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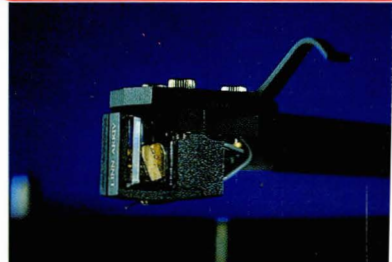


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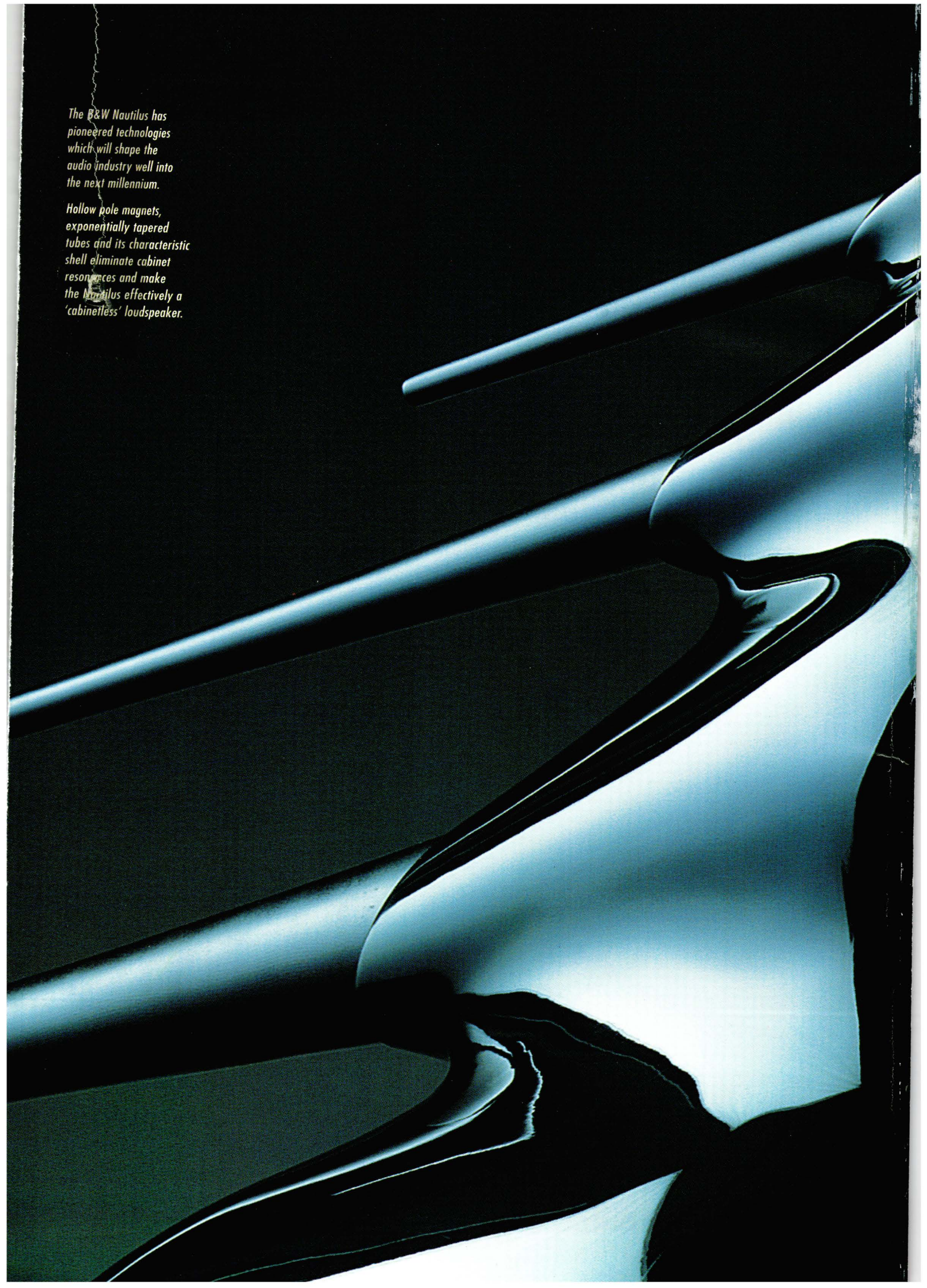
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**ISSUE 171  
NOVEMBER  
1997 £2.99**



*The B&W Nautilus has pioneered technologies which will shape the audio industry well into the next millennium.*

*Hollow pole magnets, exponentially tapered tubes and its characteristic shell eliminate cabinet resonances and make the Nautilus effectively a 'cabinetless' loudspeaker.*





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Gramophone – Jan '96



CDM™ 7



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EUROPE EISA – Aug '95



DM™ 601



*"The 601s sound like the voice coils of God."*

What Hi-Fi? – Nov '95



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Hi-Fi Choice – Aug '96



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Hi-Fi Review, Japan – 94/5

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*B&W's Matrix construction uses sophisticated internal bracing to reduce both the amplitude and decay time of cabinet resonance, resulting in clear, coherent musical reproduction.*

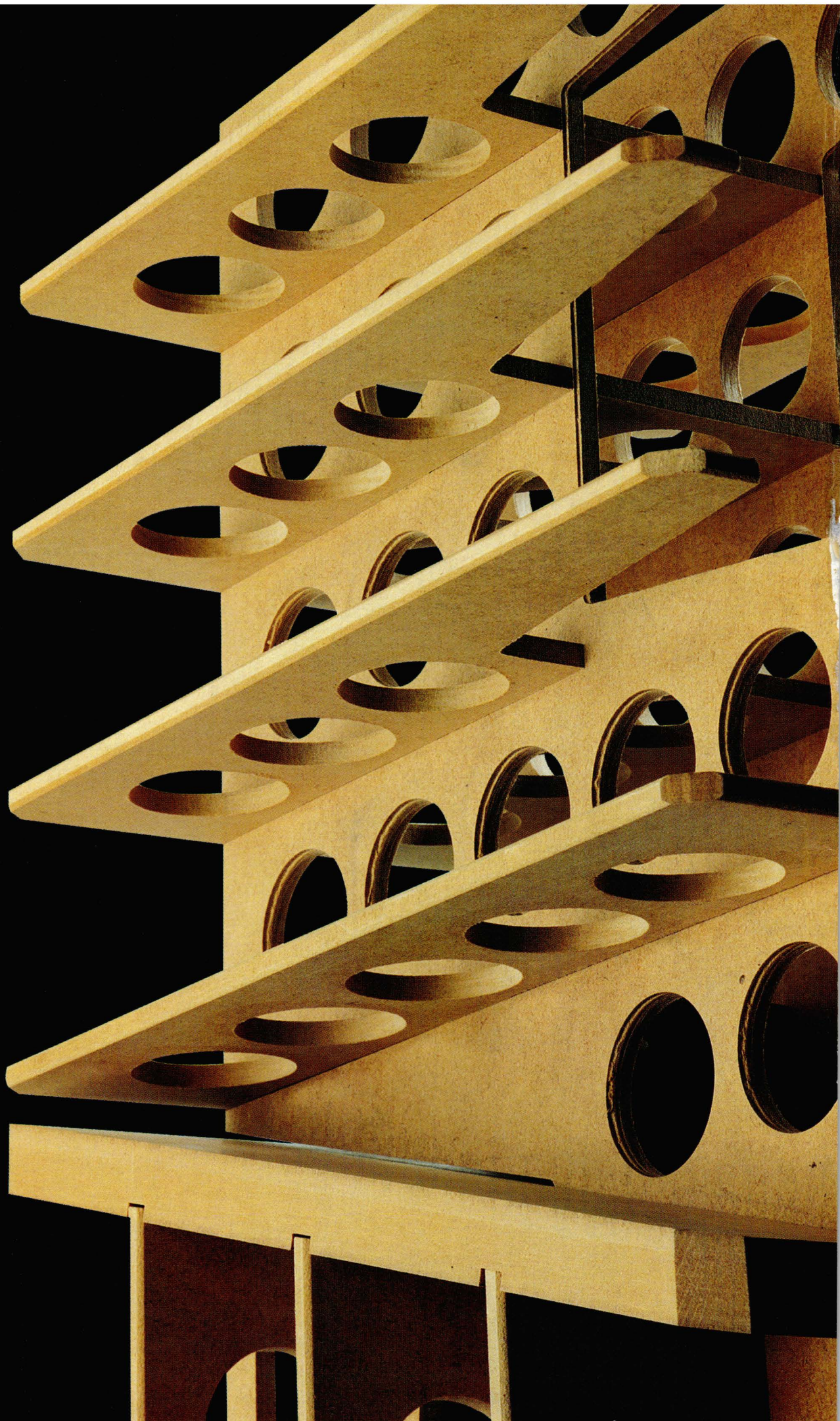
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# Editor's Notebook



PHOTO BY SEAN BLOOMFORTH

Stan Vincent offers a little hi-fi homoeopathy, and thanks you sincerely for choosing *Hi-Fi Choice*...

**T**ense, nervous, headache; memory loss — not necessarily the first signs of madness, but quite possibly the symptoms of a new modern disease. Its name? Feature Fatigue. Every new range of products has new features. Just as you get used to one set of switches and displays, along comes another. That's because features are the playthings of marketing men, who dangle them like carrots to encourage us to upgrade and buy afresh. Any mass-manufactured product, be it audio, computer software or cars, always brims with features. But which do you really need?

There's an old saying that less is more, and how true it is. So here's my prescription for preventing 21st Century equipment schizophrenia blues. Always look past the features to the essential task that any man-made contraption performs. Will it perform that task without causing you to pull out hair in the process? In the long-run, this is why minimalist, specialist hi-fi is a marvellous cure for Feature Fatigue. If you spend your day grappling with recalcitrant photocopiers, voicemail systems and computers, come home to the primal pleasure of music played with no complications.

## Must be doing something right!

*Hi-Fi Choice* has achieved a slight but significant increase in its circulation. For the six months January to June 1997, our average monthly sales were 22,474, compared with a figure of 22,191 for the same period in 1996. The same set of figures for our competitor, *What Hi-Fi?*, indicate a decline in sales from 70,170 in 1996 to 69,285. Traditionally the January to June period is the leanest part of the year for magazine sales. Thank you for your support!

## What the papers say

Hot on the heels of our circulation success came an additional boost from an unexpected source: *The Guardian* newspaper. In an early-August edition of its weekend 'Jobs & Money' tabloid, an article about hi-fi buying yielded the following... "It is easy to feel overwhelmed by the huge range of separates on sale... you should feel much more confident after a thorough reading of the monthly magazines dedicated to audio

equipment buying, such as *What Hi-Fi?* (with a useful five-page buyers' guide and glossary) and *Hi-Fi Choice* (more technical and more honest about the products it reviews, hi-fi dealers say)." If a national paper says it's true, it must be true...

## BUY AWARD-WINNING HI-FI, SAVE MONEY, HELP CHARITY!

Here's your chance to own two of this year's EISA-Award-winning products — for less than you'd pay in the shops! On offer there's a pair of Jamo's Concert 8 speakers, and one of Sony's CDP-XA50ES CD players.

Regular readers will have seen them in our Awards write-up (HFC 170). They were donated by their manufacturers, to be auctioned in aid of the children's charity UNICEF. (See Berlin Show Report, p18). Both products are yours for the taking at a substantial discount. All proceeds to charity!

## Look what you could save!

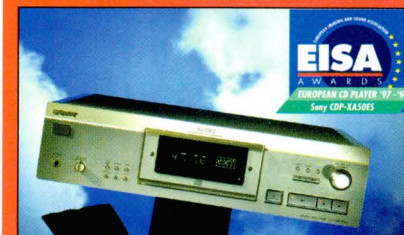
Jamo's Concert 8 speakers were reviewed by Alan Sircom in HFC 160. In the shops they'd cost £1,300, but I will accept the



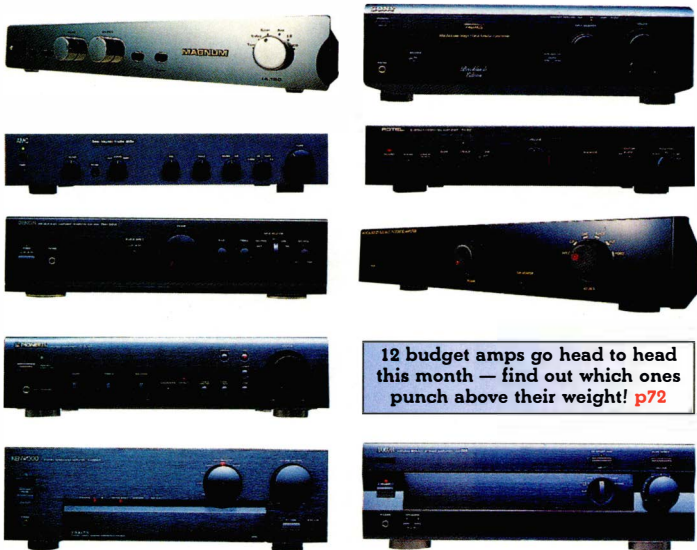
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Sony's superb CDP-XA50ES CD player is finished in champagne gold. Only limited numbers will be available in the UK. In the shops it would cost £1,000, but I'll take the best offer above £600. ● UP TO £400 SAVING.

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12 budget amps go head to head this month — find out which ones punch above their weight! **p72**



Meet the CD2 — Audio Research's stunning new CD player! **p42**

# CONTENTS

NOVEMBER 1997 ISSUE 171

## REGULARS

### 12 Update

As winter draws in, we huddle around the hi-fi fireplace to hear tales of new equipment.

### 16 Instant Systems

French-Fi doesn't come any more Gallic than this distinctive YBA/Triangle system.

### 33 Write On!

We agglomerate your armchair dispatches on pressing matters of hi-fi and music.

### 38 Statements I

Will Linn Products' birthday phono stage and top-end cartridge blow its own candles out?

### 40 Statements II

Jason Kennedy gazes into the chromium glare of Jeff Rowland's first integrated amplifier.

### 42 Statements III

Audio Research's CD2 comes under the microscopic scrutiny of Alan Sircom's ears.

### 44 Statements IV

Jason Kennedy records his records with the help of Pioneer's new, low-cost CD recorder.

### 50 Help!

Bring us your hi-fi trouble and strife, and we'll put you back on the path to high fidelity.



Chrome is where the art is... the meticulously-milled facia of Jeff Rowland's Concentra amp. **p40**





JVC's TD-W718. p64



YBA Intégré system. p16



Linn Arkiv cartridge. p38

## 55 Hints & Tips

Jimmy Hughes brings you the low-down on low notes, and tells you how to get the best from your subwoofer.

## 58 Inspirations

Phil Strongman visits a sculptor who has carved out a niche as a second-hand hi-fi nut.

## OPINION

## 9 From the Editor's Notebook

Stan Vincent offers Choice readers the chance to buy hi-fi for charity — and reports on audio coverage in the media.

## 25 Ear Waxings

Jason Kennedy weighs the digital qualities of Pink Triangle's Numeral CD player.

## 27 The Jimmy Hughes Experience

Jimmy Hughes discusses new Trichord upgrades, and ponders innate qualities of CD.

## 29 Oasis of Sanity

Paul Miller explains Pioneer's unique digital approach to the venerable compact cassette.

## 31 Personal Messages

Paul Messenger hears a fascinating new design from the reborn Kelly Transducer brand.

## 146 Ultra Vivian Scene

David Vivian visits West Sussex, worships B&W's computers and digs the new CDM7.

## FEATURES & REVIEWS

## 18 Berlin Show Report

Roving Editor-in-Chief Stan Vincent paid a flying visit to the Funkausstellung show in Berlin, and these are the fascinating facts he discovered...

## 62 Cassette Recorders

Can the latest double-decks match the sound quality of singles? Alvin Gold and Paul Miller join forces to find out.

## 72 Amplifiers

12 budget integrated amps... but which one gives the biggest sound? With the help of blind-listening tests hosted by Alvin Gold and lab tests by Paul Miller, we're here to find out.

## READER SERVICES

## 46 Hi-Fi Choice on the Net

Our cyberspace presence continues to grow as the *Hi-Fi Choice* web-site delves into new secrets of hi-fi. Surf by, now.

## 54 Subscriptions

Save time, money and shoe leather when you subscribe to the world's finest hi-fi magazine. There's a free gift for every subscriber, too!

## 107 Reader Classified

Buy, sell or trade a top-quality audio bargain today, with our select portfolio of lovingly polished, pre-owned hi-fi kit.

## 136 Factsback

The ultra-convenient and high-speed way to access classic *Hi-Fi Choice* articles and reviews by return of fax.

## 145 Next Month & Back Issues

Find out what's going on in December's kit-packed *Hi-Fi Choice* — and how to get hold of any issues you may have missed.

## THE BUYER'S GUIDE

## 109 The Price Guide/Directory

Our icon-infused listing of all new hi-fi products includes an easy-to-use almanac of every reviewed component!

**WIN!WIN!WIN!**

**19 Superb JPW speakers worth £1,500!**

**WIN!WIN!**

**21 Award-winning Sony CD player worth £1,000!**

**WIN!**

**37 Excellent cordless Vivanco headphones worth £950!**

# PRODUCTS FEATURED IN THIS ISSUE

AMC 3025a .....	75
Audio Research CD2 .....	42
B&W CDM2 .....	146
Denon DR-W580 .....	63
Denon PMA250SE .....	77
Creek 4330 .....	89
JVC TD-W718 .....	64
Kelly KT3 .....	31
Kenwood KA-5090R .....	91
Kenwood KX-W6080 .....	65
Linn Linto .....	38
Linn Arkiv .....	38
Magnum IA-120 .....	93
Marantz PM-57 .....	83
Musical Fidelity E1 .....	85
NAD 312 .....	87
NAD 616 .....	66
Pink Triangle Numeral .....	25
Pioneer A-204R .....	79
Pioneer CT-W806DR .....	67
Pioneer PDR-04 .....	44
Rotel RA-931 .....	81
Jeff Rowland Concentra .....	40
Sony TA-F448EB .....	95
Triangle Zephyr II .....	16
Yamaha AX-592 .....	97
Yamaha KX-580SE .....	69
YBA Intégré CD .....	16
YBA Intégré DT .....	16

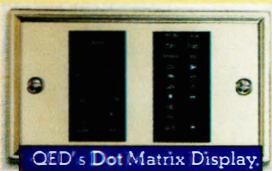


# Update

THIS MONTH... FOUR NEW AUDIOLAB AMPLIFIERS... NEW ACOUSTIC PRECISION EIKOS SPEAKERS... AND MUCH MORE...

## In brief

Germanic giant Grundig has introduced a new micro system with styling very different from the company's Space Fidelity systems. Instead of the high-tech design, the micro system has a wood finish to attract those for whom the Space 1999 look is not the acme of good taste. Grundig's new UMS2 system is packed with features for the asking price of £300. These include a 49-nameable preset, FM/LW/MW tuner, with a top-loading powered CD player and a single auto-reverse Dolby B tape deck. ☎ (0181) 324 9400



QED's Dot Matrix Display.

QED has improved the quality of the interface in its multi-room Systemline. The company's new £175 Dot Matrix Display panel allows the user to see the input selected, volume level and time of day. ☎ (01276) 451166

Swivelly wall-bracket king Pivottelli has introduced new £11.95 Rhodium speaker supports. These glass-reinforced nylon brackets are the first in the company's new System 2000 range. They can carry up to 12.5 kg speakers and sport a special cable insert system to hide both cable and screws from view. ☎ (01481) 46818



Ireland's See, Hear 97 Audio-Video and In-Car show will be held on the 4th and 5th of October at the Belfast Europa hotel. The

## Four times 8000



Audiolab's new additions: the 8000LX (top) and 8000SX.

In a fit of activity, Audiolab has announced no less than four additions to its 8000 range of amplifiers. The 8000LX is line-level integrated at £469.90, £30 below the 8000A; while the £549.90 8000SX is a stereo power amp designed to work with the 8000A. The 8000PX is an £849.90 100-Watt stereo power amp; while the 8000MX is the company's range-topping 125-Watt monoblok priced at £1,799.80 a pair.

The 8000LX is described as a straight-line design that is devoid of tone controls. It is built from the preamp section of the 8000A and the power amp from the 8000S, making it something of a hybrid. The 8000LX is also based on the 8000S but incorporates independent power supplies. It is intended for owners of 8000As and LXs who want to bi-amp.

The 8000PX and MX use 'pure direct coupled' circuits based on the 8000P and M respectively, and both have advanced DC-servo systems, claims Audiolab, for maximum compatibility. There are no input coupling capacitors to minimise low frequency phase distortion.

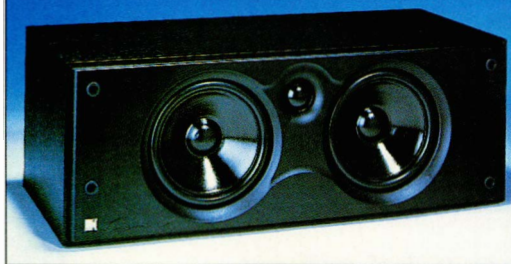
All four amps feature short-proof, heavy-duty BFA speaker sockets. Audiolab ☎ (01480) 415600

## Multi-channel Coda

KEF Coda owners need wait no longer to get their surround systems up and running. The £149 Coda C centre channel and £299 Coda S subwoofer have been created to mix and match with existing Coda speakers for home cinema and sat/sub applications.

The Coda C is timbre matched to the likes of Coda 7s and 9s, and features a pair of 5.25inch midbass units allied to a one-inch soft-dome tweeter. The active, 100-Watt-powered Coda S utilises a 10inch, long-throw woofer in a reflex-loaded, style-oriented cabinet. KEF Audio (UK) ☎ (01622) 672261

KEF's new Coda C centre channel speaker.



## Limited supply

Mission is in celebratory mood for its 20th birthday, and has produced the 750LE bookshelf loudspeaker to mark the occasion. Available in black ash, light oak or rose-wood veneers, this £248 design is the smallest Mission so far to feature an aerogel-coned midbass driver. The tweeter is the usual 25mm silk dome.

The LE part of the model number stands for Limited Edition, and relates to the fact that only 7,000 pairs are being produced. Not too limited then! Unusually for a Mission speaker, the amplifier load is a relatively tough 86dB/six Ohm combination that may not sit happily on the shoulders of similarly-priced amps. That, alongside the resonance-damped panels, might possibly suggest that the 750LE has been made with action among more elevated ancillaries in mind. Mission ☎ (01480) 451777

## Four on the floor

The gold dome enthusiasts at Monitor Audio have launched a new floorstanding speaker. The £499.99 Monitor 4 stands 840mm high and utilises a pair of six-and-a-half-inch drive units in a two-and-a-half-way configuration with the lower driver covering the bass only. The tweeter is a 19mm gold-dome aluminium unit.

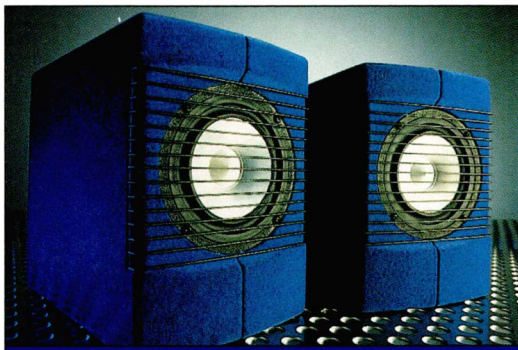
The real-wood-veneered cabinet incorporates figure-eight horizontal bracing to enhance rigidity, and a mass-loading cavity in its base. Filling the latter with sand and/or lead, and listening to the bass tighten up, seems to be the idea. A separate plinth is available to increase the speaker's 200mm-by-225mm footprint. Monitor Audio ☎ (01223) 242898



MA's £500 Monitor 4.



# The Eikos conspiracy



Acoustic Precision's new velvety Eikos FR1 speakers.

The phase-linear freaks down at Acoustic Precision have come up with a speaker to go with the Eikos CD player. Enigmatically dubbed Eikos FR1, the new £799 speaker incorporates a single, four-inch Jordan drive unit in a compact, lightweight, sealed enclosure. This crossover-less design weighs a mere 1.56kg and claims a bandwidth of 60Hz to 20kHz, with sensitivity down at 84dB.

The speaker was created by the collective talents of metal-cone specialist Ted Jordan, speaker builder Patrick Hanscombe of Electrofluidics and the phase-linear kid, Tom Evans, formerly of Trichord Research. The range of finishes includes textured and high gloss lacquered options. It will feature in next month's *Statements* section.

The speaker will shortly be joined by an Eikos Interconnect at £89 for a one-metre terminated pair. Acoustic Precision ☎ (01483) 267516

## Striking Chords

The cable activists at the Chord Company have not been lying in the sun all summer. Instead they've been refining and creating new interconnects to boost the company's Autumn collection.

First off the reel is Cobra 2 at £49.99 for a metre pair. This is no longer a coaxial design but features two conductors in a higher grade of copper and better dielectric. The Chameleon 2 weighs in at £85 and features four conductors diagonally wound in a floating braid earth to minimise noise. Both copper and outer jacket have been improved. Topping up Chord's interconnect range is the £185 Chorus, a twisted pair-balanced design with Teflon dielectric and silver-plated OFC copper conductors. Termination is via silver-plated RCA phono plugs. Chord Co ☎ (01722) 331674



Chord's new £185 Chorus, with silver-plated conductors.

## Walking on Sunshine

Audusa & Co of Kingston upon Thames has announced that it has been appointed the UK distributor of products by the Sunfire Corporation Inc. Products include amplifiers: the £2,500 2x300 Watt Sunfire Stereo and the 5x200 Watt Cinema Grand, priced at £2,600; then there's The True Sub Woofer, an 11-inch cube with eight-inch drivers



Sunfire Corporation: set to thrill the UK.

and a 2,700 Watt power amplifier that claims to reach down to 18Hz for £1,600. ☎ (0181) 241 9826



ATC's new A7 bookshelf and A7T floorstanding speakers.

## Modest ATCs

ATC is renowned for its high-quality monitor systems, featuring drive units designed and built in-house, but until now its range has been out of reach to the less well-heeled audiophile. This is set to change with the introduction of the A7 domestic monitor, which is available in bookshelf A7 form at £749.95, or in floorstanding A7T guise at £1,199.95.

Both models have been designed to work with 'modest' amplification, which means that they offer an easy load to the amp despite quite low sensitivity. They utilise massive three-and-a-half kilogram magnet systems and edge-wound voice coils on doped-paper midbass drivers; tweeters are 25mm soft domes with neodymium magnets.

The A7 is a seven-litre volume in a 330mm high cabinet, while the A7T weighs in at 13.5kg and stands 920mm high with a 12-litre volume. ATC ☎ (01285) 760561

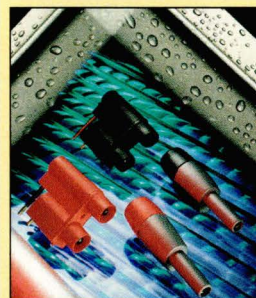
## Gold editions

Hot on the heels of the RTL3SE, TDL has launched SE versions of its RTL1 and RTL2. The £199.95 RTL1SE features gold plating in abundance, particularly on the allen bolt caps and terminal posts. The crossover components have also been tweaked. The same changes have been made to the RTL2SE, which adds spikes to the gold plating roster. The RT2SE is available in cherry, rosewood and black finishes while the RTL1SE comes in cherry only. TDL ☎ (01628) 850111

## In brief

show has been organised by Richer Sounds Ireland and Lyric Hi-Fi. ☎ (01232) 381296

Rayleigh Hi-Fi has added another store to its Essex-based chain. The new store will be located within the Dansk World of Furniture superstore at the Lakeside Retail Park, West Thurrock. Opening seven days a week from October, the new store will have three listening rooms including a home cinema room. ☎ (01268) 747571



Deltron's TS connector.

Deltron Components is covering all the bases when it comes to the replacement for now-defunct 4mm speaker plugs. Not content with the BFA-designed plug, the company has developed the new TS connector in association with Linn Products and Mission Centralforce. This ABS-based connector is fully insulated. ☎ (0181) 965 4222

Chord Electronics has a new address. Correspondence should be addressed to: Chord Electronics Ltd, The Pumphouse, Bridge Court, Farleigh Lane, East Farleigh, Kent ME16 9NB. ☎ (01622) 721444, fax (01622) 721555, e-mail sales@chord.softnet.co.uk

TDK's season promotions will soon take effect. The promotional triple packs of AR90 and SF90 will contain free £1 'Hot Gossip' refreshable phonocards. Promotional multipacks of HS and EH8 VHS tapes, as well as selected 8mm and VHS-C camcorder packs, will contain a voucher worth 75p against the cost of a Radio Times. TDK ☎ (01737) 773773

Audio Spectrum is a new company with a range of five loudspeakers. They rank from the £500, two-way, standmounted Eros to the £2,000, three-way, four driver transmission line floor-stander Hermes. ☎ (01752) 361852



## In brief

◀ Sontec (Electronics) Ltd has moved to Sontec House, Auster Close, Off Concorde Road, Vulcan Road Industrial Estate, Norwich NR6 6BE. The existing telephone and fax numbers are retained. ☎ (01603) 483675



Ross's new Micro-Flat cable.

Ross Consumer Products has introduced the new £99.99 Noise Reduction headphones which use anti-noise cancellation algorithms. Also new is the 0.5mm-thick Micro-Flat speaker cable, which comes complete with an adhesive backing and is priced at £39.99 for a 9m pair of cables and £59.99 for a 15.2m pair. ☎ (01204) 862026

Roberts Radio Ltd has introduced a new 12-band compact world radio that is a definite break from its traditional '50s radio image. Priced at £30, the R862 is small, black and has nine shortwave bands along with AM/FM. It even comes complete with its own soft pouch! ☎ (01709) 571722

### ALBUMS PLAYED IN THE HI-FI CHOICE OFFICE THIS MONTH

The Mal Waldron Trio

Free At Last

John Fahey

City Of Refuge

Earwitness Critic's Choice

('Reproducing Piano' compilation)

Free with *The Big Issue*

XFM Sampler

David Bowie

Young Americans

The Verve

A Northern Soul

The Jimi Hendrix Experience

Electric Ladyland

Tranquility Bass

Let The Freak Flag Fly

Ruby

Remixes

## First time buyer

Classic hi-fi brands Wharfedale and Quad have moved into a new era. A new company, International Audio Group (IAG), has acquired a majority of the shares in these two companies from current owners Verity plc, known also for the Mission and Cyrus brands.

IAG owns SG Acoustics, which in turn owns an OEM loudspeaker manufacturing facility in Bradford and the Airedale brand of speakers sold principally in the Far East. The new company is chaired by hi-fi-industry veteran Stan Curtis, one-time boss of Cambridge Audio.

Verity is committing increasing resources to development of its 'nxt' flat-panel speaker technology (see *HFC* 160), and Mission, the long-established speaker brand. IAG ☎ (01480) 431 737



Quad products: now part of International Audio Group

## Micro with attitude

Denon's latest super micro claims to incorporate features and specs normally associated with separate hi-fi, and the convenience of an integrated system. In basic form, the D-M7 includes an RDS receiver and three-disc CD changer, and costs £499.99 including SC-M7 speakers, but can be purchased sans speakers for £70 less. Other options include the DRR-M7 autoreverse cassette deck at £149.99 and the DMD-M7 MD recorder for £449.99.

Denon's home cinema division has announced the Gold Series AVC-A1 AC3 digital and THX surround sound amplifier at £2,499.99. This 700 Watts, five-channel behemoth incorporates inputs for external DTS decoders and true monoblok power amp configuration. Audiophile-grade 20-bit A/D and 18-bit D/A converters are used for the DSP functions with individual time-delay settings for every channel. Hayden Labs ☎ (01753) 888447



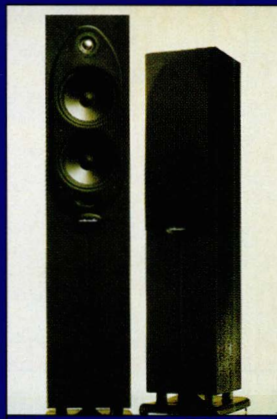
Denon claims the new D-M7 has separate sound quality.

## A Polk in the ear

American speaker specialist Polk Audio has bolstered its range with a new series of floorstanders under the title RT. Produced for both home cinema and music applications, the RT Series is fully shielded and features 'Dynamic Balance' driver technology. The latter has been created by the combined resources of John Hopkins University and Polk Audio, using laser imaging techniques to minimise cone resonance.

The series kicks off with the £399.90 RT400. This uses a seven-and-a-half-inch midbass unit and one-inch soft dome tweeter, in a three-foot high enclosure that's finished in black ash vinyl.

The £599.90 RT600 and £799.90 RT800 up the ante with tri-laminate tweeters and 'Power Ports', which are claimed to produce more powerful bass than conventional designs of the same size. Polk Audio ☎ (01727) 827311

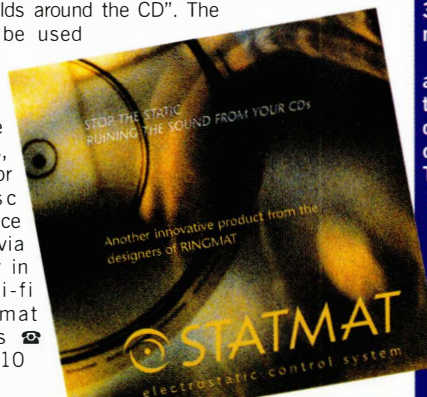


Polk's new £799.90 RT800.

## A mat for your stat

Not satisfied with turntable mats alone, Ringmat Developments has turned its attention to the CD player and come up with the Statmat. £20 will buy you a piece of carefully cut-out and printed film that's said to eliminate phase errors in disc reading.

Alleged to be the biggest advance in CD reproduction since the medium was introduced, the Statmat purports to eliminate the low-level electrostatic voltage charges that the company claims accumulate on a spinning disc. Developed over five years in collaboration with DNM design, Statmat is coated with specially formulated inks that "level out the electrostatic fields around the CD". The Statmat can be used with most CD players, including Pioneer Stable Platter designs, but not in-car or vertical disc types. The device is available via mail order or in specialist hi-fi shops. Ringmat Developments ☎ (01277) 200210



CD innovation: the new Statmat from Ringmat.

## A perfect Utopia

Sound Image UK Ltd has increased its portfolio of products with new items from JM Labs/Focal, Electrocompaniet and Boulder. JM Labs' range runs from simple £400 models right up to the mighty £33,000 Grand Utopia, while the Focal drive-units also made by the company are used in many of the finest hi-fi speaker designs. The latest model from the JM Labs/Focal company is the Grand Utopia's little brother, the £16,000 Utopia. This new speaker has a four-driver complement in two separate enclosures. It sports the distinctive 32mm inverted dome tweeter, a pair of 165mm W-cone midrange units and a 330mm W-cone.

Electrocompaniet has announced a new preamplifier and power amplifier. The new £1,750 EC4.6 model is the acme of the EC3 and EC4 range. It features remote-controlled volume and balance functions, a slimline design and symmetrical, differential balanced circuitry. This partners the £2,595 AW120DMB power amplifier, using two 650VA toroidal transformers, with both conventional and Neutrik Speakon terminals.

The new £43,500 2050 Boulder monoblok can deliver 1kW, while the £23,000 2060 stereo 'only' delivers 600W. Both feature two-stage designs, with separate sections for current and voltage. The balanced outputs are stable into any load, including sub-one-Ohm loudspeaker loads. Sound Image UK ☎ (0181) 255 6868



# IXOS

## 1002 Gamma Geometry®

*"This cable is a stunning performer. It sounds amazingly clear and focused, and boasts superb bandwidth. Overall, the character of the IXOS is neutral but very musical. This is a sound buy."*

**WHAT HI-FI?**



10/97



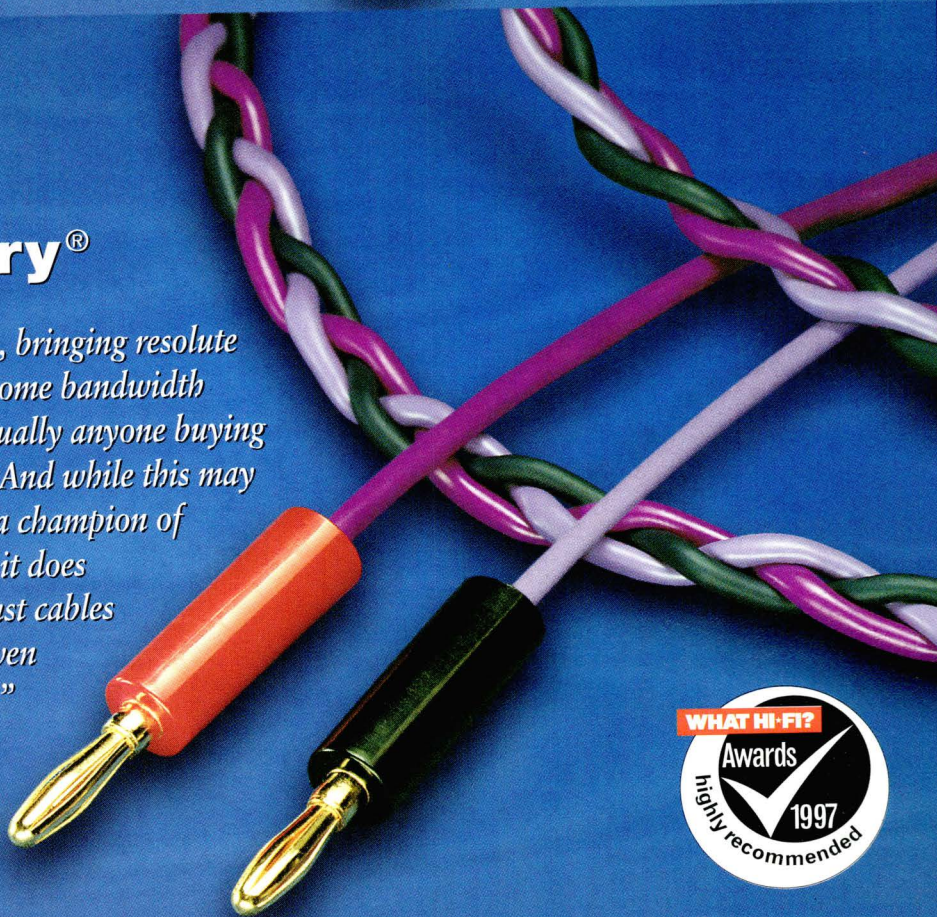
## 6003 Gamma Geometry®

*"...boy does it work, bringing resolute dynamics and awesome bandwidth within reach of virtually anyone buying a separates system. And while this may make it sound like a champion of the budget bargain it does seriously well against cables costing three and even four times its price."*

**WHAT HI-FI?**



10/97

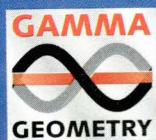


**WHAT HI-FI?**



- Avon**  
Paul Roberts, Bristol 01779 872 224
- Bedfordshire**  
Sevenoaks, Bedford 01234 272 779
- Berkshire**  
Frazers Hi-Fi, Slough 01753 520244
- Buckinghamshire**  
Sony Centre, High Wycombe 01494 521382  
Techosound, Milton Keynes 01908 604 949
- Cheshire**  
Peters Hi Fi, Chester 01244 319 392  
Chester AV Centre, Chester 01244 320 414  
Warrington AV Centre, Warrington 01925 636 215
- Cumbria**  
Sevenoaks, Carlisle 01288 590 775  
Searle Audio, Barrow-Furness 01299 821 233
- Devon**  
Upton Electronics, Paignton 01803 551 329  
Hi Fi Attic, Plymouth 01752 669 511
- Dorset**  
Movement Audio, Poole 01202 730 865  
Weymouth Hi Fi, Weymouth 01305 785 729
- Essex**  
Rayleigh Hi Fi, Rayleigh 01268 779 762
- Gloucestershire**  
Photo Sight and Sounds, Gloucester 01452 503 691  
Sevenoaks, Cheltenham 01242 241171
- Hampshire**  
Now Thats Hi Fi, Portsmouth 01705 811 618  
Southampton Hi Fi, Southampton 01703 228 434
- Humburside**  
Manders Hi Fi, Grimsby 01472 351 391
- Kent**  
Musical Images, Beckenham 0181 663 3777  
Sevenoaks, Tunbridge Wells 01892 531 543  
E.D.C., Bexleyheath 0181 298 7880
- Lancashire**  
Clearstone Hi Fi, Bolton 01204 531 423  
Beaver Hi Fi, Liverpool 0151 709 9898  
Bill Hutchinson, Manchester 0161 832 1600
- Leicestershire**  
Sevenoaks, Leicester 0116 255 7518  
Cowings, Leicester 0116 255 3232
- London**  
Hi Fi Care, W1 0171 637 8911  
Kamla, W1 0171 323 2747  
Musical Images, Covent Garden 0171 497 1346  
Nicholls Hi Fi, SE12 0181 852 5780  
Hi-Spek, Finchley 0181 349 1166
- Middlesex**  
Musical Images, Edgware 0181 952 5535  
Musical Images, Hounslow 0181 569 5802  
Dades, West Drayton 01895 420 898
- Norfolk**  
Sevenoaks, Norwich 01603 767 605
- Nottinghamshire**  
Forum Hi Fi, Nottingham 01159 622 150
- Oxfordshire**  
Audio T, Oxford 01865 765 961
- Scotland**  
Sevenoaks, Aberdeen 01224 587 070  
JD Brown, Dundee 01382 226 591  
Bill Hutchinson, Edinburgh 0131 220 0909  
Bill Hutchinson, Glasgow 0141 248 2857  
Music Station, Inverness 01463 225 523
- Somerset**  
Mike Manning, Yeovil 01935 479 361
- Suffolk**  
Bennetts Retail, Ipswich 01473 610 801
- Surrey**  
Sevenoaks, Kingston 0181 547 0717  
Tru Fi, Redhill 01737 766 128
- Sussex**  
Churchers, Hove 01273 324 616  
Jefferies Hi Fi, Eastbourne 01323 731 336
- Tyne and Wear**  
Linton Audio, Newcastle 0191 460 0999  
Bill Hutchinson, Newcastle 0191 230 3600
- Warwickshire**  
Frank Harvey Hi Fi, Coventry 01203 525 200  
Leamington Spa Hi Fi Company, Leamington Spa 01926 888 644
- West Midlands**  
Music Matters, Solihull 0121 742 0254  
Music Matters, Edgbaston 0121 429 2811  
Sevenoaks, Birmingham 0121 233 2977  
Sound Academy, Bloxwich 01922 473 499
- Wiltshire**  
Salisbury Hi Fi, Salisbury 01722 322 169
- Worcestershire**  
Sevenoaks, Worcester 01905 612 929  
Colorama Hi Fi, Redditch 01527 597 260
- Yorkshire**  
Clearstone Hi Fi, Bradford 01274 309 266  
Bill Hutchinson, Leeds 0113 242 7777  
Sevenoaks Hi-Fi, Leeds 0113 245 2775

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# Son et lumière

Alan Sircom investigates claims that this Francophone system offers an affordable taste of the high end.

**V**ive l'hi-fi Française! Last month's system featured idiosyncratic Rehdeko RK115A speakers; this month, speakers and amp hail from across the Channel. The whole caboodle is offered by Northern-Irish distributor Kronos to yield high-end performance at a prosaic price. Can it be done? That's what we're here to find out...

Both CD and amplifier are built by Yves-Bernard André (YBA). The £1,250 CD Intégré sports what YBA calls a 'Blue Laser' system, but this is not to be confused with still-experimental ways of using blue-laser light to read high-density data on CDs and DVDs. Instead, there is a blue LED that bathes the disc in blue light while a conventional infra-red laser diode reads the disc. YBA claims the blue light aids disc tracking, but this claim awaits objective evaluation.





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The £1,650 Intégré DT amplifier is similarly radical. Within the single chassis is a true dual-mono design, with precious few parts shared between the two stereo channels. It can be specified with an extremely good phono stage for £100 more, and a remote volume control for an extra £150. The DT is a step up in power and clarity over the original Intégré chassis. The latter model is still available for £1,199 (£1,299 with phono stage).

The CD and amplifier are complemented by the new Triangle Zephyr Mark II loudspeakers. These £799 two-way floorstanders have been upgraded to mkII status with a larger cabinet and new drive units, but retain Triangle's impressive lifetime guarantee. The Zephyrs use Triangle's own drivers and are

suggested to be 91dB efficient, with a claimed nominal impedance of six Ohms. Modifications are said to beef up the bass extension and power handling of the speaker.

Hooking up the system are Silver Sounds cables, including an old friend of mine, the 12-gauge speaker wire. The latest £12/m version of this silver-plated Teflon-coated copper cable works well in this system. The Silver Sounds SS1 interconnects are made from pure silver conductors that are double screened with a floating earth, and retail for £199 per one-metre pair.

This bunch of components is not a haphazard collection of products with a Gallic flavour. The importer has performed subtle blending of their individual characteristics, to good effect. The YBA designs have a soft but charming sound, but could easily sound bland and uninspiring with undynamic speakers. Yet they also have extended treble and could make ragged speakers sound very aggressive on music mixed to sound up-front and lively.

The Triangle Zephyr Mk II speakers are the perfect foil for YBA components, since they have the right balance of clean top-end extension, exciting pace and good but not earth-shakingly-deep bass. Add the Silver Sounds cables and you achieve sound that has all the grace and space of big-money, high-end systems without the extreme cost and high box count.

Combined, these components give a sound that is weighty, with plenty of richness and a lot of detail. Soundstaging was particularly strong, although it lacked the

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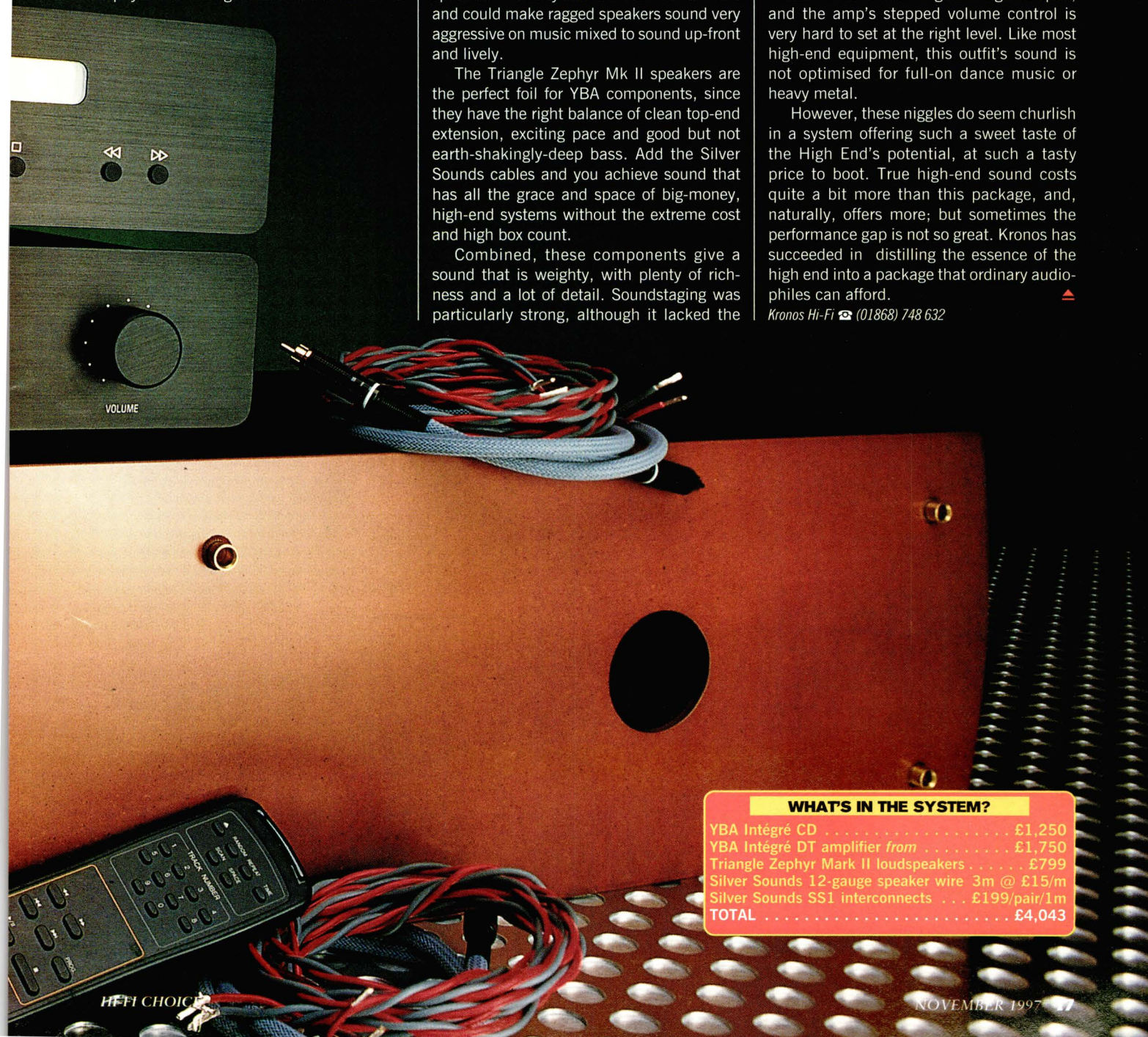
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The price of the CD player is almost justified by the improvements wrought by the supplied cleaning cloth, which YBA recommends you use with every disc. It's easy for a reviewer's CDs to end up in poor condition, and mine are no exception, but a quick wipe with YBA's rubber-feel cloth improved image separation, bass definition and depth, and low-level detail.

Inevitably, there are criticisms. The CD drawer takes almost a glacial age to open, and the amp's stepped volume control is very hard to set at the right level. Like most high-end equipment, this outfit's sound is not optimised for full-on dance music or heavy metal.

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Kronos Hi-Fi ☎ (01868) 748 632



**WHAT'S IN THE SYSTEM?**

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YBA Intégré DT amplifier <i>from</i>	£1,750
Triangle Zephyr Mark II loudspeakers	£799
Silver Sounds 12-gauge speaker wire 3m @ £15/m	
Silver Sounds SS1 interconnects	£199/pair/1m
<b>TOTAL</b>	<b>£4,043</b>



# ICH BIN EIN BERLINER

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## DVDivisions

In an echo of the last IFA in 1995, Digital Versatile Disc (DVD) was among the hot stories. As before, questions of competing standards ruled the day. This time, however, it was not a matter of physical disc formats, but rather the digital coding algorithms used to store multi-channel sound. Announcing the launch of 25 European DVD titles from the Warner Home Video stable, Warren Lieberfarb, President, put the cat among the pigeons by revealing that their multi-channel sound encoding system will be MPEG2, not Dolby Digital as used in Stateside DVD players, and already beloved of the LaserDisc community.

Owners of, say, Panasonic's DVD A100 player will be unable to play Warner's discs and listen to them in 5.1-channel

Philips' CDR 870 CD recorder.



digital surround sound, though they would obtain a Dolby-Surround-compatible two-channel signal. Panasonic was

moved to rush out a hasty 'Standby Statement' announcing the launch of its DVD A350 player, which will decode both MPEG2 and Dolby Digital discs with equal aplomb. It's due in the UK in January 1998, at an approximate price of £700.

Tim Frost, editor of the *DVD & Future CD* newsletter, counted at least eight new DVD players launched at the show, many from Korean companies such as Daewoo, LG and Samsung. Samsung's DVD 905 is an MPEG2/Dolby Digital-decoder-equipped that's on sale in the UK at the end of September, priced £549. I was pleased to see Samsung's

megabucks 'Emperor' high-end hi-fi system lording it over the digital still cameras and TVs! Other DVD launches were promised by Sony, Mitsubishi, JVC and Philips.

## Don't forget the music!

Among numerous displays of movie surround sound, I was intrigued to find a demonstration of multi-channel music recorded in the

DTS format, which in cinemas is a rival to Dolby Digital, but in audiophile circles is emerging as the preferred means of encoding multi-channel music on CD. Presented via B&W home cinema speakers and Rotel electronics, this dem reinforced my belief that surround-sound has as much to add to music as to films. Dolby Labs was keen to remind us of the classical CD it has released in association with Delos, and showed me a special music-sampler DVD it's created in the States with A&M records.

## TV and radio

Inevitably, TV sets were probably the biggest items of the show, at least in terms of product size. TV technology is at a crossroads, between refinements of the traditional cathode ray tube (CRT) and new manifestations of

state-of-the-art, flat-screen gas-plasma displays, like those from Panasonic, Philips, Sony and Mitsubishi. Digital technology is essential to both kinds of screen. Samsung's new HiTron CRT sets, for example,

allow extra viewing width by digitally controlling the extreme edges of the screen which formerly would have been too ragged to show.

Digital Audio Broadcasting (DAB) products were in evidence, predominantly for in-car use, though Technics was showing a prototype domestic unit styled like a tuner.

## CD comes home

A low-key but highly significant launch was Philips' first demonstration of its CDR 870 CD Recorder, as previewed in *Update, HFC* 169. This unit, to be available in October priced at around £500, will make recordable CDs (CD-Rs), and the new rewritable CDs (CR-RW). A strong rumour was circulating that CD-R blanks will cost as little as £1.60 each, making them as cheap as cassettes. One retailer at the show was offering packs of 10 CD-R blanks for 30 DM (approximately £10).

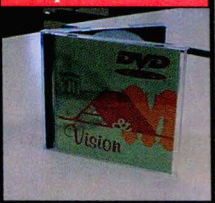
Purist hi-fi does not appear to have progressed in Germany since I was there in '95. I saw the same ludicrous high-end gear and Teutonic speakers. Likewise car audio, which, while deriving its own benefit from the digital revolution in fancy control software and colour displays, has not escaped its traditional obsession with volume, bass and garish show-cars. This is

a great shame, since I know many in-car enthusiasts in the UK at least are keen to be seen as audiophiles, not headbangers.

To wander in a hot, densely-populated, enclosed space, buffeted on all sides by thumping bass and thronging crowds, is to stray from the path of hi-fi righteousness.

And that was just the Berlin techno club that hi-fi industry colleagues and I visited the night before our departure! A little IFA goes a long way, but on the evidence of my fleeting visit, the year ahead promises many exciting new toys to play with. ▲

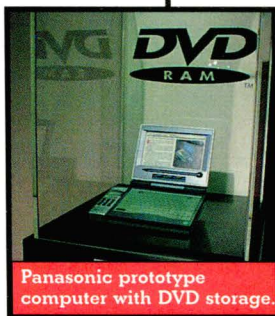
Dolby's DVD music.



Samsung's DVD A350.

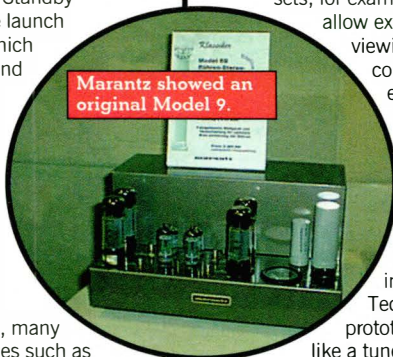


Samsung's TV sound systems get the horn.



Panasonic prototype computer with DVD storage.

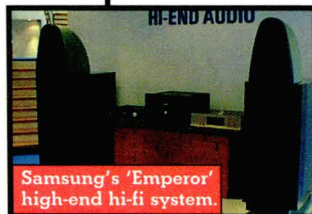
Marantz showed an original Model 9.



TEAC's new H300 system.



Technics DAB tuner mockup.



Samsung's 'Emperor' high-end hi-fi system.



Mitsubishi plasma TV.



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My principal reason for visiting was to attend the official EISA (European Imaging & Sound Association) prize-giving ceremony. This honoured the European Products of the Year 1997-1998, which were reported in *Hi-Fi Choice* last month. We had a splendid turn-out, and with the kind co-operation of all winning manufacturers, auctioned almost all of the winning equipment in aid of the children's charity UNICEF, raising a total of 45,000 Deutschmarks (£15,600). Turn to page 9 to see how you can buy two EISA Award-winning products at a knock-down price!

## DVDivisions

In an echo of the last IFA in 1995, Digital Versatile Disc (DVD) was among the hot stories. As before, questions of competing standards ruled the day. This time, however, it was not a matter of physical disc formats, but rather the digital coding algorithms used to store multi-channel sound. Announcing the launch of 25 European DVD titles from the Warner Home Video stable, Warren Lieberfarb, President, put the cat among the pigeons by revealing that their multi-channel sound encoding system will be MPEG2, not Dolby Digital as used in Stateside DVD players, and already beloved of the LaserDisc community.

Owners of, say, Panasonic's DVD A100 player will be unable to play Warner's discs and listen to them in 5.1-channel

Philips' CDR 870 CD recorder.



digital surround sound, though they would obtain a Dolby-Surround-compatible two-channel signal. Panasonic was

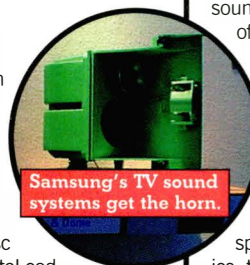
moved to rush out a hasty 'Standby Statement' announcing the launch of its DVD A350 player, which will decode both MPEG2 and Dolby Digital discs with equal aplomb. It's due in the UK in January 1998, at an approximate price of £700.

Tim Frost, editor of the *DVD & Future CD* newsletter, counted at least eight new DVD players launched at the show, many from Korean companies such as Daewoo, LG and Samsung. Samsung's DVD 905 is an MPEG2/Dolby Digital-decoder-equipped that's on sale in the UK at the end of September, priced £549. I was pleased to see Samsung's megabucks 'Emperor' high-end hi-fi system lording it over the digital still cameras and TVs! Other DVD launches were promised by Sony, Mitsubishi, JVC and Philips.

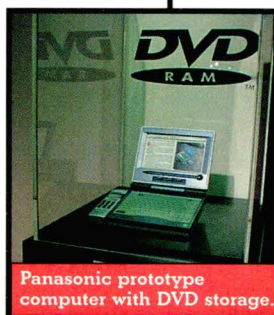
Dolby's DVD music.



Samsung's DVD A350



Samsung's TV sound systems get the horn.



Panasonic prototype computer with DVD storage.

## Don't forget the music!

Among numerous displays of movie surround sound, I was intrigued to find a demonstration of multi-channel music recorded in the DTS format, which in cinemas is a rival to Dolby Digital, but in audiophile circles is emerging as the preferred means of encoding multi-channel music on CD. Presented via B&W home cinema speakers and Rotel electronics, this dem reinforced my belief that surround-sound has as much to add to music as to films. Dolby Labs was keen to remind us of the classical CD it has released in association with Delos, and showed me a special music-sampler DVD it's created in the States with A&M records.

## TV and radio

Inevitably, TV sets were probably the biggest items of the show, at least in terms of product size. TV technology is at a crossroads, between refinements of the traditional cathode ray tube (CRT) and new manifestations of

state-of-the-art, flat-screen gas-plasma displays, like those from Panasonic, Philips, Sony and Mitsubishi. Digital technology is essential to both kinds of screen. Samsung's new HiTron CRT sets, for example, allow extra



Mitsubishi plasma TV.

viewing width by digitally controlling the extreme edges of the screen which formerly would have been too ragged to show.

Digital Audio Broadcasting (DAB) products were in evidence, predominantly for in-car use, though Technics was showing a prototype domestic unit styled like a tuner.

## CD comes home

A low-key but highly significant launch was Philips' first demonstration of its CDR 870 CD Recorder, as previewed in *Update*, *HFC* 169. This unit, to be available in October priced at around £500, will make recordable CDs (CD-Rs), and the new rewritable CDs (CR-RW). A strong rumour was circulating that CD-R blanks will cost as little as £1.60 each, making them as cheap as cassettes. One retailer at the show was offering packs of 10 CD-R blanks for 30 DM (approximately £10).

Purist hi-fi does not appear to have progressed in Germany since I was there in '95. I saw the same ludicrous high-end gear and Teutonic speakers. Likewise car audio, which, while deriving its own benefit from the digital revolution in fancy control software and colour displays, has not escaped its traditional obsession with volume, bass and garish show-cars. This is

a great shame, since I know many in-car enthusiasts in the UK at least are keen to be seen as audiophiles, not headbangers.

To wander in a hot, densely-populated, enclosed space, buffeted on all sides by thumping bass and thronging crowds, is to stray from the path of hi-fi righteousness.

And that was just the Berlin techno club that hi-fi industry colleagues and I visited the night before our departure! A little IFA goes a long way, but on the evidence of my fleeting visit, the year ahead promises many exciting new toys to play with. ▲

Marantz showed an original Model 9.



TEAC's new H300 system.



Technics DAB tuner mockup.



Samsung's 'Emperor' high-end hi-fi system.

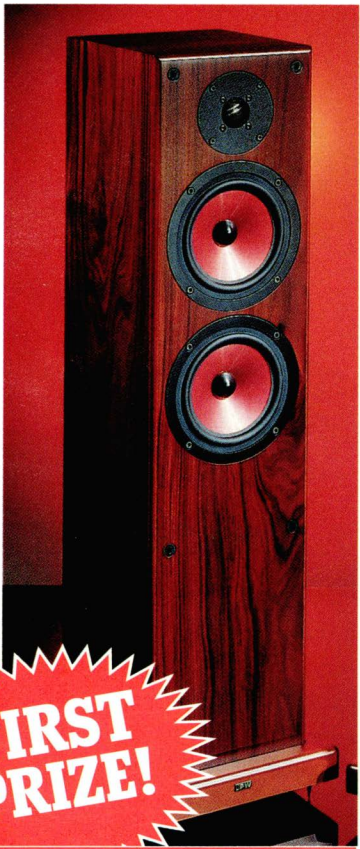


**WIN!**

**COMPETITION**

# Bonus Boxes!

## £1,500 worth of JPW speakers must be won!



**FIRST PRIZE!**

JPW Ruby 4 speakers worth £1,000!

**J**PW is a key player in the UK loudspeaker market, and although its speakers are normally available only in stores of the Richer Sounds chain, here's a special chance for six *Hi-Fi Choice* readers to acquire a pair of engaging enclosures.

Our First Prize is drawn from JPW's sophisticated Ruby range, which offers luxury touches like aluminium drive units and cabinets finished in real-wood veneers. It includes four models, commencing with the Ruby 1 at £400 and concluding in the floor-standing Ruby 4, a £1,000 enclosure which is this month's First Prize.

All Ruby designs feature distinctive red-coloured,

anodised-metal drive units, 18mm high-density MDF cabinets, and matched real-wood veneers. A special piano-black finish is available to order. The Ruby 4 stands 90cm high on its plinth and can be mass-loaded with sand and lead shot.

At the more affordable end of the scale, JPW's new Millennium range is taking the budget speaker market by storm. The Millennium range comprises nine models, from the diminutive ML210 to the mighty ML1010, a floorstanding behemoth retailing for a disarming £400.

A key range feature is the sandwich construction of the speakers' wooden baffles, which are finished with a membrane pressed outer skin. High density polymer is used for the driver chassis, and crossovers are highly-toleranced minimum-component designs.

Two Second-Prize winners bag a pair of Millennium ML510 stand-mount speakers, awarded a Best Buy in *HFC* 169 and normally retailing for £130.

Three fortunate Third-Prize winners each receive a pair of ML210 bookshelf monitors worth £80.

Send in your entry form today!



### HOW TO ENTER

Answer the question below by circling the correct answer, then fill in your name, address and day-time telephone number in the spaces given below. Please remember to tell us whether you are over 18 years of age.

#### POST THIS ENTRY FORM TO:

*Hi-Fi Choice* Competition (CHFC711B)  
Bradley Pavilions,  
Bradley Stoke North,  
Bristol BS12 0BQ

All entries must arrive by first post, Thursday November 6th, 1997.

### THE QUESTION

What has inspired the name of JPW's Ruby range?

- a) Because it is made with freshly-ground chili powder.
- b) Because it has red-coloured, anodised-metal cones.
- c) Because it featured in *The Hunt For Red October*.
- d) Because Ruby Wax bought the first pair.

### YOUR DETAILS

Name \_\_\_\_\_  
 Job Title \_\_\_\_\_  
 Company Name \_\_\_\_\_  
 Address (inc. postcode) \_\_\_\_\_

Day-time Telephone Number \_\_\_\_\_

- Please tick here if you are under 18
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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

- The Closing Date for this competition is Thursday November 6th, 1997.
- Winners of the JPW competition will be judged from all correct entries submitted, and drawn at random after the Closing Date.
- Winners will be notified by post.
- The Editor's decision is final and no correspondence will be entered into.
- The JPW competition is not open to employees of Dennis Publishing Ltd, JPW Loudspeakers Ltd, nor their suppliers, agents or associates.
- We regret this competition is open to UK residents only.
- No cash alternatives will be offered.
- We reserve the right to substitute alternative prizes with equal value to these shown, in the unlikely event of stock being temporarily unavailable.
- By entering the competition you agree to be bound by the rules.
- All entries must be on this official entry coupon. If you do not wish to cut your magazine, you may send a photocopy of the page instead. Please note: only one entry form per household.

CHFC 711B



The perfect 'point source' has been sought for over 50 years.

**KEF patented it.**



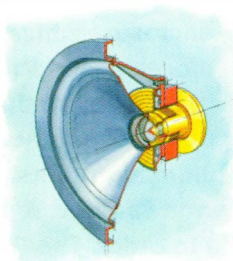
**MONITOR**  
S • E • R • I • E • S

The acoustic 'point source' has long been the Holy Grail of loudspeaker design. Ever since the early days of high fidelity, audio engineers have sought this elusive ideal. Some have come close, but none have succeeded.

Except for KEF - and KEF alone. UK patent 2 236929 and US patent 5,548,657 are the proof.

KEF's revolutionary Uni-Q® drive unit configuration is acknowledged as one of the great breakthroughs of modern high-end loudspeaker design.

The single coincident point source is achieved by placing the tweeter at the exact acoustic centre of the mid-range cone. With identical directivity and dispersion characteristics, this unique configuration creates an



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To the listener, the difference is phenomenal. Off-axis response is superb - and undesirable crossover effects are virtually eliminated.

Progressively refined by Reference Series engineers, KEF's patented Uni-Q technology is what makes the new Monitor Series the ideal solution for studio professionals and serious audiophiles alike.

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**authorised dealers:**

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<b>Belfast</b> Lyric Hi Fi	01232 381296
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<b>Bolton</b> Sound & Vision	01204 861861
<b>Bournemouth</b> Sutton's	01202 555512
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<b>Guilford</b> P J HiFi	01483 504801
<b>Huddersfield</b> Huddersfield Hi Fi	01484 544668
<b>Hull</b> Zen Audio	01482 587397
<b>Kings Lynn</b> Martins Hi Fi	01553 761683
<b>Leamington</b> Leamington Hi Fi Company	01926 888644
<b>Liverpool</b> Better Hi Fi	0151 227 5007
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<b>Maidstone</b> Unilet Sound & Vision	01622 676703
<b>Nelson</b> Wilkinsons Hi Fi	01282 612901
<b>New Malden</b> Unilet Sound & Vision	0181 942 9567
<b>Newcastle-Upon-Tyne</b> Lintone	0191 460 0999

**Norwich** Martins Hi Fi

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<b>Oxford</b> Radford Hi Fi	01865 511241
<b>Reading</b> Sevenoaks	0118 9597768
<b>Rhos-on-Sea</b> Electrotrader	01492 548932
<b>Sheffield</b> Audio Images	01142 737893
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<b>Watford</b> Acoustic Arts	01923 233011
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<b>Worthing</b> Phase 3	01903 245577

MODELS SHOWN ARE THE RDM ONE AND RDM TWO. KEF AND UNI-Q ARE REGISTERED TRADEMARKS. UNI-Q IS PROTECTED UNDER GB PATENT 2 236929 AND US PAT. NO. 5,548,657. WORLDWIDE PATENTS PENDING. FOR DETAILS ON THE KEF MONITOR SERIES PLEASE WRITE TO: KEF AUDIO (UK) LIMITED, DEPT HFC7, FREEPOST MA 1332, ECCLESTON ROAD, TOVIL, MAIDSTONE, KENT ME15 6BR. TEL: (01622) 672261. WEBSITE <http://www.kef.com>



**WIN!**

**COMPETITION**

# Win A Winner!



**"I**n the CDP-XA50ES Sony has created a CD player that is convincing in every respect. It is immaculately crafted and luxuriously equipped; and, thanks to variable-coefficient digital filters, offers sound quality that has been previously unavailable in players of this class... it combines mechanical integrity and audiophile refinement in perfect proportions."

Those were the words used by EISA, the European Imaging & Sound Association, to describe what has been voted the European CD Player of the Year '97-'98 by EISA's panel of hi-fi experts. It will be available in the UK in limited quantities only, and to special order – but here's a chance for one lucky *Hi-Fi Choice* reader to own one of these technological marvels.

The CDP-XA50ES has an unusual claim to fame among CD players, thanks to nine remote-switchable digital filter options. These grant the user unprecedented control over sound-tailoring, not to mention hours of fun. If a disc doesn't sound quite right with one filter, press a button and see how it fares with another. The choice is yours!

As you'd expect from Sony, build quality is first-class, thanks to extensive use of the company's proprietary 'frame & beam' construction techniques. The CDP-XA50ES is as solid in construction as it is in sound!

HI-FI CHOICE

## An exclusive chance to blag Sony's top European CD player!

### HOW TO ENTER

Answer the question below by circling the correct answer, then fill in your name, address and day-time telephone number in the spaces given below. Please remember to tell us whether you are over 18 years of age.

#### POST THIS ENTRY FORM TO:

*Hi-Fi Choice* Competition (CHFC711C)  
Bradley Pavilions,  
Bradley Stoke North,  
Bristol BS12 0BQ

All entries must arrive by first post, Thursday November 6th, 1997.

### THE QUESTION

How many digital filter options are there on the CDP-XA50ES

- a) 27
- b) 3
- c) 99
- d) 9

### YOUR DETAILS

Name \_\_\_\_\_

Job Title \_\_\_\_\_

Company Name \_\_\_\_\_

Address (inc. postcode) \_\_\_\_\_

Day-time Telephone Number \_\_\_\_\_

Please tick here if you are under 18

Please tick here if you do not wish to receive any further information about 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

- The Closing Date for this competition is Thursday November 6th, 1997.
- Winners of the Sony competition will be judged from all correct entries submitted, and drawn at random after the Closing Date.
- Winners will be notified by post.
- The Editor's decision is final and no correspondence will be entered into.
- The Sony competition is not open to employees of Dennis Publishing Ltd, Sony UK Ltd, nor their suppliers, agents or associates.
- We regret this competition is open to UK residents only.
- No cash alternatives will be offered.
- We reserve the right to substitute alternative prizes with equal value to those shown, in the unlikely event of stock being temporarily unavailable.
- By entering the competition you agree to be bound by the rules.
- All entries must be on this official entry coupon. If you do not wish to cut your magazine, you may send a photocopy of the page instead. Please note: only one entry form per household.

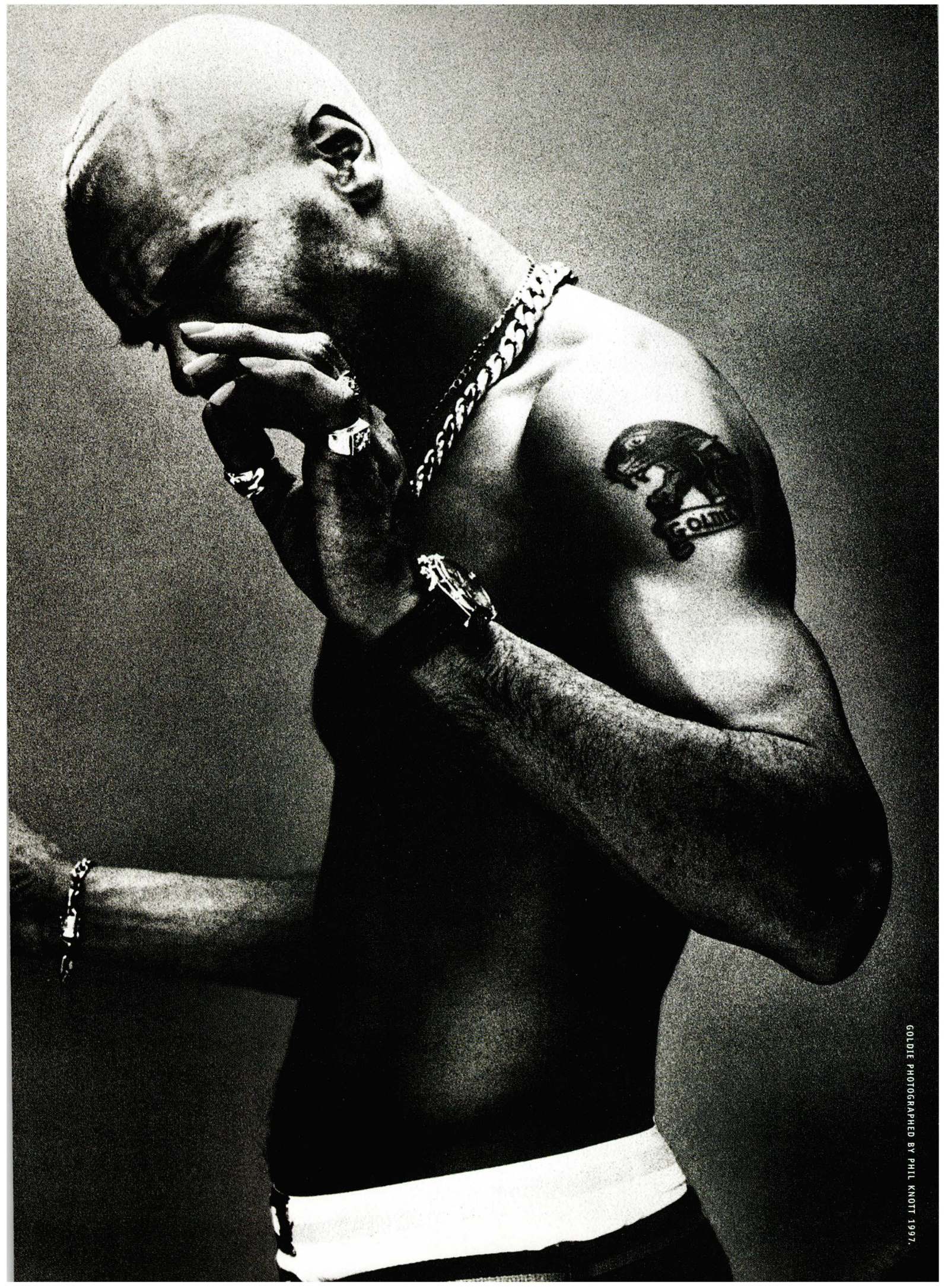
CHFC 711C



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Hi-Fi World June 1997

"... the Jamos prove capable of wide open soundstaging, wonderfully free-breathing dynamics and a winning combination of glorious bass power with smoothly-integrated midband ambience and sweet, clear treble."

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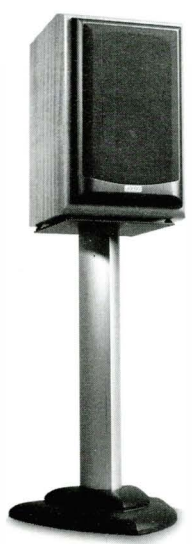
can: that insight into the music that we all desire but all too rarely experience."

GRAMOPHONE FEBRUARY 1997

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# Ear Waxings

A CD player from a company with its heart still firmly in the analogue camp — that's Pink Triangle's Numeral. **Jason Kennedy** gets to the nub of the matter.

**P**ink Triangle has been making turntables for a long time now — it must be at least 15 years — and it should come as no surprise that vinyl is still paramount in the company's estimation. You have only to sit down for a demo of the Anniversary record player and Litaural CD player to hear why: the turntable is clearly much more convincing. The turntable is also more than twice the price once you've added a decent arm, cartridge and phono stage; but price is no barrier when you're tracking down a Holy Grail so elusive as high fidelity sound.

The men at Pink take this quest very seriously, borrowing master tapes to compare with discs and LPs cut from the same tape. The disc-mastering process extracts an inevitable quality penalty, but this process of comparison is one of the best references available. Many companies claim their goal is to make neutral equipment that adds as little as possible to the musical material; but PT espouses this approach with an intensity suggesting it's closer to the corporate heart than usual. I know of no other company that regularly makes comparisons with master tape, for instance: most try to design out coloration artefacts using ears and test equipment. But when it comes to turntable design you can't beat an empirical comparative approach.

## Designer digits

Pink has used some of the best names in the business on its electronics design work. The PIP preamp still stands up as a reference-grade product several years after its demise (apparently new amplification is on its way); and John Westlake's digital electronics made quite an impact on the CD fraternity when the DaCapo DAC was introduced. His work has appeared since in more affordable form, notably Cambridge Audio's DACmagic.

Currently PT produces two integrated CD players: the £2,200 Litaural and the £998 Numeral. I've been dabbling with the latter model over the last few weeks. It's a sleek, simple-looking player whose disc drawer fits seamlessly into its curved alloy fascia. Display and control buttons are housed in a chunky block that fits onto the curve and



**Pink Triangle Numeral**  
The sleek exterior of a subtle yet complex machine.

provides some relief. The button labels could be more distinctive, but after a while you get used to them. The red-lit display, on the other hand, is not easy to read in daylight and doesn't become any clearer once you get used to it. After dark it's just about legible.

The back panel on this sturdy steel chassis is well populated with sockets. Their legends are a little tricky to follow until you realise that the subtle black and blue sticker graphically illustrates the function of each socket. Aside from the usual RCA phono outputs there's a pair of balanced outputs (still a luxury even at this price) a digital output (BNC) and a clock input. The latter interfaces with appropriately-equipped PT DACs.

Inside is a Sanyo transport mech and PT's hallmark, the discrete DAC. Not for them the simple solution of a DAC-on-a-chip, but rather a whole six-inch-square PCB full of components. An expensive way to build a DAC in this day and age, but probably the only way to achieve total control.

## Everything counts

On listening to the Numeral one is initially struck by its ability to bring out rhythm. It's alive to the leading edge in true 'follow the tune' style, and everyone likes some good

groove. Especially if it's not at the expense of an edgy balance, something that the Numeral could never be accused of. If anything it's pretty laid-back and relaxed, which makes its rhythmic skills all the more impressive. Next to the considerably dearer Acoustic Precision Eikos it has to concede points to that player's considerable spatial resolution and its ability to untangle complex material, but the Numeral stood up well enough with most music — it certainly lacks otherwise ubiquitous hashiness.

## Attractive opposites

For a more even comparison I fired up the AVI S2000MC, a solid little brick of a CD player that reflects its engineering background with a strong, distinct musical style that's no better or worse than the Numeral but quite different. In such company the PT sounded full and rounded with less bass depth but more tonal colour, more 'air' in cymbals and perhaps a degree more fluency. It was the sort of comparison that a master-tape reference would have sorted out!

The AVI's performance was interesting in more than sonic respects: it presents a more rugged appearance and works quickly and efficiently to produce authoritative sound. The PT cannot boast equally tough build but offers a lighter touch that accords with its builder's desire to intrude on the music as little as possible. The question is: do digital opposites attract? ▲

*Pink Triangle* ☎ (0171) 703 5498







# The Jimmy Hughes Experience

Trichord's latest developments still have the power to enthral Jimmy Hughes — but is it a question of exceeding CD's limitations, or are most CD players inherently flawed?

Last July, I paid a visit to Trichord Research in Malvern, to have my PD-75 Pioneer CD player updated. As most of you will know already, Trichord offers a modification service for older CD players, in which they remove the original quartz-crystal oscillator and replace it with a high-precision 'clock' to improve timing accuracy by reducing jitter.

It's possible also to replace the player's digital output stage with a superior Trichord board, claiming to offer faster signal-edge rise-time and lower jitter. The complete package of improvements costs about £360, but it should vastly improve the sound of your player, and I reckon it's money well spent.

My PD-75 already has Trichord's Clock 2 mod and the upgraded Output board, but there was something I still hadn't tried: the balanced digital output. This option is offered by Trichord's output board as standard, but because the vast majority of DACs have only unbalanced digital inputs, it's not widely exploited.

To go balanced requires a revision to your player's output wiring, and the addition of a three-pin XLR socket to the rear panel of the player. Although my Cambridge DACmagic DAC has balanced analogue audio outputs, it does not have a balanced digital input; thankfully the XLR-equipped Meridian 518 processor box enables balanced working in my system.

But why go balanced? The main reason is to cancel noise. Any spurious noise or interference picked up by cables, or present on the output, is phase-cancelled by the act of extracting the signal from its balanced state. The result is a cleaner, purer sound.

Because the standard digital output is left untouched, it's easy to compare the two options. Balanced, the music sounds cleaner and richer, with much more depth and space around instruments and voices. Subjectively, it seemed as though the volume level had been increased slightly, giving greater projection and wider dynamics.

Trichord's Graham Fowler reports that

he's been working on a replacement for Clock 2, to be ready by the Autumn. One of several improvements will be the use of superior Oscon capacitors in place of tantalums. The new caps have much lower impedance at very high frequencies.

I hope to go for 'Clock 3' when it's ready, but in the meantime Graham fitted half a dozen Oscons to the existing Clock and Output boards to give me Clock 2.5! The result was a faster, sharper, more tactile sound, with far greater bite and fine detail.

## Setting up

I visited Trichord with a couple of friends, one of whom has a set up of Trichord

down to listen — and read the September issue of *Hi-Fi Choice*. I was intrigued to see Gene Pope disagree with my assertion that CD seems to have a 'glass ceiling' beyond which it's difficult to make significant audible improvements.

I still hold to that as a general rule, but listening to the modified Trichord CD player/DAC I mused on the limitations of most ordinary CD players — regardless of how good their specs are. What is the point of making better CDs when the CD player itself is such a crippling limitation?

Elsewhere in the mag, I saw Sony's CDP-X3000ES receive a Best Buy in the group test. Actually, I tried this CD player two months earlier, but I declined to write about it as — ahem! — I found it disappointing.

Used as both a stand-alone player and a transport (through the Meridian 518 and DACmagic), it seemed to lack impact and detail. I even dragged out Sony's excellent budget CDP-761 of yore, but felt the new machine was little better.

Now, this was before I went balanced and had Oscons fitted to my Pioneer, so the performance gap is now even bigger. Isn't this as it should be? After all, the CDP-X3000 costs £499.95, while my Pioneer/Meridian/DACmagic combo costs four or five times more. By rights, it ought to be that much better...

...However, this is digital audio, where specifications are supposed to matter. To look at the lab report in September's test, you'd conclude the little Sony was virtually perfect. Yet, rightly or wrongly, I judged it to be sonically average; not a bad player, but not much better than last year's budget Sony.

The point is, I do think Trichord has achieved a quantum leap in CD player performance with its latest mods and updates. And I say this knowing I've not heard everything possible; there's more to come! CD players remain depressingly average in terms of performance, and are far more limited sonically than many fear.

Trichord Research ☎ (01684) 573524



Further reproductive revelations when upgraded with Oscon capacitors...

(Pioneer) digital turntable and Pulsar DAC, plus the Pulsemaster jitter reduction box. To convert this little lot to work in fully balanced mode took time. Graham couldn't modify it on the spot — it took about 10 days.

I installed my friend's Trichord CD turntable/DAC once the mods had been completed, and I was pretty staggered by the degree of improvement. Graham had really excelled himself, fitting about 36 Oscons in the DAC alone! With the Pulsemaster altered to work balanced (it has to be put in a bigger box) the results were highly impressive.

The sound was incredibly holographic and '3D', with instruments and voices vividly projecting in a manner that is rare for CD. The imaging was very tactile, creating a soundstage of remarkable width and depth.

Having completed the installation, I sat



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# Paul Miller's Oasis of Sanity

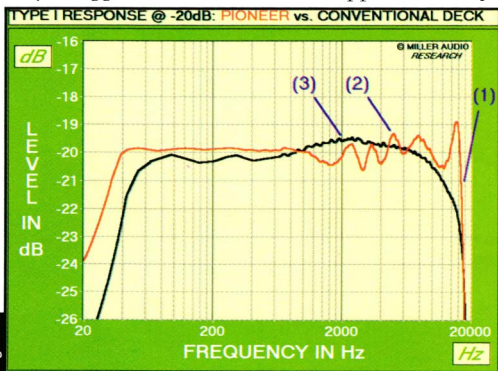
Paul Miller takes a closer look at the Pioneer CT-W806DR, reviewed on page 67, and explains why it's not a reprise of Philips' doomed Digital Compact Cassette format...

**B**ecause the bargraph system used throughout our group tests is based upon deviations from a group's mean performance, category by category, it is possible for one 'wild card' product to bias the results. Nevertheless, so long as we are testing relatively large groups, the influence of any one contender is reduced. Pioneer, in constant pursuit of unique digital technology, is a constant challenge to our statistics, whenever we come to test CD players. And now, in this month's test of cassette decks, its CT-W806DR deviates so markedly from the 'average' tape machine that, by comparison, its competitors are reduced to gaslight.

So why does the technical performance of the CT-W806DR shine so brightly? How can it achieve a miraculously low -86dB hiss with Dolby C when, with Type II chrome tapes, a figure of -73dB would usually be typical?

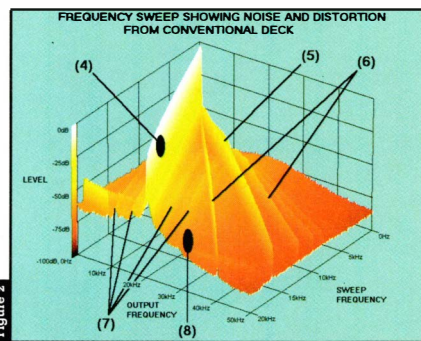
The answer, as ever, lies in the ingenious application of digital technology. Sure enough, the CT-W806DR still makes *analogue* recordings, which are no less compatible than copies made on conventional decks. Within the CT-W806DR, however, music signals are *digitally* processed before they hit the tape and, again, once they are pulled off during playback. I should make the point, however, that this is not an encode/decode process like Dolby NR.

**Fig. 1** Our first hint of the '806's 'uniqueness' comes in the frequency response of its recordings, which extend to an upper limit of around 17-18kHz before dropping sharply away (1). Not unlike the behaviour of a CD player, in fact. The recording also betrays a very exaggerated version of the ripple (2)

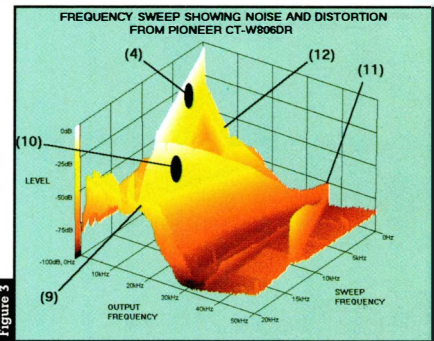


occasionally caused by less-than-fabulous digital filters in budget CD players. The black trace, meanwhile, shows a typical Type I response from a deck that's slightly over-biased — encouraging a prominent upper midrange (3) but rolled-off treble.

Nevertheless, the '806 is most definitely *not* a CD player and neither is it capable of digital recordings. Instead, this deck converts all incoming signals to a digital code whereupon both the record level and tape equalisation are adjusted. Obviously, this A-to-D step is avoided by direct digital inputs. Nevertheless, all signals are converted back to analogue before recording onto the tape. On playback, this analogue signal is converted back into a digital code where a wide variety of 'signal conditioning' facilities are employed.



**Fig. 2** However, before we take a closer look at Pioneer's clever DSP facilities, it's as well to remind ourselves of the noise and distortion associated with a recording on a typical two-head tape deck. In this example, a sweep is recorded from 20Hz-20kHz (4) at -3dB. Upon playback we can see that distortion is dominated by a characteristic 3rd harmonic (5), caused by the record head, while even-order harmonics (6), caused by associated analogue electronics, lie at a slightly lower level. We can see what look like parallel striations (7) in the skirt of noise (8) that falls away from the main signal. These patterns are all part of the modulation noise caused by the friction of the tape as it passes over the record and playback heads. Digital recording media, incidentally, does not suffer from this 'uniquely analogue' form of distortion.



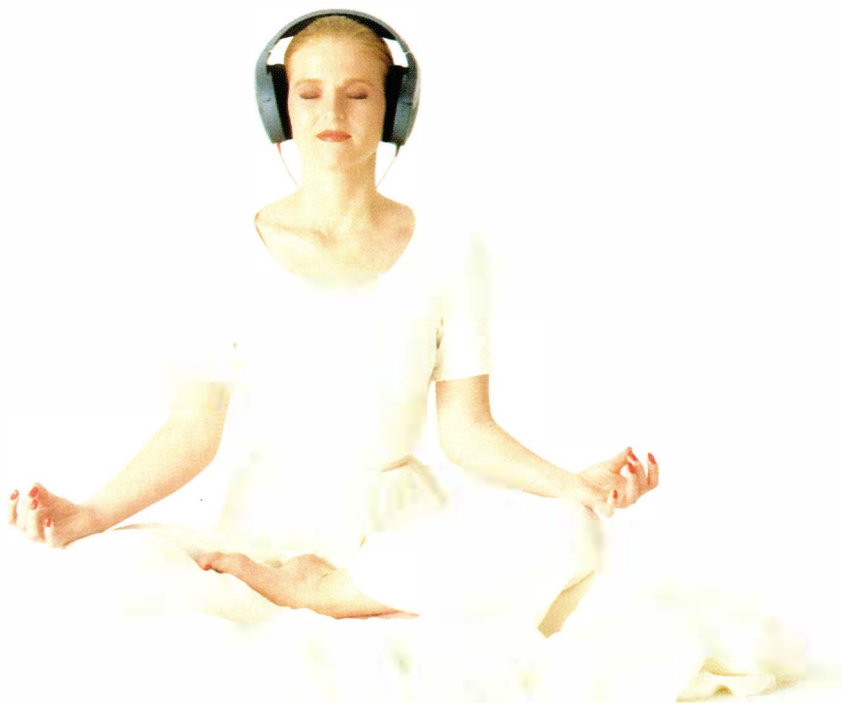
**Fig. 3** According to Pioneer's technical literature (which is translated from Japanese into something only vaguely resembling English), its replay DSP encompasses a multitude of processes, the most important of which is a form of adaptive digital noise reduction. In a process not unlike that utilised by ATRAC and PASC (the data-reduction algorithms employed by MD and DCC respectively), Pioneer employs a series of custom digital filters to divide and analyse the audioband, applying a greater degree of high frequency (hiss) suppression at lower signal levels. This is why during conventional S/N ratio tests, when the test signal is removed altogether, full suppression is engaged by the DSP, resulting in a seemingly huge S/N ratio. In the presence of bolder signals, the principal of 'psycho-acoustical masking' is invoked to justify *less* suppression of hiss (when the music's loud, you're less likely to hear the noise).

We can see this in the broadly unchanged noise-floor (9) of the recording first viewed in Figure. 2, the high level of the main sweep (4) effectively 'drowning out' any audible hiss. Also revealed is the huge digital stop-band image (10) produced during the final D-to-A conversion stage which, evidently, is hinged at a low 36kHz sample rate (11). And distortion? Well, at 0.8 per cent, the strong 3rd harmonic (12) is actually at a higher level than that suffered by most conventional decks, despite dying very abruptly above the digital cut-off frequency of 18kHz (one-half 36kHz).

Once again it really looks like you never get something for nothing, even in the realm of digital smoke and mirrors.

Do you have a subject matter for the Oasis? Please contact P. Miller via E-mail on 100576.3021@compuserve.com





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**Personal** The Kelly loudspeaker marque has been resurrected by Musical Fidelity. Paul Messenger investigates.

# Messages

**A**s regular readers will know, I'm a sucker for high sensitivity speakers. And I'm sure Musical Fidelity's Antony Michaelson is a regular reader, because he called me up the other day, bursting with enthusiasm for his new speaker project, and boasting of a new floorstanding speaker with 95dB sensitivity for only £1,200. Was I interested? Ship it on down please!

It's not happening under the Musical Fidelity brand name; instead it's a revival of one of the famous names of British hi-fi history. Stan Kelly, one of the founding fathers of *Hi-Fi News* magazine, but known above all for the legendary ribbon/horn tweeters which bore his name, has finally (at the age of 86!) decided to retire, and has sold his company, Kelly Transducers, to MF.

The resulting KT-series speakers may not have been actually designed by Stan, but they strongly reflect the guru's personal enthusiasm for higher-sensitivity designs (much of his later work was in high efficiency monitoring and PA). Antony also has plans to revive the ribbon technology.

The Musical Fidelity MC3 speaker I checked out back in 1993 wasn't very highly sensitive (though it achieved a respectable 88dB alongside an easy amplifier load). Since that time Antony has, like me, become a convert to the high sensitivity cause. He now regards it as an essential pre-requisite to reproducing the 'micro-dynamics' which are one important ingredient in musical reproduction, with the very real bonus that realistic peak levels can be achieved without clipping even a modestly-rated amplifier. I'll go along with those two key benefits, even if the rest of the propaganda leaflet is littered with the sort of half-truths and specious hyperbole guaranteed to wind up any ex-editor.

One thing I've learned not to trust is loudspeaker sensitivity ratings. All too often I suspect manufacturers pick them by adding a decibel to what's on the spec sheet of the nearest competition. Before I was going to accept the exceedingly high 95dB which Antony is claiming for the KT3s, I wanted to check them out under my own conditions. I don't even claim my own sensitivity figures are necessarily accurate in an absolute sense — but they are based on real-world (stereo-pair-in-room-at-normal-listening-distance) conditions, and are directly comparable across the vast range of speakers I've had the chance to try over the past decade.

And while I don't quite go along with Anthony's 95dB, even my pessimistic realism will happily settle for 93-94dB, which in context is a very impressive figure indeed. It's certainly the highest figure I can recall for any comparably affordable and conventional box. I ploughed back through my records, and could only come up with the long-obsolete Tannoy DC2000 and DC3000 (from 1989/90, and something of a cult in their day). More recently, the Audio Note AN/E, Dali 104B and Cabasse Skiff all deserve honourable mention for 91-92dB, but none of these will be easy to track down in British shops.

In fact, the Kelly is only beaten by the weird, the wonderful, the enormous, or the extravagantly-priced. Things like the Rehdeko family; giant Tannoys like the 215DMT studio monitor and Westminster Royal horn; and other horn systems like the Klipschorn and Living Voice models. All of which leave the £1,200 Kelly looking like a very sane, sensible and affordable proposition.

## Bending the rules

So how's it done? Dextrous *legerdemain*, smoke and mirrors? Nothing of the sort. A little to my surprise I admit, the KT3 really does deliver, not only that exceptionally high sensitivity, but also a very respectable overall frequency balance, and a very decent in-room bass extension to boot (-10dB at 20Hz). One might accuse it of bending the rules slightly with a determinedly four Ohm load — but the same applies to all the other high sensitivity box speakers I've mentioned.

There's no actual magic involved here. Just a very sensible overall configuration combined with one of the newest and lightest cone materials around. It's called an aerogel, and consists of a thin and stiff foam-like diaphragm which is allegedly 98 per cent air. (It's not even that new;

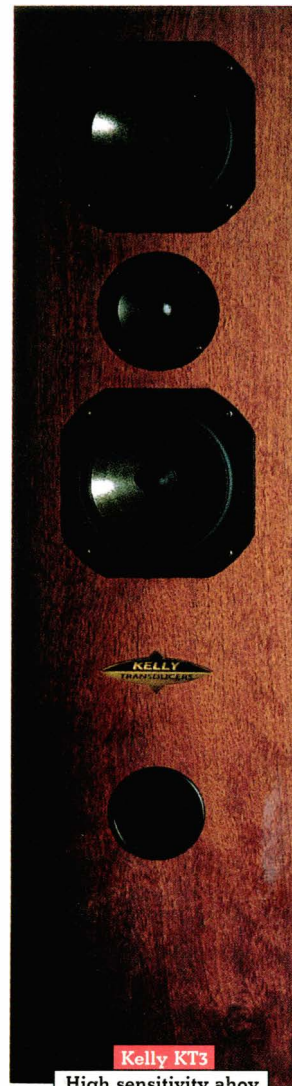
Mission used it in the estimable 752 back in 1994.) Use two such drivers in tandem, each loaded by a large enclosure, generously ported at 40Hz, operating as a simple two-way alongside a rather horny-looking tweeter, and that high sensitivity becomes the logical outcome, with no need to bend the laws of physics.

The best news is that all the theory translates beautifully into the listening experience. The KT3 is at the heart a conventional, rather conservatively-balanced loudspeaker, a little laid-back for my taste, and not as smooth as some of its competitors, it must be said. But it does generate some of that special tension I associate with true high-sensitivity designs, along with the sheer lack of strain that comes from improving the headroom dramatically, and the low-level detail delicacy which seems to come along naturally as part of the whole package. The ports are maybe a shade obvious sonically, but the bass is nonetheless quick, tight and reasonably even.

A few months back (*HFC* 167) I group-tested 15 £900-£1,850 loudspeakers, including many floorstanders in direct competition with this new Kelly. Never mind the micro-dynamics, to change from even the most sensitive of those (the KAR Torino) to a pair of KT3s is, in practical terms, the same as doubling the available amplifier power of your system. With most other speakers it would be more like a tripling.

In recent years, high sensitivity speakers have been the province of the wacky, the oddball, and the obscure. Here's hoping the marketing muscle of Musical Fidelity, alongside the respect accorded to the Kelly name, will put sensitivity back on the main hi-fi agenda, where it should have been all along.

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Kelly KT3

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## LETTER OF THE MONTH

### Flat Nak blues

After reading about Luigi Papagno's system (*Inspirations*, HFC 166), and in particular his Nakamichi ZX9, I decided it was time to give my own ZX7 a check-up. I have had my machine for 11 years and it has never put a foot wrong, but I felt its performance might have deteriorated, so I phoned B&W (UK distributors of Nakamichi) to tell them I was sending it along.

I wrapped it carefully in bubble wrap and put it in a large carton, stuffing more wrap and foam around it until it was cocooned and protected against jars and knocks. Above the address I wrote in large felt-pen letters: "Delicate electronic equipment. Do not drop".

The following week I received a letter from B&W saying that the machine had arrived with two corners of the front panel smashed and the open/close mechanism also broken. Then they dropped a bombshell by saying that they could not repair this damage as there were no more parts in the UK, or even in Japan. I sat down and cried. My pride and joy is lost forever, all because some moron courier couldn't give a damn.

R Crombie, St Albans, Herts

*Stan Vincent replies... Two salutary points arise from this heart-rending tale. One: always expect the worst when sending goods by courier. Two: if it ain't broke, don't send it away for fixin'. We trust the polo shirt will fill a small part of the hole left in your system!*

### Good, NAD and ugly #1

Having recently purchased a NAD 317 integrated amp I was somewhat perturbed to read the rather scathing review in the latest copy of your magazine.

What particularly disturbed me was the fact that your April edition had given a fairly solid review of NAD's 114/214 combination. According to NAD literature, as well as your review of the 317, it is in fact a 214 power amp with a built-in pre-amp. It therefore seems odd to me that the 114/214 combo is described as having "strong dynamics" and "considerable detail-resolving ability", and being "fairly clean and transparent", while your review of the 317 is precisely the

opposite, describing the amp as lacking in detail and dynamics, and basically producing "musical stew".

Is the power amp section of the 317 really identical to the 214 power amp as claimed? And if so, does one accept that reviews in mags really are a complete waste of time? Or, could this dichotomy be ascribed to the fact that the 114/214 combo has two separate power supplies?

J Caulfield, Cape Town, South Africa

### Good, NAD and ugly #2

As a NAD owner and a subscriber to your magazine, I have been interested in your recent reviews on this brand. I was

surprised to discover some inconsistency between your articles and criticism concerning NAD in recent months.

First came the write-up in the *Jimmy Hughes Experience* (HFC 164), praising the NAD 317: "It certainly sounds big... it's extremely solid and clean".

Then came the pre/power-amp test in HFC 165, where the NAD 214 (same power amplifier as in the 317) got a Recommendation, but "lacked star quality to be a Best Buy by a whisker".

Finally came the amplifier test in HFC 168, in which the poor NAD 317 is described as a "musical stew... bleached... the top octave is missing".

How are readers supposed to make sense of HFC tests and reviews in which almost the same amplifier can elicit such a range of different opinions?

Ishay Ben-Amotz, Ramat-Gan, Israel

*Alvin Gold replies... Both respondents are guilty of quoting selectively from the reviews in question. The comment about a "musical stew" in the 317 review, for example, was clearly signposted as being just one observation from a single listening panel member, about an amplifier that elicited mixed responses from the panel as a whole. The review also included a comment to the effect that the 317 offered "good midband resolution and transparency". The fact that the 317 is a 214 with an integral preamplifier doesn't mean that it sounds like the 214/114 combination. If it did, there would be no justification for producing separate pre and power amplifiers. The issue of separate power supplies is probably relevant*

### OUR ADDRESS

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here, but there are many other possible contributory causes for the differences encountered.

Overall, however, the 317 was clearly not one of the best-liked in our tests, and I would refer you to the protocols of the *Hi-Fi Choice* group review programme. This, as I have said before, includes by far the widest-ranging and most searching tests on a selection of broadly comparable products undertaken by any hi-fi magazine, period. If the 317 review doesn't validate your choice of amplifier, I'm sorry, but there is nothing in the review to say that a perfectly good system can't be constructed around the 317. Our main criticism was a lack of musical consistency rather than absolute ability.

PS. Our favourite NAD amplifier right now is the excellent little 312... (see p87). ▶▶

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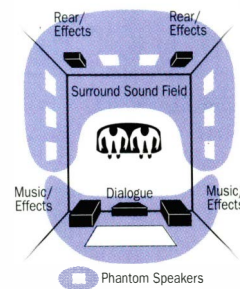
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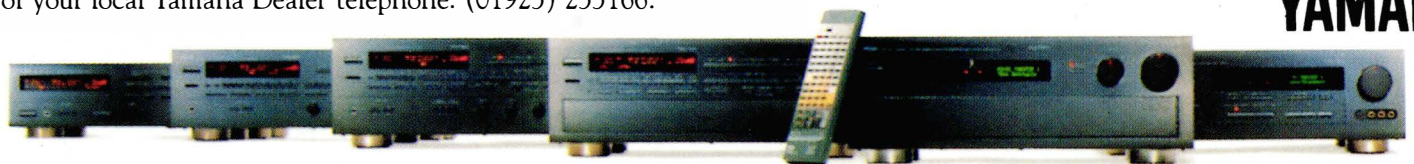
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**Micromega Stage 6**

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**◀ The only way is up**

As the owner of a Micromega Stage 6 CD player, I read your recent test of it with interest. I was somewhat amazed that it was not Recommended.

In the tests, the subjective comments on the Micromega and Cyrus dAD3Q were broadly similar in that both machines scored reasonably, but were marked down by one listener in each case. Their prices are similar, too. However, in the conclusion of the Cyrus, your Best Buy is accorded on account of its upgradability. This is totally inconsistent with your conclusion of the Micromega player which is also upgradable. In fact, it's even more upgradable than the Cyrus since there are more models in the range. Stages 4, 5 and 6, the integrated players, can be further upgraded to Drive 3 and DAC status.

D Wood, Soisy-sur-Seine, France

**Safe and sound**

I was very interested in your article on hi-fi accessories (HFC 168). There was one big omission, though: security. I would like to see some suggestions on marking software and hardware so that if it is stolen it can be identified and returned. How can you mark a CD or MD, for example?

A Cleaver, via the Internet

Stan Vincent replies... The simplest solution is to obtain a marker pen whose ink is visible only under ultra-violet light, and use it to inscribe your name and post-code on every item requiring protection. Most DIY stores should stock them. Alternatively, a company called Seton Ltd offers a variety of personalised security labels —

call ☎ (0800) 526861 for a copy of the company's complete catalogue.

**Let me be your fantasy**

The article *Ultimate Accessories* (HFC 168, p40) left me puzzled and disturbed. Under the headline *Five Free Tweaks*, Jimmy Hughes writes that one can sometimes hear the difference between an amplifier's A and B speaker terminals, because the B terminal is closer to the main circuit board and thereby has a shorter signal path.

Mr Hughes is trying to say that a time difference of 0.254 nanoseconds is audible (assuming that B is three inches closer to the main circuit board).

Claiming to hear such a time difference is like claiming to hear the difference between 0.0049 per cent and 0.005 per cent harmonic distortion. In my opinion his statement comes directly from the big book of Hi-Fi Fairy Tales written by Frank A N Tasy!

P J Frankfort, Haarlem, The Netherlands

**De old black magic**

What a tragedy! After a long wait I received my subscription gift of a Densen DeMagic CD. I waited until I had time to observe its effects properly then set to work.

I placed the CD in the drawer of my Meridian 508 20-bit CD player, and pressed Play. The resulting cacophony was awful! Still, I thought, anything that sounds so bad ought to right any wrongs in my system (based on the "nastier it tastes, the better it works" medicine principle).

On playing the same track I'd auditioned prior to the Densen treatment, my finely balanced system sounded very

nasty indeed. Harsh, violent, tiring and downright horrible.

Subsequent listening has confirmed my first impression. Gone is any semblance of subtlety; in its place an 'in-yer-face' sound that surely only journos from another leading brand of hi-fi mag could enjoy.

I'm not panicking, because I have heard my system sound like this before — when the CD player, 502 pre-amp and 557 power amp were brand-spanking new!

It took ages for electronics, interconnects and speaker cables to bed in and start working like a single component, then I came along and realigned all the molecules again...

T Woodward, via the Internet

**Table manners**

I miss the inclusion of tabulated performance data in your equipment reviews, especially the speaker response curves. Paul Miller displayed some interesting curves demonstrating port output in relation to driver output recently, demonstrating the useful information that can be available.

Data once given has been replaced by an (often incomplete) data summary, and "comparative bar charts". The bar-chart graphical representations to show relative performance of the equipment are misleading at best.

They have no fixed reference point between different reviews of similar products, so are useless for comparison of similar products from different reviews.

Even within a review the samples are, statistically speaking, too small to be reliable. Although the charts may look good, they only offer very limited information. (The less generous among us would say they are a waste of space).

Finally, in your reviews, sometimes the main author subverts the panel's opinion. This rather defeats the point of a panel of reviewers, don't you think? That said, your review

procedure (by blind testing), and willingness to name the reviewers, is likely to be more reliable than the anonymous sighted reviews published by "What Lo-Fi". Keep up the good work!

Name and address withheld

**Kenwood comeback**

How do you square your remarks in reply to R J Smith's letter (*Seedy CD, Write On, HFC 169*) with your own comments about Kenwood's DP-7090 CD player (Best Buy, HFC 163)? I auditioned this unit as a result of your review, and I hasten to add that the first sample I took home was not good, but the present one, with a little help from a Musical Fidelity X10-D, is excellent. It would not be an exaggeration to say that I did not think sound quality of this class could be achieved by a CD player — a view supported by other professional musicians who have heard it.

R Secret, Preston Bisset, Bucks

**Cable checks**

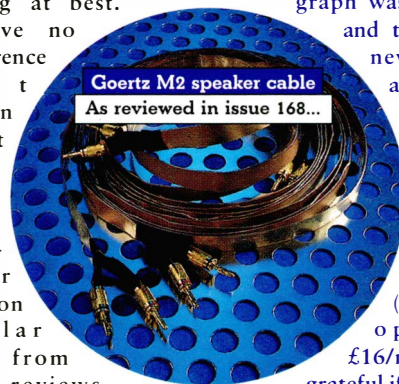
In the July/August '97 edition of *Hi-Fi Choice* you reviewed speaker cables, in particular some Goertz M1 which you rated very highly. However, when I contacted the distributors, Townshend Audio, they said that the cable in the photograph was Goertz M2, and that they had never supplied any Goertz M1 to the magazine for review.

As M2 is far more expensive than M1 (£32/m as opposed to £16/m) I would be grateful if you could tell me whether it was, in fact, Goertz M1 or M2 that was reviewed.

John Leigh, via the Internet

**Richard Black replies...**

My mistake, I'm afraid; everything was right except the name, which should indeed have been M2 (as in 2cm wide). The price was right at the time of going to press, but I understand that it has since been raised to the figure you quote.





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COMPETITION

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HI-FI CHOICE

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CHFC 711A



# Hardcore phono

Digital may dominate today's agenda, but Linn is celebrating its Silver Anniversary with new analogue turntable products. **Alan Sircom** reports.

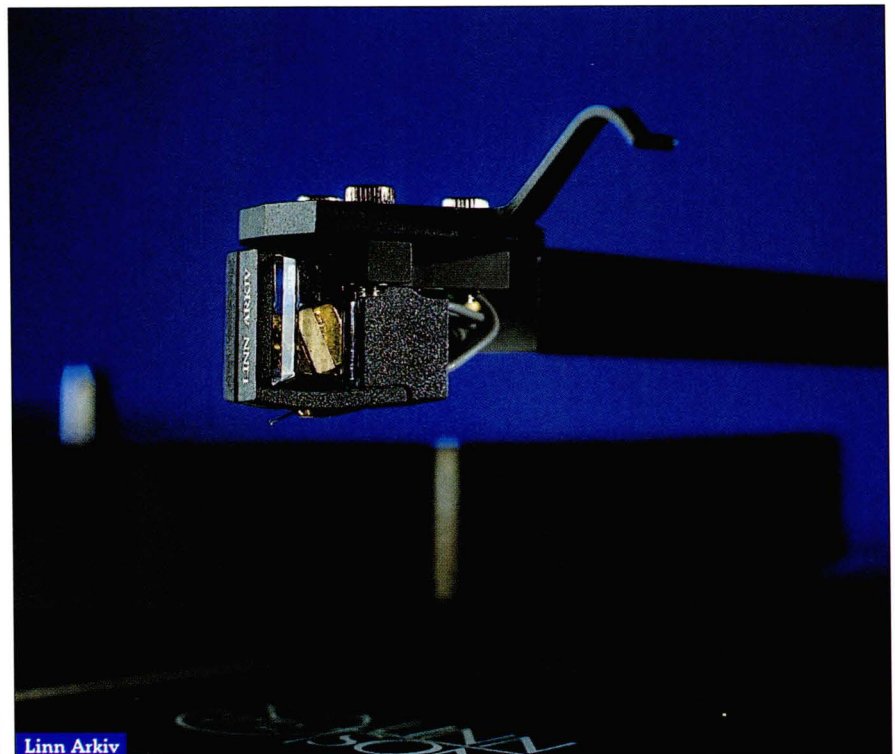
**W**ho, 25 years ago, would have believed that a small kit of turntable parts would transform the hi-fi industry and exist as a point of reference as we approach the 21st Century? The ever-so-'umble Linn Sondek LP12 of the early '70s still lives to this day; and as Linn Products approaches its 25th anniversary it has chosen to celebrate by introducing two new products that will rekindle the turntable's flame once more.

The first arrival is a radical reworking of Linn's existing flagship cartridge, the Arkiv. This new £1,200 needle looks identical to its predecessor, but features a boron cantilever with a more highly developed stylus shape. The suspension mechanism supports secured coils held in a highly-rigid assembly, terminated with gold contacts.

Partnering the new Arkiv is a wholly complementary product, the £850 Linto phono preamplifier. Presented in the usual charcoal-black Linn casework, and sporting the Brilliant switched-mode power supply, this direct-coupled phono stage has no external controls apart from a power switch. Secreted within is the wherewithal to adjust the Linto for the electrical characteristics of most moving-coil cartridges, but apart from that it just takes moving-coil cartridge signal and boosts it to line-level. The only concession to instrumentation is a green LED by the power switch, which turns red if the input is being overloaded.

So far so good — but where does Linn's Silver-Anniversary Linto differ from the myriad alternatives on the market? Well, Linn has made the bold step of feeding cartridge signal directly into the amplifier transistors instead of equalisation circuitry. While this means the RIAA circuit (which compensates for electro-mechanical curiosities of cartridges) has a bigger signal to deal with, it does seem a good way to minimise errors that are sometimes introduced by RIAA.

Internally, the Linto looks like an exercise in impressing CE-certification scrutineers. Both power supply and surface-mount circuitry are shielded to an impressive standard. As with all Linn gear it can be left on indefinitely, but comes into its own after 20 minutes of being switched on.



Linn Arkiv

The new updated Arkiv cartridge resembles its predecessor but now boasts a boron cantilever.

## Family and friends

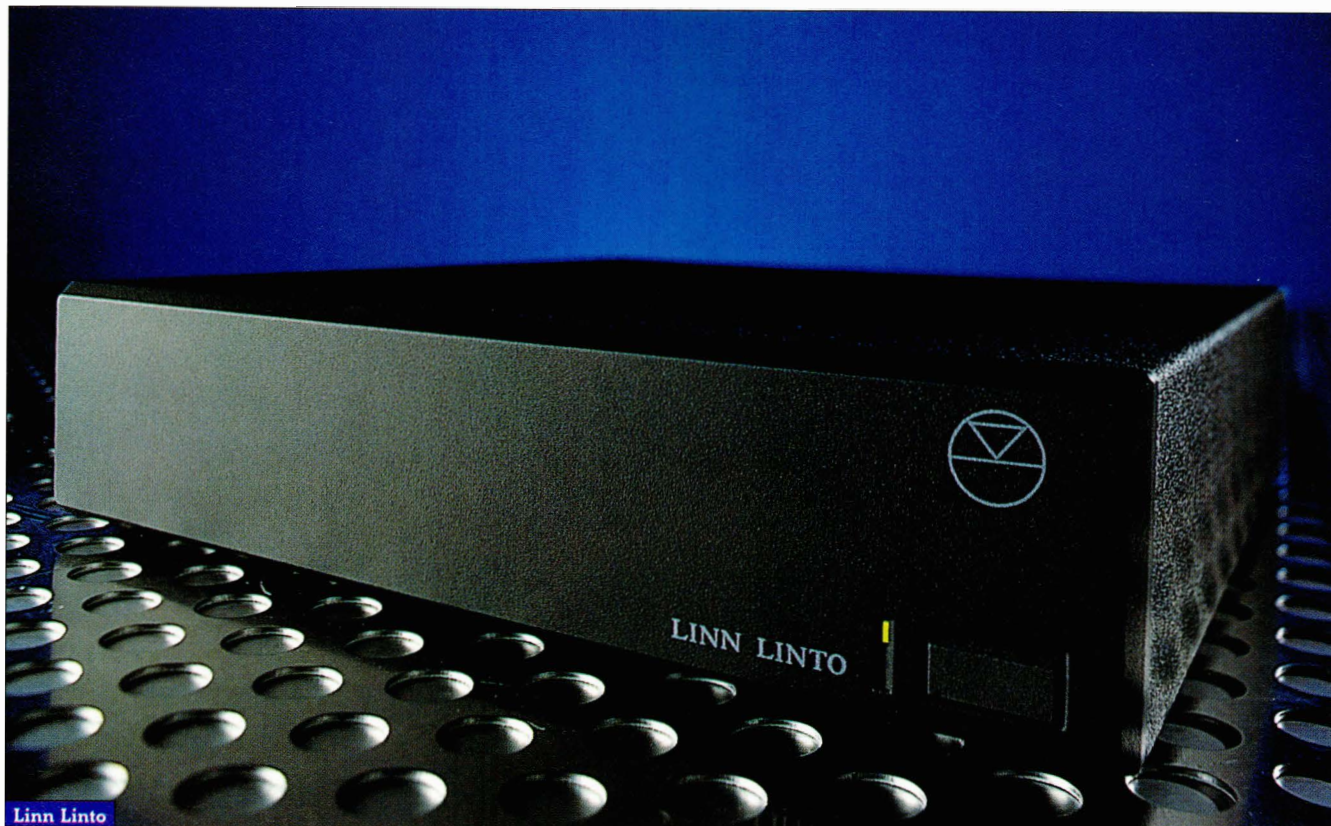
As Linn gear is so often used with its own kith and kin, to be contrary I used both products in decidedly un-Linn settings — although the unique three-point mounting of the Arkiv meant that it stayed in its LP12. My own Linn LP12 (with Naim Armageddon power supply, ARO arm, Sumiko Sho cartridge and oddities throughout) was slightly too adulterated to receive the Linn seal of approval, so the company dispatched a 1997-vintage LP12 with Trampolin baseboard, Lingo power supply, Ekos arm and Arkiv cartridge. Other combatants included an Ortofon MC7500 mounted in a Nottingham Analogue Spacedeck and Space arm, and phono stages from Audiolab, Creek, Musical Fidelity, plus an ailing and failing Moscode SuperIT. All were fed via Meridian's 502/557 pre/power amps into Rehdeko RK115A and Celestion A1 speakers. Cables included Linn's own interconnects, plus DNM and Nordost SBM Reference interconnect and speaker wires.

I didn't review the Arkiv on its first release at the turn of the decade, perhaps because I was a bit of a Troika fan — Linn's top coil of the '80s. The Red Devil Troika was not the most accurate cartridge in the world, but made music like no other. In my opinion, only the Sumiko Sho on Naim's ARO arm has come close. Until now.

While the first Arkiv had the edge over the Troika in speed and HF detail, it was no match for the Troika's natural sense of rhythm or bottom-end bloom. Nor did it live up to the standards of accuracy produced by the top Ortofon MC-series. The die-hards started looking around for cartridges offering the same sort of balance as the Troika without sacrificing too much detail, and paved the way for Dynavector, Lyra and Sumiko and others to fill the Troika's shoes.

Well, tables have turned again, and it seems as if the new Linn cartridge has achieved the impossible, by approaching the accuracy of the classic Ortofons while combining the speed and timing of the orig-





Linn Linto

The new Linn Linto phono preamp offers the traditional Linn sound: very dry and accurate, but with quicksilver treble detail and up-front timing.

inal Arkiv with the naturalness of the Troika. The latter's bass bloom is still absent, but in its place comes dynamic range that pushes the envelope of vinyl's bass response.

Even imagery is not compromised in the search for more rhythm and energy. This is rare for any cartridge, but for a Linn design it is almost unheard of. The new Arkiv favours not only pristine recordings, but even those whose clicks, pops and surface noise normally intrude. 'Needle-chatter' is reassuringly low: play a disc without amplifying the signal and put your ear close to the cartridge tracking the groove. You'll hear very little signal evaporating into the surrounding atmosphere. In short, for Linn owners at least, this Arkiv is one of the finest cartridges you can obtain regardless of cost.

### Get Linto the groove...

With the new Linto phono pre-amp, the first necessity is to ensure its gain is set correctly. If it is adjusted too high, overload will ensue, and a small thunderstorm will take up residence in your hi-fi. Get the setting right, however, and you'll enter a new world of Linn electronics sound — raised to the nth power. Broadly speaking, it is reminiscent of the Linn CD player and tuner: very dry, accurate and possessed of quicksilver treble detail and timing. In less than a minute you'll hear levels of detail hitherto unperceived from turntables through normal Linn electronics. It treads a skillful path between sibilants and sibilance, so it plays the "esses" with neither sizzle nor spit.

In particular, the dynamic range and midband transparency of the Linto are faultless. Play a predominantly acoustic record-

ing like *Hejira* by Joni Mitchell and the subtle interplay of guitar harmonics and voices comes across pristine. It can even handle Mahler at his most showy. Tubes might do this with more aplomb, but not without sacrificing speed and treble detail.

The Linto makes a case for the defence of turntables. It reveals how many vinyl-format shortcomings — transparency, for example — have, in the past, been incorrectly attributed to record decks themselves. In fact, they have been the fault of phono stages.

To the handful of us who've experienced the very best phono stages, this is not news. For the most part, however, these 'very best' phono stages cost more than twice as much as the Linto, so at the price it is something of a quantum leap forward, especially for those using the existing phono stage from the Linn Kairn. Readers with longer memories will remember the fuss made about the Lingo power supply when it was launched back in the early '90s. Commentators of the period said that the Linn turntable was simply not complete without one. Well, now it is incomplete without the Linto phono stage.

Let me say the following to make clear my esteem for these new products: if you still use good vinyl, and especially if you use a comparatively recent LP12, either the new Arkiv or the Linto should be considered your next upgrade. Perhaps the Arkiv is a little less mandatory, since in practice its applications will be limited to Linn Ekos and Naim Aro arms. However, if you've got one of the latter, a new world of music awaits. Step up from an old Linn Arkiv or Klyde cartridge, and Kairn phono stage, to a new Arkiv and Linto, and try to hold back your tears of joy.

### A giant leap for hi-fi-kind

Which one of these new arrivals offers the biggest upgrade in performance? That's one of those difficult questions to which I can give no single correct answer. Both offer a quantum-leap forward for those who like the Linn sound and want more. In my personal opinion, I would come down on the side of the Linto, because of the way it will leave owners of Linn Asaka, Karma, Troika, Klyde and (original) Arkiv cartridges wondering what's hit them. The same Asaka, Karma, Troika, Klyde and (original) Arkiv owners can now get their beloved cartridge re-tipped and will finally get to hear exactly what that needle can extract from their records. Unless your cartridge is on the way out, you don't have to change it immediately to improve the sound dramatically. That said, the new Arkiv is probably the best thing you could ever install on the business end of an Ekos, and once you hear it, you won't want to contemplate life without it.

My only real criticism doesn't relate to the Linto or the new Arkiv. In fact, it's reserved for that daft Trampolin baseboard which Linn uses to eliminate the effects of an equipment support. The idea is laudable, but four perishable rubber grommets with adjustable feet are simply not up to the mark. It's one of the most fragile turntable bases I've ever encountered.

My advice is to stick with the standard base and position the turntable upon a good table or wall shelf — I'd recommend one from the ranges of Mana Acoustics, or Russ Andrews' Torlyte products. Believe me, your system will thank you for it! ▲

Linn Products ☎ (0500) 888909



# The beauty is a beast!

Jason Kennedy praises the subtle charms of Jeff Rowland's Concentra.

**S**everal thousand miles away from HFC Towers, in Colorado Springs, a tall, slim man builds some of the world's most beautiful amplifiers. That man is Jeff Rowland. The super-amps bearing his name may not enjoy the high profile of those from Krell and Mark Levinson, but in construction quality alone Jeff Rowland's products are clearly playing in the same Premier League of high-end hi-fi.

Jeff's company has been manufacturing hi-fi electronics for two decades, but only in the last few years has it employed the subtly-machined, bright-alloy facia style you see here on the Concentra, a new integrated design priced at £5,500. The look of this finish changes according to ambient conditions, because the vertical stripes are solely reflections. Looking at the unit it's difficult to see what creates these reflections, but running a finger over the front panel reveals fine peaks and troughs. They say you shouldn't judge a book by its cover, but the finesse of this unit's crafting complements perfectly its sophisticated sonic attributes.

The facia isn't the only distinctive element on this substantial chassis: the sides and top have been machined as well. The top incorporates slots that, despite their appearance,



Jeff Rowland Concentra

The sleek facia is a minimalist's dream — except for the large bright red LED display!

are slightly different in length and width, to minimise resonance in the casework. The side panels are more than an inch thick, and feature more regular-looking deep-cut slots, for heat sinking as much as vibration control. The facia's a minimalist delight, in all but the large, red LED display surmounting a solitary, uncalibrated volume-control knob. The display indicates signal attenuation level — particularly useful if you're on the sofa with remote in hand. Oh yes, it's couch-potato-friendly too. Eight buttons offer access to eight inputs: three balanced and four unbalanced; one of the latter will be capable of becoming a phono stage when the module becomes available. This should be adequate provision for the purist music-lover, but may prove insufficient for true kit-freaks with myriad sources.

Outputs include balanced and regular pre-outs, and a pair of tape-out RCA phonos.

So if you have the regular, British complement of sources, chances are you'll be restricted to four inputs, which isn't fabulous; but then again if you've got five and a half big ones to spend on an amp perhaps you'll be using balanced connections already.

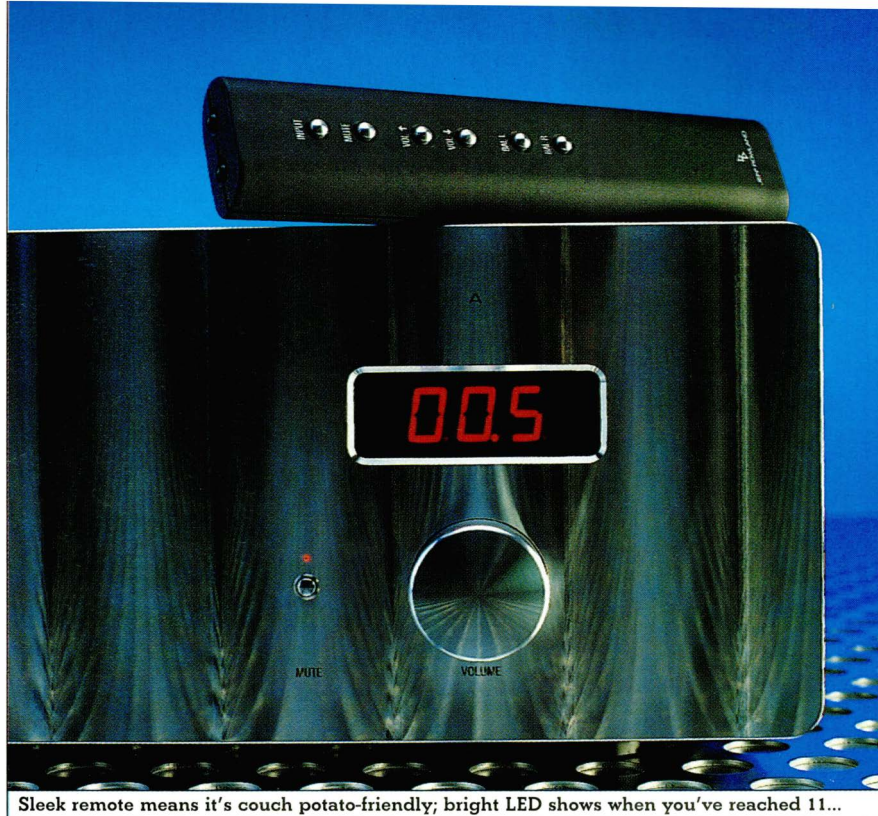
## A balanced budget

Balanced-line operation is close to Jeff Rowland's heart. Its main advantage is to ensure standardised output and input impedances for sources and amps. According to Jeff, impedance mismatches are one of the main reasons why interconnect-cable selection is such a black art. All too often it relies on cable characteristics to solve a more fundamental problem. With 600 Ohms of impedance at either end of a balanced line, the cable's job is a piece of cake. Perhaps this explains why recording engineers and other professionals find the exotic hi-fi cable



JR's elegant display of input choice.





Sleek remote means it's couch potato-friendly; bright LED shows when you've reached 11...

debate so amusing. Jeff isn't alone in his convictions: the balanced approach is espoused by most high end hi-fi practitioners.

Integrated circuit output devices have taken the place of traditional transistors in the Concentra, and lo, the claimed specification for the Concentra incorporates a revealing anomaly: power output is quoted as 100 Watts into eight Ohms or 150 Watts into four, and continuous current capability as 16 Amps. However, the JR Model 2 power amp (allegedly the basis for this design) offers 75 Watts and 20 Amps. Users of difficult-load speakers may care to try one of the company's standalone power amps.

Before I give you my appraisal of the Concentra's sound, I must mention the internal appearance of the amp, which is virtually as minimal as its exterior. There are only three PCBs: narrow strips down either heat sink, and a larger one flat against the rear panel. Between are a modest mains transformer and a pair of huge capacitors. All three components are clamped fore and aft in exemplary fashion. Most of the board-mounted components are surface mount. Excellent stuff.

### Higher ground

When the Concentra made its debut in my system I hadn't used a similarly-priced amp for some time. But I am no stranger to the rarefied air of the high end — I expected it to be good and I was not disappointed. In fact, over the first few days that it was in action, its impact on my music collection was pretty overwhelming. It didn't do it alone, though. Sonic foie-gras came courtesy of

Reviews Ed Sircom's SME Model 20A/SME V/Dynavector XX1 vinyl transcriptor, via Michell Iso phono-amp; and Acoustic Precision's Eikos CD player (HFC 165). Living Voice Auditorium speakers (HFC 164) bathed in JR-modulated electricity.

At first I was struck by subtlety. It weighs a lot, but has the most delicate touch, and revels in nuances that previous amps have barely hinted at. Even the most familiar material offered up new insights into instrumentation and subtlety of composition: no doubt the

Seismic-Sink-supported SME helped in this respect, but nonetheless these results were extraordinary considering the number of times I'd listened, and listened hard, to this material. The Concentra has almost

fractal resolution: as you listen deeper and deeper into the mix, the music remains coherent throughout. And all this without resorting to a bright balance.

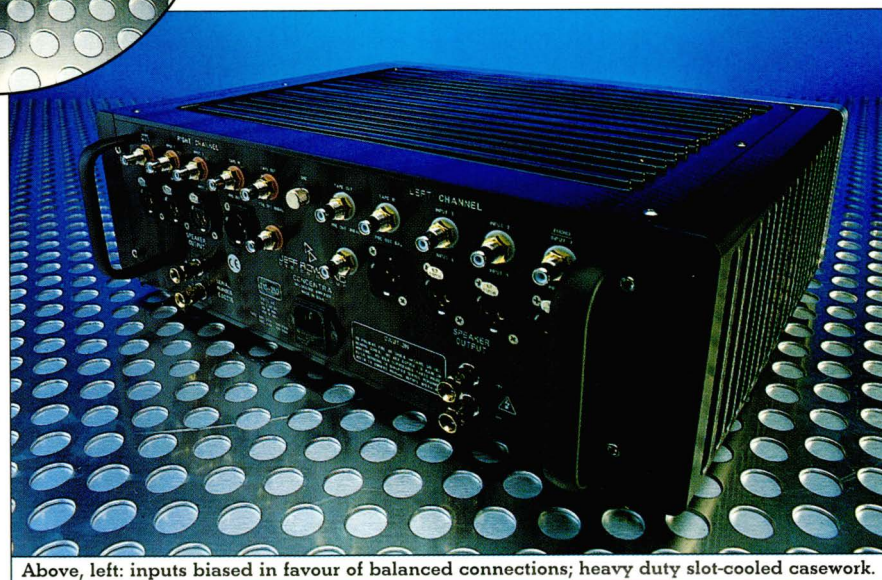
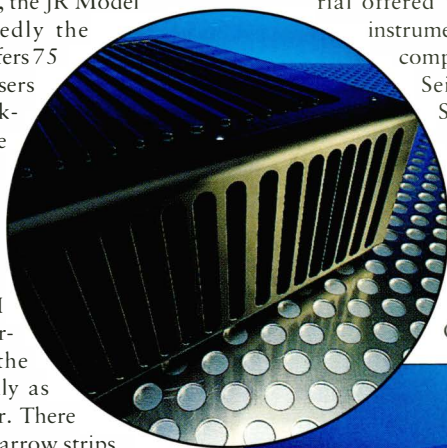
In listening terms, this means new insight into familiar material, and easier access to new or complex music. As Jimmy Hughes pointed out last month, a decent system will let you appreciate any type of music, whatever tradition it represents. With the Concentra in my set-up there were no styles barred. I wish only that I could have kept it longer, to check out more platters in my collection that I have yet to 'discover'.

Another strength of the Concentra is the way it will let you play quietly. Indicated attenuation in only the 50dB range was sufficient for regular volume levels, so there's plenty in store for those late-night sessions. You can crank down most amps, but when you do the life seeps from the music. With an amp like this, with a true grasp of dynamics, you can turn it down all the way and still appreciate the ebb and flow of music. Such qualities are less elusive in valve amps, but tubes don't have this sort of power on tap.

The Concentra certainly mixes it with the big boys. I took it up to Living Voice in Nottingham, to see how it fared against tube alternatives, and I suspect we drowned out the party next door. More surprising was the lack of paradigm shift when swapping to solid-state after listening to fine valve amps: no glare, grit or tonal greying. It's the first time I've made such a comparison and ended up with this impression.

There remains the question of whether 16 Amps' output current is sufficient for less amp-friendly speakers; but Craig Milnes of Wilson-benesch has reported excellent results with his ACT Ones, and they're not the easiest load by any means.

Jeff Rowland's Concentra disproves the diminishing returns theory; in this case, more is most certainly more. More costs more — but you don't get Ferraris for peanuts! ▲  
Musical Design Company ☎ (01992) 573030



Above, left: inputs biased in favour of balanced connections; heavy duty slot-cooled casework.



# Big and bold

Alan Sircom reviews a new high-end CD player from over there which is set to do remarkably well over here...

**H**igh-octane US CD players never used to equal home-brewed designs in our tests. But the CD1, from Audio Research Corporation (ARC) of Minnesota, rewrote the rules by gaining Recommended status in *HFC* 163. Now its replacement, the £4,100 CD2, looks likely to follow in the same footsteps.

Functionally, there is next to nothing to distinguish the CD2 from its predecessor, apart from slightly fewer buttons on the front panel. It has the same milled solid-aluminium fascia, the same big display and drawer, and the same big, bold ARC styling. In fact, only the model number and a few minute cosmetic changes mark it out. Apparently there are differences to the remote control, but I did not have one to assess so I cannot comment.

Audio Research classes the CD2 as a CD transport-player, believing it to be equally adept as a dedicated CD transport and a single-box CD player. Rear panel sockets comprise coaxial (BNC), balanced AES/EBU (XLR) and Toslink optical-digital varieties. More up-market AT&T fibre-optic connections are available at extra cost. On the analogue side there are both single-ended (phono) and balanced (XLR) outputs. One difference from the US version is the presence of an IEC mains socket. Americans often prefer to use captive mains leads, and the Yanks use different colour-coding to us Euro-types. Certain countries look down their noses on captive mains leads, feeling them to be a potential safety hazard. The CE-marked CD2 neatly side-steps all of this most elegantly — if only other US companies followed suit.

ARC designates the player as both transport and player because of its CD-ROM transport mechanism, and proprietary control over mechanical resonance ARC has

claimed to exercise internally. As a consequence of these measures, they say, the CD2 suffers less jitter than both the CD1 and the CDT1 transport it replaces. On the digital side, according to ARC, the built-in decoder is a differential 20-bit Delta-Sigma type (see Lab Report for more details), hooked-up to a direct-coupled analogue output stage featuring both J-FET and bi-polar transistors, as well as regulated supplies.

How long does it take to run in a product such as this? For me, 36 hours seemed to strike a good balance between luxury and practicality. I used both balanced and single-ended outputs of the CD2 to feed a Meridian 502 preamplifier and 557 power amplifier, also referring to ARC's own VT100 valve power amp for good measure. Loudspeakers were Celestion A1s on Target R1 stands, while cables were the excellent Nordost Reference SBM single-ended interconnects and speaker cables, and Cable Talk balanced interconnects. As usual, everything rested on Mana stands and tables. For comparison purposes, I used a Meridian 508.20 CD player in both balanced and single-ended modes.

### Sounding out new depths

Okay, so the new CD2 does not sound an order of magnitude better than the CD1, but it offers small, subtle enhancements that justify its existence completely. Most fortunately, sound quality has not been sacrificed simply to create this year's model; often we see sonic degradation between the original and the 'improved' version simply because it has been changed for change's sake. The CD2 is fortunate to retain most of the CD1's elegant and detailed sound quality.

The CD2's sonic skill lies in creating a depth of imagery that I thought had remained the premise of vinyl LP. Between the speakers appeared a hologram of the

performing musicians, allowing the Celestions to show off how they can portray layering and image depth. In particular, jazz cuts from the early days of stereo manifested a deeply enjoyable visceral presence.

Tonal colour, by which I mean the emphasis put on different parts of the musical scale, was accurate, seeming neither too warm nor too brash. This would be a perfect match for the classic ARC amplifier sound. If your system needs a sharp-sounding CD player to inject brightness into a warm-sounding system, or if it needs a ploddy, rhythmic-sounding player to add a touch of rhythm, the ARC player will not help you at all. On the other hand, if honesty is all you crave, the ARC is the ultimate truth-teller.

In common with all of the world's finest CD players, the ARC CD2 is an elusive beast for a reviewer to describe, because it draws so little attention to its character. The sound has a 'rightness' that makes listening a pleasure. Like its predecessor it errs on the syrupy side of natural, but at the same time it allows so much insight into a recording, I'd be churlish to criticise.

Inevitably this product will be compared with other members of the high-end club, such as the Meridian 508.20 and Conrad-Johnson DR-1/D/A-2b combination. I would hesitate to elevate one above another, since they are the fruit of such disparate design priorities. The c-j duo is warm, highly musical and analogue-like; the Meridian is weighty, powerful and moody sounding; the ARC is best summed-up as accurate, and represents the best compromise of the three in many regards. I prefer the c-j approach, but really this is a question of taste.

If you own a CD1, don't rush to upgrade. But if you're buying CD and your priority is honesty, especially if you're an ARC user, the CD2 is an ideal first port of call. ▲  
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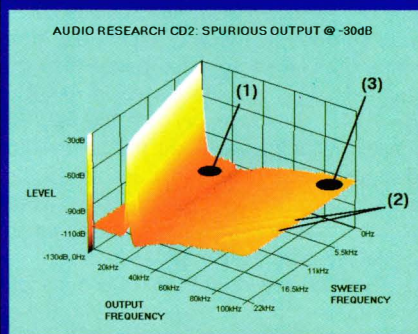




Audio Research CD2

Though it looks little changed from its predecessor, ARC's new CD machine is very different under the hood.

## AUDIO RESEARCH CD2 - LAB REPORT BY PAUL MILLER



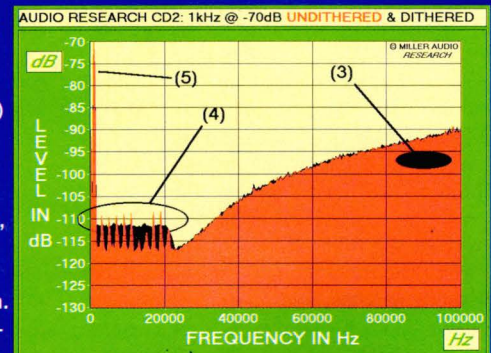
**T**his new offering from Audio Research certainly looks like the older CD1 reviewed in issue 163. It even utilises a derivative of the latter's CDM12 mechanism, from Philips. The principal difference between this CD2 and the older CD1, it appears, is in its replacement of Philips' SAA7341 (the highly integrated 'player-on-a-chip') for one of Crystal's top-quality CS4329 bitstream converters.

This device is capable of a 20-bit

resolution; though in common with the Audiolab 8000CD and Meridian 508, the CD2 achieves a performance somewhere between 17 and 18bits with its 102dB A-wtd S/N ratio. Distortion is 'controlled' by Audio Research's proprietary and entirely discrete analogue filter stage. There's a dominant 2nd harmonic at the peak 2.17V output, amounting to 0.016 per cent across the entire audioband and falling to an incredibly low 0.0045 per cent through the midband at -30dB. At this musically important level, any distortion is buried beneath noise (1), leaving a variety of spurious, high-order sampling images (2) to surf the wave of requantisation noise (3) released by the CS4329's noise-shapers.

Jitter is exceptionally low at 178psec, comprising some very low-rate patterns centred on 15Hz and, at higher frequency, a low-level data-induced pattern. The CD2's response is perfectly flat, low-level linearity is true to within +0.0/-

0.4dB limits and its handling of dithered signals is textbook (4). However, this plot showing a low-level 1kHz tone (5) also reminds us of its inherently high output of requantisation noise (3), ultrasonic 'hash' that can result in a slightly unpredictable performance with different amplifiers. As a consequence, the difference between good and merely average amps may become obvious with Audio Research's CD2 at the helm.





# Dib Dib Dib, Dub Dub Dub!

Jason Kennedy settles down to make some music compilations using the new Pioneer PDR-04 CD recorder. Home recording is taking a new turn...

**M**iniDisc is without doubt a technological marvel that offers home recordists unparalleled ease of use and portability. But hard-core audiophiles will always harbour suspicions about its inherent psychoacoustic manipulation of any recorded signal. Furthermore, while many households have acquired CD players for portable and in-car use, few have invested in the new breed of MD hardware. An affordable, recordable CD system has long been the Holy Grail for those who like to make up their own compilations of favourite CDs. (For those who would make their own recordings of music performed live, DAT is probably still the format to beat.)

Until now the cost of entry to CD recording has been in four figures. When Pioneer's PDR-05 CD recorder was introduced in 1995 (see review, *HFC* 148), it carried a £1,300 price-tag. Currency fluctuations have since reduced its price to £1,000, but a CD transcriber for £699.95 is definitely big news — and that's exactly what Pioneer has supplied in the guise of the PDR-04, as showcased in our Las Vegas WCES show report (*HFC* 164). Even this headline has been somewhat overshadowed by Philips' announcement of the £500 CDR870, which will make both one-shot CD-R and rewritable CD-RW discs — though at present, unlike the former, the latter are incompatible with ordinary CD players. Also, CD-RW discs cost over £20, while domestic CD-R blanks cost £9 for 74 minutes or £8 for 60 minutes. The hot tip at the IFA show in Berlin (report, p15) is that blank CD-Rs will soon cost less than £2.

The PDR-04 and the '05 differ mainly in recording facilities and internal component quality. The '05 features Pioneer's Legato Link S digital filter, with dual DACs and a sampling-rate converter to record DAT. The



**Pioneer PDR-04** This £500 CD recorder is a new and affordable entrance to home CD recording.

'04 has a more down-to-earth DAC and less customisable recording controls. It's probably easier to use, but the keen home recordist will probably favour the '05. Those of us only making compilations from CD or LP will find the '04 more than satisfactory.

This is the first CD recorder I've used, and the prospect of needing to get everything right first time (it's a write-once disc after all) was disconcerting. Once those precious minutes have been used there's no getting them back! My concerns were wholly unfounded, however, as the recording process is very simple. Recording via a digital interconnect from another CD player requires three or four button-presses: the recorder automatically gets going when it 'hears' the signal come down the line. Levels are set automatically and you can burn in one track at a time or all of them in one go — I soon felt comfortable hitting the record-all button and skipping tracks on the source CD player to get the desired selection. The 117-page, four-language manual seems daunting at first, but it explains clearly even rarely-used actions like manual track numbering.

#### Here's one I burned earlier...

The PDR-04 was straightforward in use, but there were two anomalies: it refused to lock onto the output of a Trichord Pulsemaster jitter buster, and it emitted a strange shriek when entering record-pause mode.

On the finished recordings I was surprised at the difference in signal levels between tracks from different source CDs. The recording level of direct-digital dubs is set automatically by the operating software, but actual digital signal level does vary between CDs.

The sound quality of recordings was impressive. When CD-R first appeared there was surprise at the way recordings from some CD players sounded better than the originals. This was discussed in detail in *HFC* 148. Suffice to say that the PDR-04 creates recordings with all the bandwidth, dynamics and subtleties of the originals. I'm sure die-hards will be keen to assess whether the '04 is equally transparent to digital feeds from alternative sources.

As a CD player the PDR-04 is a smooth operator in the Pioneer-Japan style. It's as clean as a whistle and just a little relaxed for British tastes, unlike the UK-revised CD player and amp in the company's Precision range, which would take it to the cleaners.

Is it possible for a £700 product to put CD-R on the map? Time and the market alone can tell. All I can say is that the Pioneer PDR-04 is the slickest way I've ever made up superb-quality compilations for cars and parties. It knocks cassette tape for six in the coolness stakes. What more could you want? ▲

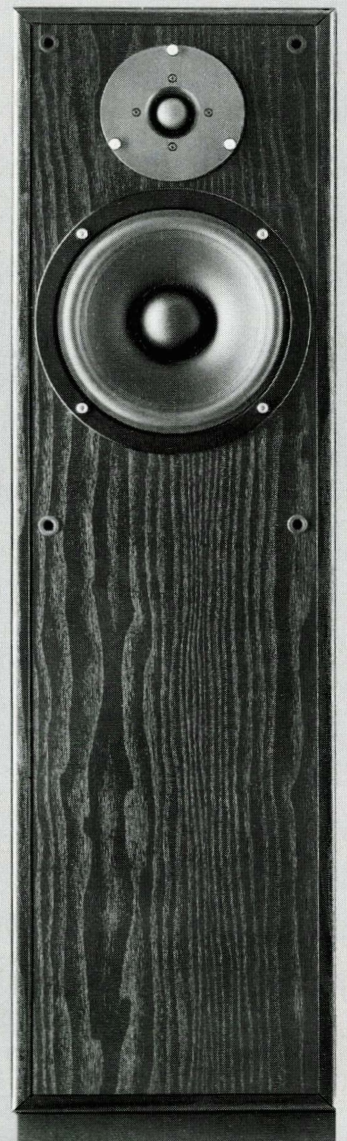
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### CONTENTS

MAY 1997 ISSUE 166

**REGULARS**

**Update**  
Election? Schmelection! We've been to Bristol and we got the news. All the latest from the show as well as locations further afield.

**Instant Systems**  
Alan Sircom gets to grips with a pair of £300 separates systems. The question is, can you get real hi-fi for the price of a telly?

**REVIEWS**

- [Acurus ACD11](#)
- [Aeon Acoustics Linear](#)
- [AMC 3025a](#)

\*Answers at the bottom of the page for those without web access.

### Have you ever wondered...

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- 3 What is the name of Benz-Micro's most expensive cartridge?
- 4 What is the best CD player for £350 or under?

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# Help!

**Jason Kennedy is here to answer your hi-fi queries this month.**

Send your hi-fi queries to 'Help' at Hi-Fi Choice, 19 Bolsover Street, London W1P 7HJ - fax on 0171-917 5512 - e-mail on 100433.1130@compuserve.com

## Query of the month



**Pioneer A-300R Precision**  
This coherent amplifier will make a good partner for TDL RTL3s.

### Last link in the chain

My old system consisted of a Marantz CD-46 CD player, NAD 310 amp and B&W DM302 speakers using Cable Talk 3.1 and Cambridge Atlantic interconnects. I'm in the process of upgrading my system and have recently bought TDL RTL3 floorstander speakers, and have changed the CD player to a Marantz CD-67SE, but I have not decided on the amplifier. What do you think of the following options: Audiolab 8000A, Musical Fidelity E10, Arcam Alpha 8 or Magnum IA-170? My budget is around £350 to £500.

Eric Lee, Portsmouth

*Presumably you listened to a few amps when you got the CD player and speakers; did none of those strike a chord? Of the options you have shortlisted we would expect the Magnum to provide the most lively response and the Audiolab to give a good even result; listen to both and see what you think. Given that the RTLs are nice and efficient we would also suggest you hear the Pioneer A-300R Precision which offers good resolution and is very coherent.*

### Use the force

My current system consists of a Marantz CD-63 CD player, Harman Kardon PM635 integrated amplifier and B&W DM603 speakers. I use Kimber Kable Silver Streak interconnects and Cable Talk 3 bi-wire speaker cables.

I am satisfied with the treble which comes across as sweet and clear, but the bass is lifeless. I plan to change my amplifier and would appreciate your advice on selecting one that would complement the rest of my system, and produce more forceful bass without compromising treble quality. I have a budget of £500 and listen to all types of music.

I intend also to upgrade my CD player in the near future. I am considering two options: complementing my Marantz with a DAC like the Cambridge Audio DACmagic 2 mkII, or purchasing a new CD player costing up to £350. Which would you recommend?

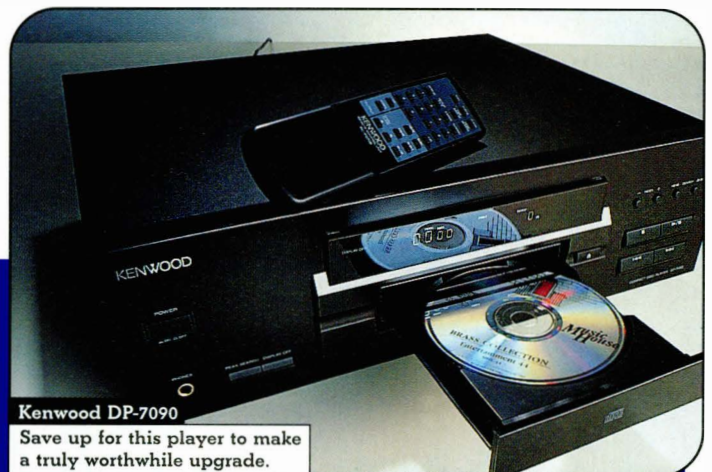
Thomas Peries via the Internet

### Untamed extremities

My current system comprises Mission DCD4000, Manticore Mantra/RB250/Roksan Corus Blue, Naim 72/140, Heybrook HB1s on Atacama SE20s with Naim cabling. I know the system is a little unbalanced at the moment, the pre/power amp being a recent upgrade from an old A60.

I am reasonably happy with the sound from the vinyl source. My library is, however, rapidly becoming CD-dominated and here is where the problem lies. The sound is very dynamic, but the extremes are rough and the overall sound isn't even close to the sweetness of my vinyl front-end. The dilemma is: do I retain the DCD4000 and use a separate DAC (on a budget of, say, £400), with the option to upgrade the transport later; or wait a while and replace the CD player (with the budget around £1,200); or is the real root of the problem the untamed extremities of the HB1s? Kevin Toon, St Lawrence, Essex

*While the HB1s are not the most refined speakers in the world, your observations about the results with vinyl would suggest that they are capable enough. So a new front end is probably the answer. We'd suggest you go the whole hog and get a new player; the Mission is beginning to look a bit long in the tooth now and could be improved upon with the budget you suggest for a DAC alone. However, spending a bit more should ensure many years of listening pleasure, so go and listen to an Acurus ACD11, a Cyrus dAD3Q, a Myryad MC100 or a Pioneer PD-S505 Precision. Any of those will do the trick.*



**Kenwood DP-7090**  
Save up for this player to make a truly worthwhile upgrade.

*The low frequency shortfall you are experiencing is most likely caused by the speakers, but you are going to need to spend more than £500 to get a speaker with the 603's qualities and serious bass. One solution would be to get a decent subwoofer by way of reinforcement; we would suggest the Strata II from the respected REL range as a good source of hi-fi quality grunt.*

*Regarding the CD source, I would try to save a little longer and upgrade to something serious like a Pioneer PD-S505 Precision, Kenwood DP-7090 or Sony CDP-X3000ES.*

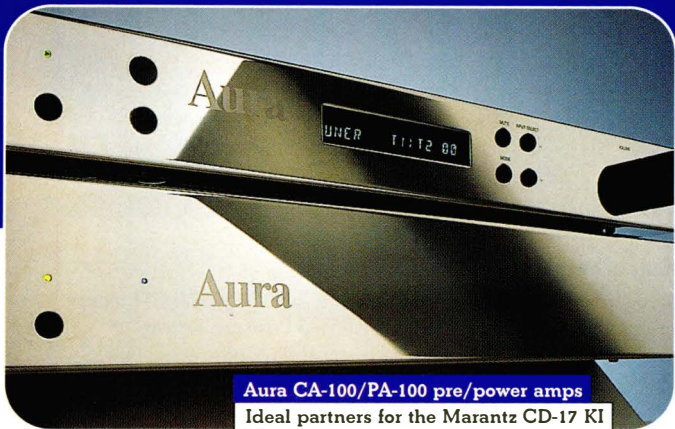


### Trash metal madness

My current system consists of Audiolab 8000C/P amps, 8000CDM/DAC transport and DAC, Nakamichi DR3 tape deck and Acoustic Energy AE1 speakers. I listen to a wide variety of music, from classical to dance and trash metal. I would like to hear some ideas on how I could upgrade my system, with a maximum of £2,500 to spend. Should I go for the Audiolab 8000Q/M set-up, or switch to the Aura pre/power combination? Or, should I opt for a change in speakers? They have to be bookshelf models, due to room constraints.

Colin Matthew Chan via the Internet

*This is a pretty broad question, and the solution will really depend on your tastes. We would suggest you listen to some complete system solutions as well as the amps suggested, bearing in mind that Audiolab has recently updated its power amp range. Alternatively, hear the AVI S2000MC/MI CD player/integrated amp combo with the new Acoustic Precision Eikos FR1 speakers (to be reviewed next month). It would also be instructive to try out the Marantz CD-17 KI Signature with the Aura pre/power; we got excellent results with this pairing and Tannoy Definition D100 speakers.*



**Aura CA-100/PA-100 pre/power amps**  
Ideal partners for the Marantz CD-17 KI Signature and Tannoy D100 speakers.

### Under heavy manners

I have an old German integrated amp (50W MOSFET), and Celestion Impact 20 speakers. I listen to all kinds of music, and I like the way it sounds, until I play something with very deep and complex bass (for example *Breathe* or *Firestarter* by the Prodigy) at high volume. Then the bass is distorted, losing its weight and precision.

Listening to old JBL 4311B Control Monitors in my room with the same cables to the same amp was a new experience. They offer clear, confident and fast sound with enough depth, even using the minimum of amplification. They are also capable of real volume, and the sound stays clear and consistent if a bit sharp, like horns. The only thing I do not like about them is that they sound darker than the Celestions.

Which of these speakers — JBL TLX 171, Jamo BX150A, Jamo D365D, TDL RTL3, Tannoy 635, Cerwin Vega VS10, Infinity SM125 or alternatives up to £500 — could also handle bass with my amp, like the JBLs, but without sounding dark? I do not want to lose any loudness if possible.

Jasenko Samardzic, Osijek, Croatia

*The old JBLs sound quite good and I suspect you are going to have difficulty improving on them in all respects with the budget you have. However, the Tannoys and TDLs you mention alongside DALI 104B might be the ticket. We don't know the JBL TLX171s but they might also be worth a try.*

### Hierarchies in hell

Currently I am in the process of selecting an all-new CD/amp/speaker system for around £2,000 (excluding cables, accessories etc). Although my knowledge of the market is reasonable I am becoming confused about how much to spend on each component.

Whatever happened to the 'system hierarchy' concept that used to be preached by all and sundry? I am referring of course to the 'rubbish in/rubbish out' theory. Regularly now we see suggestions for sub-£500 CD players (mostly Marantz-based) being partnered with amps and speakers of higher value. Does CD rewrite the rules or was the industry talking rubbish for all those years?

I want a one-make CD/amp combination (for aesthetic reasons) and well-finished, reasonably compact floorstanding speakers. The current shortlist includes electronics like Naim CD3/Nait 3 and Cyrus dAD3Q/SL, but would it make sense to go for a cheaper CD player like the Marantz KI Signature with a better amplifier set-up? Or should I go for a more expensive CD player, say at the £1,300 level, with cheaper amp and speakers?

A fast, detailed, clean and easy-to-live-with sound is my objective. Philip Hudson, Burnham, Buckinghamshire

*In short, yes, CD has upset the old equation. But only to the extent that you don't have to spend as much to get a relatively decent CD source as you did a turntable. The source still rules, but the chain is only as strong as its weakest link, and these days it's easier to build inexpensive CD players and amps than loudspeakers. So spend a bit more at the end of the chain for a change.*

*Try a Pioneer Precision amp and CD with the new Kelly KT3s or Castle Harlechs; compare that with the Naim kit you mention partnering a pair of Neat Mystiques, and the Cyrus pair with some Mission 752 or 753 Freedoms.*

### Hi-fi's rich pageant

My system now comprises Harman/Kardon HK6950R amplifier, Harman/Kardon HD7725 CD player and KEF Model Three speakers. Interconnect is Audioquest Quartz but will soon be SonicLink Vermilion. Speaker cable is Audioquest Forest.

I've got an idea that the sound I'm listening to now could be more detailed and richer, and am trying to achieve this by replacing my CD player with a Duson CD100 or Marantz CD-17 KI. I've read some excellent reviews of the Marantz, but nothing about the Duson. Is this because it's not for sale in England? I've heard the Duson and think it would be a good upgrade for my system. What other products can you recommend?

Emile van Diermen, Netherlands

*You're right, the Duson isn't distributed in the UK, so we haven't seen one let alone heard one. The Marantz does indeed seem to be a nice player, so if the Duson is better then it's probably a good choice.*

*While you're listening to CD players, have a go with a few amps as well. I suspect an improvement in this department will be required before you're able to appreciate a new CD player. Check out the Densen Beat B-100, Roksan Caspian and Musical Fidelity X-PRE/XA-50 combo for a bit of entertainment.*

### Roksan Caspian

**A £900 CD player that should add an element of aural excitement to your system.**





## HELP!

### ◀ Upgrade in order

My current system comprises Arcam Delta 170.3/Black Box 50 CD player, Alpha 9 amplifier (on Mana tables) and Mordaunt-Short MS30 loudspeakers, linked with van den Hul The First digital, Linn analogue interconnects and K400 bi-wire. All components live in a medium-sized room with a high ceiling.

At present the sound is a bit shut-in and coloured, and I'm looking for a more relaxing presentation, with natural soundstaging, dynamics and musicality. I suspect a loudspeaker upgrade is in order, but which models should I be looking at, bearing in mind I shall be upgrading my amplification with an Alpha 9P in due course?

Mark Bowers, Macclesfield



Your present set-up seems quite well balanced, but yes, better speakers would be the next sensible step — yet how much can you spend? We'll assume you've got about £500 as a starter and suggest you listen to some B&W DM603s, DALI 104Bs and PMC TB1s. All three will serve you through an upgrade of amplification and source and provide a lifetime of relaxed listening.

**PMC TB1s**  
A good solid upgrade for £410

### No problem!

I have the following system: Marantz CD-63 mk II KI Signature CD player and Marantz ST53 tuner sources connected through Audioquest Indigo cable to DPA 200S pre and power amplifiers. Interconnect is DPA Slink Two Kimber 8TC speaker cable feeding ProAc Tablette 50 loudspeakers on Goldring MBS stands. This system is in a small and narrow room (16x9 feet). Due to the particular room shape, speaker positioning is very difficult, but apart from a lack of bass, the system sounds good.

Do you have any suggestions or comments concerning this set-up? My budget is very tight at the moment.

Jorge Fernandes, Portugal

Well, there are a couple of things that might help here. Specifically stands: replace the Goldrings with some Kudos S100 speaker stands and put the source and amps on a decent support such as a Quadraspire, Townshend or Mana. Both actions will enhance performance and bass extension.

### Pioneer PD-S904

Ideal for turbo-charging with Trichord tweaks.



### Full house

Thank you for a fine and consistent magazine. I would be grateful for some fine-tuning tips for my system, which is as follows: Trichord Genesis CD player, Musical Fidelity E200/300 amps, Epos ES14 speakers on dedicated stands, Rega Planar 3 with Elys, Yamaha KX390 tape deck and Yamaha TX480 tuner. Cable is LAT 100 and Silver-Pink with Chord (Nordost) Flatline Gold made up as a bi-wire pair. I wire my Grundig VCR into the aux socket. The preamp is fitted with the optional phono stage. I realise that the amp is not particularly well rated, but part exchange and discount were the name of the game. Selling an old Tandberg receiver gave me a pre/power for £500!

Here are some of my options: RATA suggests a mains cable change to the amps and CD; it will also do unspecified mods to the amps for about £250 each. A second E300 is available from Richer Sounds for £500. Does the M/F CD buffer stage work well with the Trichord? I think the biggest potential improvement may come from changing my stands. New ones have to be Mana, even if I can't afford them and don't understand how they work! RD Steel, Christchurch, Dorset

You seem to know what you're doing so we'll cut to the chase. Russ Andrews' RATA mods are generally very good, and mains cable upgrades are always helpful. If you got another E300 to bi-amp with, you'd have to have Russ lay his hands on that as well which makes it quite expensive, possibly a little too much so given the potential gains. There's no reason for the E200's CD buffer to be unsuitable for the Genesis; its output is electrically just like any other CD player. And yes, some Mana will probably do more than any of these tweaks — get some platforms for the speaker stands as well.

### Progressing along the path

My old system consisted of Cyrus 781 speakers, a Philips 920 CD player and a home-upgraded QED Digit DAC with two Positron power supplies, and a Pioneer A-400 amplifier. I was always impressed by the energy and attention-grabbing sound it produced, especially after making Digit modifications to the QED, but it always seemed to suffer from a ragged treble and unsubstantiated suggestions of a growling bass.

So the upgrading started: the speakers turned into KEF Q35s, which changed the balance but not much else. Then I changed the CD player to a Pioneer PD-S904, which smoothed out the treble and steadied bass lines, but it was as if all the midband had been sucked out, and the lead guitarist and drummer had been sent behind the sound-proof window in the recording studio. Things got better when I bought an Audiolab 8000S amplifier and put my converted DAC onto the digital output of the PD-S904 — wow, what a change! All the life came back with better-behaved top end and bass.

So I get to my question: would it be worth spending between £500 and £1,000 on a more modern DAC, or should I get a new CD player?

Room size: 14' x 14'. Musical tastes: Beethoven to Deep Purple. Connectors: QED digital, Cable Talk 3 and Cable Talk Monitor 2.

Julian Dortot, Reading, Berks

PS: Why don't you change your Compuserve e-mail address to an alias like HiFiChoice@compuserve.com? It would be a lot easier to remember.

Last things first: changes are afoot and all our e-mail addresses will be updated to reflect each of our features within the next few months. As for your system, if you want to upgrade the front end, look at a player or transport rather than another DAC. One cost-efficient (and potentially most rewarding) option would be to have Trichord go to work on your PD-S904. Get the company to put in the Clock, power supply and digital output board plus any other tweaks that are appropriate. This should transform what is essentially a fine player into a killer transport.



### Classic combinations

My system currently comprises an LP12 on a Target wall-bracket, with Pink Link power supply, Naim ARO and Dynavector XX-1L, Naim NAC72, FLAT CAP, NAP140, Rotel RCD-865, and Mordaunt-Short MS10s on Target stands wired with Rotel Supra cable.

I am looking to upgrade my system and have a budget of £2,500. My speakers and CD player are obviously the weak links but as I hardly ever listen to CDs I am loath to spend money on a new player.

To improve the system, should I spend most of the budget on speakers such as SBLs, or choose cheaper speakers and upgrade other parts of my system at the same time, for example with Hi-Cap, Prefix, and Credo speakers?

Also, the sound from the system appears to be unbalanced as the left channel is clear while the right channel sounds dull with little treble information.

C S Matley, via the Internet

*The lack of balance in the system sounds like a fault, and an instant upgrade could be had by getting it fixed — consult your dealer. As for your next step up the ladder, speakers seem the obvious choice, and if you like the Naim sound then the SBLs would be a good place to start. It might be informative to listen to some other options before parting with the readies. The Totem Model One, Rega XEL and Epos ES14 would all gel with your system and offer an alternative to the Naim theme. You should also get some serious equipment supports and cable. In a system like yours the preferred choice would be Mana and Naim NACA5.*

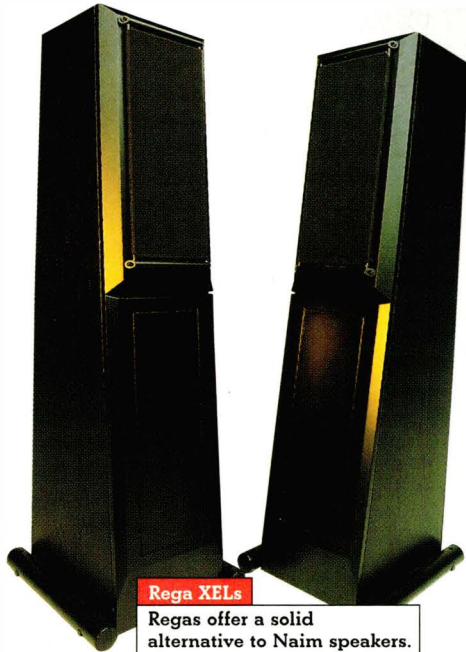
### Neighbours!

I have a rather old system comprising a pair of IMF ALS30 speakers, a Luxman L30 amplifier and a Sony CPD-502ES CD player. I plan to upgrade slowly initially by buying a pair of Monitor Audio Studio 20SEs, followed by the Krell KAV-300i and possibly the KA-300CD. But would it be more sensible to keep the Sony and add a DAC? My listening room is large but unfortunately the locals are not deaf!

Neale Watson, via the Internet

*Not an easy one, this. Your system is made up of decent old gear, but it may be tricky getting it to work well with modern kit. A couple of years back, your Sony had something of a revival due to its remarkable response to the Trichord Clock 2 upgrade, which made it into a first-class transport.*

*However, it's probably time for a change and we would suggest that a bit of field-work is in order. Go out to a few dealers and listen to what they can do; with your apparent budget this should be quite an entertaining process and an education to boot. The system you mention looks pretty good but you won't know until you compare it with a couple of others. Finally, make a point to listen quietly in the dem room — it sounds like you'll have to at home!*



Rega XELs

Regas offer a solid alternative to Naim speakers.

### It's cold out here

I currently have an Audiolab 8000A amplifier, Marantz CD-63 KI- Signature CD player, Sony STS-A3ES tuner, Sony MDS-JE500 MD recorder and Acoustic Energy AE109 speakers, with Nordost Black Night interconnect for CD, XLO Type150 for MD and shotgunned Nordost Flatline Gold speaker cables.

Although my system has speed, clarity and control, I find it lacks warmth. I have already planned to upgrade my amplifier to the Audiolab 8000Q/P. Will changing the interconnect bring more warmth but retain clarity? What interconnect would you recommend for my future 8000Q/P set-up? Will adding a separate DAC add warmth? If yes, what budget DAC do you recommend? I am also planning to upgrade my speakers some time next year. I have a budget of up to £700. What speakers would bring more warmth but keep the clarity and bass of the AE109s?

Christopher Tan, via the Internet

*Not cosy enough for you, perchance. You may find that more sympathetic cables could do a lot of good; try a warmer interconnect such as Ixos 103 or van den Hul Source. If one of those seems to be helping, then try a mellow speaker cable such as Audioquest F-14.*

*Further fine-tuning will also help (you do leave your amp and CD player switched on permanently, I hope). Stick a Townshend Seismic Sink under both amps and CD player and some RF clamps on your mains cables. Tweak some heat into the system, then worry about upgrading.*

### The c-j challenge

Your help is badly needed. I recently purchased a pair of Vandersteen 2Ce speakers to go with my conrad-johnson PF2L preamp and MF2100 power amp, partnered with a JVC XL-Z441TN CD. As it is the sound is dry, too laid back with a forward midrange, limited transparency and imaging, and bass is just not powerful enough. I am planning to buy a new CD player, possibly the conrad-johnson DV-2B CD player, but I am open to suggestions. I am looking for transparency and detail, a very good soundstage, three dimensionality, open and fluid midrange, and last but not least deep, powerful and tuneful bass (not exaggerated). I listen to dance music, female vocal, new age, jazz, and rock music. My budget for the CD player is up to US\$2,800.

Primerose P. Sanchez, via the Internet

*What a weird system; it's no surprise you're looking for a new CD player! The question is, what can you get for 2.8 kilobucks? In real money that's £1,750, enough for something rather special like a Copland, Audio Research or even a Wadia (depending on how much they go for in your country). Then there's the c-j you mention. You'll need to find a dealer who stocks your amps and speakers and have them play you a few options; all of the players above are capable of good results but more than likely one will fit in with your set-up better than the others. Go forth and listen!*



Copland CDA-288

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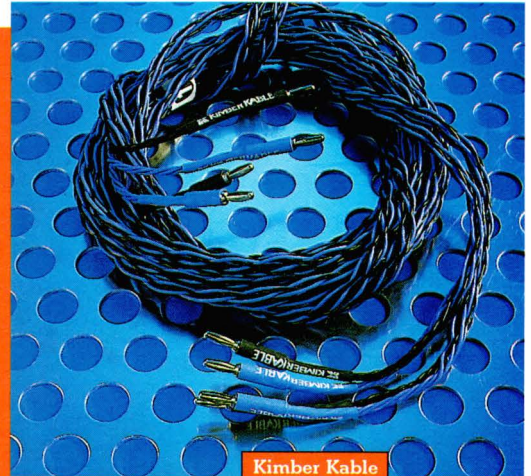


**A convenient system!**

Quite a few years back, I purchased an Audio Innovations 300 integrated valve amp on your Recommendation. I would like to say that this amp left a wonderful impression on me — I loved it — but I got rid of it because I wasn't able to leave it on all the time. Teamed with a pair of ProAc Super Tablettes and a Linn Sondek it made the best system that I have owned (though a little more bass was desirable). But for convenience, I've now got a Parasound HD-650 amp, a pair of Mirage 360 speakers and a Denon CD player.

When finances are available, I'd like to upgrade one of the components. I am not sure if I should upgrade the amp or the speakers. Could you tell me what is currently available in terms of integrated Class A amps, and would you recommend picking up a second-hand Musical Fidelity A100? Or should I be considering a speaker upgrade? In a way, I am content with what I have, but I would like a change.

Henry Leong via the Internet



**Kimber Kable**  
The hi-fi system equivalent of tonic wine.

Unfortunately, the amp and speakers you have at present are not available in the UK so we're a little in the dark as to how to advise you. It's tempting to say get your old system back and live with some warm-up time, but I guess it's too late. As it is you'll have to do a bit of listening in order to assess which component to change. On the other hand, if you like it as it is, why not spend some money on first-class stands, supports and cables? A couple of Townshend Seismic Sinks, some Kudos speaker stands (if your Mirages need them) and a bit of Kimber Kable will perk up the sound no end. Check out our Directory (page 122) for specific product recommendations.

# HINTS & TIPS

## BASS: HOW LOW CAN YOU GO?

**Jimmy Hughes provides some helpful pointers for budding subwoofer owners**

**S**ome months back, a friend added a REL Q-100E subwoofer to his system, and very pleased with it he was too. Alas, like most of us he was pushed for space, and the REL occupied the centre spot where an equipment rack had been. So he decided to build a cabinet around the sub, to support his TV and video recorder.

Naturally, he was concerned that slightly enclosing the REL would adversely affect its sound, although the cabinet did not



**Bionic bass**

Your subwoofer may benefit from a degree of enclosure...

impede the back or the front of the sub, only the sides and top. Even so, when first he listened to it, his fears seemed to be justified.

The bass was heavier and louder, making it more dominant and less integrated. The low frequencies were less controlled and too powerful. Luckily, correction was possible by reducing the sub's volume level. This done, the bass actually seemed to improve, sounding more focused and slightly deeper, with cleaner pitch definition and better integration with the main speaker system.

The equipment support cabinet acted as a bass reinforcement device, narrowing dispersion, which helps concentrate and focus the low frequencies. It's a little like using a reflector around a light bulb to give a more intense beam.

Because the sub's output level has been reduced, it's actually working less hard and is thus under less strain. So there's reduced cabinet resonance, and I guess it's this that makes the bass sound cleaner.

At home, I have two of the old Q-Bass subs (now replaced by the Q-50) and I use them reversed, fairly close to a rear wall to reinforce the bass. But I've also put a thin cardboard 'collar', some three inches deep, around the circumference of the bass units to narrow dispersion. This helps focus the bass more precisely, and stops it spreading.

Just play the sub(s) on their own, and see to how clearly you can hear low-frequency melodies. If the low frequencies sound shapeless and soggy there's something wrong; any change that gives more shape and articulation to the notes will almost certainly be judged a big improvement when you get the complete system going.

Of course, there is a danger that by enclosing the sub you'll create a strong resonant mode, leading to excessive bass output at particular frequencies. This will make the bass response uneven and inclined to boom on certain notes. However, problems like this are only likely to occur when the sub is excessively enclosed on three sides — say, put at the back of a very deep cabinet.

A moderate degree of enclosure will not do this and should usefully load the bass driver, solidifying and enhancing low frequency performance, as well as helping to improve focus. Bass may not be as obviously directional as the middle and high frequencies, but it does need to be focused; too wide a dispersion can lead to vague ill-defined lows.



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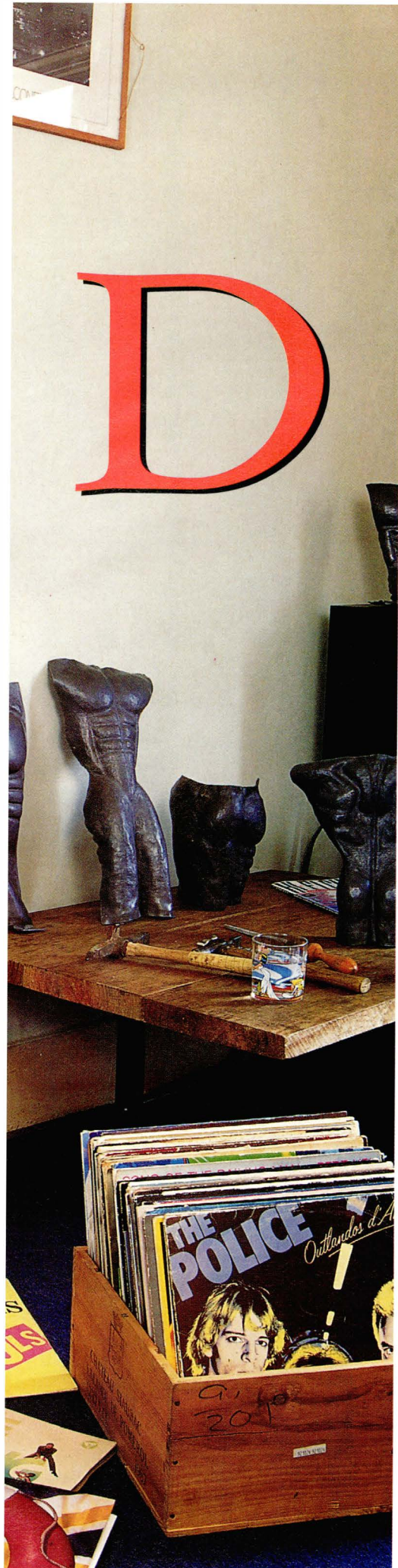
# A STATUESQUE SOUND



**A finely sculpted system**

Chico Tardetti's system may not seem conventional, but it is the result of an extended hi-fi odyssey.





Ever worried that you can't afford a great system? **Phil Strongman** visits a sculptor whose hi-fi rig's a cost-effective second-hand bargain.

**S**culptor Chico Tardetti, the man behind this month's Inspirational system, had a baptism of fire on the hi-fi front. He refused to do national service in his native Italy, leading to the cancellation of numerous exhibitions and art commissions, and causing him to lose power of attorney over his family home. That meant he arrived in the UK almost penniless, forcing him to make a living from his other great passion — hi-fi. For over a year, when he wasn't hammering out post-modern sculptures from lead or steel, Chico was buying publications like *Loot* a day early and scouring them for hi-fi bargains that could be bought and then sold. Later, when luck improved, increased wealth gave him an excuse to hang on to some of the finer audio pieces he'd found. All a far cry from his first system, assembled at the age of 12 in his native Pompeii. That comprised a transformer, a car stereo and dashboard speakers. "It sounded awful," says Chico. "It could clear a room in seconds, like a fire alarm!"

Chico kept trying new combinations of budget hi-fi. His quest gained impetus from several bizarre sources, including a neighbour who was into black magic. "He was a clever man in some ways, although he

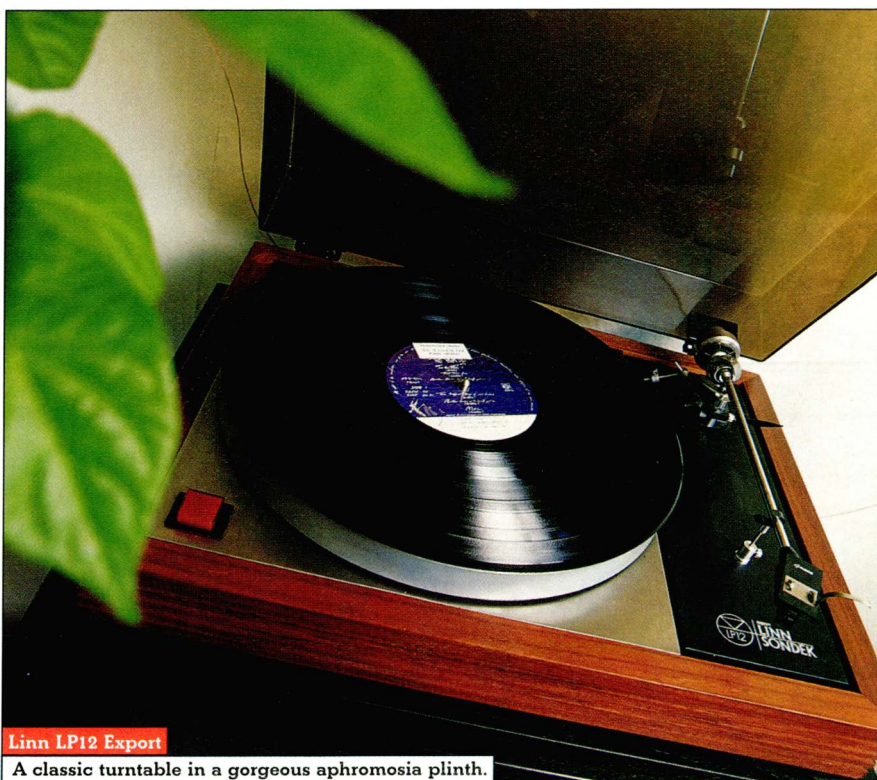
ended up killing himself, but whenever I went round there he never had any music on. There was always an eerie silence in his house... it made me appreciate musical sound a lot more."

#### **A short history of hi-fi**

Through a roundabout route, a rapid succession of Aiwa separates led Chico to a discovery — and love — of UK turntables. "British decks are the ultimate. The Aiwa stuff always sounded so much better with a British deck at the top."

A fling with a Connoisseur BD motor unit, with hand-built plinth and a Linn Basik arm, came to an end in 1993 after former affairs with various "budget turntables too numerous to mention". The new apple of his ear was a Rega Planar 3 complete with RB300 arm and Linn K9 cartridge.

At first, the Rega rig was hooked up to a Marantz PM-64 feeding a pair of Wharfdale Diamonds. "The Diamonds sounded strong at first, but after a few hours they tended to be too bass heavy, too compressed for my ears. They were replaced by some Gale 401s that were okay, but convinced me I'd have to spend a lot more money to get the sound I wanted from a big speaker. So I did invest, briefly, in a Meridian active system



**Linn LP12 Export**

**A classic turntable in a gorgeous aphrosia plinth.**



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**Ancient and modern**  
Audiolab 8000A and Yamaha CT-1010.

with an M1 control amp. They were these huge wedge-shaped speakers with their own individual amps under them. The amps were linked up to a Pink Triangle Little Pink preamp, and the only control was volume. It could go ridiculously loud without cracking up. A friend of mine had just been to see the Stones and he insisted on playing their *Too Tough* track with the gain near maximum. I was in a really solid three-storey house back then, but the foundations still seemed to shake. You could actually feel the floor move, but there was no distortion. My friend was stunned. He kept saying afterwards: 'My God, it's louder than the gig! It's louder than the gig!'

### The Linn-man of the county

They were fine pieces of hi-fi, but the Meridians' ungainly, leatherette-clad form did not have much aesthetic appeal for a man whose forte is the visual arts. "Their pointed tops meant I couldn't even keep any of my sculptures on them," jokes Chico. "But despite their good dynamics, the Meridians sounded a bit nasal, to tell you the truth... a couple of months with them convinced me that sheer power wasn't necessarily the answer. My lounge is about 16 foot by 10 in size, so I decided that my next speakers would have to be smaller. But first I replaced the deck with a Linn."

And not any old Linn either, but the rare Sondek LP12 Export with its superb aphrosia wood surround, nearly twenty years old and still on fine form. "I totally fell in love with it. It was, is, beautiful. The colour and grooving of the wood and the sheer simplicity of its base... amazing... I got it in a swap for the Rega and the very next week a Japanese hi-fi dealer offered me a thousand pounds cash for it, but I couldn't sell it. The minute I laid eyes on it I thought I might keep it and once I'd heard it play, that decided it. I had to have it. It is just so fast... I play a lot of rock, r'n'b, stuff like that, and you need a fairly speedy deck to handle it. With the Linn you get that speed, plus it handles mid-band superbly, and it always gives you full, well-rounded notes and a good clear soundstage.

"I play the odd classical disc sometimes and they come out strongly too. Also the LP12 is well-insulated and well-isolated, which I need, since I've always lived in downtown areas. Where I am now, there are lorries or buses rumbling by. The Linn, and

the Target stand it's on, just soak up all of that. Some people customise them but I won't touch it. I could have put in a new power supply and stuff like that, but no... you don't mess around with an old classic. If it ain't broke, don't fix it, as they say. (Not sure whether Linn's marketing department would agree — Ed) I suppose it helps that the arm is a Grace G707 and the cartridge a Supex 900."

### Little boxes by the fireside

As all of us should know by now, a strong front-end alone does not guarantee sonic purity. Amps, speakers and cables all play a part — but the immediate problem was to fill the void left by the departed Meridians. "I'd heard some Celestion Threes, and liked them, but I wasn't sure if they could sustain the sound at higher levels. After all, they were only about £140 new — not that price is always a guide. I linked them up with some Linn K20 speaker cable and they sounded great. They can fill the room, but even when they're cranked up they never



**Surprise ending**  
Celestion's baby 3 makes the grade.

sound oppressive; they're always very neutral and uncoloured."

Visually they're less intrusive — and of course their small black MDF boxes are ideal supports for Chico's smaller sculptures. "Though I always take artwork off them before I use them. I take the speaker grilles off too and I always try and switch equipment on a few hours early. Especially the Sondek and the Audiolab — they give you a lot more when they're warmed up."

The Audiolab is an 8000A integrated amp, again a bargain rescued from the hi-fi jungle. "Some DJ had received it as a present, but he hadn't even unpacked it; he wasn't really interested in it at all. He'd just bought a little mixing desk with built-in amp instead. So I offered him fifty pounds cash and he jumped at it. I'd had NADs before that, a 302E for a long time, but in comparison with the Audiolab they sound a bit hissy. The NAD's bottom end tended to boom slightly too, which some rock people like, but it's not something I go for. The Audiolab has a palpable soundstage and it manages to project a full, weighty bass, but not in an overpowering way... the lower end doesn't fall out of the speaker and splodge on the floor, which is the bass vibe some amps create."

The tuner is a large, ancient but smooth Yamaha CT-1010 which has great signal clarity and a smoothly weighted steel hunk of a tuner dial. "Just feel that, it's designed to fit the hand... it's a pleasure to tune in with that". It was one of the very first tuners to have the MPX filter system.

Mr. T's hi-fi is completed by a Pioneer CT-F900 cassette deck, purchased after he'd auditioned several Nakamichis. "They were all somewhat lightweight with the exception of their Dragon, of course; but I couldn't find a Dragon at the right price."

### Living by numbers?

Van den Hul interconnects link up everything, but as yet do not make contact with a CD player. "I did have a Marantz CD-99 for a time, but for me it just wasn't the same as using the Linn. There just wasn't the crispness you get with vinyl. I might be tempted back into the field if I heard the right machine. Some of the DACs I've heard do improve sound, but the jury's still out on that one as far as I'm concerned. Besides, with things sounding the way they do now, I'm in no real hurry to change. Some systems would only last me a few weeks before I swapped components, but this one I've had for nearly three years. As far as I'm concerned, of all the combinations I've tried, this is the best one — for me."

And you can see his point; or rather, you can hear it. For this is a system to experience, especially for those who love their rock with a bit of pace and depth. Lou Reed's *Kicks* for example, from his 1976 *Coney Island Baby* album, sounds incredibly life-like through it. When the musicians chat across the music, during the solo, you actually look around the room to see who's talking. Phil Collins' *In The Air Tonight*, with its spectacular drum opening, also gets a near-perfect showcase.

Signor Tardetti's system is a testament to what can be achieved in the second-hand market with only a few hundred pounds, a sharp eye and a bit of experience. Let's rock... ▲

Chico Tardetti's work can be seen at 20th Century Design Classics, The Stables, Chalk Farm Road, London NW1



**Pioneer CT-F900**  
A serious lump of cassette hardware.



# DOUBLE VISION

Can today's twin cassette decks challenge the sound quality of uniquely-endowed brethren? **Alvin Gold** (listening) and **Paul Miller** (lab test) find out.

**T**here is one over-riding goal for cassette-deck reviews in *Hi-Fi Choice*: what do they sound like? Experience has taught us that when sound quality is the primary consideration, there is only one manufacturing paradigm: the single-transport, uni-directional deck. However, to think this way is to ignore the fact that numerous cassette-deck buyers are at least as interested in convenience features as they are in sound quality. And many single-transport cassette decks have very limited functions.

Let's think a little more closely about the kind of features offered by a twin-mechanism cassette recorder. It offers the apparently useful service of dumping the contents of one tape directly onto another, which seems like a good idea until you start wondering why you might want the (inevitably slightly inferior) copy. An auto-reverse facility can also deliver one from the tyranny of a C90's 45-minute tape side; with twin recording decks three hours becomes the maximum duration for unattended recordings, assuming C90s are used.

There have been no-compromise auto-reverse decks in the past, notably from Nakamichi, and from time to time there have even been stabs at making low-compromise twin-cassette decks. These have always proved controversial, not least because the music business sees them as an incitement to blatant piracy.

Some cassette decks are offered on the premise of high sound quality; Yamaha's 'UK-tweaked' KX-580SE is a case in point. Inevitably, though, they will never equal most CD players. Even if they did, they'd still be at the mercy of the pre-recorded cassette industry, which, though it will protest to the contrary, has never taken on board the quality message. But at least 'audiophile' cassette decks profess to do something useful for their livings.

The question remains: has the twin-mech cassette deck evolved to the point where it can offer a convincing blend of convenience and sound quality? Therein lies the objective of this test.

## What we set out to do

We assembled five twin-mech cassette decks of a price that should indicate at least presentable sound quality; and pitted them against a similarly-priced, single-transport

## THE CAST LIST

Denon DRW-580.....	£199.99
JVC TD-W718.....	£299.99
Kenwood KX-W6080.....	£199.95
NAD 616.....	£299.95
Pioneer CT-W806DR.....	£299.95
Yamaha KX-580SE.....	£250.00



non-auto-reverse deck to act as a sound-quality yardstick. In addition to establishing whether there is parity of sound quality between single and twin-mech variants, we also looked for distinctions within the twin-decks themselves.

The five double-decks have some basic features in common. They all have two mechanisms (not always completely independent internally, but that's another story), both of which can be used for playback, and at least one of which records. All have Dolby B and C noise reduction and HX Pro head-room extension circuitry, though tellingly none offers Dolby S noise reduction.

Each one can dub from one tape to another in real time, taking 90 minutes to dub both sides of a C90; or will dub at twice normal speed taking 45 minutes to accomplish the same task. Both methods involve some loss of sound quality; inevitably, the loss is greater at double speed.

Copying CDs onto tape is a favourite pastime for twin-deck owners, and many units offer automated facilities for this purpose, usually (but not always) in conjunction with a CD player from the same brand. These facilities may include: a routine to establish appropriate recording level, support for track-editing, and synchronised CD-to-tape recording starts. We assessed only tape-to-tape and CD-to-tape performance.

## HOW THE TESTS WERE DONE

**D**uring our listening tests we made recordings from a tame CD player, then replayed these off-tape and compared them to the originals. Tests concentrated on Type II (chrome bias) and Type IV (metal) tapes, because these are the toughest for any cassette deck to deal with, especially in respect to high frequency and noise capabilities.

Type I (ferric) tapes are the most appropriate for our test samples in normal casual use, but their performance with high bias tapes defines their performance. Ancillary equipment for the tests included: Copland CDA 288 CD player, Roksan Caspian amplifier, Kelly KT3 loudspeakers and Sennheiser HD580 Precision headphones.

## WHAT MUSIC DID WE USE?

Joni Mitchell: *Cool Water from Chalk Mark in a Rainstorm*; Geffen 924 172-2

Mahler: *Symphony No 9 (3rd Movement)*; Jesús López-Cobos/Cincinnati Symphony Orchestra; Telarc 2CD-80426

JS Bach *Prelude from Prelude & Fugue in B Flat Major*; BWV866 Rosalyn Tureck; VAI Audio VAIA 1041





**DENON DRW-580**

The Denon has twin auto-reverse-capable transport mechanisms, of which one is record-enabled and equipped with Dolby B and C noise reduction, and HX-Pro headroom extension circuitry. Transport features are tape dubbing at normal and double speed, and relay play (in which one tape plays when the other ends). Manual bias adjustment can help 'tune' the deck, but is by no means easy to perform without off-tape monitoring. The metering covers a wide 50dB operating range, and a headphone socket is fitted, but there is no volume control.

The control system itself is easy to understand, if rather cluttered in layout. The mechanism is a little noisy, both when engaging transport modes, and (more significantly) in play mode. On the plus side, tape dubbing is a one-button process, and if you're using a Denon CD player, discs can be dubbed with a single button-press. Added-value features include timer standby, track search (just one track away in either direction), multiplex (MPX) filter switching for radio recordings, and a remote-control sensor for use with Denon audio or AV remote-control amps. No handset is included with the deck.

A seven-stage display-dimmer is unusual

**DENON DRW-580 - VERDICT**

- SOUND ★★☆☆☆
- VALUE ★★☆☆☆
- PRICE £199.99

Disappointingly prosaic performance all round, with suspect transport and modest electronics combining to make a strong case for single cassette decks instead.

Hayden Laboratories Ltd, Hayden House, Chiltern Hill, Chalfont St Peter, Bucks SL9 9UG  
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for remembering its setting after being switched off, though to invoke it demands an arcane sequence of control activations.

As we did with the other decks, we tested the Denon primarily with TDK chrome (SA, actually a chrome-compatible super-ferric) and metal (MA) tapes, since these provide the greatest challenge for any tape recorder. However, in many cases a good ferric tape would be the most cost-effective choice in day-to-day use, and arguably it is better matched to the Denon and most of the other twins for all but the most quality-critical applications.

**Sound quality**

The Denon suffered from significant intermittent tape drop-out, ie a momentary loss of output, with both Type II (chrome bias) and Type IV (metals). In both cases these were new tapes that had been fast wound a few times to prepare them for use. Sound quality had a slightly muted quality: there was an obvious loss of openness and subtle detail, and a crowding of the stereo soundstage — probably this was a flutter-related side effect.

This was confirmed partially by shallow, tinny-sounding percussion, another classic indicator. Recordings of small instrumental forces (Beethoven string quartets in this case) sounded obviously tape-like, with a subtle and unsettling modulation effect of each instrument on its neighbours.

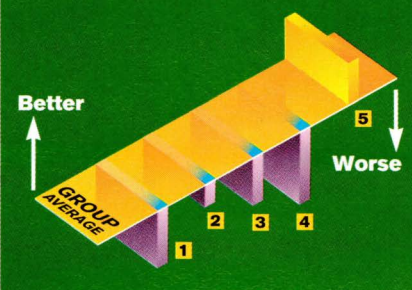
Tape-to-tape dubbing performance was modest, with apparent Dolby mistracking using metals at normal dub speed, a loss of openness and of subtle detail. Midband sound quality was fairly impressive, however, and the bass sounded powerful. High-speed dubs were very poor, and should be avoided for any sound-critical application. **AG**

**THE LAB REPORT: DENON**

Evidently this deck is optimised for Type II pseudochromes rather than premium ferrics which, despite lapping up oodles of bass (MOL = +5.9dB), are sufficiently over-biased to limit any treble headroom to just -4.6dB. NAD's machine suffers a similar compromise though the effect is more dramatic with the DRW-580: a -4dB loss at 10kHz with ferric tapes and decidedly muffled-sounding recordings unless the bias control is wound all the way back to the 9 o'clock position during recording. Current IEC Type II favourites like TDK SA and Maxell XLII perform ideally with the bias knob turned back one notch, providing a flat response to 17kHz (there's the faintest peak at 14kHz) and benefiting from a MOL/SAT balance of +5.4dB/-3.5dB respectively. In plain English, this means a strong bass with enough treble headroom to preserve powerful, percussive detail.

Once you've grasped its bias control, there's another tougher problem to deal with. Specifically, though the deck's absolute speed accuracy is very good (just +0.13 per cent re. 4.76cm/sec), its overall stability is a little 'fluffy' with evidence of very low-rate pitch variations alongside capstan wow and clumps of flutter at 41Hz and 93Hz. *PMI*

1	SPEED STABILITY	-40%
2	AUDIBLE HISS	-15%
3	DYNAMIC RANGE	-32%
4	TREBLE OUTPUT	-50%
5	DISTORTION	30%







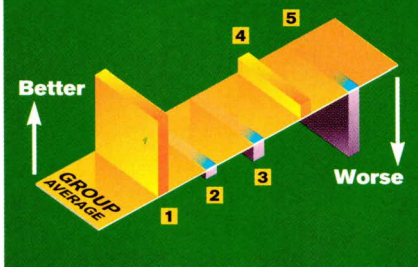
**THE LAB REPORT: JVC**

Due to being fractionally over-biased in the Type I position, recordings on ferric tape lead to a slightly prominent upper midrange, though the far treble is still usefully extended to 16kHz. Type II tapes are fundamentally under-biased, however. Without JVC's 'Compu-Cal' facility, IEC-compatible pseudochromes like Maxell's XLII are some +3dB up at 8kHz, falling to a not-insignificant peak of +1.7dB with tape-tuning engaged. JVC's meters are accurately aligned with the IEC 0dB point but don't get confused with the 0VU point marked slightly lower down on the same scale. Hiss is very low at -55.0dB and -58.5dB with Type I and II tapes respectively, falling to -69.8dB and -73.3dB with Dolby C.

If the MOL/SAT (overload) margins of JVC's heads are par for the course, then at least its tape mechanism(s) are more stable than the norm. There's no very-low-rate wow to disturb the stability of sustained notes, only a hint of capstan wobble at 4Hz amounting to 0.09 per cent.

Flutter occurs as a broad clump at +/-36Hz but the total spurious band energy from 10Hz-100Hz is still the lowest in this test at -18dB (NAD clocks-up -16.8dB while the Kenwood hits -10.8dB). A very balanced overall result. *PMI*

1	SPEED STABILITY	55%
2	AUDIBLE HISS	-5%
3	DYNAMIC RANGE	-11%
4	TREBLE OUTPUT	10%
5	DISTORTION	-45%



**JVC TD-W718**

Here is a true twin-recording deck, in which both transports are capable of recording as well as playing back. This means that two tapes can be made simultaneously from a single-source CD. The deck will also record sequentially, allowing up to three hours uninterrupted recording from the radio using C90s. This good idea is spoiled by the remarkable omission of a timer operating facility, severely devaluing the benefits of this feature. What were they thinking of?

In other respects, this is a powerfully endowed deck. Auto tape calibration, under JVC's proprietary "Compu-Cal" tag, automatically adjusts sensitivity and equalisation, and retains separately the values found for tape groups ferric, chrome and metal. DDRP (Dynamics Detection Recording Processor) sets record levels automatically in co-operation with JVC DDRP CD players, but the system can be fooled, for example when peak levels happen to fall between sampling points.

One of the transports has a variable-playback-speed control (+/-10 per cent), which is potentially useful for musicians who want to play along with a commercial recording. There are sockets for microphones and level-controlled headphones. A 'music scan' (track search) feature and blank skip head the list of convenience features.

In its ergonomics the JVC is on strong ground with its well-grouped controls, though some, such as for dubbing, are rather inconspicuous. Transport-mode engagement is extremely quiet, and tape play/record modes also run with less than the usual mechanical noise.

The tape counter reads out in minutes and seconds, but the times are unrelated to the tape start unless reset was pressed initially. One interesting omission is record bal-

ance, which reduces scope for more creative recording applications.

The lack of balance adjustment was also reflected in intermittent channel balance errors to the order of 2dB when making normal speed tape-to-tape recordings with chrome tape. A faulty sample?

**Sound quality**

Sound quality is modestly encouraging for a £300 twin deck (it would equate to a £170-£180 single). Type II recordings from CD showed mild but noticeable losses of treble presence (possibly flutter related), dynamics and space, especially front to back. The soundstage sounded stable, but lacked differentiation, interest, and 'air', and voices were often less articulate than the source. Metal recordings sounded somewhat sharper and clearer, with minimal dropout, and pitch integrity was better than average.

Normal-speed dubbing performance was surprisingly good, and even high-speed dubs sounded reasonable, with only a mild loss of stability and some dropout being noticeable with all three tape groups.

Pre-recorded cassettes sounded reasonable enough, but they were no match for native recordings made using good-quality tape stock. *AG*

**JVC TD-W718 - VERDICT**

SOUND	★★★★☆
VALUE	★★★★☆
PRICE	£299.99

Strong support for creative home recording (microphone sockets, play-speed adjust etc) is a major focus of this deck, but the lack of timer standby and balance controls are significant omissions. Musically it is one of the better (and costlier) twins.

JVC UK Ltd, JVC Business Park, Priestley Way, London NW2 7BA  
 (0181) 450 3282





**KENWOOD KX-W6080**

The KX-W6080 is gargantuan, just like its sibling the KA-5090R amplifier (reviewed on p91). Its layout of controls is highly stylised, while its capabilities broadly parallel those of the JVC TD-W718. Both transports are capable of recording, which means that in addition to tape dubbing and sequential play, the Kenwood can make two sequential recordings. Hence up to three hours continuous recording is possible using C90s.

This implementation is more usable than on the JVC because timer standby has been included, so with a cheapo wall timer you can make absentee recordings off-air. However, this deck will not record on both decks simultaneously.

The user is not short-changed elsewhere. Headline gadgets include 'skip play' (track search), single-track repeat, rewind and play, dash and play (aka 'blank skip') and CCRS (Computer Controlled CD Recording System), which sets the recording levels from a compatible Kenwood CD player automatically, after sampling the disc to establish the highest signal level.

Tape tuning is limited to a slow-acting auto-bias adjustment, a half-way house that helps minimise distortion, but which is only fitted to Deck B. The Kenwood is not

designed to record on metals, and the meters cover a short 23dB. On the plus side, the tape counter includes a zero stop feature for each transport, and automatically synchronised recordings are possible from compatible Kenwood CD players, with selective track editing. The deck will also link into a Kenwood-brand system for full remote control operation.

Both transports suffer noisy mode engagement, but varying levels of play (and record)-mode noise. Deck A is reasonably quiet, but Deck B suffers an intrusive droning noise, and other chirrups in the fast-wind mode. Ergonomics are marred by a long row of identical buttons to perform many tasks, plus obscure multi-function level-and-associated-mode controls.

**Sound quality**

Sound quality is surprisingly competent for a unit of this price, but the Kenwood has limited headroom, and bright-sounding source material should not be allowed to peak much above OVU on the meters. The deck sounds clean and open once bias has been set up: there is a rather glassy, sharp presentation with strong detail resolution to match, though the bass sometimes seemed shallow and resonant. I made a tonally-accurate Type-II-tape facsimile of Jennifer Warnes's *Big Noise, New York*, though bass was rather syrupy.

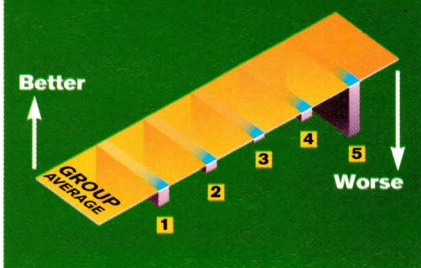
I noticed similar virtues when making normal-speed Type II tape-to-tape dubs, even though these tended to be somewhat brash and metallic, with a moderate loss of fine detail. High speed dubs resulted in an additional loss of treble, a squeezing effect on stereo imagery, and a further loss of stability, but these findings are about average for an inexpensive twin-mech machine. **AC**

**THE LAB REPORT: KENWOOD**

Squeezing two transport mechanisms into a budget recorder usually exacts a toll. Typically, the choice of (dual) record/playback heads ensures that costly metal tapes are easily out-performed by premium pseudochromes as the record heads simply cannot sustain high levels at the elevated, Type IV bias position. So it is with the KX-W6080 where distortion increases from 0.6 to 0.8 per cent with ferric/pseudochrome tapes respectively before leaping to 2.2 per cent with metal tapes, all else being equal. Furthermore, the huge +7.8dB MOL for ferric tapes (ably employed by the likes of TDK AR) is reduced to just +2.0dB with TDK MA or Sony Metal Master.

Sure enough, the deck is slightly over-biased in the Type I position and under-biased with Type II and IV tapes. This does exaggerate the differences between ferric and metal tapes, the latter seeing a rising HF that peaks at 10kHz (+2dB) before dropping away to give a -3dB point of 17kHz. Nevertheless, the fact remains that the widest dynamic range and lowest distortion are still achieved by sticking with good quality pseudochromes like TDK SA and Maxell XLII, rather than shelling-out unnecessary sums on metal tape. A truism that extends to virtually every other deck in our test, I might add. *PMi*

1	SPEED STABILITY	-10%
2	AUDIBLE HISS	-5%
3	DYNAMIC RANGE	-1%
4	TREBLE OUTPUT	-5%
5	DISTORTION	-35%



**KENWOOD KX-W6080 - VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £199.95

On the whole, this is a more-than-viable £200's worth, despite being excessively large, having sham-bolic controls and feeling slightly flaky. Nevertheless, the features count is very strong, and performance exceeds the limited expectations at the price.

Kenwood Electronics UK Ltd, Kenwood House, Dwight Road, Watford, Herts WD1 8EB  
 (01923) 816 444





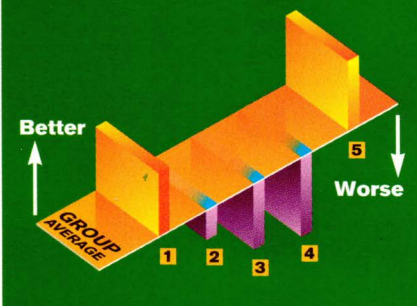
**THE LAB REPORT: NAD**

It is possible to engineer a flat response from this recorder by tweaking the Play Trim facility to +3 to +4dB for ferric tapes, and between 0 to +1dB for pseudochromes, always assuming that your choice of tape adheres to the IEC specification. TDK's D and Maxell's UDII make two good choices for Type I and II respectively but if the Play Trim facility is set too low then expect a distinctly dull-sounding and lacklustre performance from your recordings.

This serves to highlight the poor set-up of NAD's 616 which, in its 'default' state, is so over-biased in the ferric position that its MOL reaches +7.8dB while its SAT plummets to -5.9dB. This suggests that while a strong bass line will just be ticking over, any accompanying percussion or brass may be plunged into compression. Tape hiss, meanwhile, at -52.8dB, is still a few dB behind the better conventional decks in our test.

Otherwise, the over-biasing does reduce levels of bass/mid distortion to 0.5 and 0.35 per cent (ferric/pseudochrome, respectively) while the excellent speed stability of its transport(s) ensures that its recordings are, if nothing else, free from the ravages of wow and flutter.

1	SPEED STABILITY	45%
2	AUDIBLE HISS	-20%
3	DYNAMIC RANGE	-45%
4	TREBLE OUTPUT	-55%
5	DISTORTION	50%



**NAD 616**

For those befuddled and bemused by the complications inherent in twin decks, here is an almost-perfect antidote: a twin player that even hi-fi reviewers like yours truly can understand. The control count is surprisingly low, though most of the usual and essential facilities are present, including Dolby B and C noise reduction and HX Pro. However, unlike some of its competitors, this deck records on only one of its twin transport mechanisms.

Tape dubbing is possible at either normal or double speeds — quality or convenience options, respectively. NAD's taping feature 'play trim' even operates during dubbing to 'correct' frequency response errors due to azimuth differences between record and play decks, or because the source tape has become partially erased through heat or being left near a loudspeaker, for example. Play trim is a useful emollient measure, but it is also potentially hazardous, presenting another way to degrade recordings if it is administered without proper care.

There are some unfortunate simplifications, such as the single tape counter that must be switched between transports, the lack of any clear indication on the front panel that Deck A doesn't record, and the coaxial record-level and balance control which makes it too easy to mis-set balance inadvertently.

The record-level meters have a limited (though perfectly usable) 26dB dynamic range, but potentially more serious is the omission of a timer standby feature. Also there is no headphone socket, and no taping aids — not even a manual bias adjuster. The most serious flaw, however, is that the Dolby circuit defaults to 'off' every time the power is switched off. This is cer-

tain to result in errors, especially as Dolby B is a prerequisite for the playback of commercially recorded material, and noise reduction of some form is pretty much mandatory when recording.

**Sound quality**

The two tape transports are mechanically quiet, and sound-quality is not without promise. Some masking of fine detail was noticed at lower levels, probably due to transport flutter; also there was some dropout with metals, a tape type with which the NAD copes uneasily. But piano transients are handled effectively, and dynamically the NAD is on firm ground, especially with metal tapes, despite some coarseness and granularity. Chrome-bias tapes generally sounded softer than others.

It was the NAD's performance with piano recordings, however, that was concerning: there was just a lack of solidity to the presentation. Some recordings sounded noisy and compressed, even with Dolby C, and the Play Trim control was mis-set on the test sample, and had to be adjusted to around the +3 mark for accurate record/playback tracking. High speed dubbing performance was strictly bottom-drawer, with severe muddle and losses of clarity, but the deck was modestly successful when dubbing at normal speed. *AG*

**NAD 616 - VERDICT**

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £299.95

❏ This primitive deck lacks some basic features — the ability to remember the Dolby setting is the most spectacular own goal — and simply isn't set up to the standards one would expect at this price.

✉ The Audio Club, Adastral House, 401-405 Nether Street, London N3 1QSG  
 ☎ (0181) 343 3240





**PIONEER CT-W806DR**

The CT-W806DR is a *tour de force* of technological sophistication, principally in its use of digital signal processors and digital filters to perform many of the functions usually handled by custom (analogue) processors. These functions include Dolby B and C noise reduction and HX Pro headroom extension, but their digital implementation obviates the amplification of electrical hiss commonly encountered when performing complex equalisation in the analogue domain. The digital electronics also allow recording from a digital source using an optical digital input, with no need to set the record level. The digital converter employs Pioneer's Legato Link digital filter.

The list of features is bewilderingly long, but the highlights are that the deck has twin record-capable mechanisms and timer standby, allowing relay (sequential) play and record with timer-controlled starts if required. There are microphone and headphone sockets, each with level controls, and options for dubbing and parallel recording. 'FLEX' (Frequency Level Expander) aims to restore the usual frequency-vs-level characteristic for tapes whose high-frequency content falls off prematurely because they have become partially erased. 'ALCA' is an auto-level control for analogue and digital sources that incor-

porates an element of tape analysis; while BLE XD is a digitally-enhanced version of Pioneer's established bias, level and sensitivity auto-tape-tuning features. Phew!

**Sound quality**

In some ways, the new technology feels like work in progress, and assessing the deck proved frustrating, not least because it was clearly exceptional in some areas, yet poor in others. The good news should include strong digital-domain dubbing performance from digital sources, but I was unable to initiate a recording in the digital domain.

Even in the analogue domain, however, background noise was virtually absent, and dynamics were faithfully preserved, especially with metal tapes. Detail seemed strong too, but there was something a little too slick and easy about some of the recordings. With critical, densely-constructed material, the Pioneer sounded odd, with super-sharp transients, and little of the humdrum detail that invests music with a sense of reality and presence. Metal-tape performance, however, was clearly more open, vivid and detailed than when using chrome bias tapes.

Had the transports been up to the task this would have been an excellent, if uneven deck, but there were clear indications of wow and flutter, which led to uncertainty on piano transients and a characteristic grubbiness with high-frequency detail.

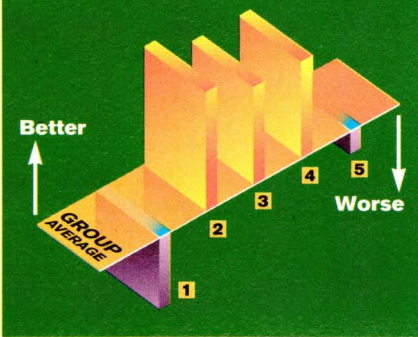
I was surprised to find that the CT-W806DR has no balance control, and that there was a degree of mild though uncorrectable channel imbalance when dubbing at either speed. This which was audible mainly as a shift in the sound-stage focus towards the left. Subject to the transport constraints, however, dubbing performance was good at both speeds. **AG**

**THE LAB REPORT: PIONEER**

For the full story of Pioneer's CT-W806DR, turn to my *Oasis* column on page 29. As far as this test is concerned, Pioneer's Digital Signal Processing provides some spectacular results. Not least is the apparent reduction in hiss from the usual 52-55dB anticipated from a ferric tape to a level of -78.4dB in this instance. Add Dolby C into the equation and hiss is reduced still further to -84.9dB. Sure enough, there's digital trickery at work, but the implication is that the CT-W806DR is one of the few decks able to make full use of high-MOL ferrics like TDK AR, extracting a potential dynamic range of 90dB! The other consequence of these results is that the bargraph readings for hiss and dynamic range are skewed firmly in Pioneer's favour.

Nevertheless, it's not all roses. Despite the fine electrical results, the overall performance of the deck is compromised by the very poor speed stability of its transport mechanism(s) — the worst in this test in fact. The deck runs 1.1 per cent slow (re. 4.76cm/sec) while suffering an extended series of flutter sidebands amounting to 0.1 per cent at 14Hz and 30Hz and 0.14 per cent at 50Hz. The high, low-rate wow, however, will probably exert the greatest subjective influence. So near, and yet so far. *PMi*

1	SPEED STABILITY	-50%
2	AUDIBLE HISS	85%
3	DYNAMIC RANGE	70%
4	TREBLE OUTPUT	70%
5	DISTORTION	-15%



**PIONEER CT-W806DR - VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £299.95

⊠ Exceptional (though uneven) electronics are let down by a transport whose wow & flutter content makes critical listening a trial. The instructions should be burned to avoid terminal user confusion.

✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough Berks SL2 4QP.  
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**YAMAHA KX-580SE**

Our token single-transport deck comes as a relief after the complications of the dual decks models. The Yamaha lacks much of the front-panel furniture exhibited on the other models in varying abundance, and it took a mental effort to re-acclimatise myself to reversing tapes half way through recordings, and only being able to record in 45 minute segments (using C90s). On the other hand, you do get Dolby S in addition to B, C and HX Pro, fine-bias adjust, a tape tuning feature, and a NAD-like-but-more-accurately-adjusted 'play trim'.

The tape-tuning feature, however, is not a complete all-singing, all-dancing system. It limits itself to adjusting bias and sensitivity only, and the tape is not wound past the leader, which must, therefore, be done manually. A headphone socket is fitted along with a level control; and there are various repeat modes and a bi-directional intro-scan feature to play the first few seconds from each identifiable track.

The Yamaha's mechanism is not one of the quietest: transport modes slip in and out with strong clicks from the relays, and there is a muted, but high-pitched noise from the transport in play mode. Additionally, though

I would applaud Yamaha's decision to put minor controls behind a flap, the control legends are invisible if the deck is placed much below eye level — an unnecessary irritant.

The unique selling point here is without doubt the 'Special Edition' facia legend, which indicates the presence of enhanced-quality passive components as used in an increasing number of amplifiers and CD players, but which were until recently an extreme rarity in cassette decks.

**Sound quality**

The Yamaha sounds less than perfectly set up as standard: there is a perceptible lightening of tone with Type II and IV tapes with Dolby C and S alike, and recorded low frequencies lacked the fullness of their source counterparts. There was occasional dropout with metal tapes, and all tape groups suffered some loss of air and space when compared to the original. A smidgen of additional bias helped to counteract this effect.

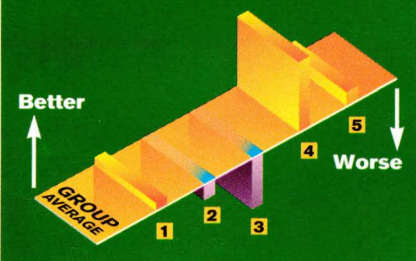
So the Yamaha KX-580SE is neither perfect, nor even the closest approach to perfection available at the price. It is, however, as near as you get in this test, making it an easy group winner. On the whole, its stability and image focus are of a different and superior order to the rest. With appropriate source material, recordings sounded transparent, subtle and highly detailed, offering a three-dimensional halo of acoustic presence barely hinted at by other decks. With Dolby S, on a subjective evaluation, hiss levels were broadly comparable with those of the Pioneer (a tribute to the Pioneer's digital signal processing) but better than the rest. Even Dolby B sounded quieter and more refined than most of the twins. *AG*

**THE LAB REPORT: YAMAHA**

The output amplifiers fitted to Yamaha's KX-580SE have an inherent treble droop of -2.3dB at 20kHz that is 'superimposed' onto the sound of every playback. However, after auto-tuning, many premium ferrics (including TDK AR and Maxell UD-ICD) are left with a +0.5dB boost to upper mid/treble that helps brighten the overall sound of recordings. By contrast, before the application of Yamaha's 'auto-tuning' widget, recordings on premium pseudochromes like TDK SA or Maxell XLII will sound bright. Remembering to apply 'auto-tuning' before recording on these tapes will result in much smoother, better-balanced copies.

Tape-tuning is also critical to obtain the optimum MOL/SAT balance. A decent ferric tape will enjoy overload margins of +5.7dB through bass/mid and -0.7dB through treble frequencies, respectively. This is a very fine result, as is the low 0.4 per cent distortion at 0dB (250nWb/m) which, incidentally, does coincide with the 0dB point on its meters. Transport speed stability is pretty good with 0.08 per cent wow at 6Hz and 0.07 per cent flutter above 14Hz. Hiss is also 'average' at -53.5dB and -58.5dB for Type I/II tapes, respectively, but this drops to a very low -71.7dB and -76.0dB with Dolby S in tow. *PMI*

1	SPEED STABILITY	5%
2	AUDIBLE HISS	-10%
3	DYNAMIC RANGE	-35%
4	TREBLE OUTPUT	50%
5	DISTORTION	10%



**YAMAHA KX-580SE - VERDICT**

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £250.00

☑ This is more like it: a single deck that triumphantly outperforms twin decks in every important performance parameter, and which is easier to use into the bargain.

✉ Yamaha Electronics UK Ltd, 200 Rickmansworth Rd, Watford, Herts WD1 7JS  
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Hi-Fi Choice March 1995



Photos: Paul Hanley Studios



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Malcolm Steward, Hi-Fi Choice February 1996

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Listener Magazine (USA)

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# CONCLUSIONS

We set out to answer a question: does it make sense to buy a twin cassette deck, or is it better to stick to single-transport decks, as traditionally recommended to those whose concerns are primarily centred on sound quality? On the basis of our test, the answer is unavoidable. In each case, the twin deck was undermined by myriad weaknesses, of which the most common were transport related. No matter how good a recording may be in terms of signal-to-noise ratio, distortion or frequency response, or any other static measure of musical performance, if the pitch of steady notes varies, it isn't good enough. A useful metaphor would be with cars, where



Denon DRW-580

well-honed dynamic performance is completely pointless if the brakes can't cope.

Of course this is not the whole story, and some of the models tested were better than others. A couple of the twins were sufficiently capable all-round to be worth considering, and one, the **Kenwood**, has received a formal endorsement in the form of a Recommended tag. There can be no doubt that in sound-quality terms, at this price level, you're still better off with almost any single transport deck; but it will be a different story if you're interested in functionality.

The fact remains: with or without critical endorsement from organs such as this, dual cassette decks will continue to sell well because they provide a service that many people require, which cannot be performed by a single-mech cassette deck. These tasks include making long, uninterrupted recordings, either two or four times as long as those which can be captured on a single deck. The twin-deck manufacturers also seem to have realised that creative live



JVC TD-W718



NAD 616

recording is not a completely dead activity, and two of the models tested (the **Pioneer** and the **JVC**) have microphone sockets. Again, an automotive analogy comes to our rescue: if you have a lot of boxes to carry around, an estate car is the preferred tool for the job. Just be aware that you will not get sports-car handling and performance.

Of the models tested, the **Denon DRW-580** is a disappointing, erratic performer that simply doesn't cut the mustard in this test, price notwithstanding. The **NAD 616** also falls by the wayside; the omission of a Dolby status memory is an unforgivably cheapskate omission (ironically one that Denon promulgated some years ago), but



Kenwood KX-W6080

this is a comparatively crude deck anyway. The **Pioneer CT-W806** is a much more talented performer, which in many ways is irresistible. It is technologically sophisticated, and its capabilities are far in advance of its competitors. Only an audibly erratic transport pulls it up with a bump.

At £300, the **JVC TD-W718** is well worth considering, especially for those interested in live recording, but the lack of timer standby will rule it out for many.

## Recommendations

**Kenwood's KX-W6080** offers a level of musical attainment not a zillion miles removed from the JVC TD-W718. It has a more even (though not necessarily better) spread of features, in a package costing just £200, and it is the only twin deck to earn a

formal Recommendation here. The Kenwood's transport section outperforms most of the other twins, its character is sharp (sometimes too sharp) and detailed.

The sole single-transport representative, the **Yamaha KX-580SE**, is another clear Recommendation. This is a transparent-sounding and detailed performer with a solid transport, though some will find the front panel layout annoying. In short then, single decks still hold the high ground when it comes to sound quality.



Yamaha KX-580SE

## Best of the rest

One intriguing alternative to a twin cassette deck is to use two single cassette decks connected via an amplifier with two tape circuits and support for cross-dubbing. This configuration will facilitate pretty much anything a twin-deck could do, short of high-speed dubs, auto-reverse (possibly) and long, unattended recording. High-speed dubbing is best avoided anyway; real-time dubs invariably sound a lot better. Naturally you'd pay more for this kind of set-up, but not necessarily a fortune, and it can make sense to divide the budget

so that one deck has the highest possible performance for normal recording and playback. For the secondary deck, think in terms of the **Aiwa AD-F450** (£120), probably unequalled at this price; primary deck candidates could include the **JVC TD-R472** (with auto-reverse) at £200, or the **Yamaha KX-490** at £199. **Aiwa's AD-WX727** is a twin-deck alternative at £170. ▲



Pioneer CT-W806DR



# The Amp champs

**Alvin Gold** (listening tests) and **Paul Miller** (lab tests) give 12 budget amplifiers the rigorous Hi-Fi Choice review treatment.

**F**rantic is the pace of life here at HFC Towers! We had barely put to bed the last group of mid-priced integrated amplifiers (HFC 168) when work was starting on this month's test of 12 budget integrated amplifiers. In price they range from £130 to £300, which means that all qualify as starter amplifiers for inexpensive systems. A handful of the more expensive models on test have ambitions to be taken seriously as audiophile contenders.

One question arises with amplifiers such as these: how does one distinguish between them? Some have tone controls, others sport tacked-on features, another lot limit themselves to a minimalist complement of controls, say source selection, volume control and an on/off switch. Power ratings vary too, over a four-to-one range in the case of this month's test group. If you've done your homework you'll already know that one can't have too much power, and gadgets like tone controls tend to cause nervous tics among those who hand out learned advice from on high. Hey presto, a ranking order can suddenly be imposed on the apparent chaos. We know how to choose amplifiers: it is simply a matter of maximising power output and minimising the number of unnecessary gadgets. Problem solved.

Unfortunately, life is rarely so simple. First, the real-world power output of amplifiers rarely correlates to their printed specifications. This is partly because the specs are rarely stated in exactly the same terms by different manufacturers, but mainly because the power ratings tend to be given for ideal circumstances, that is, when driving a sine wave into a large value resistor of the stated value, rather than the more complex real-world picture of a reactive,

## THE CAST LIST

MODEL.....	PRICE .....	PAGE .....
AMC 3025a .....	£129.95 .....	p75
Creek 4330 .....	£279.00 .....	p89
Denon PMA-250SE .....	£159.99 .....	p77
Kenwood KA-5090R .....	£299.95 .....	p91
Magnum IA120 .....	£265.00 .....	p93
Marantz PM-57 .....	£199.90 .....	p83
Musical Fidelity E1 .....	£199.00 .....	p85
NAD 312 .....	£199.95 .....	p87
Pioneer A-204R .....	£159.95 .....	p79
Rotel RA-931 .....	£149.95 .....	p81
Sony TA-F448BE .....	£249.99 .....	p95
Yamaha AX-592 .....	£279.95 .....	p97

capacitative and resistive loudspeaker load, whose characteristics are constantly changing with the ebb and flow of the music signal. There is no room for a treatise on this here: it is enough to say that rated power output figures are very poor indicators of practically-achievable volume levels. In any case there is no guarantee that sound quality and power output are correlated. Worse, although there is a kind of inverse relationship between unnecessary gadgets like tone controls and sound quality, it is a very casual one indeed; and as you will read, some of the best amplifiers in this month's group are relatively well-featured. Now read on!

## HOW THE TESTS WERE DONE

**O**ur 12 amplifiers were subject to a full battery of tests, including a physical examination, unsighted panel-based listening tests in a high-grade system, hands-on listening using a range of speakers and source components, and a computerised measurement test programme. Each amplifier was warmed up prior to being auditioned. This represents the most searching battery of tests that any magazine uses to judge products.

Panel testing was conducted over two days, and included a number of repeats, with the panel not knowing the equipment's identity. Levels were equalised between tests. The system used for these tests included a Copland CDA-288 CD player (recently revised), Definitive Technology BP2002 loudspeakers, and Nordost cables. The hands-on listening included a number of loudspeakers: Tannoy Mercury M2s, B&W 805s, and an unnamed prototype two-way floorstanding speaker. Other source components used included a Roksan Caspian CD player, an Alphason record player with Goldring moving magnet cartridge, and Mana supports. A Roksan Caspian amplifier was used as a point of reference.

### WHAT MUSIC DID WE USE?

**Dohnányi Scherzo: Symphonic Minutes Op. 35**, Matthias Bamert/BBC Philharmonic Orchestra on Chandos CHAN 9455.

**Liszt: Mephisto Waltz #1**, Nojima on Reference Recordings RR-25CD

**Evan Dando with Juliana Hatfield: My Drug Buddy** from *Rare on Air – Live Performances* on Mammoth MR0074

**Jennifer Warnes: Big Noise, New York** from *The Hunter* on BMG/Private Music 261974  
Plus various others for hands-on testing.

### THE LISTENING PANEL

Our usual sincere thanks for the skills and valuable time contributed by our listening panel, industry luminaries one and all, who were **David Inman** (The Audio Marketing Department), **Alan O'Rourke** (Ruark Loudspeakers), **Roger Batchelor** (Denon), **Julian Maddock** and **Robin Marshall** (Mission) and **Alan Sircom** (Hi-Fi Choice).





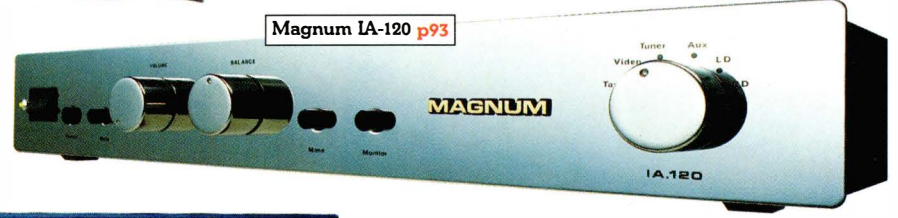
AMC 3025A p75



Denon PMA-250SE p77



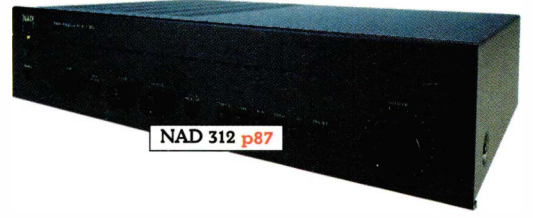
Kenwood KA-5090R p91



Magnum IA-120 p93



Creek 4330 p89



NAD 312 p87



Rotel RA-931 p81



Musical Fidelity E1 p85



Marantz PM-57 p83



Sony TA-F448EB p95



Pioneer A-204R p79

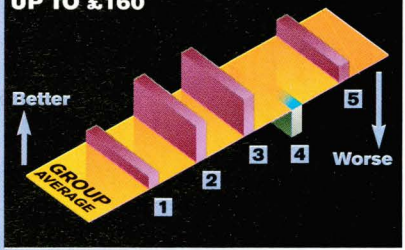


Yamaha AX-592 p97

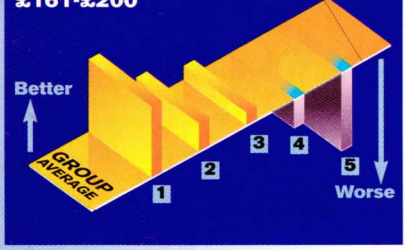
**UNDERSTANDING OUR BAR-GRAPHS AND GROUP AVERAGES**

There will be significant differences between the cheapest product in our test and the most expensive. For this reason we always segregate our test candidates into two or more categories based on price. Our aim is to assess every product's performance in the context of its closest rivals. Each lab-report panel is colour-coded according to the key given below:

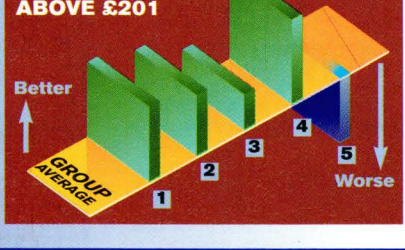
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Our Technical Editor, Paul Miller, has been awarded Test Innovator of the Year by Test magazine, the leading European journal of the test and measurement industry. This gong came in recognition of Paul's Jitter Measurement Suite, as used to test CD players for *Hi-Fi Choice*.



**UNDERSTANDING OUR BAR-GRAPH MEASUREMENTS**

The measurements behind *Hi-Fi Choice's* unique bar-graphs 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.

- 1 Dynamic Power Output**  
A measure of power up to one per cent distortion under realistic, music-like conditions, using a brief (20msec) transient signal and a model eight Ohm speaker load.
- 2 Speaker Load Tolerance**  
This indicates how ably the amplifier maintains a given level of performance into progressively lower-impedance and difficult speaker loads.
- 3 Audible Distortion**  
Rather than quote a single figure for distortion at one frequency and level, this bar value represents a measure of distortion and its consistency across both the whole audio band and the amplifier's entire dynamic range.
- 4 Noise**  
This is a direct representation of the amplifier's A-weighted Signal-to-Noise (S/N) ratio at 1W output into a model eight Ohm load.
- 5 Susceptibility to RFI**  
Various forms of Radio Frequency noise can induce audible, dynamic variations in the amplifier's S/N ratio. A susceptibility to this effect is demonstrated by a negative-going bargraph.



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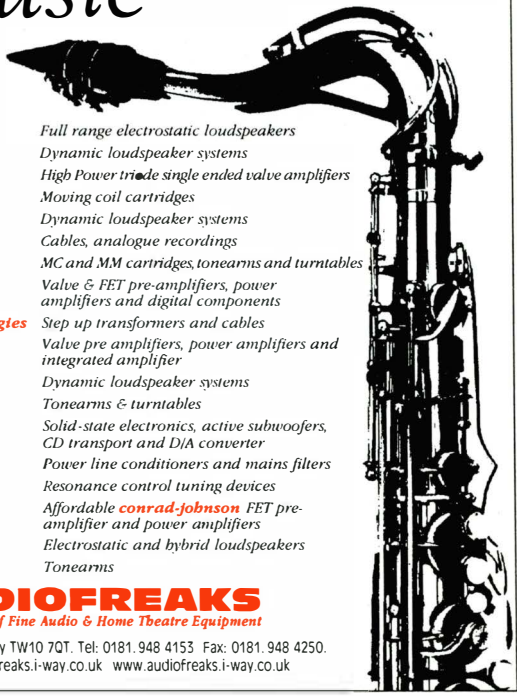
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# AMC 3025a

This 3025a is the lower-power version of the AMC 3050a, which was itself reviewed in our last look at budget integrated amplifiers (HFC 167). This little brother is rated at 30 Watts into eight and four Ohms; its beefier sibling claims to raise 45 Watts into eight Ohms, and a significantly more powerful 80 Watts into four Ohms (manufacturer's figures). To paraphrase the 3050a review, the ghost of NAD is almost palpable. The amps have the same dark-grey fascia colour, which is practically a NAD trademark, and sure enough AMC equipment (note the almost NAD-like name) turns out to be made in a NAD production plant.

There is no NAD-style soft clipping, but some of the remaining facilities have a familiar ring, including a removable pre- to power amp link at the back and tone controls which can be bypassed using the 'direct' position of the normal/mute/direct control. One feature, however, is very un-NAD like at this price, which is the provision of a remote control, albeit a very simple one which addresses only the volume control and the non-tape-related input selection.



There are inputs for phono (MM and MC), three line-level components and tape monitor. There is also a rear-channel switch to select between four and eight Ohm loads, in the former case to maximise Watts, in the latter to optimise current delivery. Given that there was no apparent shortage of power to drive virtually any of the loudspeakers tried, even in the four Ohm position, this was the setting used for most of the listening.

### Sound quality

The 3025a has a rather bland overall character, with strictly limited midband resolution, a shallow yet rich bass and a soft, recessed treble. All panelists mentioned these traits, apart from one who bucked the trend by being somewhat more enthusiastic.

Although it was marked down for its lack of positive virtues, no-one seemed to think it unpleasant in any way, which is probably worth bearing in mind when looking at its unimpressive overall scoring. "Bass rather uninteresting", wrote one of the Jennifer Warnes song. When playing *My Drug Buddy* by Lemonheads' Evan Dando with Juliana Hatfield, the AMC was dismissed as "a little too nice", with an acoustic guitar that was "just too smooth and lacking in sparkle". In the powerful

Liszt piano piece another listener noticed that the sound appeared to emulsify during more complex passages.

My own listening with conventional passive speakers, including typical budget compacts like the Tannoy Mercury M2, suggested that although the sound never becomes catastrophically aggressive, it does sag and become congested when the amplifier is stressed. Ironically, it is easier to find these limits with budget speakers like the Mercury than with the big and unusually sensitive Definitive Technology BP2002 used for the panel tests, which even at moderately high volume levels barely raised a bead of sweat on any of the amplifiers tested.

### Conclusion

Whatever reservations one may have about this amplifier, the fact is that it offers a lot of usable power and some useful facilities, including a serviceable phono input and remote control, for a low price. The 3025a may sound soft and muddled in extremes, but it had a firm grip on music, and it never sounded offensive. Recommended. AG

### VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★★★★  
**PRICE** £129.95

Not an ideal budget amp, but a sensible choice where sweetness and creative masking are the priorities of the day. It can be soft-centred and muddled.

Tangent Acoustics UK, 115 New London Road, Chelmsford, Essex CM2 0QT.  
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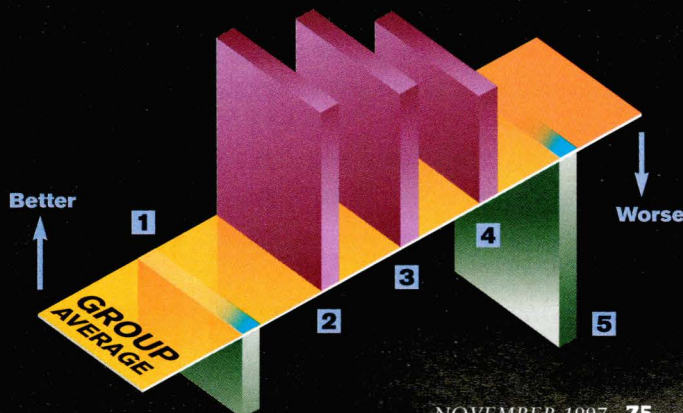
## THE LAB REPORT

Affordable it may be, but the 3025A performs much more like AMC's costlier 3050A than, say, the 3030A (HFC 167 and 168 respectively). The overall power output is a little lower at around 45W/8 Ohms but its tolerance of difficult speakers remains exceptionally good. Under dynamic conditions, this little amplifier will surprise most budget loudspeakers with its 56W/97W/142W/173W output into 8/4/2/1 Ohm loads respectively.


Furthermore, distortion stays remarkably consistent at 0.02 per cent right across the audioband and over a good 90 per cent of its dynamic range. The nature of this distortion, however, alters subtly from 2nd harmonic at low frequencies to a mix of 2nd and 3rd harmonics through the upper midrange and treble frequencies. In another remarkable parallel with the AMC 3050A, this amplifier also exhibits an astonishing 90.5dB S/N ratio at just 1W/8 Ohms — second only to the Yamaha in this survey and almost 10dB ahead of the Denon in this same group. The 3025A appears to be slightly more susceptible to spurious RF than the 3050A, but all things being equal I would have expected it to perform just like its (Recommended) bigger brother, albeit with fractionally less 'grunt'. PM

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-35%
2	SPEAKER LOAD TOLERANCE	75%
3	AUDIBLE DISTORTION	65%
4	NOISE	45%
5	SUSCEPTIBILITY TO RFI	-80%







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# Denon PMA-250SE

The PMA-250SE replaces the now defunct PMA-250III, and is the junior of the PMA-350SE (Recommended HFC 162), which is a more powerful and expensive design with a minimalist control scheme. The PMA-250SE is clearly designed to attract customers who cannot be channelled towards the PMA-350SE, and the amp is equipped with tone controls, an extravagance that the necessarily limited parts budget in the amplifier can ill afford. If you can bear to manage without, it is best to use the Source Direct bypass switch.

There are few other unnecessary gadgets. You can connect headphones or a single pair of speakers, but there is no phono input as standard, and surprisingly there is no tape-monitor facility either. Five line inputs (including one tape circuit) are available, but a moving-magnet phono input can be retro-fitted by Denon for just £14.99, and the amp is also available pre-fitted in this form for £174.98.

Packaging is not exactly radical, but the necessarily lightweight build and rather plasticky control feel is at least balanced by good finish. Design improvements over the PMA-250III are claimed to include tweaks to the power supply, current delivery and to



the main amplifier topology, as a result of a design programme which was carried out in the UK in conjunction with Denon's head office in Japan.

## Sound quality

The panel scored the PMA-250SE reasonably well (averaged over two sessions), and clearly enjoyed listening to it, but with certain reservations. On the plus side, it was felt to be lively and natural, well-integrated and open-sounding. The principal causes of complaint, such as there were, included rather flat stereo perspectives and some degree of congestion through more densely scored passages.

"Good attack and control" was a representative view following the Liszt presentation, "but the higher notes sound slightly forward and edgy". The Jennifer Warnes track was described as "open, detailed and underpinned by a bass line that flows well and is easy to follow" by one; and as "open, free-sounding and clean" by another. Just one listener demurred with the comment that the clarity and detail inherent in the recording were not really apparent.

My hands-on testing generally confirmed the panel's findings; if anything it extended them by suggesting that the PMA-250SE reacts rather more to different loudspeaker loads than some of the competition (or, if

I remember, from earlier samples of the same amplifier). In the wrong combination, this PMA-250SE could sound rather uneven and opaque, and the amplifier is only moderately powerful. It would be quite easy to push it over the edge.

Nevertheless, the predominant impression left by the test programme was of a relaxed, easy-going and enjoyable amplifier. Fine detail is neither obscured nor emphasised, and the whole effect can be very easy and natural, especially with small instrumental forces, and at modest volume levels.

## Conclusion

This is not an amplifier for every purpose, but the PMA-250SE works well when the volume control is not used too enthusiastically. It is advisable to think in terms of fairly sensitive speakers and medium-sized rooms. It is no powerhouse, nor was it meant to be. The tone controls have an unfortunate effect on the sound, depriving it of stereo focus and transparency, but if they are bypassed, the amplifier easily meets the requirements for Recommendation at the price. *AG*

## VERDICT

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £159.99

A talented, if only modestly powerful amplifier that can sound mature beyond its price. It has limited real-world power output, and tone controls should be bypassed.

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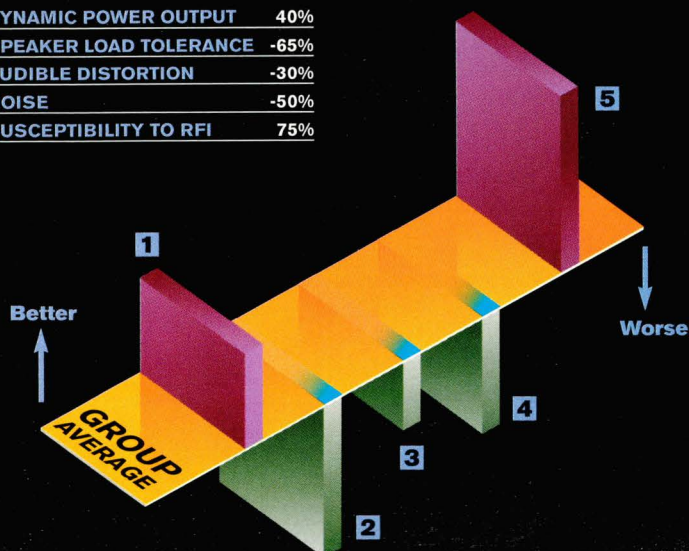
## THE LAB REPORT

Whatever the apparent merits of this amplifier, on the basis of my *objective* evidence, I feel I must temper the assertions made by Denon for its 'upgrade'. In particular, it claims "excellent load capability with 10A peak current rating" and "lower feedback provides greater stability and superior load matching". On the one hand, the PMA-250SE certainly beats its 30W/8 Ohm rating with some 55-59W/8 Ohms across the audioband (single-channel) and does, indeed, achieve an *rms* current rating of 9.3A into 1 Ohm. Nevertheless, referring back four years to my review of the PMA-250III (issue 121) demonstrates that the latter model could deliver 14.1A under the same conditions. In fact, it was the PMA-250II (issue 80 — three and a half years earlier) that first had a current capacity of 9A!

Meanwhile, the increase in output impedance (0.047 Ohms to 0.17 Ohms) and distortion (0.0018 to 0.06 per cent), suggests this PMA-250SE evidently employs less overall feedback. Perhaps as a result, its speaker tolerance could be hampered by the steady increase in distortion with decreasing load (reaching 0.7 per cent into 1 Ohm) and its fading output beyond 4 Ohms or so as the 81W/130W/106W/86W 8/4/2/1 Ohm figures, respectively, clearly demonstrate. The PMA-250, it would seem, is no spring chicken. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	40%
2	SPEAKER LOAD TOLERANCE	-65%
3	AUDIBLE DISTORTION	-30%
4	NOISE	-50%
5	SUSCEPTIBILITY TO RFI	75%





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# Pioneer A-204R



Pioneer's inexpensive new A-204R is undercut only by the Rotel RA931 and AMC 3025a in this test, but boasts a specification including three line inputs and MM phono input, two tape circuits with tape monitor, plus tone and loudness controls and a worthwhile 'direct' switch to bypass the widgets. Also included is a remote system control. The A-204R has the excellent standards of finish expected of the marque, though the metalwork is fairly flimsy. Quoted power output is a relatively modest 25 Watts (eight Ohms, 0.1 per cent THD, 20Hz-20kHz), with a barely significant increase in output into four Ohms, and the price is just £160.

There is silicon intrigue under the hood in the Wide Range Linear Circuit, a "sophisticated feedback configuration" originally introduced in the A-400X (*HFC 138*), and which forms the basis of the circuit used in the A-300R Precision (*HFC 162*). The A-204R is also said to be capable of driving low impedance loads, though neither listening tests nor four-Ohm power-output specification lend much credence to this claim.

## Sound quality

In keeping with our reviewing practice, this model was tested twice, the second time at

the end of the second day's listening. It was interesting to note that some of the second-round scores were lower than those awarded first time round. Indeed, one panel member declined to give a score on the second test run. On its first canter out of the stables the A-204R attracted an excellent set of scores, but on average its performance was probably marked down overall. Nonetheless the nature of listeners' comments, both positive and negative in tone, were similar throughout the two test runs.

Principal complaints were of the sound possessing "muddiness and confusion" (Dohnányi); of a "monotonous, arm's length" quality (Liszt); and of "indistinct vocals" (Jennifer Warnes). But these comments were in the minority, and the Pioneer was also praised for its overall balance and solid musical architecture. "The piano sounds natural, with a believable acoustic and ambient information, and good timing" said one; while another wrote of the "clarity of the guitar strings", and the way in which the "expressive quality of the vocals" came across (Lemonheads with Juliana Hatfield). Good control in the bass was also singled out for praise, especially in the Jennifer Warnes track, which can sound heavy and plodding given the opportunity.

Hands-on testing failed to dent the Pioneer's reputation significantly, though real-life power output into compact, relatively insensitive speakers is perhaps more limited than was obvious using the high-sensitivity speakers employed for the panel tests. The Pioneer was sometimes a little edgy and had what is best described as a hollow coloration with material as varied as Bach on piano (Rosalyn Tureck) and the song *Cool Water* (Joni Mitchell).

In passing, it was intriguing to note that the (bipolar) A-204R performs somewhat more satisfactorily at the price than the (MOSFET) A-605R, a senior model from the same range (tested *HFC 168*).

## Conclusion

It's easy to pick holes in inexpensive amplifiers like this one, but at £160, the A-204R is a steal, partly because it is well equipped, but mainly because it just doesn't sound like a cheap amplifier, at least when used at sensible volume levels with compact speakers of, say, 88dB/Watts sensitivity or better in a medium-sized room. Recommended. AG

### VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★★★★  
**PRICE** £159.99

Clean, detailed and attractive music making in a low-cost, well-equipped package. Typical budget amp failings when extended, including loss of internal clarity and musical architecture.

Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough, Bucks SL2 4QP.  
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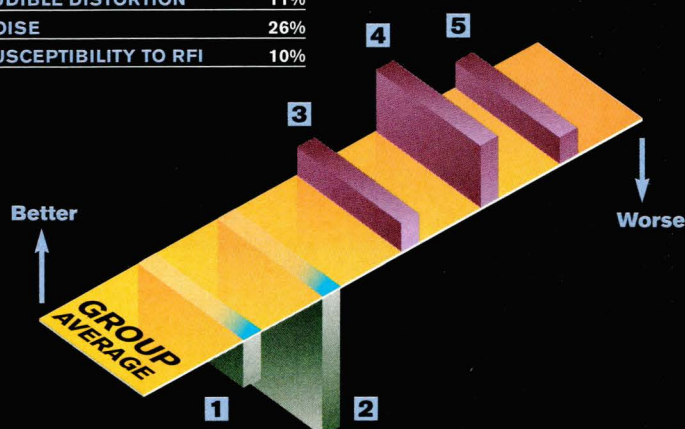
## THE LAB REPORT

The high 800pF input capacitance suggests Pioneer is taking the 'slug any traces of RF' route to EMC compliance rather than utilising an amplifier topology that is inherently insensitive to RF in the first place. There remains some mild sensitivity to RF at the low frequency end of the spectrum (5-9MHz), but otherwise, the A-204R looks like a very conventional and thoroughly dependable mass-market budget amplifier. Power output is optimised for easy-going loudspeakers with a continuous 46-49W available into 8 Ohms, peaking at 64W under dynamic conditions. The output impedance is also a little high at 0.18 Ohms, so don't expect the crispest bass performance.

VI-limiting kicks in below 4 Ohms, ensuring that, volt-for-volt, the amplifier's output into sub-4-Ohm loads is at significantly higher distortion than at, say, 8 Ohms. Power also tails away at 95W, 90W and 73W into 4, 2 and 1 Ohm loads respectively. Otherwise, the mix of low 0.0056-0.018 per cent distortion, very low -88.7dB (re. 1W/8 Ohm) noise, a healthy 11V input overload margin and fine 0.2dB channel balance error at -60dB, all suggest the A-204R offers good, reliable value for money even if it's unlikely to set the world alight. *PMi*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-20%
2	SPEAKER LOAD TOLERANCE	-60%
3	AUDIBLE DISTORTION	11%
4	NOISE	26%
5	SUSCEPTIBILITY TO RFI	10%







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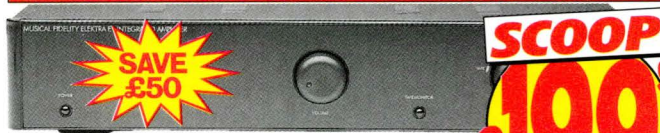
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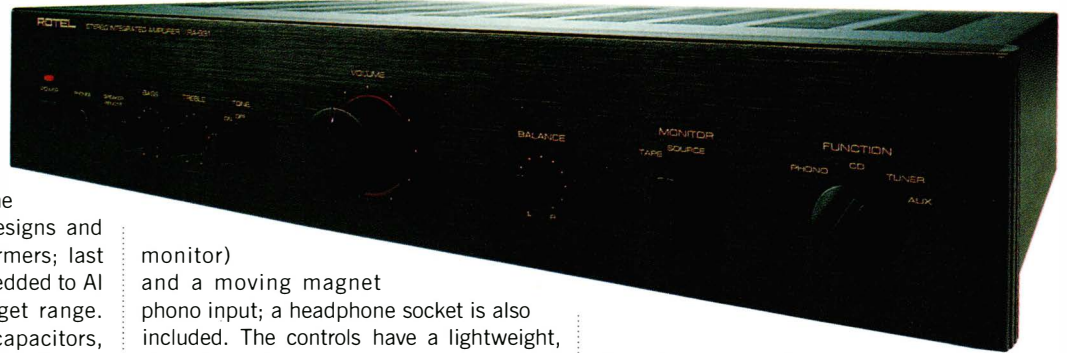


# Rotel RA-931

Rotel's amplifier range has presented an apparently unchanged face to the world for quite a few years, but under the skin things have been moving on. A sign on the back of the RA-931 attests that it is made in China, and the company now boasts that it designs and makes its own toroidal transformers; last time I looked Rotel was firmly wedded to Al frame transformers in its budget range. Other components, including capacitors, have also been specified. However, despite all these changes, Rotel has chosen to stick with the admittedly neat aesthetics that have become a family feature.

The company has also elected to continue with a comparatively full specification, which includes tone controls (with a narrower than usual +/-6dB operating range, and a bypass switch), and switching for one of the two speaker circuits. The (nominally) main speaker pair, however, remains hard-wired and cannot be switched off, and there is a small but significant benefit in bi-wiring to these terminals rather than using the switchable set or mixing the two.

The input complement consists of three line inputs, a single tape circuit (with tape



monitor) and a moving magnet phono input; a headphone socket is also included. The controls have a lightweight, plasticky feel, but the shaped control tops used for all but the volume control are welcome, and the amplifier gives every indication of being well built. Rated power output is 35 Watts into eight Ohms and 45 Watts into four Ohms, both 20Hz - 20kHz.

## Sound quality

With an average score from the panel, the RA-931 was seen as an amplifier that broadly lived up to, but didn't transcend, its price limitations. It was said to have a musical character that is rather dry and lacking in subtlety, as well as a propensity to irritate thanks to an excessively sharp top end that allowed rim shots to ring out, yet which paradoxically sounded dull and forced at other times.

The amplifier was praised, however, for its good timing, and for the quality of its bass: "the left-hand playing sounds good — mellow and sharp" wrote one of the Liszt *Mephisto Waltz No.1*, which is a testing recording even for amplifiers more exotic than this. The latter comment was partially confirmed by another panelist who felt that the Rotel sounded "strong on bass extension, but poor on dynamics". Another

described the piano sound overall as "dull and lifeless" with some deterioration in the louder passages (a point directly echoed by others). On *My Drug Buddy* from Lemonheads with Juliana Hatfield, the male vocal was variously thought to be "boxy" and "recessed", again with some "hardening on peaks".

This is indeed a dry and rather literal-sounding amplifier, but in many ways a very credible one. Ultimately, however, it lacks a touch of common warmth and grace, the qualities that separate a fine simulacrum from something that gets up on its hind legs and sings. The main failing is undoubtedly in the upper midband and treble, which has plenty of presence, but lacks transparency and can sound rather edgy and mechanical.

## Conclusion

Here is an amplifier that promises much, and which is undeniably attractively priced and well-specified. For all the apparent bonuses, however, the RA-931 ultimately fails to deliver, thanks in particular to an unyielding mid/treble and an undistinguished bass. *AG*

## VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £149.95

⊞ Cheap, well presented and adequately endowed, with crisp, lively sound to match. It lacks resolution and can sound hard-edged.

✉ Gamepath Ltd, 25 Heathfields, Stacey Bushes, Milton Keynes, Bucks MK12 6HR

☎ (01908) 317707

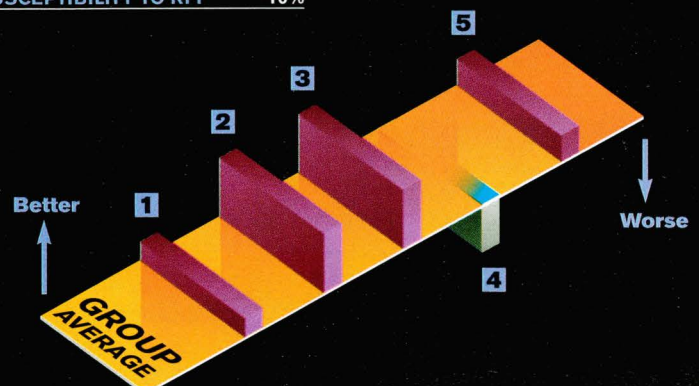
## THE LAB REPORT

This amplifier has an impressive pedigree, beginning with the RA-820AX, which I reviewed over seven years ago (*HFC* 80). This was superseded by the RA-930AX (*HFC* 104) and, latterly, by the RA-930BX (*HFC* 134). I mention this because the latest RA-931 bears very close comparison indeed. The 71W/8 Ohm dynamic output is identical, as is the 12A maximum current delivery, though evidence of VI-limiting at 2 Ohms becomes much stronger at 1 Ohm where THD is already 0.2 per cent at a dynamic output of 30W, increasing uniformly to 1 per cent at 121W.

The low 0.023 Ohm output impedance is gratifying but, in common with its predecessors, the power bandwidth is limited. For, though the RA-931 has an entirely flat frequency response (within +0.0/-0.1dB between 20Hz-20kHz) and will sustain 57W/8 Ohms at mid-frequencies, this does sag to 50W at extremes of bass and treble. Distortion is also a little high, rising to >0.1 per cent at HF, though its complement of 2nd and 4th-order harmonics may not be particularly disagreeable. Both the RA-930AX and 'BX shared these traits, I might add, though the newcomer's S/N ratio at 84.5dB places it squarely in between the performance of its forebears. *PM*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	8%
2	SPEAKER LOAD TOLERANCE	25%
3	AUDIBLE DISTORTION	25%
4	NOISE	-20%
5	SUSCEPTIBILITY TO RFI	10%







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- Integrated/ Pre/ Power Amp/ AV mode
- R.R.P. £650



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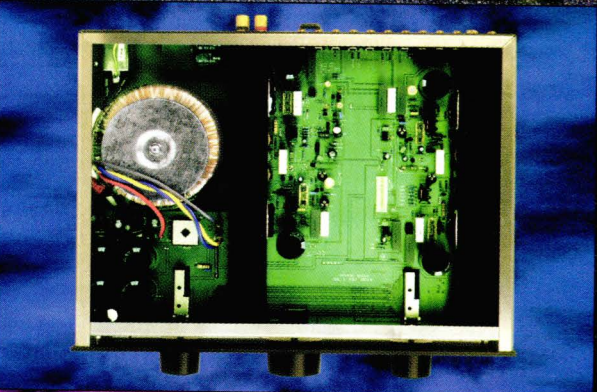
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- 300 WPC into 4 Ohms
- 450 WPC Bridged into 8 ohms
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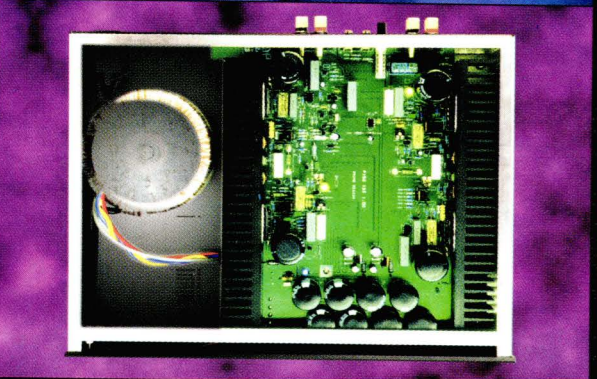


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- 2 Line Outs for External Devices
- Optional Phono stage available
- Full Electrical Protection



#### P-150 Construction

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# Marantz PM-57

The design priorities for the PM-57 are apparent: to be reasonably bulletproof and extremely flexible. Clearly, it is meant to sound good too, but sound quality is not the only agenda here.

Described in the accompanying blurb as a 'soft line' amplifier, the PM-57 has a well-filled fascia, with large input selectors across the top (three line, two tape and MM phono), and matching indicator LEDs. Just below, on an inset panel, you'll find a separate record selector, which allows any source to be recorded while another is connected to the speakers, and therefore automatically provides a tape monitor facility for either of the two tape circuits. The record selector has two additional switch positions allowing tape-to-tape dubbing in either direction, and an 'off' position, which yields a significant improvement in sound quality. Additional features include independent switching for two pairs of speakers, tone controls, tone defeat and loudness, plus of course balance and volume controls. The icing on the cake is a button-bound system remote-control handset, which additionally offers a 'mute' facility. Rear panel system control sockets are also fitted.

Clearly these features place the PM-57



alongside the Kenwood and Yamaha in this group for operational flexibility. Build quality and finish are excellent for the price. Rated power output is also reasonably generous, at 50 Watts per channel into eight Ohms, and 70 Watts into four Ohms (20Hz - 20kHz).

## Sound quality

Scoring consistently well in two sessions, the panel reacted to this design favourably, but with little enthusiasm. One listener referred to "moody sound and lack of bite — there isn't much going on at the top end, and it tends to shout in the midband". There was a consensus view that this is a smooth and powerful, if slightly coloured amplifier, but it does lack somewhat for ambience. "Uninvolving", wrote one of the Ravel excerpt; "safe and uninspiring" was the verdict on the Lemonheads' Evan Dando duet with Juliana Hatfield in *My Drug Buddy*.

The following comments were more representative: "good detail, sweet, expressive and musical, but slightly lacking in dynamics and flair". The latter comment referred to the Dohnányi, but in truth its tone was echoed by other panel members about each of the test tracks.

On the basis of hands-on listening I can

only agree with the panel. This is a smooth, attractive-sounding amplifier, but it fails to respond with the requisite enthusiasm to changing tonal and dynamic qualities. Instead, it tends to homogenise, or at least reduce the distinctiveness, of some music, especially those styles characterised by their high octane content or dense, complex structure. This is never a displeasing amplifier, but there were times when it didn't really rock and roll.

More specifically, my contemporaneous listening notes talk of a metallic, clanging piano tone, a lack of individuality with some vocal tracks, a "one-note" bass, and a loss of stereo depth information, especially near the centre of the sound-stage.

## Conclusion

While it becomes rather anodyne when stretched, the Marantz PM-57 is rarely less than enjoyable at other times. Many listeners might well choose it on the basis of its extensive feature list, and comparatively compact packaging for such a well-equipped amplifier. *AG*

## VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £199.90

Well finished, well kitted-out, and the price is not unreasonable. Lacks star quality, with suspect tonality, bass performance and imagery.

Marantz Hi Fi UK Ltd., Kingsbridge House, Padbury Oaks, 575-583 Bath Road, Longford, Middlesex UB7 0EH.  
(01753) 680868

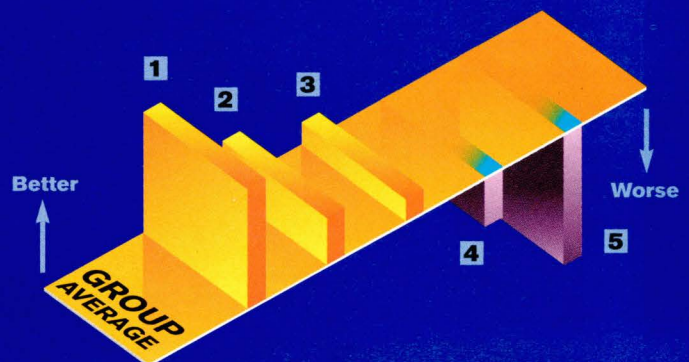
## THE LAB REPORT

Marantz's amplifier range is populated with a mixture of highly-tuned audiophile amplifiers and a number of equally powerful but apparently less specialised designs. Judging by the lack of a fanfare to announce it, the PM-57 would appear to fall into the latter camp. There's certainly no disgrace in the PM-57's 66W/8 Ohm continuous and substantial 91W/8 Ohm dynamic output; and yet its invasive protection circuitry limits peak current to just 5.3A/1 Ohm (28W) for bursts longer than 10msec. Should the musical transient last no more than 5msec, then some 16.6A (276W) is permitted to escape! Stick to easy-going speakers for optimum results.

The PM-57's power bandwidth is very wide, though the high 0.22 Ohm output impedance is likely to impair bass performance with some speakers. This may well have been introduced to ensure the amplifier remains thoroughly stable into capacitive loads, particularly as the very low 0.0014 per cent distortion indicates that plenty of compensation (feedback) is at work. Incidentally, distortion increases to 0.018 per cent at higher (treble) frequencies and higher power outputs. Otherwise, the 83dB 1W/8 Ohm S/N ratio is par for the course, as are the 11V overload margin and safe, 37 kOhm input impedance. It won't spring any nasty surprises. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	51%
2	SPEAKER LOAD TOLERANCE	20%
3	AUDIBLE DISTORTION	10%
4	NOISE	-20%
5	SUSCEPTIBILITY TO RFI	-55%





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# Musical Fidelity E1

**M**usical Fidelity has had simple sub-£200 amplifiers in its range for a long time; in fact, since the B1, which was designed to offer the power output and facilities of the A1 without the complication and expense implicit in that neo-Class A design.

The E1, which is rated at 30 Watts per channel into eight Ohms, is the latest in the line, and is dressed in a slimline version of the now-familiar, black-gloss-fronted E-series casework, which means it looks and feels like a quality item.

Musical Fidelity is not forthcoming about circuit topologies, and has been no more revealing than usual with the E1. The basic power amplifier circuit is claimed to be tonally neutral, low in distortion and to have a high current delivery. Much work, says M-F, has been done to reduce asymmetry between channels. Output semiconductor devices, allegedly, are bipolar.

Apart from the power-on/off button, the only controls are for volume, source selec-



tion and tape-monitor switching. All six inputs are at line level, and there is a single tape circuit. The E1 is fitted with a solitary set of four-millimetre binding-post terminals, with the now-familiar EU-friendly plastic blanking pegs. There is no provision for headphones. Unlike other Musical Fidelity products, the E1 is available in the UK only from the Richer Sounds retail chain.

## Sound quality

The panel score was average, with little spread of marking. There was almost complete unanimity about the sonic character of the E1, which was judged to have been struck clearly from the Musical Fidelity mould. The amplifier was described as warm, even a little overblown at times, with a generous soundstage presence, good if slightly sweetened tonality and a slightly indistinct, one-note bass line. The latter was evident in the left-hand line of the Liszt piano piece, and also in the full-sounding Jennifer Warnes track.

"Only marred by a slight over-emphasis on the upper bass", was a typical comment of the Liszt, though the same listener also noted that the E1 "makes music easy to listen to", while another wrote "it's 'get your baton out' time!" after the Dohnányi.

My own listening notes conclude that

the E1 will need to be matched with systems of sympathetic persuasion. It's likely to tame excessively bright speakers, if the brightness is not indicative of some other problem.

There were times when the E1 seemed overblown, when its ambitions exceeded its reach, but there was real drama and depth here too, and an opulent tonality which worked well with small and large-scale chamber and orchestral music, female vocals and the like.

## Conclusion

Musical Fidelity claims there is no "tone painting" with the E1 — that it simply tells the truth. In reality it's difficult to assess this claim. It sounds different to most other contenders here, though bears a familial musical resemblance to the NAD and Magnum designs. In general, reproduced rock music sounded a little short of adrenalin, while classical music was reproduced with an organic quality, a bold tonality and a sense of scale that left most of the rest behind. Ultimately, all depends on the nature of the system you erect around this amplifier, and the bottom line here is to listen carefully before buying — but do listen. Recommended. *AG*

## VERDICT

**SOUND** ★★★★★☆  
**VALUE** ★★★★★☆  
**PRICE** £199.00

☐ Built for orchestral music, with sonorous tonal colours, life-size dynamics and image scale. It can sound a little distant and understated, which is not appropriate with all types of music.

☒ Richer Sounds plc, Richer House, Hankey Place LONDON SE1 4BB

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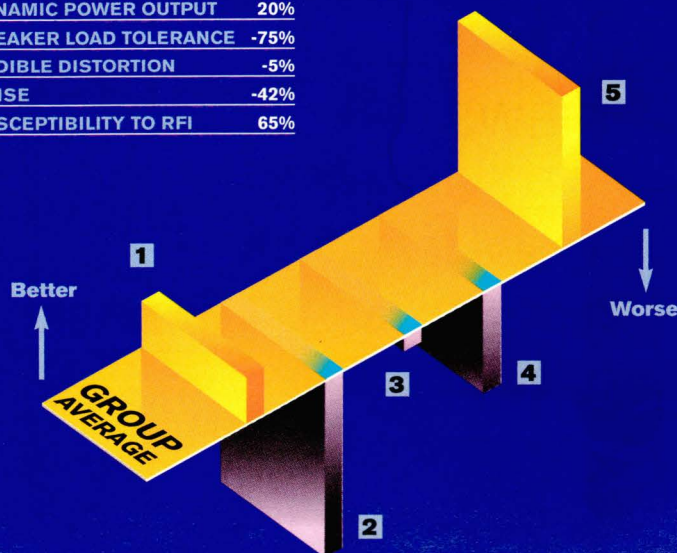
## THE LAB REPORT

This is something of a mixed bag from Musical Fidelity: an amplifier whose combination of a low 0.05 Ohm output impedance and gently contoured response (-0.6dB at 20kHz) might seem to promote a firm but sweet overall balance. Sadly, it doesn't seem quite to have worked out this way. Distortion, for example, is astonishingly low at 0.002 per cent through the midrange and yet, as the effect of feedback diminishes, this increases towards 0.04 per cent at the extremes of its range. The figures remain low, but the variation may be subjectively significant.

The E1 is no powerhouse, just achieving its 50W specification into 8 Ohms. Protection bites between 2 and 1 Ohm loads where the absolute current limit of 9.6A restricts the maximum *voltage* sustainable by the amplifier. This poses no problem into 'easier' impedances, allowing 71W/129W/162W into 8/4/2 Ohm loads respectively under dynamic conditions, but just momentary bursts of 93W into 1 Ohm. Musical Fidelity's bigger amplifiers are significantly gutsier, though this should not necessarily be a concession to budget: just turn to the NAD 312 for a contrary example. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	20%
2	SPEAKER LOAD TOLERANCE	-75%
3	AUDIBLE DISTORTION	-5%
4	NOISE	-42%
5	SUSCEPTIBILITY TO RFI	65%





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WHAT HI-FI, FEB 1997



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WHAT HI-FI,  
APRIL 1997

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HI-FI NEWS, APRIL 1997



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HI-FI CHOICE,  
APRIL 1997

“Tannoy’s new Mercury M2s seem hard to beat”

HI-FI CHOICE,  
APRIL 1997

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WHAT HI-FI, FEB 1997

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# NAD 312

Here's the successor to NAD's semi-legendary 3020, the famous model that launched the concept of beer-budget esoterica as well as the NAD brand itself, many more years ago than your reporter has fingers left to count. The 312 also succeeds the 302, which was EISA's European Amplifier of the Year 1993-1994.

The 312 appears to be a thoroughly sensible reworking of audiophile principles to which NAD has cleaved since day one. Flexibility is a NAD hallmark, with four line-level inputs, a moving-magnet phono input and two tape circuits, one of which allows off-tape monitoring. The specification also stretches to tone controls, at which purists will turn up their noses. But NAD has always been consistent in the view that customers want this feature.

In any case, the tone-control circuits can be bypassed — even in use their action is limited largely to the frequency extremes. Another favourite NAD feature is 'Soft Clipping', a kind of compression circuit to prevent things getting out of hand at high volume levels. Likewise the removable link between pre and power-amp sections,

which allow the preamplifier to be upgraded, or the internal power-amp to be supplemented for bi-amplified applications. A headphone socket has been fitted for fans of personal listening.

A smattering of high-quality (so-called 'audiophile-grade') passive components are used internally, and signal switching is performed near the inputs, using long-rod-actuated controls. As usual, the 312 is designed to drive loads both reasonable and unreasonable.

## Sound quality

The NAD 312 put in a stonking performance and pleased the panel, who repaid the favour with a high average score. Some similarities with the Musical Fidelity were noted: both are warm, large-scale performers. One of the captive scribes noted that the NAD reproduced Dohnányi's orchestral piece "with a string section".

The Jennifer Warnes track was described as "atmospheric, with a soaring saxophone", and as "a sophisticated recording that reproduced well", though a third panel member, praising the NAD's euphony rather than its resolving ability, wrote that the song was "quite engaging once one adjusted to the slight detail loss".

The same listener felt that the NAD was

"a nice big open window on the music", while a third track was felt to be "strong and powerful".

The NAD didn't escape criticism entirely. The Dohnányi *scherzo* was described as "brash" by one listener, and "atmospheric but hard-sounding" by another.

I had no such reservations in my own tests. The NAD was powerful beyond its official power rating, and worked consistently and confidently with the entire range of partnering speakers at my disposal. Just a hint of euphony in place of ultra-sharp analysis reminded me that this is, after all, a budget design punching above its weight.

## Conclusion

The NAD 312 is an object lesson in combining the elements that make up a Best Buy. This amplifier will make music with a wide range of ancillaries; the phono input was a touch glutinous perhaps, but this will not affect most potential users.

It approaches music-making with great consistency and attractive audio manners, and an almost tactile sense of presence. Buy with confidence! *AG*



## VERDICT

**SOUND** ★★★★★☆  
**VALUE** ★★★★★★  
**PRICE** £199.95

Exemplary mid-budget amplifier which is broadly evenly competent all round, and drives even difficult speakers like a train, though there is some opacity via the phono input.

The Audio Club, 15 Faraday Road, Aylesbury, Bucks, HP19 3RY  
 (01296) 82017

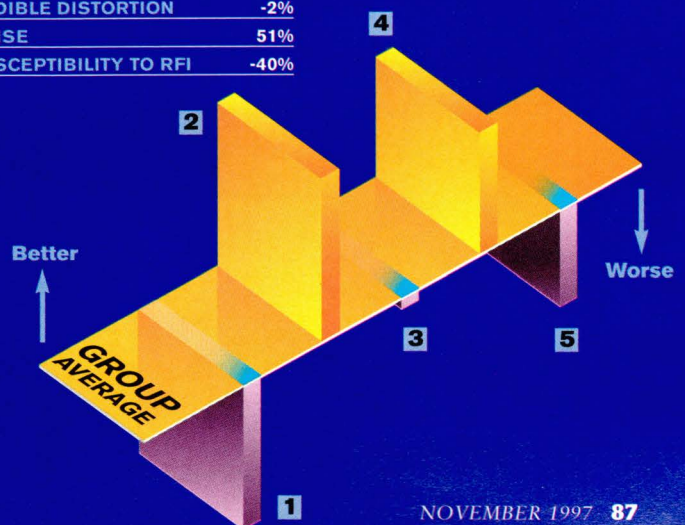
## THE LAB REPORT

Contrary to NAD's specification, the 312's load tolerance is traded for a reduction in the amplifier's dynamic headroom, that is the difference between the amplifier's continuous output into, say, 8 Ohms and what can be squeezed out under momentary conditions, typically 10msec. It all works out like this: the amplifier's continuous output into 8 Ohms is 39W, increasing to just 48W (+0.9dB) under dynamic conditions. On the other hand, this dynamic output increases from 48W to 83W, 125W and 158W into 8, 4, 2 and 1 Ohm loads respectively. This is exceedingly generous for what is, notionally, a '40W amplifier'. Do note, however, that with soft-clipping engaged, this drops to 26W, 49W, 88W and 143W into 8, 4, 2 and 1 Ohm respectively.

The amplifier does betray some mild susceptibility to RF interference but this is probably only revealed by the very wide 90dB A-wtd S/N ratio. The 'average' amplifier is 5-6dB noisier than this which may, in turn, be sufficient to camouflage the effects of RF IMD. In a 'clean' environment, however, the 312 should sound bigger, beefier and more crisply detailed than its small frame might otherwise suggest. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-60%
2	SPEAKER LOAD TOLERANCE	70%
3	AUDIBLE DISTORTION	-2%
4	NOISE	51%
5	SUSCEPTIBILITY TO RFI	-40%





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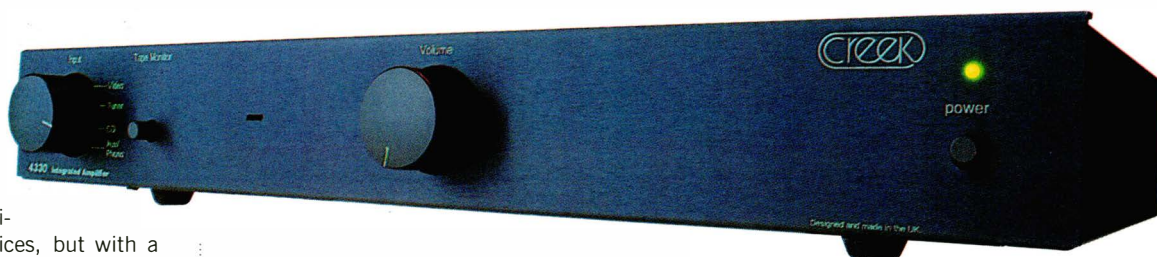
# Creek 4330

Creek's new entry-level 4330 takes over from the 4240SE, a seriously successful amplifier in its own right. The 4330 claims to use similar MOSFET output devices, but with a new 'high speed' drive circuit and, so they say, an enhanced power supply with multiple small reservoir capacitors — an unusual refinement at this price. The idea is to liberate the power amplifier to show what it is made of, as Creek puts it.

All active gain is now achieved in the power amp section, they claim, leaving the front end passive unless the optional phono stage (MM and MC) is specified. On paper it is only a moderately powerful amp with a 40 Watt rating into eight Ohms. However Creek claims that high current delivery allows a 370 Watt dynamic output into one Ohm loads on a peak basis.

As an optional extra there's a remote control with a 'non-scanning microprocessor' to maintain sound quality; like the phono circuit we did not test it here. The remote-controlled version costs £76 extra.

The unashamedly minimalist Creek front



panel limits itself to source selection, volume control, a tape monitor switch and power on/off. The total input count is five including the tape circuit, all at line level. Headphones are not accommodated. A preamp-level line output is fitted, and could be used in a bi-amplified installation; the speaker terminals are Euro-friendly, though they are tapped for side entry of 4mm plugs.

One more point: the 4330 is tiny. Measuring just 420 by 60 by 230mm (WxHxD), it can be used on shallow shelves that would groan at the sight of a more conventionally proportioned amplifier. Bedsit land please take note!

## Sound quality

Regrettably the Creek was not favoured on test, achieving a disappointing score in two presentations. The character of some comments suggests it was lucky to get off this lightly! There were consistent criticisms of the bass, which was felt to be shallow, lumpy and "woomping". The latter may not be in the dictionary, but it is an onomatopoeic description.

Timing was criticised consistently. Treble was marked down for sounding "synthetic" and "shrill", while the overall presentation was felt to be lacking in transparency. Jennifer Warnes's voice came across with a "brassy quality" according to one panelist;

her voice was described elsewhere as "veiled". It should not come as a surprise that there were also consistent criticisms of stereo performance. The Liszt piece, for example, was thought to be diffuse.

The lack of resolving power, stereo depth and cleanly-extended bass was apparent in most of the systems tried. Powerfully recorded bass lines really did "ring" through underdamped full-size speakers, but matters improved significantly with compact speakers like the Tannoy Mercury M2, which are more appropriate to the Creek's job description. The hard, ungracious treble, however, was always a factor, and words like "forward", "hard sounding" and "uninviting" spill out from the listening notes.

## Conclusion

It's difficult to understand what's gone wrong here. The amplifier is apparently full of good thinking and common-sense engineering, but clearly it is musically deficient in the ways outlined above.

The hard-nosed quality, however, might suit some tastes more than a notionally more transparent amplifier, and perhaps there is something to be said for such a positive, outgoing quality, even if the subtleties have been sacrificed in the process. AG

## VERDICT

SOUND ★★☆☆☆

VALUE ★★☆☆☆

PRICE £279.00 (£355.00 with remote)

Compact packaging, good build, strong power yield and explicit musical delivery. It lacks transparency, and bass has a 'one-note' quality with larger speakers.

Creek Audio Ltd, 2 Bellevue Road, Friern Barnet, LONDON N11 3ES.

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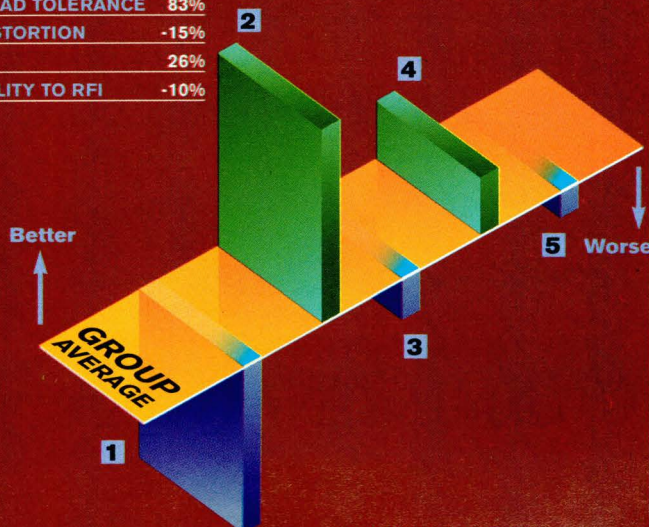
## THE LAB REPORT

On paper, this 4330 is the least powerful in its group, providing just 40W into 8 Ohms. Nevertheless, Creek's latest MOSFET-based power amp combines low levels of noise (just -89.6dB re. 1W/8 Ohms) and low 0.0045 per cent distortion with a prodigious 19.6A maximum current output. So, though the amplifier might seem to be a mere '40-Watter', it's actually capable of 56W, 99W, 195W and 373W under dynamic conditions (<1 per cent THD) into 8, 4, 2 and 1 Ohm loads, respectively. The most 'argumentative' of loudspeakers should not give the 4330 pause for thought, particularly as these reserves of power are sourced from such a low 0.016 Ohm output impedance.

Meanwhile, the moderate 20 kOhm input impedance will be an easy enough load for most CD players to drive, though there remains a trace of RF susceptibility that could 'roughen' its performance with an unfortunate combination of CD player and/or electrical environment. PM

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-70%
2	SPEAKER LOAD TOLERANCE	83%
3	AUDIBLE DISTORTION	-15%
4	NOISE	26%
5	SUSCEPTIBILITY TO RFI	-10%





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# Kenwood KA-5090R

This is a vast amplifier, which could double as an overnight hold-all if it wasn't covered in controls and in need of a local mains power supply. It is also illuminated like the proverbial Christmas tree when powered up, though it can choose to be coy by hiding the bulk of its operational flexibility behind a front-panel flap. Power output is claimed to be 65 Watts per channel, 0.05 per cent THD, 20Hz - 20kHz.

At the heart of the amplifier is a clever rotary source selector that can be used as a 'listen' and 'record' selector using a 'rec out' toggle behind the flap. Chosen settings are retained between sessions. Switching is available for two pairs of speakers, and Kenwood has kept faith with 4mm binding-post speaker terminals, with the obligatory prise-out plastic caps. Tone and loudness controls are fitted, with a 'source direct' facility for purists, and a 30dB attenuation switch for answering the door/phone/call of nature without losing your volume setting.

The Kenwood is well-endowed with inputs and relay switches, including two tape circuits, three line-level inputs and a phono input switchable between moving magnet and moving coil settings. Bi-directional tape-dubbing and tape-monitoring



from either tape circuit is available thanks to independent listen and record circuits.

The technological highlight of this design is known as TRAITR (Thermally Reactive Advanced Instantaneous Transistor), a semiconductor substrate that incorporates an on-board heat-sensing mechanism which claims to allow continuous real-time biasing adjustments in response to signal dynamics. The idea is to reduce crossover and certain other distortions.

## Sound quality

Like a number of the amplifiers tested here, the Kenwood appeared to reproduce a narrow perceived bandwidth that was dominated and led by the midband. There was no real lack of treble; indeed the amplifier sounded bright at times, but there was a significant loss of treble detail and resolving power. One panel member, recognising this attribute, memorably described the Kenwood as "bright and shiny". There is little wrong with the midband per se, and tracks like Lemonheads' *My Drug Buddy*, which has comparatively little intrinsic bass weight, attracted praise. The Kenwood's bass was more actively disliked when pushed, being described variously as "dull

and thudding", for example with the Jennifer Warnes test track *Big Noise, New York*.

The most telling criticism, and one that was clearly represented in my own listening, was a loss of dynamic contrast. Everything seems to happen at much the same volume level, and in tone the music seemed often unvarying and monochromatic. In both respects the Kenwood lacked the freedom and range of expression associated with a truly first-rate amplifier.

Unsubtle it may have been, but the KA-5090R was perfectly capable of raising a storm with virtually all of the loudspeakers tried. It was just that the thin, slightly sham-bolic character of the sound made it unrewarding to do so.

## Conclusion

With straightforward, melodic pop and rock, everything was fine; but once the music took on a tougher character, this amp began to sound two-dimensional and unvarying in character, and the spell was lost. Also, the sheer physical size of this amp may debar it from some interior décor schemes. AG

## VERDICT

**SOUND** ★★☆☆☆  
**VALUE** ★★☆☆☆  
**PRICE** £299.95

A lot of amplifier for the money in every sense apart from the one that counts most. Balance is midband led, and performance becomes increasingly ragged towards the frequency extremes.

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

## THE LAB REPORT

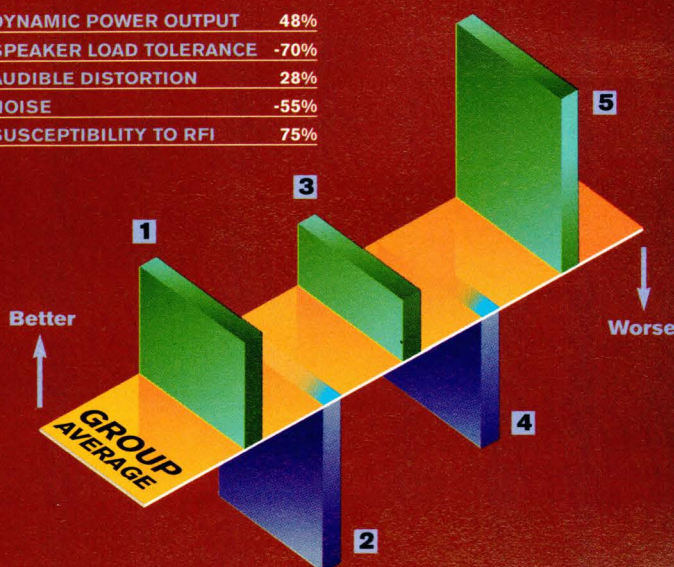
This unusual amplifier features an extremely extended bass response that's precisely flat to 2Hz, below which it's cut short by a 'brick-wall' DC servo. The effect of this at higher (bass) frequencies is anyone's guess. At higher frequencies, the KA-5090R has a sensible -3dB point of 67kHz, providing a gentle -0.45dB cut at 20kHz (the top of the audio range).

In terms of distortion, there's an increase in odd-order, crossover-like components at low powers and high frequencies, from 0.018 to 0.04 per cent, suggesting that a simple increase in bias rather than Kenwood's elaborate thermal compensation (TRAITR) might yield the sonic gains required. In relation to power output, though 100W/8 Ohm seems generous enough, Kenwood's active protection circuitry limits maximum current output to 9.3-9.6A regardless of the load condition. Under dynamic conditions, this yields values of 132W/235W/174W (protection)/74W (protection) into 8, 4, 2 and 1 Ohm loads respectively.

The A-wtd S/N ratio is surprisingly poor at 80.2dB (13dB behind the Yamaha!) though interestingly, the amplifier's inherent noise floor remains pretty much unchanged regardless of volume position; available gain determines the dynamic range. A very mixed package, by all accounts. PM

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	48%
2	SPEAKER LOAD TOLERANCE	-70%
3	AUDIBLE DISTORTION	28%
4	NOISE	-55%
5	SUSCEPTIBILITY TO RFI	75%





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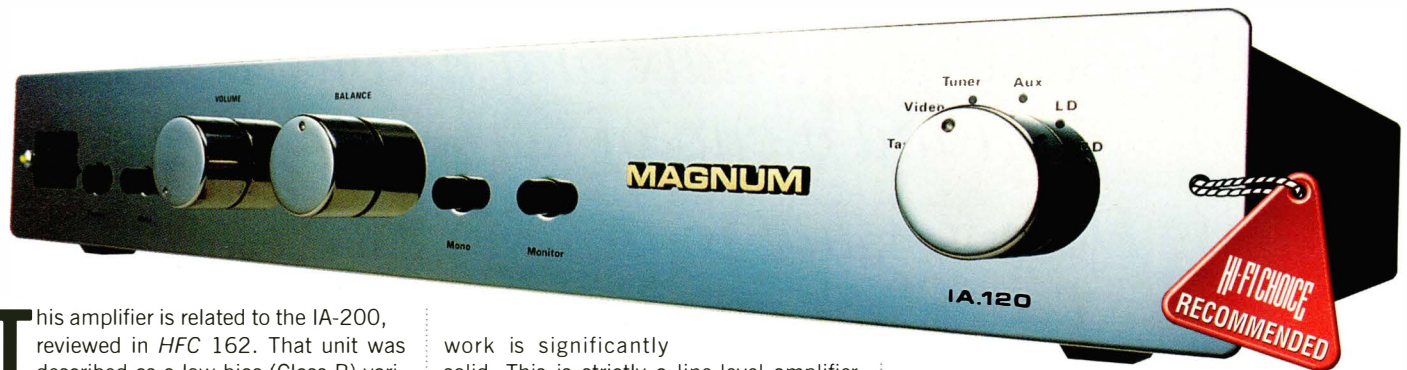
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 Morduant Short MS0.5 (NEW!) ... £99.00  
 Mordaunt Short MS10i Pearl .... £149.00  
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 Naim CREDO (NEW!) ..... £987.00  
 ProAc Response 2.5 ..... £2700.00  
 Rega Kyte speakers ..... £198.00
- audio - VISUAL*  
 Pioneer CLD515-1 Laser (NEW!) £549.00  
 Arcam Xeta2 processor ..... £649.00  
 Yamaha DSP-E390 processor .... £245.00  
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# Magnum IA-120



This amplifier is related to the IA-200, reviewed in *HFC* 162. That unit was described as a low-bias (Class B) variant of the Class A models which are Magnum's mainstay. Much the same applies here. The Darlington output stage is executed with discrete components, and the amplifier is fitted with what the maker describes as a new high-speed rectification stage and multiple local power supplies to speed and beef-up the amplifier's current delivery. Other components have been swapped for better quality types, reportedly. Power output is rated at 65 Watts into eight Ohms, and 90 Watts into four Ohms.

The most striking feature of this amplifier is the chromed front panel, which you are free to regard as being in the worst possible taste if you prefer. Build quality, however, appears to be good, and the exterior panel-

work is significantly solid. This is strictly a line-level amplifier, with a total of six inputs, including one tape circuit with off-tape monitoring. The latter, of course, can be used also as a straight line input, and is capable of delivering marginally superior sound quality.

### Sound quality

With a high panelometer reading, the Magnum clearly impressed the jury. Reading through the comments, almost everyone acknowledged the IA-120's strong bass, which was felt to be solid, well integrated and tuneful, with little sign of the upper bass excess and shallow deep bass of some of the others, though one listener complained that the Jennifer Warnes track sounded "overblown and unbalanced".

There was clearly a feeling that leading edges were slightly grubby, however, and the Magnum lacked the clarity of some competitors. Perhaps this was the motivation behind one comment that the IA-120 "lacks refinement", and the same listener's criticism of an "ungraceful piano sound".

This was not the consensus view, however, which was of a bold, confident and fundamentally musical amplifier that was in charge of proceedings, and not about to be

blown off course with every difficult musical passage. In short, the IA120 is an easy amplifier to listen to — and listen through.

In the hands-on tests, the Magnum proved to be less than completely consistent. In general it contrived to sound bold and solid, with a strong sense of drive, but in some combinations it sounded slow and lacking in stereo focus, and a perceptibly sweetened treble sometimes impeded the resolution of fine detail. Undeniably it's an easy and enjoyable amplifier, and tends to perform at its best with relatively bright speakers. It can sound messy with darker, thicker-sounding enclosures — it needs some system synergy working in its favour.

### Conclusion

It would be unjust not to Recommend this amplifier. It is a bold and thoroughly capable design, and comes with the added benefit of a handy integral mirror. Essentially it sounds a little warm and loose, but it has a thoroughly musical manner that makes recordings sing out. At the same time, it is no all-purpose solution to amplifier requirements, so be sure to listen before you buy. AG

### VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** Line version £265.00  
 Phono version £285.00

⊠ Bold, colourful and dynamic amplifier, but shows some inconsistency with different speakers and demands careful system matching.

✉ Hailey Audio Ltd, 328 Ware Road, Hailey, Herts SG13 7PG  
 ☎ (01992) 442425

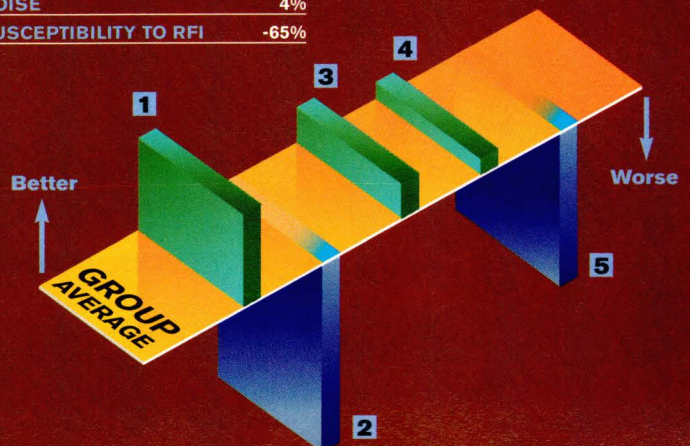
## THE LAB REPORT

Despite this amplifier's chromed but utilitarian external appearance, its internal construction is reassuringly professional with a modestly-proportioned power supply feeding a bipolar power amp. It's probably the characteristic of these TIP35/TIP36 Darlingtons that accounts for much of the IA-120's 'character', including a dynamic power output that increases from 123W/147W into 8/4 Ohm loads but drops back to 108W/73W into 2/1 Ohm loads respectively. There are on the market more load-tolerant and, indeed, more powerful '65W' amplifiers than this, but the attraction of the IA-120 does not lie in brute strength.

A lone 2nd harmonic is joined by higher orders as distortion increases from 0.02 to 0.1 per cent across the audio range at 1W/8 Ohms, and then on up to 0.22 per cent as the volume is cranked up to two-thirds output. As a further sign of the IA-120's increasing stress at high frequency and power, its IM distortion climbs to a full 0.9 per cent. The pattern, however, is almost exclusively 2nd-order and likely to encourage a certain 'euphonic warmth' in most systems. This is fortunate because the IA-120 betrays some sensitivity to RFI up to 100MHz (where most CD players are 'active') and a limited sensitivity from 100-200MHz. Any deleterious effects of RFI, however, are likely to be masked by the prevailing tonal 'colour'. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	40%
2	SPEAKER LOAD TOLERANCE	-80%
3	AUDIBLE DISTORTION	17%
4	NOISE	4%
5	SUSCEPTIBILITY TO RFI	-65%





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# Sony TA-F448BE

**B**ased on the TA-F448E (HFC 157), the TA-F448BE Brooklands Edition has undergone a now well-established UK-based upgrading programme, which has been applied to selected Sony hi-fi components for the last few years. The changes listed include: an enhanced Torus (sic) toroidal transformer with reduced stray flux; larger power-supply reservoir capacitors in a lower-noise power-supply circuit; and improved earthing. Almost all of these changes may mean everything or nothing, depending on the skills of the designer. Unchanged is the attractive presentation which looks more expensively engineered than the price suggests, and the minimalist interface, with controls limited to an input selector, an over-size volume control, a tape-monitor switch and a speaker on/off switch.

Claimed power output is 55 Watts per channel (eight Ohms/1kHz), rising to 85 Watts into four Ohms. The Sony will accept inputs from a moving-magnet-equipped record deck, three line-level components and two tape decks, both with tape-monitoring facilities. Headphones can be connected, and bi-wire speaker terminals — blanked-off 4mm binding posts — are fitted.



## Sound quality

The good news is that in this month's tests the TA-F448BE performed much better than the TA-F448E, though the overall score may have been a little generous in view of some comments from the panel. Indeed no less than three listeners compared it directly to the Yamaha AX-592 (the preceding model in the test) and found it wanting. For starters, it was deemed "less clear" and "not as easy to follow" in the Dohnányi. The Liszt was felt to be "not as even"; the Yamaha had attacked this tumultuous piece with more gusto and enthusiasm. One listener memorably described the Sony as like putting a "von Karajan" filter into the system, which I take to mean that he felt the amplifier sounded manipulative and over-controlled.

However, this rather bleak assessment over-states the case for the prosecution of what was also perceived to be a generally likeable and fairly neutral-sounding amplifier, in the panel and hands-on tests alike; and moreover, one that was consistent in its handling of dynamic and tonal nuances. Though sometimes criticised for "blandness", on the whole it did not squeeze individuality out of the music.

The Sony did lead me into trouble on odd occasions, such as when playing Grainger's *Country Gardens* (Rattle CBSO)

at a fairly high level through a pair of B&W 805s, which are comparatively insensitive. The piece started out well, but it is a grower, and when the orchestra was let off its leash, the sound soon became edgy and uncomfortable. Backing off a lick-spit on the volume control resolved this problem, suggesting that the amplifier was being stretched beyond its limits. When it was kept on the rails, however, (and objectively the Sony is not lacking in power — it simply objects to being treated as a powerhouse) it performed well, with a lively, incisive and very clear account of the music, and a particularly well-lit mid and upper midrange in my tests.

## Conclusion

This new Sony clearly meets the requirements for our flag of Recommendation. It is presented as a leanly-carved and gimmick-free product that makes cool and finely disciplined music with a range of speakers. However its prodigious power output is not complemented by graceful behaviour in extreme circumstances, which are easy to provoke with certain musical styles and insensitive speakers. AG

## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £249.99

A satisfactory showing in the panel tests was exceeded in hands-on use with a range of speakers: this is a clean, articulate amp. Some hardness and opacity at times, and abrupt transition to aggressiveness if overdriven.

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

(0990) 111 999

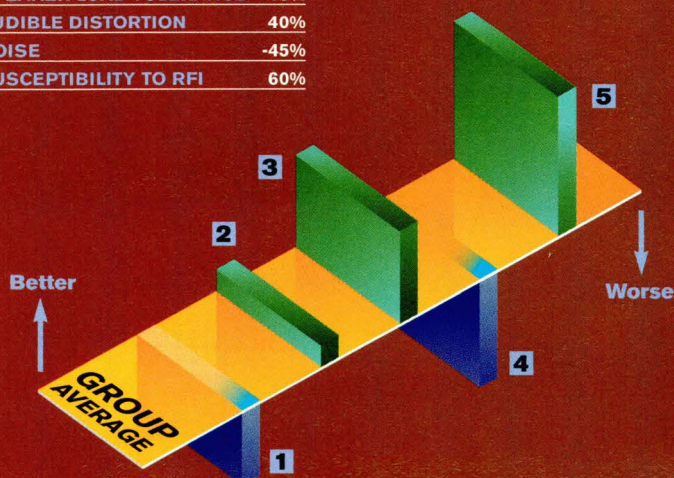
## THE LAB REPORT

This may look, feel and radiate as much heat as the TA-F448E amplifier reviewed in issue 157, but the intervening year has seen Sony's Brooklands-based UK design team hard at work. The upshot is very interesting indeed. For example, at 64W/8 Ohms and 96W/4 Ohms, there's absolutely no increase in power. The amplifier is just as tolerant of difficult speakers with its dynamic delivery of 81W/136W/174W/163W into 8/4/2/1 Ohm loads respectively. However, there's clear evidence of some sort of erratic VI-limiting, possibly an intermittent protection, into 2 and 1 Ohm loads where the THD profile is a trifle uneven. And the amplifier still betrays the instantaneous, almost violent clipping behaviour at high powers and high frequencies, which was first observed in issue 157.

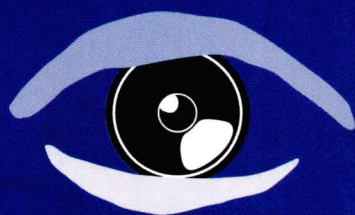
Reduced noise and ground impedance are claimed while the board architecture has been revised to maintain stability while reducing feedback. The significance of this is twofold. The A-wtd S/N remains on the low side at 81.5dB (re. 1W/8 Ohms) while distortion has increased from typically 0.001-0.006 per cent to 0.011-0.016 per cent. Importantly, however, this tight band of distortion remains utterly consistent across the amplifier's full dynamic and audio range, a feature that can only bode well for sound quality. PMi

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-30%
2	SPEAKER LOAD TOLERANCE	10%
3	AUDIBLE DISTORTION	40%
4	NOISE	-45%
5	SUSCEPTIBILITY TO RFI	60%







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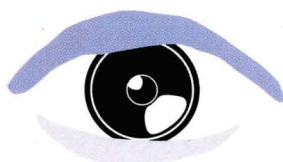
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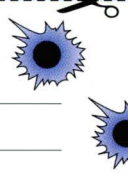
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# Yamaha AX-592

Yamaha's AX-592 is a big brute of an amplifier, inhabits a box almost as capacious and dominating as that of Kenwood's KA-5090R — but it has an excuse. Its claimed output is 100 Watts per channel between 20Hz-20kHz, into eight Ohms at 0.015 percent THD. Dynamic short-term power output is said to be high, and even though no four-Ohm figure is given this is easily the most powerful model in the group. It is also the second most expensive.

The AX-592 comes complete with a full system-remote-control handset. Three line inputs are fitted, and a phono input with an MM/MC switch near the input sockets. Independent source and listen selectors allow tape dubbing between the two tape circuits. The AX-592 is even equipped with a control socket for a Yamaha-branded turntable to allow full remote control, though most users will probably opt for a higher-quality manual turntable. Tone controls are supplemented by a variable loudness knob, and there is a choice of not one, but two bypass switches. One bypasses the tone controls, loudness, balance and sub (high pass) filter for any of the inputs; another, labelled CD Direct, additionally bypasses the input selector. Two pairs of loudspeakers may be switched independently.



## Sound quality

As one of the more consistent and better-liked amplifiers, the AX-592 scored moderately well, though the comments belie this, suggesting an even higher score. On the whole the Yamaha attracted very few brickbats. The Jennifer Warnes track *Big Noise, New York*, for example, was described in these terms: "...one of the best of the day with natural vocals, the bass has power and extension, and timing is good". Another commented on the "good vocal quality, sharp rim shots, and the ability to hear into the mix". There was some criticism of a degree of politeness, or a lack of drive in the bass, and also a feeling of a loss of clarity. "Not the most transparent sound, but apart from being a bit heavy in the lower/mid, this amplifier is well-balanced, with natural vocals" was one sum-up comment. Another simply described the Yamaha's second presentation, towards the end of one day's listening, as "the best so far".

I obtained good results in hands-on listening too. It cut through the muddle and congestion that afflicted the B&W 805

speakers in some circumstances, and it helped bring the Tannoy Mercury M2s to life. Dynamics, too, were strongly presented, but there was a relentlessness in the higher frequency region that tended to irritate in long-term listening, and bass lacked the physical quality and pace needed to drive along the music convincingly.

The only quirk is the way that output levels increase very quickly in the early part of the volume knob's rotation. Potentially this could have a significant effect for those listening on headphones or via speakers at low levels. This effect can help amps seem more responsive and powerful, but means that their volume setting is being used where channel balance is least consistent.

## Conclusion

This amplifier misses Recommendation by a whisker, but remains worth considering as a good all-rounder which is a simply not quite competitive enough to shine at the price. AG

## VERDICT

**SOUND** ★★★★★  
**VALUE** ★★★★★  
**PRICE** £279.95

Sharp, detailed; controls even quite obtuse speakers well. Something of a 'midband special' which ultimately lacks authority and expressiveness.

Yamaha Electronics UK Ltd, 200 Rickmansworth Rd, Watford, Herts WD1 7JS  
(01923) 233166

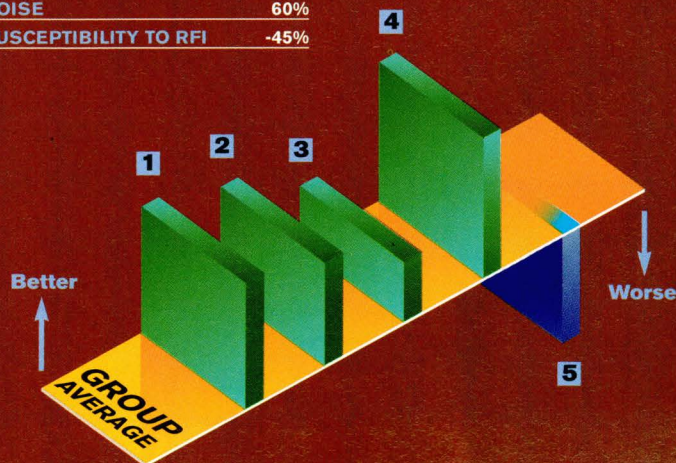
## THE LAB REPORT

Tested with the 'CD Direct Amp' and 'Pure Direct' facilities engaged, this amplifier returned a state-of-the-art noise performance. Even with its unnecessarily high +45dB overall gain, leading to an input sensitivity of just 16mV for 1W/8 Ohms, the A-wtd S/N ratio remains some 10dB ahead of the norm at an incredible 93.7dB. At two-thirds output, the S/N ratio increases to 103dB, though the amplifier's input overload margin is reduced to just 2.65V — insufficient in the light of today's high output CD players. This margin does increase to 8.7V with the 'CD Direct Amp' switched out, even though the overall gain is reduced by only 0.3dB. The gain could easily be reduced by 10dB or more, allowing a more linear portion of the volume control track to be utilised.

In common with most amplifiers that run almost stone-cold, the Yamaha betrays evidence of odd-order crossover distortions at HF/low power, while unusually, there is a peculiar step-function to its dynamic output profile where THD increases by 8-10dB at the 50W level, almost regardless of load condition. Plenty of power on tap for a '100W amp' — this one's capable of delivering a speaker-thumping 134W/252W/408W/485W under dynamic conditions into 8, 4, 2 and 1 Ohm loads respectively. *PMI*

## HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	55%
2	SPEAKER LOAD TOLERANCE	45%
3	AUDIBLE DISTORTION	27%
4	NOISE	60%
5	SUSCEPTIBILITY TO RFI	-45%





# Conclusions

I was more than intrigued to discover that the best amplifiers of this group were in many ways the models with the fewest pretensions. Pioneer was awarded a Recommended swing-tag, for example, for a straightforward model. Unlike some of the others in this price range, it is essentially just another commercial amplifier with little more to recommend it than strong equipment levels and the promise of adequate sound qual-

ity. The NAD 312, the only Best Buy in this test, inherits a slightly different tradition. NAD was always a 'sound-first' supplier, with features played down, though tone controls have miraculously survived the pruning shears in this case.

There is not really a strong enough statistical base to draw conclusions, but it is at least possible to speculate that the added unit costs of producing a UK special, 'Special Edition' or other improved

model may not pay off when the alternative is a slightly senior, but unimproved model at the same price. The point here, of course, is that one should not judge a book by its cover. As was noted in the introduction, it really doesn't matter in the end if an amplifier has tone controls and loudness buttons, or whether it has fancy capacitors and specialised low feedback circuits. In the end, it is not what it is that counts. It is what it does.

## GROUP A (UP TO £160)

<b>AMC 3025a</b>	<b>£129.95</b>
<b>Denon PMA-250SE</b>	<b>£159.99</b>
<b>Pioneer A-204R</b>	<b>£159.95</b>
<b>Rotel RA-931</b>	<b>£149.95</b>

As well as bearing an uncanny resemblance to a NAD, the **AMC 3025a** is the least expensive amplifier tested here, and one of the cheapest you can buy with any pretence of decent sound quality. Ostensibly it is a conventional product, but it turns out to be something of a powerhouse, easily outranking some of the more expensive models in speaker-driving ability, despite having only 30 Watts per channel on paper. Also, it boasts a phono input, with moving-coil compatibility no less. Admittedly, in absolute terms it has limited musical potential, and the phono stage is not the best part of the design. (It's hard to imagine a sensible system

that could include this amplifier and a moving coil cartridge, which is unlikely to cost much less than the amplifier itself.) But as ever, AMC can't be faulted on value for money.

The **Rotel RA-931** represents a new generation of amplifier, from a brand that practically invented the concept of a tweaked Far-Eastern amplifier, but which has been less pro-active



Rotel RA-931

more recently. Rotel has been careful not to frighten the horses with the '931, which is virtually indistinguishable from previous-generation products. It is a good amplifier too, but ultimately a little too close in price to alternatives that performed even better on test.

Nevertheless, the Rotel is a well-built and attractive model, in every sense.

Costing just £10 more than the Rotel are models from **Denon** and **Pioneer**, the **PMA-250SE** and the **A-204R** respectively. The Denon PMA-250SE, as you might guess a Special Edition model, emerged from a joint UK/Japan design exercise alongside the '350SE. In many ways the '250SE is the straight guy of the two, the one that has been compromised for commercial acceptability, which is why it has tone controls, while the PMA-350SE doesn't. Not that this stops it doing well. But then, the Pioneer A-204R is about as far from being a specialised audiophile product as the Pioneer range allows, yet this is the one that came up smelling of roses in our tests, in relative terms outranking its own high-tech cousin, the A-605R.

## GROUP B (£161-£200)

<b>Marantz PM-57</b>	<b>£199.90</b>
<b>Musical Fidelity E1</b>	<b>£199.00</b>
<b>NAD 312</b>	<b>£199.95</b>

The **Musical Fidelity E1** is not on general sale in the UK, but is available exclusively through the Richer Sounds retail group. The E1 is the successor, several time removed, to the B1. It boasts a newly developed circuit topology, and is claimed to be more tonally neutral than its predecessors. In fact, it sounds very different to most competitors, but this is no criticism, and

although it is a little fussy about partnering equipment, and doesn't appeal equally with all types of music, it can sound exceptionally spacious and refined. Anyway, since when were all kinds of music equal?



Marantz PM-57

The **Marantz PM-57** was mildly disappointing. It is not a bad amplifier by any means, and

it will be possible to build affordable, enjoyable, musical systems based around it. Nevertheless, it was generally felt to be unremarkable at best, and seemed unable to get a grip on difficult music. Not so the **NAD 312**, which put in an outstanding performance all round, despite having only a modest specification on paper. It is a lively and detailed performer, but never sounds bright or cluttered: here is an amplifier that allows you to forget this it is an amplifier — it just goes with the musical flow.

## GROUP C (OVER £201)

<b>Creek 4330</b>	<b>£279.00</b>
<b>Kenwood KA-5090R</b>	<b>£299.95</b>
<b>Magnum IA-120</b>	<b>£265.00</b>
<b>Sony TA-F448BE</b>	<b>£249.99</b>
<b>Yamaha AX-592</b>	<b>£279.95</b>

Moving up the price ladder, we hit a group of five models priced at £250-£300. The criteria for judgement must be tightened up here to allow for some talented existing competition (see *Best of the Rest*), and three of the models failed to achieve a Recommendation.

The **Creek 4330**, for example, was disappointing for its lack of transparency and resolu-

tion, and for its odd bass quality, though sympathetic system matching can help ameliorate these failings. This is a shame, not least because so much well-considered work has gone into the design, but also because it is extremely compact. The **Yamaha AX-592** and



Creek 4330

the **Kenwood KA-5090R** are perfect examples of a more corpulent trend. The Yamaha is the better of these two. Just missing a Recommendation by a whisker, its principal fail-

ing was a rather intrusive treble and some loss of drive in the grunt department. The Kenwood was less well-liked, and was described by some as a "midband special" — not the only one in these tests, it should be said.

The **Sony TA-F448BE** (B stands for Brooklands, Sony's UK base) is arguably the best-looking amplifier in this test, and although it exhibited some mild shortcomings, it performed well. A tidy and well-controlled amplifier. The **Magnum IA-120** is more muscular and organic, if slightly less refined and detailed. Both are excellent amps on which some very capable systems could be built.



## BEST BUY

One model was awarded full Best Buy status. The **NAD 312** is simply a fine all-round amplifier which performed well without excelling in any particular department. Suffice it to say that it was clean, detailed and insightful — and it knows how to control a pair of speakers.



## RECOMMENDATIONS

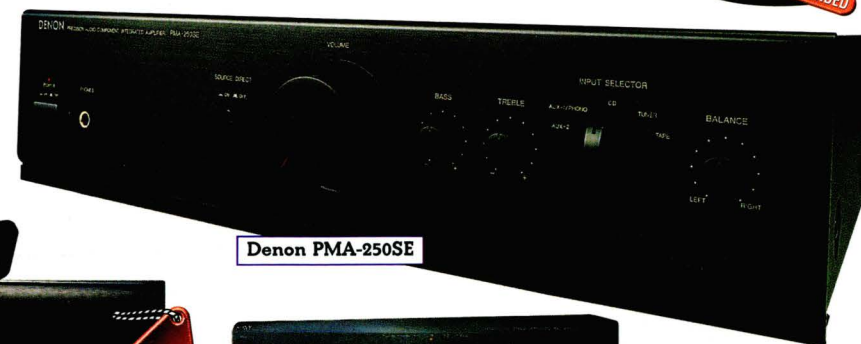
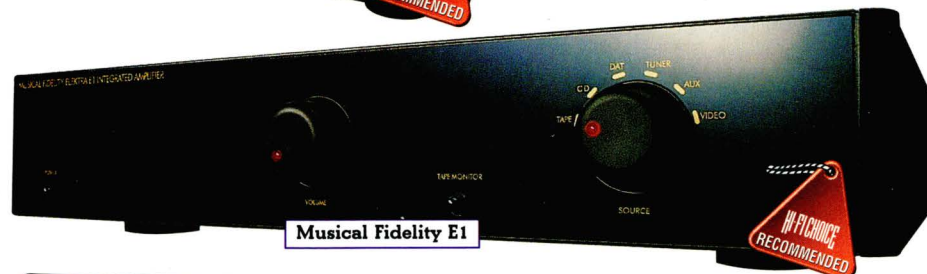
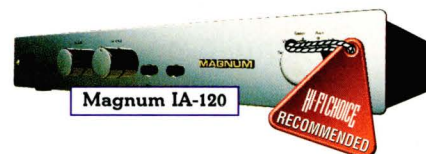
Five models are Recommended. In ascending price order, the **AMC3025a** is astonishingly inexpensive for so complete a performer, though readers should be aware that although power output is not an issue, its rather glossy, soft-centred sound quality may well be. The **Denon PMA-250SE** also veers towards euphony, but it is well worth its slightly higher price-ticket.

The **Pioneer A-204R** is an amplifier with few pretensions: just a sensible internal design, some useful features (remote control for example), and a low price. Arguably, it is superior to Pioneer's more expensive A-605R model.

The **Magnum IA-120**, the silver-fronted amplifier, is another very likeable design, still perceptibly on the euphonic side of the fence, but with a bold architectural quality and a strong sense of pace and timing.

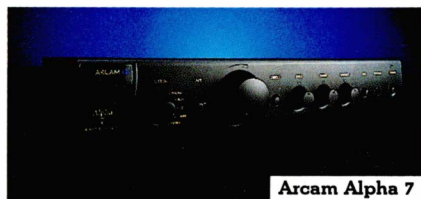
**Musical Fidelity's E1** earns a Recommendation for an amplifier that can play outside its price class if partnered with appropriate loudspeakers. It doesn't really rock'n'roll like the Magnum, compensating with rich tonality.

Finally, the **Sony TA-F448BE** has done what its predecessor could not, it makes cool and finely disciplined music with plenty of grunt.



## BEST OF THE REST

Who could envisage buying an amplifier around £250 without at least considering the **Arcam Alpha 7**? At the same price, **harman/kardon** offer the muscular **HK620**, and there are others to consider too, including the naturalistic £300 **Audio Innovations Alto**, the **Marantz PM-66SE** at £230, and the £200 **Cambridge**



**Audio A3i**, which offers a masterclass in information retrieval.

Less expensive alternatives worth considering include another **AMC**, the £170 **3050a**, the £180 **harman/kardon HK610**,

and the **Denon PMA-350SE** at £200.

Finally, just to show that **AMC** isn't untouchable at the bottom of the market, **NAD** has its own giant slayer in the shape of the £100 **NAD 310**.



# 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 magazine, 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 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



# For Value

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

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 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.

*Paul Messenger*

The specialist Dealers listed here are professional and enthusiastic. Give your nearest a ring for a demonstration.

## STAR QUALITIES

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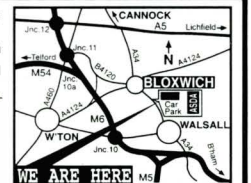
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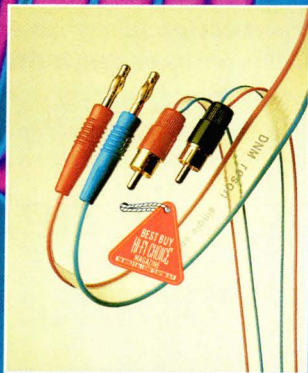
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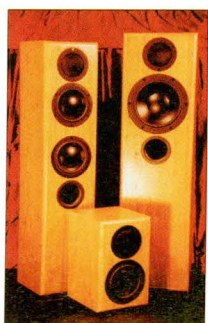
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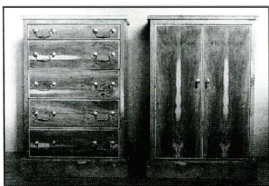
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- Billy Cobham album, Magic, good condition (will pay £50) or good cassette recording. Del, London (0171) 917 7748.
- Naim CDS. Midlands (01902) 786818.
- Strathern SMA2 turntable wanted! Good condition only. Offers to Mr Kissinger, fax Germany (+49) 6241 52449.
- Tannoy Little Red Monitor, speakers in ex working order, one box has slight damage. £800 ono. Notts (0115) 993 0898.

### SPECIAL REQUEST

- The following items have been stolen: Teac P30 CD transport, serial no EUR30013. Chord Electronics DAC serial no JF2144. Chord CPA220 pre-amp, serial no JF1989. Chord SMP600 power amp, serial no JF2090. All the Chord equipment was in silver finish. There may be a reward for information leading to the safe return of the equipment. Please call Crimestoppers on (0800) 555111.



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part exchange welcome



delivery and installation



interest free credit on selected items  
(subject to status, written details available on request)



service department



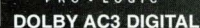
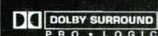
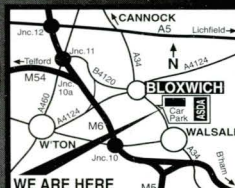
## look no further



### for the midlands

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# 01922 493499/473499



ANCAM AUDIO LAB CHORD EXPOSURE NAIM KESWICK ALSO - APOLLO A.T. AUDIO ALCHEMY AUDIO QUEST B&W BOSE BEYER CABLE TALK CHORD COMPANY CYRUS CELESTION DEA EPOS KEF REFERENCE KENWOOD MARANTZ MICHELL MORDAUNT SHORT MERIDIAN MICROSCA MISSION MOFI MUSICAL FIDELITY NAKAMICHI ORTOFON PROJECT QUAD ROKSAN ROGERS ROTEL SENSHEISER SONY SUMIKO SYSTEMEK TARGET TDL TUBE TECHNOLOGY VAN DEN HUL YAMAHA TV & VCR FROM: SONY TOSHIBA PANASONIC A&A FLORIAN PRODUCTION UNITS FROM: SANYO SIELCO

emics of hi-fi ...the academics of hi-fi ...the academics of hi-fi..the



# THE DIRECTORY

## Our Three Step Guide to Buying Hi-Fi

The legendary *Hi-Fi Choice* Directory is now simpler to use than ever before, but contains all the information you need to select and buy the perfect hi-fi system.

**STEP 1** Discover which products fall within your budget by using our Price Guide (starts on the next page). This listing is updated bi-monthly and includes all hi-fi products currently available in the UK. It is organised by product type, then by price band, and is sorted alphabetically. Products whose names are printed in **red** are those that we have reviewed. Which leads us to...

**STEP 2** Read about the hi-fi equipment that we have reviewed in the Directory (starts after the Price Guide). Here you will learn which items have been singled out for our famous Best Buy and Recommended awards that denote 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 (starts on page 139) to book a demonstration of the products you are interested in.

## Best Buys and Recommendations

If you see a Best Buy (**red**) or Recommended (**blue**) flag at the beginning of an entry in our Directory of reviewed products, the item concerned is particularly deserving of your attention.

**B** **Red** signifies the Best Buy swing-tag, which indicates products of the best quality and superb value for money in their price category.

**R** **Blue** Recommended products offer excellent quality and value, but not the same cost-effectiveness as a Best Buy.

Please note that an expensive Recommended product will nearly always perform better than an inexpensive Best Buy.

### Using Best Buys and Recommendations to buy hi-fi.

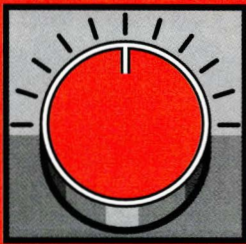
Do not commit the cardinal sin of dashing into your local dealer, magazine in hand, demanding to purchase Best Buy CD player A, Best Buy amplifier B and Best Buy speakers C. This is unlikely to result in your long-term satisfaction. Our belief at *Hi-Fi Choice* is that you must consider the hi-fi system as a complete entity, not as a collection of components. While a superb system might well contain Best Buy and Recommended components, one cannot lump together Best Buys and Recommendations in the hope that they will automatically perform superbly. These ratings make a useful guideline for short-listing components worth trying, but only by hearing them for yourself can you draw meaningful conclusions about what suits your taste. Furthermore, don't panic if the dealer offers you equipment that we have not tested. At the end of the day, what matters most is that your hi-fi system fits your tastes like a glove, and it is the dealer's challenge to ensure your satisfaction by any means – and components – necessary!



## DIRECTORY INDEX

ITEM	PAGE NUMBER
<b>NEW PRODUCT PRICES</b>	<b>110</b>
<b>LIST OF REVIEWED PRODUCTS</b>	<b>122</b>
<b>INTEGRATED AMPLIFIERS</b>	<b>122</b>
<b>PREAMPLIFIERS</b>	<b>123</b>
<b>POWER AMPLIFIERS</b>	<b>123</b>
<b>CABLES</b>	
<b>ANALOGUE INTERCONNECTS</b>	<b>124</b>
<b>DIGITAL INTERCONNECTS</b>	<b>125</b>
<b>LOUDSPEAKER CABLES</b>	<b>125</b>
<b>CARTRIDGES</b>	<b>126</b>
<b>CASSETTE DECKS</b>	<b>127</b>
<b>CD PLAYERS</b>	<b>128</b>
<b>CD TRANSPORTS</b>	<b>129</b>
<b>DACS</b>	<b>129</b>
<b>DIGITAL RECORDERS</b>	<b>130</b>
<b>HEADPHONES</b>	<b>130</b>
<b>HI-FI LOUDSPEAKERS</b>	<b>131</b>
<b>SUBWOOFERS</b>	<b>133</b>
<b>STANDS &amp; SUPPORTS</b>	<b>134</b>
<b>TONEARMS</b>	<b>135</b>
<b>TUNERS</b>	<b>135</b>
<b>TURNTABLES</b>	<b>136</b>
<b>FACTSBACK SERVICE</b>	<b>136</b>
<b>MANUFACTURER CONTACTS</b>	<b>137</b>





**AMPLIFIERS**  
Integrated Amps

**KEY**  
⑤ - number of line-level inputs.  
'20W' - output power per channel  
into nominal load of 8 Ohms.  
Up to £250

Aiwa XA-003	40W	140
AMC 3020	4 20W	100
AMC 3025A	4 25W	130
AMC 3050A	4 45W	170
Arcam Alpha 7	4 40W	250
Cambridge A1	4 35W	80
Cambridge A1 Mk III	4 40W	120
Cambridge A31	4 60W	200
Denon PMA-250SE	4 30W	160
Denon PMA-350SE	4 50W	200
Denon PMA-425R	4 45W	230
Denon PMA-100M	4 80W	240
Goodmans Delta 801	4 140W	140
Grundig V11	4 55W	160
H/K HK610	4 30W	180
H/K HK620	4 40W	250
JVC AX-V4BK	4 30W	200
JVC AX-R5BK	4 45W	200
Kenwood KA-1080	4 60W	140
Kenwood KA-3080R	4 70W	170
Kenwood KA-3020SE	4 50W	200
Marantz PM-47	4 40W	150
Marantz PM-57	4 50W	200
Marantz PM-66SE	4 50W	230
Marantz SR-47	4 40W	250
NAD 310	4 100W	100
NAD 312	4 25W	200
Pioneer A-105	4 30W	130
Pioneer A-204R	4 35W	160
Pioneer A-300R	4 45W	200
Pioneer A-405R	4 60W	250
Rega Brio	4 30W	229
Rotel RA970BX	4 60W	250
Sherwood AX-7030R	4 95W	250
Sony TA-FE210	4 45W	130
Sony TA-FE310	4 45W	150
Sony TA-F246E	4 40W	200
Sony TA-F448E	4 55W	250
TEAC A-R300	4 45W	200
TEAC A-R500	4 90W	250
Technics SU-V300	4 25W	170
Technics SU-A600 Mk3	4 60W	200
Technics SU-V500	4 30W	200
Technics SU-V620	4 70W	230
Technics SU-A700 Mk3	4 45W	250
Yamaha AX-390	4 60W	170
Yamaha AX-492	4 85W	220
<b>£251 to £500</b>		
Alchemist Axiom	4 30W	289
Alchemist Maxim	4 30W	319
AMC CVT 3030A	4 30W	400
Arcam Alpha 8	4 50W	350
Arcam Alpha 9	4 70W	500
Audio Analogue Puccini	4 40W	450
AudiInnov Aito	4 35W	300
Audiogram MB1	4 35W	493
Audiolab 8000A	4 60W	500
Aura VA-100 II	4 70W	350
CR Dev CR324	4 100W	499
Creek 4330	4 35W	279
Creek 4330R	4 35W	335
Creek 5250	4 50W	450
Denon PMA-725R	4 65W	350
EMF Audio Sequel	4 50W	450
H/K HK640	4 55W	400
JVC AX-V8BK	4 70W	350
Kenwood KA-5090R	4 75W	300
Kenwood KA-7090R	4 85W	400
Magnum IA120	4 60W	265
Magnum IA170	4 90W	330
Magnum IA170SE	4 90W	430
Marantz PM-68	4 90W	300
Marantz PM-66 Ki Sig.	4 50W	400
Micromega Minium	4 40W	350
Mission Cyrus SL	4 50W	398
Monrio Asty	4 40W	495

Musical Fidelity E11	4 60W	300
Musical Fidelity A2	4 25W	500
NAD 314	4 35W	260
NAD 317	4 80W	470
Onkyo A9210	4 40W	260
Onkyo A921	4 50W	350
Onkyo A922	4 70W	400
Orelle SA-100	4 50W	499
Pioneer A-400X	4 50W	300
Pioneer A-605R	4 80W	400
Pioneer A-300R Precision	4 35W	400
Pro-Ject Model 7	4 50W	300
Rega Elex	4 50W	398
Shearpe 2.5	4 35W	489
Sony TA-FA3ES	4 70W	400
Sony TA-F3000ES	4 60W	500
Talk Electronics Storm 1	4 50W	500
TEAC A-H500	4 50W	280
Technics SU-A800D	4 55W	400
Technics SU-A900 Mk2	4 90W	450
Technics SU-A900D	4 70W	500
Yamaha AX-592	4 100W	280

**£501 to £700**

Alchemist Kraken Integrated	4 55W	579
Alchemist Nemesis	4 80W	700
Audio Analogue Puccini SE	4 50W	595
Audio Note Kanji Line SE	4 9W	699
Audio Note First integrated	4 40W	699
Audiogram MB2	4 60W	599
Audiolab 8000S	4 60W	700
CR Dev Kalypso	4 15W	599
CR Dev CR325	4 175W	699
Creek 5250SE	4 60W	540
Creek 5250R	4 50W	575
Creek 5250SER	4 60W	665
Densen Beat B-100	4 60W	600
DPA Renaissance int.	4 40W	595
Exposure XX Super	4 55W	700
Fase Evoluzione Performance 2.0	4 40W	570
Gamma Gemini	4 12W	699
H/K HK660	4 65W	700
JoLida 202	4 40W	695
LFD Integrated 0	4 50W	549
Linn Majik (Line)	4 33W	650
Lynwood Opal	4 80W	685
Magnum IA200	4 100W	599
Magnum Class A	4 85W	690
Mission Cyrus III	4 50W	598
Musical Fidelity A220	4 50W	700
Myryad MI 120	4 60W	530
Naim Nait 3	4 30W	575
Orelle SA-100RX	4 75W	649
Prime Design A-100	4 100W	650
Quad 77 Integrated	4 85W	700
Roksan Caspian	4 70W	695
Rose Scion	4 65W	615
Shearpe Phase 2	4 50W	649
Stemfoort SF60	4 60W	549
Talk Electronics Storm 2	4 65W	650
TEAC A-BX7R	4 50W	700

**£701 to £1000**

Alchemist Forseti Integrated	4 100W	949
Audio Note Oto Line PP	4 12W	950
AVI S2000M1	4 100W	999
Copland CSA8	4 60W	945
Credo IMP702	4 70W	938
Credo IMP703	4 70W	1,000
Electrocompaniet ECI-2	4 50W	995
Exposure XV Super	4 55W	800
Fase Evoluzione Performance 1.1	4 70W	790
Fase Evoluzione Performance 1.0	4 60W	790
Golden Tube Audio SI-50	4 50W	995
H/K HK680	4 85W	1,000
LFD 0 LE Integrated	4 60W	799
Linn Majik (Phono)	4 33W	800
Magnum Class A SE	4 85W	815
Marantz PM-17	4 60W	900
Meridian 551	4 55W	795
Micromega Tempo 1	4 50W	750
Micromega Tempo 2	4 75W	950
Minstrel Ultra Linear	4 25W	900
Monrio MC-200S	4 60W	895
Naim Nait 3 R	4 30W	760
Pioneer A-07	4 80W	1,000
Rega Elicit	4 70W	730
Shearpe Phase 2 Reference	4 50W	799
Stemfoort SF100	4 100W	849
TEAC AB-X10	4 100W	1,000
Thule IA100	4 100W	949
Unison Simply Two	4 12W	995

**£1001 to £2000**

Art Audio Integra	4 30W	1,499
AudiInnov Classic 25	4 25W	1,099
AudiInnov S500	4 25W	1,199
Audio Note Soro Line PP	4 20W	1,200
Audio Note Oto Line SE	4 12W	1,200
Audio Note Oto Phono SE	4 12W	1,500
Audio Note Soro Line SE	4 18W	1,699
Beam-Echo SA-50	4 50W	1,950
Bryston B-60	4 75W	1,280
Bryston B-60R	4 75W	1,468
Copland CSA14	4 70W	1,199

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"This pre/power combo gets behind the recording and hi-fi... it simply makes music!"  
Alan Sircom, Hi-Fi Choice, November 1994

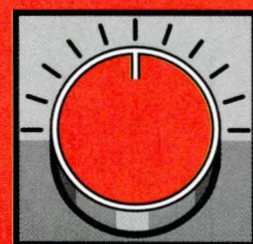
For more information or your nearest stockist, ☎ (0181) 947 5047, or e-mail 73064.1710@compuserve.com

**audio research**  
HIGH DEFINITION

Copland CSA28	4 1,299	
Copland CTA401	4 25W	1,699
CR Dev Romulus V3	4 35W	1,198
CR Dev Remus V3	4 60W	1,989
Credo LIM 702	4 1,191	1,249
Credo LIM 703	4 1,249	1,249
EAR 834	4 40W	1,999
Graaf Venticinque	4 20W	1,995
Heybrook Signature II	4 120W	1,600
LFD Integrated 1	4 65W	1,099
Marantz PM-16	4 90W	1,700
Meracur Intrare	4 60W	1,095
Minstrel Partridge	4 26W	1,499
Monrio MC-205	4 80W	1,545
Musical Fidelity A1000	4 50W	1,500
Primare 301	4 80W	1,800
Rogers E-20a	4 17W	1,090
Rogers E-40a	4 42W	1,900
Sonic Frontiers Anthem Integrated	4 25W	1,295
Unison Simply Four P	4 24W	1,555
Unison Simply Four T	4 11W	1,595
Woodside ISA230 Line	4 30W	1,099
Woodside ISA230 Disc	4 30W	1,249

**Over £2000**

Adyton Opera	4 50W	2,595
Audio Note Meishu Line	4 9W	2,750
Audio Note Ongaku	4 26W	56,000
Audio Research CA50	4 3,990	3,990
Cary CAD-300SEI	4 11W	3,495
EAR 859	4 13W	2,499
Electrocompaniet ECI-1	4 100W	2,195
Gamma Rhythm	4 18W	2,499
Jadis DA30	4 30W	3,490
Jadis DA60	4 60W	5,750
Krell KAV300i	4 150W	2,550
Meracur Onesta	4 75W	2,595
Pioneer A-09	4 45W	4,000
Tube Tech Unisig Sig. Int.	4 30W	2,300
Tube Tech Synergy PPS	4 150W	6,900
Unison Performance One	4 25W	4,500
Unison Absolute 845	4 40W	11,995



**PREAMPS**

**KEY**  
⑤ - (etc) number of line-level inputs.  
Ph - phono input fitted as standard (may be an option on some other models).

**Up to £500**

AMC CVT 1030A	4 Ph	400
Art Audio Minuet	4 Ph	499
Audio Alchemy Vac-in-the-box	4 Ph	250
Audio Analogue Bellini	4 Ph	475
AudiInnov P1	4 Ph	369
AudiInnov L1	4 Ph	369

Audio Note The M	4 350	
Beam-Echo PP-21	4 499	
Bryston BP1	4 Ph	438
Carver CT-24	4 Ph	499
CR Dev Themis	4 Ph	399
Creek P43	4 Ph	399
Creek P52	4 Ph	499
Crimson CS610C	4 Ph	450
EAR 834P	4 Ph	349
EAR 834L	4 Ph	449
Electrocompaniet ECP-1	4 Ph	495
Fase Evoluzione Phonodrive 1.0	4 Ph	445
Henley HMC50	4 Ph	200
Henley HMC100	4 Ph	450
LFD Mistral Linestage	4 Ph	449
LFD LSO Linestage	4 Ph	499
Lumley PP70	4 Ph	345
Lumley PP1	4 Ph	345
Magnum MP120	4 Ph	330
Magnum MP660	4 Ph	500
Magnum MP300	4 Ph	500
Moth 30 Passive	4 Ph	149
Moth 30 RIAA	4 Ph	249
Moth 30 Active	4 Ph	349
Musical Fidelity X10-D	4 Ph	120
Musical Fidelity X-LP	4 Ph	130
Musical Fidelity X-PRE	4 Ph	200
Musical Fidelity E20	4 Ph	400
Musical Fidelity F2	4 Ph	500
NAD 114	4 Ph	270
NAD 116	4 Ph	430
Naim Prefix	4 Ph	350
Naim NAC92	4 Ph	470
Rose EOS	4 Ph	398
Roksan Artaxerxes 10	4 Ph	395
Rose RV-23	4 Ph	450
Rotel RC970BX MkII	4 Ph	175
Talk Electronics Hurricane 1	4 Ph	500
Technics SU-C1000	4 Ph	350
Trilogy 905	4 Ph	375
Trilogy 904	4 Ph	375
Trilogy 900	4 Ph	499
Unison Simply Phono	4 Ph	500

**£501 to £2000**

Adyton Chorus	4 1,995	
Alchemist Kraken Pre	4 519	
Alchemist Forseti Pre	4 919	
Art Audio Headline	4 700	
Art Audio VPL	4 741	
Art Audio Conductor Phono	4 750	
Art Audio VP1	4 952	
Art Audio Conductor	4 1,250	
Art Audio Conductor Export	4 2,000	
Audio Note M1 Line	4 550	
Audio Note M1 RIAA	4 Ph	550
Audio Note M2 Line	4 Ph	999
Audio Note Discovery	4 Ph	999
Audio Note M2RIAA	4 Ph	1,099
Audio Research LS7	4 1,750	
Audio Research LS3	4 1,997	
Audio Synthesis Pro Passion	4 595	
Audio Synthesis Passion	4 695	
Audio Synthesis Passion 6	4 1,195	
Audio Synthesis Passion 8S	4 1,295	
Audio Synthesis Passion 8M	4 1,695	
Audiolab 8000C	4 Ph	550
Audiolab 8000PPA	4 Ph	900
Audiolab 8000Q	4 Ph	1,100
Aura CA-200	4 Ph	700
AVI S2000MP	4 Ph	949
Beam-Echo SP-21	4 Ph	1,116
Bryston .4	4 Ph	642



Bryston BP5	Ph	889
Bryston BP20		1,126
Bryston BP-25		1,326
Bryston 4B-ST PRO	Ph	1,756
Cary SLP-74	Ph	1,495
Cary PH-301	Ph	1,795
Chord CPA 1800	Ph	1,730
Chord CPA 4000 phono	Ph	1,790
Concordant Exhilarant	Ph	900
Concordant Exquisite	Ph	1,950
Conrad-Johnson PV-10AL	Ph	995
Conrad-Johnson PV-10A	Ph	1,295
Conrad-Johnson PV-12AL	Ph	1,990
Conrad-Johnson EF-1	Ph	1,990
Conrad-Johnson PF-2	Ph	1,990
Copland CSA303	Ph	1,199
Copland CTA301 MkII	Ph	1,399
CR Dev Carmenta	Ph	659
CR Dev Argento	Ph	699
Creedo CMP004	Ph	1,246
Creedo CMP005	Ph	1,876
Densen DM-20	Ph	1,200
DNM 3 Start	Ph	1,000
DNM 3A Start	Ph	1,650
DPA Enlightenment pre	Ph	695
DPA DSP500S	Ph	2,000
Dynavector L200	Ph	1,195
Dynavector P100	Ph	1,495
Dynavector L100	Ph	1,995
Earmax Earmax Pre	Ph	1,895
ECA Vista S	Ph	760
ECA Vista HD	Ph	880
ECA Prisma	Ph	880
Electrocompaniet EC-4.5	Ph	1,200
Electrocompaniet EC-4R	Ph	1,495
Exposure XIX	Ph	800
Exposure XVII	Ph	850
Fase Evoluzione Controlsorce 2.0	Ph	625
Fase Evoluzione Controlsorce 1.0	Ph	1,395
Golden Tube Audio SEP-1	Ph	890
Graaf WFB Two	Ph	1,195
Graaf WFB One	Ph	1,895
Henley HMC200	Ph	750
Jadis DPL2	Ph	1,790
LFD MC1 PhonoStage	Ph	949
LFD LS1 LineStage	Ph	999
LFD MC2 PhonoStage	Ph	1,499
LFD LS2 LineStage	Ph	1,599
LFD LSB LineStage	Ph	1,999
Linn Wakonda	Ph	750
Linn Kairn	Ph	1,400
Lumley LV1.5	Ph	895
Lumley LV1	Ph	1,150
Lumley PV1.5	Ph	1,700
Lumley PV1	Ph	1,700
Marantz AC-500	Ph	700
Marantz EC-500	Ph	900
Matisse Atom	Ph	1,000
Meracus Ingredi	Ph	925
Meridian 501	Ph	695
Meridian 562	Ph	765
Meridian 562V	Ph	995
Meridian 502	Ph	1,295
Michell Argo	Ph	730
Michi RHC-10	Ph	795
Michi RHQ-10	Ph	1,150
Michi RHA-10	Ph	1,150
Micromega Tempo P	Ph	1,250
Mission Cyrus Pre	Ph	648
Monrio ADN	Ph	625
Monrio PLUR1-L	Ph	960
Muse Model 3	Ph	1,990
Musical Fidelity F25	Ph	1,500
NAD 118	Ph	1,000
Naim NAC92R	Ph	630
Naim NAC72	Ph	725
Naim NAC102	Ph	1,050
Quad 77 Pre	Ph	850
Rega Hal	Ph	998
Roksan ROK-L2.5	Ph	1,250
Rose RV-23S	Ph	525
Shearne Phase 6 Pre	Ph	899
Shearne Phase 1 Pre Ref	Ph	1,399
Sonic Frontiers SFP-1	Ph	1,095
Sonic Frontiers SFP-1 Sig	Ph	1,495
Sonic Frontiers Anthem Pre 1	Ph	1,495
Sonic Frontiers Line 1	Ph	1,995
Sonographe SC26	Ph	995
Sumo Athena II Line	Ph	767
Sumo Athena IIB/II LS	Ph	987
Sumo Athena III	Ph	987
Sumo Artemis uP	Ph	1,595
Talk Electronics Hurricane 2	Ph	650
Talk Electronics Hurricane 3	Ph	900
Talk Electronics Hurricane 4	Ph	1,100
Technics SU-C2000	Ph	700
Tesserac TAADA	Ph	1,500
Tesserac TALA	Ph	1,500
Tesserac TAHA	Ph	1,800
Thorens TTP-2000F	Ph	699
Thule PR200	Ph	699
Trilogy 901	Ph	750

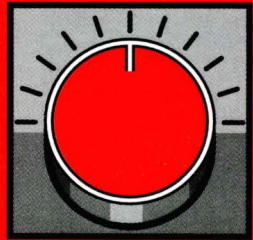
Trilogy 906	Ph	995
Trilogy 902	Ph	1,595
Tron Retro	Ph	1,000
Tron Nucleus Phono	Ph	2,000
Tron Nucleus	Ph	2,000
Tube Tech Seer Line	Ph	935
Tube Tech Mac Phono	Ph	1,150
Tube Tech Prophet	Ph	1,970
Unison Mystery One	Ph	1,750
Unison Phono One	Ph	1,995
Wilson Benesch Stage One	Ph	995
Woodside SC27 Line	Ph	949
Woodside SC26 Line	Ph	1,557
XTC PRE-1	Ph	1,250
Yamaha CX-2	Ph	650
<b>Over £2000</b>		
Adyton Temper	Ph	2,495
Adyton Modus	Ph	2,695
Alchemist The Alchemist pre	Ph	4,995
ATC SCA2	Ph	2,499
Audio Note M3Line	Ph	2,650
Audio Research LS15	Ph	3,399
Audio Research LS22	Ph	4,391
Audio Research LS5 MkIII	Ph	6,435
Audio Research REF 1	Ph	9,900
Boulder L3AE	Ph	2,100
Boulder L5AE	Ph	3,400
Boulder L5M	Ph	3,800
Boulder 2010	Ph	25,000
Cary SLP-94L	Ph	2,095
Cary SLP-98L	Ph	2,295
Chord CPA 2200	Ph	2,298
Chord CPA 2800	Ph	3,090
Chord CPA 3200	Ph	3,352
Chord CPA 4000	Ph	6,025
Conrad-Johnson PF-R	Ph	2,490
Conrad-Johnson PV-12A	Ph	2,590
Conrad-Johnson Premier 15	Ph	3,995
Conrad-Johnson Premier 14	Ph	3,995
Conrad-Johnson Art	Ph	14,995
CAT SL1 Sig. Mk2	Ph	6,500
CR Dev Kastor	Ph	2,995
Creedo LPR 001	Ph	2,815
DNM 3C Primus	Ph	2,550
DNM 3C Twin	Ph	3,800
DNM 3C Six	Ph	5,050
EAR 802MC	Ph	2,599
EAR G88	Ph	9,999
EAR P52	Ph	15,999
Gamma Era Phono	Ph	2,499
Gamma Era Ref	Ph	2,499
Gamma Era Sig	Ph	19,999
Graaf GM13.5B	Ph	3,950
Jadis DP60L	Ph	2,800
Jadis DPL	Ph	3,190
Jadis DPMC	Ph	3,190
Jadis JPL	Ph	4,720
Jadis JPP200	Ph	4,998
Jadis JP30MC	Ph	5,978
Jadis JPS2	Ph	7,900
Jadis JP80MC	Ph	11,989
Krell KRC3	Ph	3,250
Krell KRC-HR	Ph	6,949
LFD Disc Preamp	Ph	4,499
Marantz Model 7	Ph	3,500
Mark Levinson 25S	Ph	2,950
Mark Levinson 38	Ph	3,995
Matisse Fantasy	Ph	2,500
Matisse Reference	Ph	3,500
Meracus Pretare	Ph	2,195
Naim NAC82	Ph	2,160
Naim NAC52	Ph	3,350
Roksan ROK-L1.5	Ph	2,250
Sonic Frontiers Line 2	Ph	2,995
Sonic Frontiers Line 3	Ph	4,995
Tesserac TAP-A	Ph	5,300
Trilogy 918	Ph	2,775
Unison Dream	Ph	11,995
Woodside SC26 Line & Phono	Ph	2,233

Arcam Alpha 8P	Ph	50W	250
Arcam Alpha 9P	Ph	70W	400
Arcam Delta 290P	Ph	75W	400
Carver FTM-6CB	Ph	65W	399
Creek A43	Ph	50W	399
Creek A52	Ph	70W	499
Crimson CS620C	Ph	50W	450
Earmax Earmax Headphone	Ph	0.1W	375
LFD Mistral Power	Ph	60W	449
LFD PAO Powerstage	Ph	50W	499
Magnum MF120	Ph	85W	365
Marantz MA-500	Ph	125W	250
Marantz MA-700	Ph	200W	400
Mission Cyrus XPA	Ph	50W	298
Mission Cyrus Power	Ph	50W	498
Moth 30 Series Power	Ph	30W	249
Moth 30 Mono/40	Ph	40W	469
Musical Fidelity X-CANS	Ph	0.1W	130
Musical Fidelity E30	Ph	100W	500
Musical Fidelity X-A50	Ph	50W	500
Myryad MA 120	Ph	60W	450
NAD 912	Ph	30W	200
NAD 214	Ph	80 W	370
NAD 216THX	Ph	125W	470
Naim NAP90/3	Ph	30W	450
Rotel RB970BX MkII	Ph	60W	225
Rotel RB980BX	Ph	120W	450
Shearne 3.5	Ph	35W	469
Talk Electronics Tornado 1	Ph	50W	450
Technics SE-A1000	Ph	70W	400
<b>£501 to £2000</b>			
Alchemist Kraken pwr	Ph	55W	529
Alchemist Forseti Pwr	Ph	150W	1,309
AMC CVT 2100A	Ph	80W	600
Art Audio Quintet	Ph	15W	1,393
Art Audio Quintet SE MB	Ph	-W	1,500
Art Audio Concerto	Ph	50W	1,669
Audio Analogue Donizetti	Ph	60W	575
Audiolinn Series 800	Ph	25W	999
Audiolinn First Audio	Ph	7.5W	1,749
Audiolinn Series 1000	Ph	50W	1,799
Audio Note The P	Ph	40W	550
Audio Note P0	Ph	9W	599
Audio Note P1	Ph	12W	750
Audio Note P1SE	Ph	12W	999
Audio Note P2	Ph	20W	1,000
Audio Note P2SE	Ph	18W	1,499
Audio Note Conqueror	Ph	8W	1,599
Audio Synthesis Desire	Ph	100W	1,695
Audiolab 8000P	Ph	100W	750
Audiolab 8000M	Ph	125W	800
Aura PA-100	Ph	100W	700
Aura PA-200	Ph	110W	1,200
Aura PA-200 C	Ph	100W	1,250
AVI S2000MM	Ph	150W	1,399
Bryston 2B-LP	Ph	75W	750
Bryston 3B-ST PRO	Ph	150W	1,160
Bryston 3B-ST	Ph	150W	1,160
Bryston THX3B	Ph	150W	1,262
Bryston 7B-ST PRO	Ph	500W	1,545
Bryston 4B-ST	Ph	300W	1,756
Bryston 7B-ST	Ph	500W	1,815
Bryston THX4B	Ph	300W	1,850
Bryston THX7B	Ph	500W	1,886
Carver FTM-15CB	Ph	100W	599
Carver A-500X	Ph	250W	949
Carver A-760X	Ph	380W	1,299
Cary SLA-70 II	Ph	30W	1,495
Chord SPM 400	Ph	100W	1,325
Chord SPM 600	Ph	130W	1,720
Conrad-Johnson MV-55	Ph	50W	1,995
Copland CTA501	Ph	30W	1,750
CR Dev Amphion	Ph	12W	1,949
Creedo PMP 804	Ph	1,876	
Creek AS2SE	Ph	80W	599
Crimson CS630C	Ph	100W	800
Densen DM-30	Ph	100W	1,200
DNM PA Start	Ph	45W	1,000
DNM PA1 Start	Ph	45W	1,650
DPA Enlightenment pwr	Ph	100W	995
Earmax Earmax Power	Ph	25W	1,895
ECA Lectern S	Ph	50W	880
ECA Lectern HD	Ph	50W	1,480
Electrocompaniet AW60FTT	Ph	60W	1,095
Exposure XVIII Super	Ph	70W	850
Fase Evoluzione Powersource 2.0	Ph	65W	860
Fase Evoluzione Powersource 1.0	Ph	100W	1,670
Golden Tube Audio SE-40	Ph	40W	1,000
Golden Tube Audio SE-300B MkII	Ph	8W	1,490
Golden Tube Audio SE-100	Ph	100W	1,995
Jadis DA5	Ph	40W	1,997
Lexicon 212	Ph	120W	1,850
LFD PA1 Powerstage	Ph	60W	999
LFD PA2 Powerstage	Ph	75W	1,599
LFD PA2M Powerstage	Ph	90W	1,999
Linn LK100	Ph	50W	659
Linn LK240	Ph	120W	750
Linn AV510S	Ph	100W	1,200
Lynwood Ruby	Ph	120W	985
Magnum MF330	Ph	150W	685
Magnum MF660	Ph	125W	825
Magnum A500SE	Ph	200W	1,485

Magnum A50SE	Ph	200W	1,595
Meracus Ciere	Ph	60W	1,095
Meridian 555	Ph	60W	750
Meridian 557	Ph	200W	1,400
Michell Alecto Stereo	Ph	50W	1,150
Michell Alecto Mono	Ph	100W	1,989
Michi RHB-05	Ph	100W	1,100
Michi RHB-10	Ph	200W	2,000
Micromega Amp	Ph	100W	1,250
Monrio Cento	Ph	135W	1,495
Monrio HP1	Ph	135W	1,995
Moth 60 Stereo	Ph	60W	599
Moth 30 Mono/100	Ph	100W	879
Muse Model 100	Ph	100W	1,490
Musical Fidelity FX2	Ph	100W	800
NAD 218THX	Ph	200W	850
NAD 208THX	Ph	250W	1,100
Naim NAP140	Ph	45W	750
Naim NAP180	Ph	60W	1,060
Naim NAP135	Ph	75W	1,655
Naim NAP204	Ph	70W	1,655
Papworth TVA50	Ph	50W	1,425
Prime Design P-150	Ph	150W	650
Quad 77 Power	Ph	85W	600
Quad 707	Ph	140W	800
Rega EXS	Ph	70W	598
Rega Exon	Ph	125W	1,196
Roksan ROK-S1.5	Ph	70W	1,495
Rose RP-190 (Dual Mode)	Ph	75W	550
Rotel RB990BX	Ph	200W	625
Shearne Phase 3	Ph	50W	619
Shearne Phase 3 Reference	Ph	50W	729
Shearne Phase 5 Mono	Ph	100W	1,500
Sonic Frontiers Anthem Amp 1	Ph	40W	1,195
Sonographe SA250	Ph	125W	995
Sonographe SA400	Ph	220W	1,395
Sumo Ulysses III	Ph	60W	629
Sumo Polaris III	Ph	120W	950
Sumo Model Five	Ph	60W	1,975
Sumo Andromeda III	Ph	240W	1,975
Talk Electronics Tornado 2	Ph	65W	600
Talk Electronics Tornado 3	Ph	100W	750
Talk Electronics Tornado 4	Ph	110W	1,100
Technics SE-A2000	Ph	100W	1,100
Thorens TTA-2000	Ph	30W	599
Thule PA200	Ph	200W	1,798
Trilogy 948	Ph	50W	1,895
Tube Tech Unisig Sig. Pwr	Ph	30W	1,900
Woodside SA240	Ph	40W	1,199
Woodside MA100	Ph	100W	1,733
Woodside STA50	Ph	50W	1,880
XTC POW-1	Ph	200W	2,000
Yamaha MX-2	Ph	150W	750
<b>Over £2000</b>			
Adyton Cordis 1.6	Ph	120W	3,495
Adyton Cordis 3B	Ph	280W	12,995
Alchemist The Alchemist pwr	Ph	220W	3,995
Alchemist The Alchemist mono	Ph	55W	8,995
Art Audio Tempo	Ph	30W	2,499
Art Audio Quintet SE	Ph	-W	2,500
Art Audio Maestro	Ph	100W	3,524
ATC SPA2-150	Ph	200W	2,500
Audiolinn Ser 1000SE	Ph	50W	2,499
Audiolinn Second Audio	Ph	15W	



DNM PA3	50W	2,500
DNM PA3S	23W	3,750
DPA DAP500S	250W	3,000
Dynavector HX75	75W	2,195
Dynavector HX1.2	130W	3,995
EAR 861	32W	3,299
EAR 509 Mk II	100W	3,699
EAR 519	100W	4,699
EAR 549	200W	6,499
Electrocompaniet AW100DMB	100W	2,095
Electrocompaniet AW250DMB	250W	3,995
Electrocompaniet AW180MB	180W	4,595
Exposure IV	80W	2,199
Exposure XVI	125W	4,000
Gamma Rhythm Ref	35W	3,999
Gamma Aeon	20W	4,999
Gamma Space Ref	18W	7,999
Gamma Aeon Sig	90W	78,600
Graaf 5050	50W	2,150
Graaf GM100	100W	4,490
Graaf GM200	200W	8,000
Jadis DA8	80W	3,333
Jadis DA7	80W	5,290
Jadis JA30	30W	5,980
Jadis JA300B	10W	9,000
Jadis JA80	60W	9,912
Jadis JA200	160W	15,518
Jadis JA500	400W	21,500
Krell KAV500/2	100W	3,485
Krell FPB200	200W	6,490
Krell FPB300	300W	9,500
Krell FPB600	600W	12,900
Krell KAS2	200W	20,000
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Lumley ST70	70W	2,225
Lumley M125	120W	3,750
Lumley M250	250W	7,500
Magnum Class A mono	180W	2,450
Magnum A200SE	275W	3,750
Marantz Model 8	35W	3,500
Marantz Model 9	70W	4,000
Mark Levinson 331	100W	4,495
Mark Levinson 332	200W	6,495
Mark Levinson 333	300W	8,495
Mark Levinson 33H	150W	19,395
Matisse Ref Monoblocks	180W	8,000
Meracrus Tentare	75W	2,245
Meracrus 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 F19	300W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Roksan ROK-M1.5	160W	2,250
Shearpe Phase 1 Pwr Ref	100W	2,199
Sonic Frontiers Power 1	55W	2,495
Sonic Frontiers Power 2	110W	4,995
Sonic Frontiers Power 3	220W	9,995
Sumo Model Ten/M	340W	4,200
Sunfire Sunfire	200W	2,500
Tesseract TAMP-60	60W	7,350
Trilogy 958	100W	3,395
Tube Tech Genesis Sig.	100W	4,700
Tube Tech Synergy DMA	150W	6,400
Unison Smart 845	24W	3,250
Unison Palladio	32W	11,995

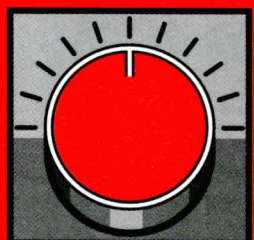


**SURROUND SOUND AMPLIFIERS/RECEIVERS**

**KEY**  
 '20W' - output power per front channel into nominal load of 8 Ohms.

AMC 2445	45W	200
Arcam Xeta One	60W	1,000
Audio Research SDA1		4,391
Bryston THX3B	150W	1,262
Bryston THX4B	300W	1,850
Bryston THX7B	500W	1,886
Bryston 5B-ST PRO	150W	1,892
Bryston THX5B	150W	2,062
Bryston 8B-ST PRO	150W	2,195

Bryston 8B-ST	150W	2,195
Bryston THX88	150W	2,385
Carver AV-505	80W	899
Carver AV-705X	125W	1,299
Carver AV-753X	250W	1,549
Chord SPM 1600	250W	4,700
Chord SPM 1800	250W	4,700
Chord SPM 2000	200W	4,890
Chord SPM 3000B	315W	7,960
Denon AVC-1800	70W	550
Denon POA-T2	120W	800
Denon POA-T3	120W	800
Denon AVC-3800	90W	1,700
Denon AVP-A1	-W	3,000
H/K AV100	30W	250
H/K AV150	55W	350
H/K AV200 II	65W	400
H/K AVI250	100W	1,250
H/K Citation 7.1	130W	2,500
JVC AX-V4	60W	200
JVC AX-V6BK	50W	230
JVC AX-V8BK	75W	350
Krell KAV500/3	100W	3,985
Krell KAV500/4	100W	4,485
Krell KAV500/5	100W	4,985
Lexicon 312	120W	2,750
Lexicon 412	120W	3,250
Magnum MF500	125W	1,445
Marantz MM-500	55W	400
Marantz PM-711AV	65W	450
Mission AV-Master	65W	650
NAD 316	50W	450
NAD 916	30W	500
Onkyo ASV 620	120W	700
Parasound 806	80W	1,495
Parasound 1206	135W	2,195
Pioneer VSA 805S	80W	450
Rotel RB956AX	30W	350
Rotel RSP960AX	30W	400
Sansui AV-7100	75W	250
Sony TA-VE700	90W	350
Sony TA VE 800G	100W	400
Sony TA VA 8ES	120W	700
Sunfire Cinema Grand	200W	2,600
TEAC AV-H500	80W	380
Yamaha DSP-A492	65W	250
Yamaha DSP-A592	70W	330
Yamaha DSP-A1092	80W	850
Yamaha DSP-A990	60W	900
Yamaha DSP-A2070	80W	1,100
Yamaha DSP-A3090	80W	1,500



**SURROUND SOUND PROCESSORS**

**KEY**  
 6 - number of inputs.  
 AC-3 - includes AC-3 decoding for compatibility with Dolby's digital home cinema format.

AMC Pro7	200
Arcam Xeta 2	650
Audio Research SDPI	3,293
H/K ADP303	600
H/K Citation 7.0	3,500
Lexicon DC-1 Pro-Logic	2,000
Lexicon DC-1 THX	3,000
Lexicon DC-1 AC-3	4,000
Marantz AV-1030	330
Marantz AV-1040	400
Marantz DP-870	600
Meridian 565 AC-3	2,700
NAD 117	470
Naim AV1	1,680
Onkyo SR 211PRO	340
Onkyo ED 901	700
Parasound PSP 1500	1,569
Pioneer SP-D07	800
Sanyo HT D47	200
Sony SDP E300	230
Sony SDP-EP9ES	600
Technics SH-AV500	280
Yamaha DSP-E492	250
Yamaha DDP-2	349
Yamaha DSP-E580	450
Yamaha DSP-E1000	700



**SURROUND SOUND RECEIVERS**

**KEY**  
 '20W' - output power per front channel into nominal load of 8 Ohms.

Aiwa AV-X100	60W	400
Carver CT-26V		699
Carver HTR-880	85W	849
Carver HR-895	50W	1,099
Denon AVR-600RD	100W	300
Goodmans Delta 801	30W	200
Grundig R14DPL	40W	230
H/K AVR10	30W	300
H/K AVR25	65W	600
H/K AVR70	75W	1,000
H/K AVR80	95W	1,500
JVC RX320VBK	30W	250
JVC RX-416VBK	50W	270
JVC RX-616VBK	60W	350
Kenwood KR-V5090	50W	230
Kenwood KR-V6090	100W	280
Kenwood KR-V8090	110W	400
Kenwood KR-V9090	120W	500
Marantz SR-370	80W	300
Marantz SR-770	80W	700
Marantz SR-96	110W	1,300
Mission M Time	100W	2,000
NAD 713	60W	400
NAD 917	50W	550
NAD 716	80W	600
Onkyo TXSV 434	65W	400
Onkyo TXSV 424	50W	450
Onkyo TXSV 525R	60W	600
Onkyo TXSV 535R	80W	600
Onkyo TXSV 636	85W	800
Onkyo TXSV 727R	80W	800
Onkyo TXDS 838	100W	1,300
Onkyo TXSV 828THX	100W	1,300
Onkyo TXSV 919THX	110W	2,000
Onkyo TXSV 939THX	120W	3,000
Philips FR731	35W	250
Philips FR751	50W	300
Pioneer VSX-405RDS	50W	250
Pioneer VSX-505RDS	50W	300
Sansui RZ-5110AV	50W	190
Sherwood RV-4050R	35W	140
Sony STRD E405	50W	280
TEAC AG-V6200	90W	400
Technics SA-EX300	40W	250
Technics SA-EX500	60W	350
Technics SA-EX700	60W	450
Technics SA-TX50	120W	1,000
Yamaha RX-V392RDS	50W	250
Yamaha RX-V592RDS	70W	400



**CABLES ANALOGUE INTERCONNECTS**

**KEY**  
 2 - stranded construction.  
 1 - solid-core construction.  
 Prices for interconnects are for a one-metre terminated pair.

Apertura Model B	260.00
Apertura Model A	469.00
Art Yam Church 5000	515.00
Audio Note AN-A	18.00

Audio Note AN-C	35.00
Audio Note AN-S	99.00
Audio Note AN-V	179.00
Audio Note AN-Vx	450.00
Audioquest Jade	30.00
Audioquest Turquoise 2	40.00
Audioquest Topaz 2	60.00
Audioquest Ruby 2	80.00
Audioquest Quartz	120.00
Audioquest Opal	189.00
Audioquest Emerald	249.00
Audioquest Lapis	399.00
Audioquest Diamond	549.00
Cable Talk Improved 2/CD	26.00
Cable Talk Advanced 2	35.00
Cable Talk Monitor 2	50.00
Cable Talk Improved 2/T	50.00
Cable Talk Studio 2	65.00
Cable Talk Professional 2	85.00
Cable Talk Broadcast 2	100.00
Cable Talk Reference 2	150.00
Cable Talk Signature 2 Gold	300.00
Cambridge Atlantic	10.00
Cambridge Arctic	20.00
Cambridge Pacific	30.00
Cambridge Studio Reference	40.00
Cardas Audio 300B-Microtwin	115.00
Cardas Audio Quadlink-Five	200.00
Cardas Audio Cardas Cross	360.00
Cardas Audio Hexlink-Five C	530.00
Cardas Audio Hexlink Golden-5 C	600.00
Cardas Audio Golden Cross	700.00
Connections Ultra	28.00
Connections Midas	39.00
Connections HD	46.00
DNM-Reson TCC75	34.00
DPA Slink	41.00
DPA White Slink	75.00
DPA Black Slink	245.00
Expressive Tech IC-1	700.00
Gamma Wow Balance	799.00
Goertz Interconnect	135.00
GT Audio Intercon	130.00
Henley HSP10	20.00
Henley HSP50	35.00
Henley HSP100	65.00
Henley HSP200	95.00
Heybrook Black Flash	49.95
Ixos 104	20.00
Ixos 103	45.00
Ixos 102	60.00
Ixos 101	100.00
Ixos 100.X03	150.00
Kimber PBJ	68.00
Kimber KC1	96.00
Kimber Silver Streak	180.00
Kimber KCAG	390.00
Kimber KCTG	720.00
Kronos Konnekt 3	49.00
Kronos Konnekt 2	99.00
Kronos Konnekt 1	199.00
LAT International IC-50	37.00
LAT International IC-80	60.00
LAT International IC-100-D	89.00
LAT International IC-200 Mk II	151.00
Lieder Chanson	340.00
Lieder Lek	420.00
Lieder Het Lied	420.00
Lieder Song	580.00
LiederMaas	620.00
Lieder Rijn	620.00
Lieder Waal	1,400.00
Lumley Silver 12/2	115.00
Lumley Silver 14/4	175.00
Moth Leyline Black	100.00
Moth Leyline Grey	200.00
Nordost Magic	30.00
Nordost Black Knight	55.00
Nordost Blue Angel	90.00
Nordost Blue Heaven	135.00
Nordost Red Dawn	260.00
Nordost SPM	825.00
Ortofon 7N interconnect	250.00
QED P2 Gold	20.00
QED Incon P2 Screened	23.00
QED Incon P1 Screened	26.00
Roksan ROK-Intercon	75.00
Siltech MC2-12	308.00
Siltech MC4-24S	400.00
Siltech FTM-3S	730.00
Silver Sounds SS2	99.00
Silver Sounds SS1	199.00
Silver Tone Ex-Static	35.00
Silver Tone Sci-Fi	95.00
SME S2LB-4	46.18
SME S3LB-4	56.83
SME 4900A	76.83
SME 5900A	102.57
Sonic Link Bonus	15.00
Sonic Link Red	25.00
Sonic Link Silver pink	35.00
Sonic Link Black	49.00
Sonic Link White	65.00



Sonic Link Brown	70.00
Sonic Link Violet	85.00
Sonic Link Blue Nickel	140.00
Sonic Link Vermillion	195.00
Sonic Link Red earth	300.00
Sonic Link Black earth	450.00
Sonic Link Blue earth	695.00
ChordCo Chrysalis	30.00
ChordCo Cobra	49.00
ChordCo Siren	65.00
ChordCo Chameleon	68.00
ChordCo Solid	99.00
Transparent Cable Musichord Int	48.00
Transparent Cable The Link	92.00
Transparent Cable Music Link	119.00
Trichord Pulsewire 75	169.00
Vampire Wire CC	24.00
Vampire Wire CCC/II	58.00
Vampire Wire SC/II	98.00
Vampire Wire SC/IV	144.00
Vampire Wire AI/2	259.00
Vampire Wire SL	412.00
Yan Den Hul Source HB	50.00
XLO Type 150	50.00
XLO Type 0.1	180.00



**DIGITAL INTERCONNECTS**

**KEY**  
Prices for interconnects are for a one-metre terminated pair.

Apertura Model B	139.00
Apertura Model A	255.00
Art Yam Church 5000	275.00
Audioquest Digital/video 1	30.00
Audioquest Digital/video 2	60.00
Audioquest Optilink X	90.00
Audioquest Digital PRO	100.00
Audioquest Optilink Pro	149.00
Audioquest Optilink Z	179.00
Cable Talk Digital 2	75.00
Cardas Audio Lightning	190.00
DPA Opti-link	20.00
DPA Digi-link	28.00
Ixos 105	25.00
Kimber Opti-link	50.00
Kimber Illuminati DV-30	55.00
Kimber Illuminati D-60	215.00
Kimber Illuminati DX-50	350.00
Kimber Illuminati Orchid	750.00
LAT International DI-20-D	79.00
MoTh Layline Datalink	140.00
Nordost Moonglo	145.00
QED DigiFlex	20.00
QED Optiflex	25.00
Roksan ROK-Intercon	45.00
Siltech HF-6	145.00
Sonic Link Blue/black	10.00
Sonic Link Green	60.00
Sonic Link Green Earth	150.00
ChordCo Codac	33.00
ChordCo Prodac	50.00
Transparent Cable PDL	199.00
Trichord Pulsewire 75D	75.00
Trichord Pulsewire 110D	145.00
Vampire Wire DI/1	150.00



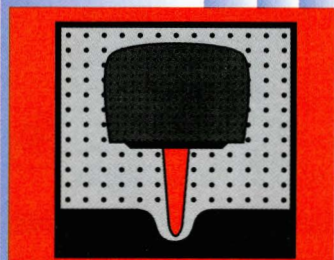
**SPEAKER CABLES**

**KEY**  
Price per mono metre unterminated.

Apertura Silver	82.50
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Art Yam Church M2000	470.00
Art Yam Church 5000	795.00
Audio Note AN-D	4.50
Audio Note AN-B	16.50
Audio Note AN-L	29.50
Audio Note AN-SP	150.00
Audio Note AN-SPx	450.00
Audioquest Type 2	3.50
Audioquest F-16	3.60
Audioquest Type 6	7.50
Audioquest Indigo 2	12.00
Audioquest Crystal	18.00
Audioquest Forest	65.00
Audioquest Argent	95.00
Audioquest Clear 3	160.00
Bandridge LC7409	4.00
Bandridge LC4110	28.00
Bandridge LC3410	40.00
Bandridge LC3210	75.00
Bandridge LC3219	75.00
Bandridge LC3220	90.00
Bandridge LC3310	95.00
Bandridge LC3240	125.00
Cable Talk The Flat One	2.00
Cable Talk Theatre 2	2.00
Cable Talk Talk 3.1	2.25
Cable Talk Overture 2.1	4.00
Cable Talk Talk 3.1 Biwire	5.00
Cable Talk Talk 4.1	5.00
Cable Talk Concert 2.1	7.00
Cable Talk Talk 4.1 Biwire	9.00
Cable Talk Symphony 3	13.00
Cable Talk Concert 2.1 Biwire	14.00
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	239.00
DNM-Reson LSC	6.95
DNM-Reson LSCB	11.95
DPA Black Sixteen	100.00
Electrocompanion EC-K2	30.00
Gale XL189	1.00
Gale XL315	2.00
Gale XL160-2	2.50
Gamma Wonder Line	60.00
Goertz M1	10.00
Goertz M2	20.00
GT Audio Speaker	50.00
Ixos 607	2.00
Ixos 605	3.00
Ixos 606	8.00
Kimber 4PR	8.00
Kimber 4VS	12.00
Kimber 4TC	19.68
Kimber 8TC	40.00
Kimber 4AG	394.00
Kimber 8AG	656.00
LAT International SS 800	21.00
LAT International BIWIRE	27.00
LAT International SS 1000	42.50
Lieder Pad	460.00
Lieder Bel Canto	500.00
Lieder Spoor	660.00
Lieder Straat	1,080.00
Lieder Weg	1,400.00
Linn K20	4.00
Linn K400	10.00
Linn K600	15.00
Lumley Silver 12/2	35.00
Lumley Silver 14/4	40.00
Mission Duet	1.90
Mission Quartet bi-wire	3.90
Naim NACA 5	5.50
Nordost Octava	3.00
Nordost 4-Flat	10.00
Nordost Blue Heaven	50.00
Nordost Red Dawn	100.00
Nordost SPM	325.00
Ortoton SPK100	3.00
Ortoton SPK200	5.00
Ortoton SPK300	8.00
Parasonic 7845	2.00
Parasonic 7891	3.00
QED Qudos Micro	1.25
QED Qudos Bi-Wire	4.50
QED Profile 8	6.50
QED Profile 4x4	9.00
QED Profile Silver 12	15.00
Rega REGA	2.00
Roksan ROK-Speaker	6.00
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
Sonic Link AST50	1.95
Sonic Link AST75	3.00
Sonic Link AST200	5.95
Sonic Link AST200x2	10.00
Sonic Link S300	18.00
Sonic Link S300x2	35.00
Sonic Link S900	50.00
Sonic Link S600x2	70.00
Sonic Link RE3.1	330.00
Sonic Link RE3.4	5.95
ChordCo Myth	15.00
ChordCo Legend	11.00
Transparent Cable Musichord Spkr	23.00
Transparent Cable The Wave	25.00
Transparent Cable Music Wave Spkr	11.00
Vampire Wire SC-384	15.00
Vampire Wire SC-554	30.00
Vampire Wire ST-I	30.00
Vampire Wire SC-1108	48.00
Vampire Wire ST-II	73.00
Vampire Wire ST-III	4.00
XLO Pro 625	16.60
XLO Pro 600	16.60



**CARTRIDGES**

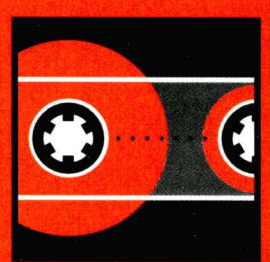
**KEY**  
MM - moving-magnet type.  
MC - moving-coil type.  
Up to £100

Audio Note I01	MM	99
Audio Technica AT-91	MM	13
Audio Technica AT-95E	MM	19
Audio Technica AT-110E	MM	24
Benz-Micro MC20EII	MC	70
Denon DL110	MC	70
Denon DL160	MC	90
Denon DL103	MC	100
Goldring Elan	MM	19
Goldring Elektra	MM	29
Goldring 1006	MM	59
Goldring 1012GX	MM	79
Goldring 1022GX	MM	99
Grado ZTE+1	MM	27
Grado ZCE+1	MM	37
Grado ZF3E+1	MM	48
Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado ZF1+	MM	63
Grado Prestige Red	MM	99
N'ham Tracer I	MM	18
N'ham Tracer II	MM	94
N'ham Tracer III	MM	10
N'ham Tracer IV	MM	20
Ortoton MC3 Turbo	MC	30
Ortoton MC15 Super II	MC	38
Ortoton 540	MM	50
Ortoton MC25E	MC	65
Ortoton MC25FL	MC	70
Ortoton MC10 Supreme	MC	70
Ortoton SPU mono	MC	80
Ortoton MC20 Supreme	MC	90
Ortoton SPU Classic	MC	100
Ortoton MC30 Supreme	MC	100
Ortoton MC2000II	MC	20
Pickering TE-15	MM	25
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 XV15-757S	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	39
Rega RB78	MM	39
Rega Super Bias	MM	59
Rega Elys	MM	85
Shure SC35C	MM	29
Shure ME95ED	MM	38

Shure M70BX	MM	38
Stanton 500AL II	MM	34
Stanton 500EL	MM	37
Stanton 680AL/X	MM	56
Stanton 680EL/X	MM	30
Sumiko Oyster	MM	70
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MC	100
<b>Over £100</b>		
Audio Note I02	MM	139
Audio Note Soara	MC	795
Audio Note I01V	MC	1,095
Audio Note I02V	MC	1,695
Audio Note I0Ltd	MC	4,500
Audio Technica AT-OC9	MM	245
Audio Technica ART-1	MC	944
Benz-Micro The Glider	MC	650
Benz-Micro M090	MC	700
Benz-Micro L040	MC	700
Benz-Micro H200	MC	700
Benz-Micro Reference	MC	1,100
Benz-Micro Reference Ruby	MC	1,500
Benz-Micro Ruby Open Air	MC	1,600
Clearaudio Aurum-Alpha	MM	135
Clearaudio Aurum-Beta	MM	195
Clearaudio Aurum-Beta/S	MM	265
Clearaudio Gamma-S	MC	745
Clearaudio Signature	MC	1,595
Clearaudio Accurate	MC	2,950
Clearaudio Insider	MC	5,500
Denon DL304	MC	200
Dynavector 10X4II	MC	189
Dynavector 23RS	MC	375
Dynavector 17D2	MC	450
Dynavector XX-1L	MC	998
Dynavector XX-1	MC	998
Dynavector Te-Kaitora	MC	1,698
Goldring Eroica LX	MC	110
Goldring Eroica	MC	110
Goldring 1042	MM	120
Goldring Elite	MC	220
Goldring Excel VX	MC	495
Grado Prestige Silver	MM	119
Grado Prestige Gold	MM	149
Grado Signature Junior	MM	150
Grado Signature 8M2	MM	250
Grado Signature MCZ	MM	375
Grado Signature TLZ	MM	650
Grado Signature XTZ	MM	975
Koetsu Red T	MC	1,550
Koetsu Red K Sig	MC	1,998
Koetsu Urushi	MC	2,297
Koetsu Signature	MC	3,218
Koetsu Gold PR	MC	5,498
Linn K9	MM	125
Linn Klyde	MC	500
Linn Arkiv	MC	1,000
London Decca Maroon	MM	259
London Decca Gold	MM	299
London Decca Maroon Dp	MM	339
London Decca Gold Dp	MM	379
London Decca S Gold Dp	MM	399
London Decca S Gold Pp	MM	479
London Decca Jubilee	MM	999
Lyra Lydian	MC	649
Lyra Clavis Da Capo	MC	995
N'ham Tracer II	MM	310
N'ham Tracer III	MM	410
N'ham Tracer IV	MM	660
Ortoton MC3 Turbo	MC	130
Ortoton MC15 Super II	MC	130
Ortoton 540	MM	130
Ortoton MC25E	MC	180
Ortoton MC25FL	MC	250
Ortoton MC10 Supreme	MC	300
Ortoton SPU mono	MC	350
Ortoton MC20 Supreme	MC	425
Ortoton SPU Classic	MC	450
Ortoton MC30 Supreme	MC	525
Ortoton MC2000II	MC	750
Ortoton MC Rohmann	MC	1,000
Ortoton MC3000 II	MC	1,100
Ortoton MC5000	MC	1,500
Ortoton 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
Reson Mica	MM	150
Reson Aciore	MC	199
Reson Recca	MC	225
Reson Etile	MC	299
Reson Lens	MC	899
Roksan Corus Black	MM	130
Roksan Shiraz	MC	970
Stanton 890AL/X	MM	118
Sumiko BPS	MC	250
Transfiguration Spirit	MC	1,000
Transfiguration Temper	MC	1,950



Van Den Hul MM-1	MM	250
Van Den Hul MM-2	MM	299
Van Den Hul DDT-II	MC	699
Van Den Hul MC-10	MC	799
Van Den Hul MC-One	MC	999
Van Den Hul MC-ONE Super	MC	1,150
Van Den Hul MC-Two	MC	1,349
Van Den Hul The Frog	MC	1,700
Van Den Hul Grasshopper IISLA	MC	2,200
Van Den Hul Grasshopper IIGLNL	MC	2,999
Van Den Hul Grasshopper IIGLNL	MC	2,999
Van Den Hul Grasshopper IICMNL	MC	3,000
Van Den Hul Grasshopper IICMNL	MC	3,400
Van Den Hul Grasshopper IVGLA	MC	3,450
Wilson Benesch Matrix	MC	786
Wilson Benesch Hybrid	MC	1,068
Wilson Benesch Carbon	MC	1,586
Wilson Benesch Analog	MC	1,850



**CASSETTE DECKS**

**KEY**  
 ↔ - Autoreverse - no need to remove and turn round the tape.  
 3-H - 3 heads, i.e. separate record and replay heads.

Up to £200

Aiwa AD-F450	↔	120
Aiwa AD-WX727	↔	170
Denon DRM-550	↔	160
Denon DRW-580	↔	200
Denon DRS-640	↔	200
Goodmans Delta 801	↔	130
Grundig CCF3	↔	200
JVC TD-W218BK	↔	170
JVC TD-X372BK	↔	170
JVC TD-R472BK	↔	200
JVC TD-W318BK	↔	200
Kenwood KX-W4080	↔	160
Kenwood KX-3080	↔	160
Kenwood KX-W6080	↔	200
Kenwood KX-5080S	↔	200
Marantz SD-555	↔	200
Onkyo K 185	↔	200
Pioneer CT-S250	↔	150
Pioneer CT-W205R	↔	160
Pioneer CT-W505R	↔	180
Pioneer CT-S450S	↔	200
Sony TC-KE200	↔	120
Sony TC-WE405	↔	150
Sony TC-KE400S	↔	180
Sony TC-WE505	↔	180
TEAC W-416	↔	100
TEAC V-610	↔	100
TEAC W-780R	↔	170
TEAC R-560	↔	180
TEAC R-H500	↔	200
Technics RS-TR373	↔	200
Technics RS-BX501	↔	200
Yamaha KX-380	↔	150
Yamaha KX-W392	↔	180
Yamaha KX-490	↔	200

Over £200

Aiwa AD-F850	3-H	230
Aiwa AD-S950	3-H	300
Carver TRD-1550	↔	629
Denon DRM-850S	↔	230
Denon DRM-740	3-H	270
Denon DRS-810	3-H	310
H/K TD420	↔	250
H/K TD450	3-H	350
JVC TD-V562BK	3-H	220
JVC TD-W718BK	↔	250
JVC TD-V652BK	3-H	270
Marantz SD-57	↔	249
NAD 613	↔	230
NAD 614	↔	270
NAD 616	↔	300
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-W803RS	↔	300
Pioneer CT-S830S	3-H	500
Pioneer CT-95	3-H	1,000
Sony TC-KE500S	↔	230
Sony TC-WE805S	↔	250
Sony TC-KE600S	3-H	300
Sony TC-KA6ES	3-H	550
TEAC W-850R	↔	250
TEAC V-1030	3-H	250
TEAC W-6000R	↔	450
TEAC V-6030S	3-H	550
TEAC V-8030S	3-H	650
Technics RS-TR474	↔	220
Technics RS-AZ6	3-H	230
Technics RS-TR575	↔	280
Technics RS-AZ7	3-H	300
Yamaha KX-W592	↔	250
Yamaha KX-W592	↔	280
Yamaha KX-690	3-H	400



**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

Aiwa XC-300	↔	150
AMC CD9	↔	120
AMC CD8	1010	150
AMC CD6	1010	250
AMC CDM7	↔	250
Cambridge CD4	1010	150
Cambridge CD4SE	1010	200
Cambridge CD6	1010	250
Denon DCD-625	1010	200
Denon DCD-715	1010	235
Denon DCD-825	1010	240
Eclipse CD30	↔	50
Eclipse CD50	↔	60
Eclipse CD101	↔	80
Grundig CDII	↔	170
H/K HD710	1010	200
JVC XL-V120BK	↔	110
JVC XL-V184BK	↔	120
JVC XL-V284BK	↔	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 DP-R6090	↔	200
Kenwood DP-4090	↔	230
Marantz CD-46	↔	150
Marantz CC-38	↔	200
Marantz CD-48	1010	200
Marantz CD-57	1010	230
Marantz CD-67II	1010	250
Marantz CC-47	↔	250
NAD 510	↔	200
NAD 512	1010	250
Philips CD711	↔	120
Philips CD721	↔	130
Philips CD751	1010	150
Philips CDC751	↔	180
Pioneer PD-104	↔	130
Pioneer PD-204	↔	150
Pioneer PD-M603	↔	200
Pioneer PD-S505	↔	200
Pioneer PD-F605	↔	230
Pioneer PD-F25	↔	230
Rotel RCD-930AX	↔	180
Sherwood CD-4030R	↔	110
Sony CDP-M205	↔	180
Sony CDP-XE210	↔	120
Sony CDP-M305	↔	130
Sony CDP-XE310	↔	140
Sony CDP-CE105	↔	150

Sony CDP-CE315	↔	180
Sony CDP-XE510	↔	180
Sony CDP-C325M	↔	200
TEAC CD-P1800	↔	130
TEAC CD-P3450SE	↔	200
TEAC PD-H500	↔	240
TEAC PD-D2200	1010	250
Technics SL-PG380A	↔	120
Technics SL-PG480A	↔	140
Technics SL-PG580A	↔	160
Technics SL-PD687	↔	160
Technics SL-PD887	↔	180
Technics SL-PS670A	1010	200
Technics SL-PS770A	1010	250
Yamaha CDX-390	↔	130
Yamaha CDC-565	↔	170
Yamaha CDA-490	↔	170
Yamaha CDC-665	↔	220
Yamaha CDX-590	1010	230

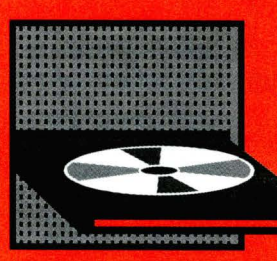
£251 to £500

Aiwa DX-C100M	↔	500
Arcam Alpha 7	1010	320
Audio Alchemy ACD II	1010	490
Audiolinn Alto	1010	399
Aura CD100	↔	400
Carver SDA-400	1010	299
Carver MV-5	↔	469
Denon DCM-260	↔	300
Denon DCD-1015	1010	350
Grundig CDC14	↔	300
H/K HD730	1010	300
H/K FL8300	↔	300
JVC XL-Z674BK	↔	300
Kenwood DP-R7080	↔	300
Kenwood DP-9090	↔	300
Kenwood DP-7090	↔	400
Marantz CD-67	1010	270
Marantz CD-67SE	1010	350
Marantz CC-870	↔	400
Marantz CD-631KI	↔	500
Micromega Minium	1010	400
Musical Fidelity E60	1010	300
Musical Fidelity A2	1010	500
NAD 513	↔	290
NAD 515	↔	350
NAD 514	↔	370
NAD 517	↔	400
Onkyo DX 7210	1010	260
Onkyo C721	↔	290
Onkyo DXC 320	↔	380
Onkyo DX 7510	↔	400
Onkyo CM 716	↔	450
Pioneer PD-S705	↔	300
Pioneer PD-F805	↔	330
Pioneer PD-F905	↔	400
Pioneer PD-S904	↔	400
Pioneer PD-S505 Precision	1010	460
Rotel RCD-965BX	1010	300
Rotel RCD-970BX	1010	375
Sony CDP-XE900E	↔	300
Sony CDP-XA2ES	↔	350
Sony CDP-CX200	↔	380
Sony CDP-X3000ES	↔	500
TEAC CD-5	↔	350
Yamaha CDX-890	1010	350

£501 to £1000

Acurus ACD11	1010	899
Alchemist Nexus	1010	597
Arcam Alpha 8	1010	520
Audiolab 8000CD	↔	1,000
AVI S2000MC2	↔	895
Creek CD42	↔	599
Denon DCD-3000	1010	1,000
DPA Renaissance int CD	↔	950
Fase Evoluzione Laserdrive 1.0	↔	995
Heybrook Signature II	↔	989
Linn Mimik	↔	875
Marantz CD-17	↔	800
Micromega Stage 4	↔	600
Micromega Stage 5	↔	750
Micromega Stage 6	↔	950
Mission dAD3	↔	598
Mission dAD3Q	↔	898
Monrio Privilege	↔	995
Myriad MC100	↔	700
Naim CD3	↔	1,000
Orelle CD100eA	↔	649
Orelle CD-100eSA	↔	999
Pink Triangle Numeral	↔	999
Quad 77 Bus	↔	700
Quad 77 Mains	↔	900
Roksan Caspian	1010	895
TEAC VRDS-7	↔	599
TEAC VRDS-9	↔	700
TEAC VRDS-10SE	↔	850
Technics SL-P2000	↔	1,000
Thule CD100	↔	849
Trichord Genesis	↔	549
Trichord Digital Jukebox 25	↔	599
Trichord Digital Jukebox 50	↔	649

Trichord Digital J'box 100	↔	699
Trichord Revelation	↔	799
Over £1000		
Alchemist Forseti	↔	1,950
Audio Alchemy ACD Pro	↔	1,395
Audio Research CD1	↔	3,290
Audio Research CD2	↔	4,100
Audiomeca Talisman	↔	2,150
Audiomeca Talisman SE	↔	2,300
AVI S2000MC	↔	1,399
Cary CD-301	↔	2,495
Copland CD277	↔	1,800
Copland CD4288	↔	2,199
Krell KPS30i	↔	5,490
Krell KPS-20i	↔	9,990
Marantz CD-17KI	↔	1,300
Marantz CD-23	↔	4,000
Mark Levinson 39	↔	5,995
Meracus Tanto	↔	1,395
Meracus Imago Player	↔	4,495
Meridian 506	↔	1,100
Meridian 508	↔	1,685
Meridian 800	↔	4,995
Micromega Solo	↔	2,750
Musical Fidelity FCD	↔	1,500
Naim CD2	↔	2,000
Naim CDS	↔	3,940
Orelle CD100eV	↔	1,149
Pink Triangle Litaural	↔	2,099
Primare 302	↔	1,800
Roksan Attesa-DP3P	↔	1,495
Sherwood CD1	↔	1,100
Sonic Frontiers SFCD-1	↔	3,495
TEAC VRDS-25	↔	1,300
XTC CDP-1	↔	1,250



**CD TRANSPORTS**

**KEY**  
 1010 - electrical (coaxial) digital output.  
 Many players also include an optical (Toslink) output.

Arcam Delta 250	↔	800
Audio Alchemy DDS III	↔	700
Audio Alchemy DDS Pro	↔	1,550
Audio Research CDTI	↔	3,290
Audio Synthesis Transcend	↔	1,395
Audiolab 8000CDM	↔	1,400
Audiomeca Damnation	↔	999
Audiomeca Damnation SE	↔	1,100
Audiomeca Kreatura SE	↔	1,400
Audiomeca Mephisto	↔	2,350
Cambridge Discmagic One	↔	300
Conrad-Johnson DR-1	↔	1,795
DPA Enlightenment Drv	↔	725
Jadis JD3	↔	4,850
Jadis JD2	↔	4,990
Jadis JDI	↔	12,500
Krell KPS-20t	↔	8,490
Linn Karik	↔	1,850
Mark Levinson 37	↔	3,995
Mark Levinson 31.5	↔	9,295
Meracus Imago	↔	3,995
Meridian 500	↔	1,245
Micromega Drive 3	↔	750
Micromega Data	↔	2,250
Monrio Bitmatch	↔	875
Muse Model 5	↔	1,800
Orelle CD100eTI	↔	699
Orelle CD100eT2	↔	799
Pink Triangle Cardinal II	↔	875
PS Audio Lambda TR	↔	2,250
PS Audio Lambda AT&T	↔	2,778
Roksan Attesa-DP3	↔	1,295
Sonic Frontiers SFT-1	↔	2,295
TEAC VRDS-TI	↔	550
TEAC P-30	↔	2,500
Theta Digital Data Basic II	↔	2,397
Theta Digital Data III NTSC/PAL	↔	5,455
Thorens TCD-2000	↔	999
Trichord Digital Turntable	↔	699
Wadia 8	↔	3,195
Wadia 20	↔	4,370



# SENNHEISER



## THE ESSENTIAL ACCESSORY – SENNHEISER'S HD565

"Sound quality is exceptionally good... easily the best all-round model tested".

Alvin Gold, Hi-Fi Choice, September 1996.

Call (01494) 551551 for more information or your nearest stockist.



### DIGITAL TO ANALOGUE CONVERTERS (DACs)

AMC CDM7DAC	100
AMC DAC8	130
AMC CDM7VAC	200
Arcam Black Box 50	480
Arcam Black Box 500	750
Audio Alchemy DAC Man	150
Audio Alchemy DDE v1.2	596
Audio Alchemy DDEv3.0	699
Audio Note DAC1	675
Audio Note DAC2	1,099
Audio Note DAC3	1,750
Audio Research DAC5	2,148
Audio Research DAC5	2,335
Audio Research DAC3	4,195
Audio Research DAC3	4,555
Audio Synthesis DAX-2	2,195
Audiolab 8000DAC	900
Audiomeca Elixir	799
Audiomeca Ambrosia	1,850
Boulder 2020	25,000
Cambridge Dacmagic 2 Mk II	150
Chord DSC1100	2,575
Chord DSC1500	3,850
Conrad-Johnson D/A-3	1,195
Conrad-Johnson D/A-2b	1,990
Denon DCD-425	150
DPA Little Bit 3	325
DPA Renaissance DAC	570
DPA Enlightenment DAC	825
DPA SX128	2,000
DPA SX256	4,000
DPA SX512	8,000
Jadis JS3	2,129
Jadis JS1	8,068
LFD DAC2	1,950
LFD DAC3	3,000
Linn Numerik	1,500
Mark Levinson 36	3,995
Mark Levinson 35	7,995
Mark Levinson 30.5	15,950
Meracus Auriga	1,295
Meracus Flagrare	2,495

Meridian 566	1,095
Micromega DAC 2	750
Micromega Dialog	2,000
Monrio 18B2	875
Muse Model 2	2,190
Muse Model 2 Plus	2,500
Musical Fidelity X-DAC	200
Musical Fidelity X-DAC	300
Onkyo DX 7310	330
PS Audio DL3	777
PS Audio SL3	1,449
PS Audio UltraLink 2 HDCD	2,590
PS Audio Ref Link	4,560
Roksan Attezza-DA2	595
Sonic Frontiers SFD-1 Mk 2	2,495
Sonic Frontiers SFD-2 Mk 2	5,295
Sumo Theorem II	945
Sumo Theorem IIB	1,155
TEAC D-T1	500
TEAC D-700	600
Theta Digital Chroma Std	849
Theta Digital Pro Geny	1,145
Theta Digital Pro Prime II	1,800
Theta Digital Pro Basic III	2,990
Theta Digital Gen V SE	4,300
Theta Digital Casablanca LS	5,910
Thorens TDA-2000	700
Trichord Pulsar Ser One	1,395
Wadia 12	1,530
Wadia 15	3,790
Wadia 64.4	4,750
Wadia 16	7,395
Wadia 7	9,995
Wadia 9	12,790
Woodside DVAC-18	1,499



### DIGITAL RECORDERS

Kenwood DM-7090	MD	500
Meridian CDR		4,500

Onkyo MD 122	MD	700
Pioneer D-05	DAT	900
Pioneer PDR-05		1,300
Pioneer D-C88		2,000
Sharp MD-R1E		300
Sharp MD-MS200H		350
Sharp MDX300H		1,000
Sony M2-E40		180
Sony MZ-E30		280
Sony MDS-S38		300
Sony MZ-R30		300
Sony MDS-JE500		300
Sony MDS-MX1		500
Sony MDS-S1		550
Sony MDS-503		550
Sony DTC-ZE700	DAT	699
Sony MDA-JA3ES	MD	700
TEAC MD-H500	MD	650
TEAC MD-10	MD	950



### HEADPHONES

#### KEY

'D' – dynamic type, compatible with virtually all normal headphone sockets.

'E' – electrostatic type; generally includes a separate power supply.

— open-back construction.

— closed-back construction.

Up to £40

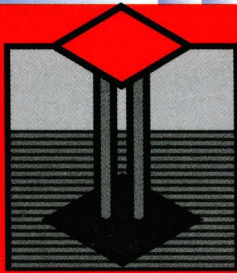
Aiwa HP-X301	D	20
Aiwa HP-VX303	D	25
Aiwa HP-X705	D	40
AKG Rox	D	30
Audio Technica ATH-P1	D	10
Audio Technica ATH-P3	D	15
Audio Technica ATH-P5	D	20
Beyer DT111 Beta	D	20
Beyer DT111 Gamma	D	25
Beyer DT211	D	34
JVC HA-CD88	D	18
JVC HA-D525	D	20
JVC HA-F65	D	20
JVC HA-D626	D	25
Kenwood KPM-310	D	18
Kenwood KPM-410	D	25
Maxell HP-1000	D	20
Maxell HP-2000	D	25
Maxell HP-3000	D	30
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 HD435 Vegas	D	30
Sennheiser HD435 Manhattan	D	30
Sennheiser HD60TV	D	40
Sony MDR-W20G	D	18
Sony MDR-E837	D	18
Sony MDR-009TV	D	20
Sony MDR-A34L	D	20
Sony MDR-E848	D	20
Sony MDR-CD170	D	20
Sony MDR-ED238	D	25
Sony MDR-P1TV	D	25
Sony MDR-CD270	D	30
Sony MDR-E868	D	35
Sony MDR-IF120	D	40
Sony MDR-CD370	D	40
Technics RP-HT280	D	30
Technics RP-HT300	D	40
Vivanco SR250	D	19
Vivanco SR150	D	20
Vivanco SR200	D	25
Vivanco SR300	D	30

Over £41

AKG K301	D	80
AKG K221R	D	100
AKG K401	D	120
AKG K501	D	150
AKG K333R	D	180
AKG K441R	D	180

AKG K290S	D	250
AKG K1000	D	700
Audio Technica ATH910PRO	D	90
Beyer DT311	D	57
Beyer DT411	D	69
Beyer DT331	D	82
Beyer DT431	D	98
Beyer IRH890	D	117
Beyer DT511	D	117
Beyer DT531	D	135
Beyer DT770 Pro	D	152
Beyer DT100	D	152
Beyer DT801	D	172
Beyer DT990 Pro	D	187
Beyer DT811	D	200
Beyer IRS890	D	222
Beyer DT901	D	222
Beyer DT911	D	235
Denon AH-D210	D	45
Denon AH-D350	D	65
Denon AH-D550	D	80
Denon AH-D650	D	95
Denon AH-D750	D	130
Denon AH-D950	D	150
Grado SR40	D	45
Grado SR60	D	79
Grado SR80	D	100
Grado SR125	D	150
Grado SR225	D	200
Grado SR325	D	300
Grado RS1	D	695
Jacklin Float Model 1	D	79
Jacklin Float Model 2	D	99
Jacklin Float ELS	E	399
JVC HA-D727	D	43
JVC HA-D810	D	65
JVC HA-D1000	D	250
JVC HA-F25	D	699
Precide Ergo Model 1	D	120
Precide Ergo Model 2	D	140
Sennheiser HD445	D	45
Sennheiser IS 380	D	55
Sennheiser HD445	D	55
Sennheiser HD465	D	65
Sennheiser HD475	D	80
Sennheiser HD25 SP	D	90
Sennheiser HD535	D	105
Sennheiser IS450	D	120
Sennheiser HD545 Ref	D	125
Sennheiser HD250II	D	150
Sennheiser HDC 451-1	D	150
Sennheiser HD565 Ovat'n	D	150
Sennheiser HD265 Linear	D	150
Sennheiser HD25-13	D	160
Sennheiser HD25	D	160
Sennheiser HD 580 P'cision	D	200
Sennheiser HD600	D	250
Sennheiser Lucas	D	280
Sennheiser IS850	D	859
Sennheiser HE80/HEV70	E	998
Sennheiser Orpheus	E	9,652
Sony MDR-IF50K	D	50
Sony MDR-IF120K	D	50
Sony MDR-CD470	D	50
Sony MDR-E888	D	55
Sony MDR-CD570	D	70
Sony MDR-IF320RK-MK2	D	80
Sony MDR-CD770	D	100
Sony MDR-NC5	D	100
Sony MDR-D77	D	130
Sony MDR-NC20	D	150
Sony MDR-NC10	D	150
Sony MDR-CD1700	D	200
Stax SR-0001	E	280
Stax SR-Lambda Nova C	E	370
Stax SR-Lambda Nova Basic	E	449
Stax SR-Lambda Nova S	E	450
Stax Omega	E	1,695
Stax SR-Omega Ref	E	1,700
Technics RP-HT400	D	50
Technics RP-HT600	D	60
Technics RP-HT700	D	70
Vivanco IR5700	D	50
Vivanco IR5000	D	50
Vivanco SR850	D	50
Vivanco SR650	D	50
Vivanco SR750	D	60
Vivanco IR6000	D	70
Vivanco SR909	D	70
Vivanco IR6500	D	90
Vivanco SR1000IFL	D	110
Vivanco IR7100	D	120
Vivanco IR7600	D	140
Vivanco SR200IFL	D	140





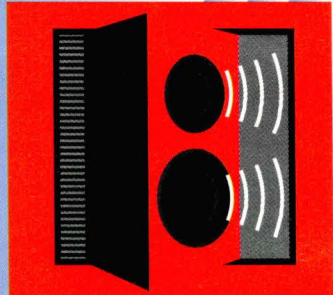
EQUIPMENT SUPPORTS & SPEAKER STANDS

Alphason NCI	47
Alphason RS1	49
Alphason NCIII	84
Alphason Titan S	125
Apollo AZ6	80
Arcici Q-1	299
Arcici Q-2	299
Atacama BD21	55
Atacama BD17	55
Atacama BD25	60
Atacama SE16	65
Atacama SE12	65
Atacama SX500	67
Atacama F2	70
Atacama F1	70
Atacama SX600	70
Atacama SL200	70
Atacama SE24	70
Atacama SE20	70
Atacama SX700	73
Atacama SL300	73
Atacama TP600	75
Atacama TP500	75
Atacama SE615	75
Atacama SE515	75
Atacama SE415	75
Atacama SL400	76
Atacama SE1000S	80
AWF Tower	40
Chord CEL 01	387
Credo STD 001	284
Custom Design CD 500	35
Custom Design AS 130	35
Custom Design Tri 100	50
Custom Design RS 200	50
Custom Design R/S300	70
Custom Design Tri 300	85
Custom Design SCS 24	85
Custom Design C 20	109
Custom Design H1	275
Deadrock 903	60
Deadrock 902	60
Deadrock 901	60
Dynaudio Trophy	120
Dynaudio Master	200
Dynaudio Ultima	290
Harbeth HL-Stands	249
Heybrook Stand-ULT	55
Heybrook Stand-S6	59
Heybrook Stand-S4	59
Heybrook Stand-S1	119
JPW HS1	120
JPW HS2	120
Kudos Audio Arrow	50
Kudos Audio S-50	100
Kudos Audio S-100	270
Mission Micrometer	70
Mission Entasis	98
Pioneer CP-7	50
Pioneer CP-8	80
Projekt Signature	80
Resolver RS1	70
Royd Royd	99
SD Acoustics SD Alexandra	369
Silverado Silverado 1 Stand	350
Sonus Faber Ironwood	475
Sonus Faber Stonewood	497
Sound Org Z037	55
Sound Org Z027	55
Sound Org Z026	55
Sound Org Z524	65
Sound Org Z518	65
Soundstyle X6118	100
Soundstyle X6124	100
Soundstyle X020	105
Stands Unique Speaker support	159
Stands Unique Tuned Spkr Support	220
Stands Unique Tuned Carbon Fibre	299
Stands Unique Vivas CF Spkr Supp	349
Target TR60	68
Target R1	280
UKD-Opera S2	345
UKD-Opera S1	345
Equipment Supports	
Alphason SM17	49

Alphason GSM17	75
Alphason VSM17	85
Alphason R17/17	120
Alphason GR17/17	150
Alphason VR17/17	190
Audiophile Base 01	79
Audiophile S4T120	280
Audiophile Furniture Base	480
Audiophile S4T120P	560
Custom Design CD-1	70
Custom Design WMB	100
Custom Design G5	160
Custom Design CD-3	200
Custom Design Aspect 650	230
Custom Design Aspect 850	250
Custom Design Aspect 500AV	270
Deadrock 701	60
Deadrock 802	90
Deadrock 703	130
Deadrock 704	190
Deadrock 705	230
Fi-Rax R4	399
Frameworks H175	130
Frameworks FS1	150
Frameworks FT2	285
Frameworks FT3	350
Frameworks H700	355
Frameworks H900	389
Frameworks H500/H175	404
Heybrook Stand-Signtaure	249
Impulse Iso-plate	190
JPW MS2	45
JPW MS3	55
JPW MS1	80
JPW 3 Tier	80
JPW 5 Tier	100
Kudos Audio Corinthian	600
Linn K3000	85
Mana Sound Frame	125
Mana Mini Table	150
Mana Power supply table	150
Mana Reference flat top	150
Mana Sound Shelf	175
Mana Sound Base	175
Mana Sound Stage	200
Mana Sound Table	235
Mana Ref Shelf	325
Mana Reference Table	350
Mana 2 Tier Amp stand	375
Mana 3 Tier Amp Stand	450
Mana 4 Tier Amp Stand	500
Mana 5 Tier Amp Stand	600
Mana 6 Tier Amp Stand	700
Mission Hark	298
Optimum G2	55
Optimum G2/Pedestal	85
Optimum C4/Pedestal	130
Optimum OPT 3406	149

Optimum G5/Pedestal	150
Optimum OPT 4906	199
Optimum OPT 6006	199
Optimum OPT 10206	299
Optimum AV 300	299
Optimum OPT 340	299
Optimum OPT 490	349
Optimum OPT 440	349
Optimum OPT 700	399
Optimum OPT 610	399
Optimum OPT 660	399
Optimum OPT 1020	449
Optimum OPT 1190	499
Projekt A3	145
Projekt A4	190
Projekt B3	255
Projekt A6	280
Projekt B3i	300
Projekt A5	320
Projekt B4	340
Projekt B Multi	345
Projekt B3ii	345
Projekt C3	375
Projekt D3	420
Projekt C3i	420
Projekt B5	425
Projekt C3iii	465
Projekt C3ii	465
Projekt D3i	500
Projekt C4	500
Projekt C3iv	510
Projekt D3ii	545
Projekt C Multi	555
Projekt D4	560
Quadraspire Q4 mini shelf	60
Quadraspire Q4 shelf	60
Quadraspire Cabinet shelf	80
Quadraspire AV shelf	120
Quadraspire Q4 mini table	200
Quadraspire Q4 table	200
Quadraspire AV table	300
Quadraspire Cabinet	400
Reson DOMOPS	195
Reson DOMOWS	195
Sound Org Z022	65
Sound Org Z021	78
Sound Org Z030	100
Sound Org Z060	120
Sound Org Z038	135
Sound Org Z540	140
Sound Org Z545	140
Sound Org Z560	160
Sound Org Z530	170
Soundstyle X300	180
Soundstyle X305	210
Soundstyle X053	210
Soundstyle X050	210
Soundstyle X6300	215

Soundstyle X100	220
Soundstyle X058	240
Soundstyle X310	250
Soundstyle X105	250
Soundstyle X6053	255
Soundstyle X6100	265
Soundstyle X6310	275
Soundstyle X6058	290
Soundstyle X6105	300
Soundstyle Finewoods W105	320
Stands Unique Isolation Platform	52
Stands Unique Sound Support	249
Stands Unique Sound Tower	289
Stands Unique Compact Sound Supp	315
Stands Unique Sound Support 10	315
Stands Unique Sound Twr Cabinet	369
Stands Unique Ref Wall Support	550
Stands Unique Ultimate Tower	689
Stands Unique Ultimate Tower	689
Stands Unique Ref Floor Support	799
System Tripod Z053	135
System Tripod Z050	135
System Tripod Z058	155
Target B5	175
Townshend Seismic Sink 1CD	99
Townshend Seismic Sink 1.3D	399
Townshend Seismic Sink 2.3D	449
Townshend S/Sink Stand 1SH	999
Townshend S/Sink Stand 2SH	1,199
Wilson Benesch Asside	720
Wilson Benesch Triptych	990



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 hung on the wall or mounted in-wall.

**You must listen to...Mission's 731i.**

**MISSION**

**"A combatant truly worthy of the budget speaker challenge".**

Alan Sircom, Hi-Fi Choice, July/August 1996.  
Call (01480 451777) for more information or your nearest stockist.



□ - 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

Allison Micro Monitors	95
Allison Mini References	120
Celestion 12i	119
Denon SC-M2	80
Gale Mini Monitors	70
Genexxa GX300	80
Genexxa GX330	80
GLL Arena HF	99
Goodmans Active 75	65
Interaudio XL1000	100
Jamo Studio-80	70
Jamo SAT-90	90
Jamo Cornet 25	100
Jamo D-110	100
Jamo SAT-170	110
Jamo Studio-110	110
Jamo Cornet 35	120
Jamo Artina	120
Jamo D-115	120
Jamo 28	125
JBL TLX111	120
JPW Mini Monitor	60
JPW Gold Monitor	80
JPW IW51	80
JPW ML210	80
JPW ML310	90
JPW ML410	100
JPW IW61	100
JPW IW81	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 731i	130
Mordaunt-Short VS-100	100
Mordaunt-Short MS05i	100
NAD 801	100
Pioneer CS-3030	120
Polk AB410	100
Realistic Minimus 26	56
Realistic Minimus Pro-77	100
Revolver Beretta	100
Richard Allen Minette 2	129
Solid HCM2	130
Sony SS-86E	100
Sony SS-126E	130
Tangent Monitor 3	60
Tangent Monitor 5	80
Tangent Monitor 7	100
Tannoy Mercury M1	120
TDL Nucleus 1	60
TDL NFM 1	120
TEAC LS-X8 Mk II	80
Technics SB-CS55	80
Technics SB-CS75	100
Visonik 5202	129
Wharfedale Valduis 100	80
Wharfedale Diamond 7.1	100
Wharfedale Diamond 6R	110
Wharfedale Valduis 200	110
Wharfedale Modus Micro	110

£131 to £200

Acoustic Energy AE100	200
Allison Model 4A	170
B&W DM302	150
B&W CWM5	170
B&W DM601	199
Bose 101 M'ble Monitor	190
Boston CR6	149
Boston 325	149
Boston Micro 80 Sat	169
Boston Runabout	169
Boston 335	179
Boston 351	189
Boston CR7	199
Boston Runabout II	200
Celestion 15i	199
Cerwin-Vega CT-165	200
Denon SC-E313	160
Gale 2iB	140
Gale 4i	140
Gale 3s	150
Genexxa GX650	140
GLL Arena SW	139
GLL Imagio IC100	170
Grundig BX1	160
Heybrook Prima	139
Infinity SM65	150
Infinity Reference 1i	150

Infinity Reference 11i	200
Interaudio XL2000	140
Interaudio XL3000	160
Interaudio XL4000	200
Jamo 38	150
Jamo 525	150
Jamo 560	170
Jamo 660	170
Jamo Cornet 65	170
Jamo Studio 180	180
Jamo D165	200
Jamo 68	200
JBL TLX121	150
JPW ML510	140
JPW ML610	170
JPW SS551	200
KEF Coda 8	189
KEF Q15	199
KEF Model 60S	199
Kenwood LS-200G	200
Mission 731i Pro	140
Mission 732i	200
Mordaunt-Short MS10i	140
Mordaunt-Short VS-200	150
Mordaunt-Short MS20i Pearl	200
Mordaunt-Short VS-300	200
Mordaunt-Short MS20i	200
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Polk RT3	200
Polk AB610	200
QLN Qubic111	200
Rega Kyte	198
Revolver Colt	139
Revolver The 230	169
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Richard Allen Dim'n 5/1 Compact	179
Richard Allen RA6	199
Rogers LS1	149
Sequence 200	199
Solid Monitor	200
Sony SS-176E	200
Tangent Monitor 9	150
Tangent Monitor 11	180
Tannoy Mercury M2	140
Tannoy Profile 631	149
Tannoy Profile 631SE	169
Tannoy Profile Plus 632	199
TDL RTL 1	200
Technics SB-CS95	150
Technics SB-M20	200
Visonik 6003	143
Visonik 5001	170
Wharfedale Diamond 7.2	140
Wharfedale Modus Mini	140
Wharfedale Valduis 300	150
Wharfedale Modus Music Two	170
Wharfedale Modus Music Four	200
Wharfedale Valduis 400	200
Wharfedale Diamond 7.3	200
ZYP A1	199

£201 to £300

Audio Gem Opal	230
B&W CWM6i	280
B&W DM602	300
Bose 151 Environmental	270
Bose 161 Freestyle	275
Bose 201 Ser III	290
Boston 361	219
Boston CR8	239
Boston 381	259
Boston CR9	279
Boston Voyager	299
Castle Isis	229
Celestion 23i	299
Cerwin-Vega VS-8	250
Cerwin-Vega CT-330	300
Chario Syntar 100	250
Dali 102B	260
Dali 150	300
Faraday FS1	245
Gale 5B	220
GLL Imagio IC110	300
Heybrook Optima	259
Heybrook Heylette	269
Heybrook HB1	269
Infinity SM85	250
Jamo 892	220
Jamo Classic 4	250
Jamo Art	270
Jamo Deco Art	280
Jamo D265	300
Jamo 307A	300
JBL LX2	250
JBL TLX151	300
JPW ML710	230
JPW ML810	260
JPW ML910	300
JVC SX-SW10	300
KEF Coda 9	299
KEF Model 70S	299

Keswick Aria II	299
KLH Soundbites System	276
M-A Monitor 1	250
M-A Monitor 2	300
Mordaunt-Short MS30i	275
Mordaunt-Short MS10i Classic	280
Mordaunt-Short MS25i	300
Mus Tec Kestrel SE	300
NAD 802	280
NHT SuperZero	238
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
QLN Qubic 122	270
Rega EL8	298
Revolver The 250	250
Richard Allen Dimension Five 1	239
Richard Allen RA8	249
Richard Allen RA8M	249
Richard Allen Dimension Five 2	269
Rogers LS 33	249
Royd The Envoy	249
Royd Minstrel	269
Sequence 300	249
Solid HCM1	250
Sony SS-176EB	250
Tannoy Mercury M3	230
Tannoy Profile Plus 633	299
TDL RTL 2	280
Visonik 7003	203
Visonik SUB5	259
Wharfedale MFM1	250
Wharfedale Modus Music Six	280
Wharfedale Valduis 500	300
Yamaha NS10M	300
ZYP A1T	219
ZYP A2S	275
ZYP A2ST	295

£301 to £500

Acoustic Energy AE109	850
Acoustic Energy AE120	500
Allison Model 2A	420
AudioInnov Alto	329
B&O Beovox CX50	325
B&O Beovox CX100	425
B&W CWM8i	350
B&W DM305	350
B&W DS6	400
B&W CDM2	400
B&W DM603	500
B&W Signature 7	500
Bandor Pictures	352
Blue Room Mini Pod	400
Bose 301 VM	380
Bose 305	430
Bose A'mass AM3 II	500
Bose 401	500
Boston Micro 90 Sat	369
Boston Micro 80 Sys	369
Boston VR20	380
Castle Tay	329
Castle Eden	449
Celestion 25i	399
Celestion 30i	449
Celestion 35i	499
Cerwin-Vega VS-10	350
Clements 300si	395
Dali 104B	370
Dali Royal	500
Def Tech Celsius	395
Epos ES12	499
Faraday SG	345
Faraday Siren	445
GLL Imagio IC120	420
Grundig BX3 Mk II	350
Heybrook Heylios	389
Heybrook Heylo	439
Infinity SM105	350
Infinity SM115	400
Infinity SM125	500
Jamo Classic 6	330
Jamo Cornet 75	330
Jamo BX-100A	350
Jamo 98	350
Jamo 407A	350
Jamo D365	400
Jamo Cornet 95	400
Jamo Classic 8	400
Jamo Graphic	400
Jamo 128	400
Jamo BX-150A	450
Jamo Atmosphere	480
Jamo 477A	500
JBL LX6	350
JBL TLX161	400
JBL PS8	500

JBL TLX171	500
Jordan Watts JHFLG	380
JPW SS553	400
JPW ML1010	400
JPW Ruby 1	400
JPW Ruby 2	500
KEF Q35	349
KEF Q55	499
KEF RDM One	499
Keswick Aria II	329
Keswick Centrale	359
Linn Sekrit	395
Mission 733i	330
Mission 751f	348
Mission 734i	499
M-A Monitor 3	400
M-A Monitor 4	500
Mordaunt-Short MS40i	450
Mus Tec Harrier	400
NAD 804	400
Neat Critique	385
NHT SuperOne	358
NHT Model 1.5	450
Origin Live OL-1AS	399
Origin Live Monarch	399
Pentachord A	469
Pioneer S-LC2	450
Polk AB705	330
Polk RT8	400
Polk RT10	500
Polk AB805	500
Prof Monitor Co TB1S	366
Prof Monitor Co TB1SM	403
Prof Monitor Co TB1	410
Prof Monitor Co TB1M	447
Prof Monitor Co XB1	499
Promenade SP2	399
Promenade SP3	499
QLN Qubic 222	400
Rega ELA	498
Revolver The 260	350
Ri hard Allen Dimension Five 3	349
Richard Allen Dimension Five 4	429
Rogers db101	399
Rogers LS55	429
Rogers Studio 3	499
Royd The Squire	350
Royd Minstrel SE	399
Royd Doublet	450
Ruark Icon	359
Sequence 400	329
Solid Verticale	400
Spendor S2	399
Spendor 2020	399
Spendor S1	499
Tannoy Profile Plus 635	449
TDL RTL 3	400
Technics SB-M300	350
Technics SB-M500	450
Totem Mite	495
Triangle Titus TZe	379
UKD-Opera Opera Duetto	395
Visonik TB1S	366
Wharfedale MFM3	350
Wharfedale Modus Music Eight	360
Wharfedale MFM5	450
Wharfedale Modus Music 1/6	460

£501 to £800

Acoustic Energy AE1-II	795
Allison Model 3A	525
Audio Gem Emerald	540
Audio Note AN-K/D	620
Audio Note AN-I/B	799
B&O Beolab 2500	750
B&W CDM1	600
B&W P4	675
Bose SE-5 Ser II System	760
Bose A'mass AMS II	800
Boston VR30	600
Boston Micro 90 Sys	669
Castle Severn	539
Castle Avon	699
Celestion 45i	599
Cerwin-Vega VS-12	550
Cerwin-Vega VS-15	700
Chario Syntar 100T	550
Clements 600si	595
Dali 107	600
Dali 350	600
Dali 450	700
Dali 109	800
Def Tech BP6B	750
Epos ES14	675
Faraday FS10	795
GLL Imagio IC130	530
Harbeth BBC LS3/5A	699
Harbeth HL-P3ES	799
Heybrook Ultima	649
Heybrook Quartet	649
Infinity SM155	550
Jamo BX-200A	530
Jamo Classic 10	600







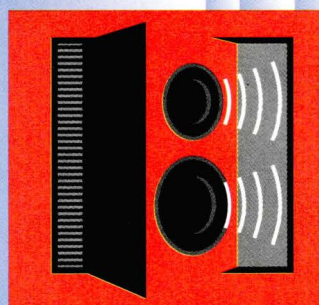
Origin Live Conqueror	£	1,650
Paragon Jubilee	£	1,995
Pentachord P-column	£	1,649
Polk LS90	£	1,700
Posselt Albatross	£	2,500
Proac Response 2S	£	2,000
Proac Studio 250	£	2,249
Proac Response 2.5	£	2,700
Prof Monitor Co IB1S	£	2,099
QLN Reference	£	2,000
QLN Reference HDII	£	2,500
Rehdeko RK115	£	1,700
Rogers LS5/9	£	1,531
Rogers Studio 9	£	1,549
Ruark Crusader II	£	1,599
Ruark Equinox	£	1,849
Ruark Accolade	£	2,699
SD Acoustics SD5	£	1,549
SD Acoustics SD1E	£	2,995
Shahinian Arc	£	1,875
Shahinian Obelisk	£	2,695
Silverado Silverado 1	£	1,995
Sonus Faber Minima Amator	£	1,566
Sound-Lab Quantum	£	2,150
Spendor SP7/1	£	1,990
Spendor SP100	£	2,099
Tannoy Definition D500	£	1,999
Tannoy Stirling TW	£	2,200
Tannoy Definition D700	£	2,500
TDL Studio Monitor-m	£	2,449
Totem Mann-2	£	2,795
Triangle Zays	£	1,750
Triangle Altinis	£	2,250
Triangle Extan	£	2,950
UKD-Opera Caruso II	£	2,350

**Over £3000**

Acoustic Energy AE5	£	7,995
Alon Alon IV	£	3,500
Alon Alon V Mk2	£	5,000
Alon Adriana	£	9,000
Alon Phalanx	£	19,000
Ambience Mod 5.0	£	9,550
Apertura Athena	£	4,395
Apertura Atlante	£	6,995
ATC SCM20A	£	3,049
ATC SCM50	£	3,750
ATC SCM100	£	4,499
ATC SCM50A	£	5,250
ATC SCM100A	£	5,999
ATC SCM200A	£	12,999
ATC SCM300A	£	14,999
Audio Note AN-JSE Silver	£	7,900
Audio Note AN-ESE Silver	£	9,600
Audio Physic Virgo 2	£	3,399
Audio Physic Avanti 2	£	6,699
Audio Physic Caldera	£	10,599
Audio Physic Medea	£	24,999
Audiovector 6	£	4,600
Avalon Avatar	£	4,495
Avalon Arcus	£	6,000
Avalon Eclipse	£	6,495
Avalon Radian	£	10,995
Avalon Osiris	£	72,000
B&W Matrix 801s3	£	3,995
B&W Silver Signature	£	5,500
B&W Nautilus	£	35,000
Bandor Bandoline	£	3,290
Bandor Bandora/Mora	£	3,290
Boston Lynfield 500L	£	4,449
Bravura Virtuoso Silver	£	3,195
Bravura Virtuoso Gold	£	3,395
Bravura Accelerando	£	6,600
Chario Academy 3 Junior	£	6,000
Chario Academy 3	£	9,000
Crede SPB 012	£	3,147
Crede SDL 001	£	5,677
Dali Grand	£	4,000
Def Tech BP2000	£	3,600
Dynaudio Contour 2.8	£	3,198
Dynaudio Contour 3.3	£	4,815
Dynaudio Confidence 3	£	4,846
Dynaudio Confidence 5	£	5,924
Dynaudio Consequence	£	14,566
ELS Res'ch Vista	£	3,900
ELS Res'ch Illusion MkII	£	9,000
Fase Evoluzione Aria	£	3,100
Genesis 400	£	4,000
Genesis V	£	15,000
Genesis 300	£	27,500
Hales Concept Three	£	4,350
Hales Concept Five	£	6,350
Horning Agathon	£	3,555
Impulse Ta'us	£	3,100
Infinity Sigma	£	5,995
Infinity Epsilon	£	9,995
Jamo Oriel	£	7,000
JBL S2600	£	3,500
JBL S3100	£	4,000
Jordan Watts JH5K	£	3,950
Jordan Watts JH10K	£	7,570
KEF Ref. Model Four	£	3,299
Keswick Zero 2	£	6,000

Linn Keltik Aktiv	£	6,000
L Voice Air Scout	£	19,500
L Voice Air Partner S	£	37,200
Lowther Delphic	£	3,099
Lowther Opus One	£	4,999
Lumley L/M 2 Sig. Mk3	£	4,500
Magneplanar MG-3.5SE	£	3,800
Magneplanar MG-20 SE P	£	10,300
Magneplanar MG-20 SE A	£	11,000
Martin-Logan SL3	£	3,499
Martin-Logan CLS IIz	£	4,555
Martin-Logan Re-Quest	£	5,875
Martin-Logan Monolith S	£	7,440
Martin-Logan Monolith IIIIP	£	8,550
Martin-Logan Monolith IIIHPB	£	11,900
Meridian DSP5000	£	3,295
Meridian DSP5500	£	5,950
Meridian DSP6000	£	9,400
M-A Studio 50	£	4,000
M-A Studio 60	£	6,000
Naim DBL Active	£	7,414
Neolith NEO 2	£	3,499
Neolith NEO 3	£	4,999
NHT Model 3.3	£	3,500
Paragon Regent	£	3,490
Proac Response 3.5	£	4,250
Proac Response 4	£	12,000
Prof Monitor Co MB1P	£	4,370
Prof Monitor Co BB5/P	£	6,270
QLN Artec 1600	£	4,500
Quad ESL63	£	3,450
Rehdeko RK125	£	3,200
Rehdeko RK145	£	4,800
Rehdeko RK175	£	8,800
Shahinian Hawk	£	4,995
Shahinian Diapason	£	8,895
Shun Mook Bella Voce	£	5,500
Sonus Faber Electa Amator	£	3,293
Sonus Faber Extrema	£	6,500
Sound-Lab Dynastat	£	3,790
Sound-Lab Aura	£	6,490
Sound-Lab Pristine III+	£	7,990
Sound-Lab A-3	£	11,990
Sound-Lab Ultimate II	£	13,950
Sound-Lab A-1	£	13,990
Sound-Lab Ultimate III	£	18,950
Sound-Lab Ultimate I	£	23,950
Spendor SP9/1	£	3,450
Tannoy Edinburgh TW	£	3,250
Tannoy Definition D900	£	3,999
Tannoy GRF Memory TW	£	4,000
Tannoy Westminster TW	£	6,600
Tannoy Canterbury 15 TW	£	7,720
Tannoy Westminster Royal	£	14,920
TDL Ref Standard-m	£	4,999
Triangle Nemo Altair	£	4,250
Wilson Audio Cub	£	5,495
Wilson Audio WATT 5	£	8,750
Wilson Audio WITT	£	8,888
Wilson Benesch Actor	£	3,800
Wilson Benesch ACT1 spkr	£	6,400

Castle Keep	£	249
Celestion CC1	£	89
Celestion CSC	£	129
Celestion Centre 2	£	149
Celestion Cii	£	150
Cerwin-Vega CC-240	£	80
Cerwin-Vega CC-250	£	100
Dali SC5	£	220
Def Tech C1jr	£	275
Def Tech CIB	£	395
Def Tech CLR1000B	£	595
Def Tech CLR2002	£	595
Def Tech CLR2000	£	845
Dynaudio Audience CC	£	425
Dynaudio Contour CC	£	850
Gale Centre 1	£	80
Gale Centre 2	£	120
GLL Arena AV Centre	£	100
Infinity SM Video	£	175
Infinity Centre	£	650
Jamo Centre 30	£	60
Jamo Centre 50.II	£	80
Jamo Centre 40	£	100
Jamo Centre 100 II	£	130
Jamo Centre 18	£	150
Jamo Centre 160	£	180
Jamo Centre 200	£	200
Jamo Concert Centre	£	500
JBL MR Centre	£	100
JBL TLX103	£	100
JBL SC305	£	150
JBL LX Centre	£	150
JBL L Centre	£	350
JPW Mini Monitor	£	50
JPW Gold Monitor	£	40
JPW CC40	£	80
JPW CC50	£	90
JPW CC60	£	100
JPW CC70	£	130
KEF Model 80C	£	129
KEF Q95C	£	199
KEF Model 100	£	359
KEF Model 200C	£	699
Kenwood CS-6	£	150
Keswick Centrali	£	359
Linn AV5120	£	650
Martin-Logan Logos	£	1,998
Meridian M60C	£	1,125
Meridian M60C	£	1,125
Meridian DSP5000C	£	1,750
Meridian DSP5500C	£	3,095
Meridian DSP6000C	£	4,900
M&K S-85C	£	400
M&K S-125C	£	600
M&K S-150C (THX)	£	800
Mission 73C	£	150
Mission 75C	£	248
M-A CC300	£	300
M-A CC900	£	500
M-A CC70	£	600
Mordaunt-Short VS-100C	£	100
Mordaunt-Short MSCi	£	180
Mus Tec Merlin	£	200
Mus Tec Osprey	£	250
NAD 808CC	£	170
NHT AudioCenter-1	£	299
Polk M3 C	£	120
Polk CS101	£	120
Polk CS200	£	170
Polk AB705C	£	180
Polk RM2500C	£	249
Polk CS250	£	250
Polk CS350	£	450
Proac Response CC One	£	599
Revolver The Ricochet Ctr	£	50
Richard Allen Centre	£	49
Richard Allen Centre plus	£	99
Richard Allen Dimension Ctr Pod	£	149
Richard Allen Magnum Ctr Pod	£	249
Royd AV77	£	250
Ruark Dialogue One	£	289
Solid C100	£	130
Sony SS-CN15	£	40
Sony SS-CN35	£	70
Sony SS-CN65ES	£	130
Spendor 2010	£	249
Tannoy Profile Plus 621	£	99
Tannoy Profile Plus 622	£	179
Tannoy Definition D750	£	999
TDL Nucleus CCS	£	150
TEAC LS-CT8	£	80
Triangle Sat 1	£	399
Wharfedale Modus Centre Cube	£	50
Wharfedale Valdus Centre	£	100
Wharfedale Modus Centre	£	120
Wharfedale Modus Music Centre	£	150
Yamaha NS-C60	£	60
Yamaha NS-C105	£	80
Yamaha NS-C150	£	110
ZYP A1TAV Centre	£	109



**DEDICATED CENTRE SPEAKERS**

**KEY**  
 ◻ - magnetically shielded; allows positioning close to TV sets.  
 THX - THX approved by Lucasfilm for use in Home THX installations.

Acoustic Energy AE107C	£	150
Allison Black Gold Centre	£	99
B&W CC3	£	150
B&W CC6	£	230
B&W Matrix HTM	£	500
Bandor Voice	£	317
Boston CR1	£	100
Boston Centre 6	£	130
Boston Micro 90 Cntr	£	180
Boston Centre 7	£	200
Boston CR2	£	200
Boston VR10	£	250
Boston VR12	£	300
Boston VR14	£	400

249	£	89
129	£	149
150	£	80
100	£	220
275	£	395
595	£	595
845	£	425
850	£	80
120	£	100
175	£	650
60	£	80
100	£	130
150	£	180
200	£	500
100	£	100
150	£	140
220	£	395
395	£	595
1,095	£	398
1,750	£	500
60	£	70
90	£	120
130	£	170
280	£	550
180	£	80
539	£	80
80	£	80
100	£	100
170	£	170
345	£	150
299	£	350
350	£	449
80	£	99
139	£	40
100	£	170
149	£	250
60	£	80
110	£	110
50	£	49
99	£	149
249	£	250
289	£	130
40	£	70
130	£	130
249	£	99
179	£	150
999	£	80
150	£	399
50	£	100
120	£	150
60	£	80
110	£	200
250	£	300
350	£	350



**DEDICATED SURROUND SPEAKERS**

**KEY**  
 ◻ - magnetically shielded; allows positioning close to TV sets.  
 THX - THX approved by Lucasfilm for use in Home THX installations.

B&W SCM8	£	1,190
Boston VRS Micro	£	170
Boston CRX	£	200
Boston VRS	£	299
Boston VRS Pro	£	370
Celestion Little 1	£	99
Celestion MP1	£	199
Cerwin-Vega SA-140	£	100
Cerwin-Vega SA-150	£	140
Dali SS5	£	220
Def Tech BP1X	£	395
Def Tech BP2X	£	595
Def Tech BPX	£	1,095
Dynaudio Audience 5	£	398
H/K Citation 7.3	£	1,750
Infinity Quadrapole	£	500
Jamo Surround 40	£	60
Jamo Surround 50 II	£	70
Jamo Surround 100 II	£	90
Jamo Cornet 35	£	120
Jamo Surround 160	£	130
Jamo Surround 200	£	170
Jamo Surround 300	£	280
Jamo Surround One	£	550
JBL LX Surround	£	180
JPW Satellites	£	80
KEF Model AV2	£	539
Kenwood RS-05	£	80
Kenwood CM-5ES	£	80
Kenwood RS-550	£	100
Kenwood CM-7ES	£	100
Kenwood Omni 7	£	170
Martin-Logan Stylos	£	2,872
Mission 73	£	100
Mordaunt-Short VS-100R	£	90
Mus Tec Kestrel SE	£	345
NAD 805RC	£	150
NHT HDP-1	£	299
Polk RM2000 II	£	350
Polk RT f/x	£	350
Polk LS f/x Surround	£	449
Revolver The Ricochet Rear	£	80
Richard Allen Satellites	£	99
Richard Allen Dimension Cubes	£	139
Sony SS-SR15	£	40
Sony SS-SR35	£	100
Sony SS-SR65ES	£	170
Tannoy Profile Plus 628	£	149
Triangle SAT II	£	250
Wharfedale Modus Cube	£	60
Yamaha NS-E60	£	80
Yamaha NS-E105	£	110

**SUBWOOFERS**

**KEY**  
 ◻ - active; includes a dedicated power amplifier.  
 THX - THX approved by Lucasfilm for use in Home THX installations.

Aiwa TS-W9	£	170
Allison Mini Ref Sub	£	210
Alon Poseidon	£	15,000
AMC B1-20	£	350
Audio Physic Terra	£	3,499
B&W AS6	£	500
B&W Matrix 800ASW	£	1,500
Boston CR400		

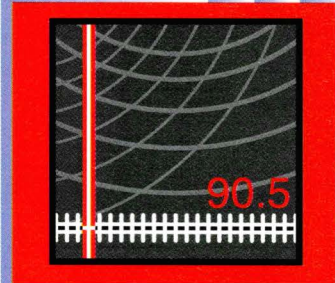


Hales Concept Zero	2,950
H/K Citation 7.4	875
Infinity SSW-10	500
Jamo 860SW	110
Jamo SW303E	220
Jamo SW400E	330
Jamo SW505E	400
Jamo Sub One	400
Jamo SW600e	530
JBL CM6	200
JBL PSW800	275
JBL Sub 10	300
JBL PSW1000	325
JBL PSW1200	375
JPW Subwoofer	130
JPW SW60	350
JPW SW120	500
KEF Model 20B	349
KEF Model 30B	499
KEF Model AV1	2,499
Kenwood SW500	250
Keswick Alto	1,299
Linn AV5150	2,850
L Voice RW24	11,500
Meridian Sub 1	1,500
Meridian M2500	1,595
M&K VX-7MkII	450
M&K V-75 MkII	600
M&K V-125 (THX)	850
M&K MX-70	900
M&K MX-150	1,500
M&K MX-200	1,800
M&K MX-300	2,500
M&K MX-5000	2,900
Mission 73AS	450
Mission 75AS	548
Mordaunt-Short T2000	500
Mus Tec Sub	650
Muse Model 22	1,890
Muse Model 18	3,790
Neat Gravitas	1,095
NHT SW2Pi	609
Polk PSW50	350
Polk PSW150	500
Polk PSW300	750
REL Q50	375
REL Q-100E	495
REL Strata II	575
REL Storm	695
REL Stadium II	995
REL Stentor II	1,795
REL Studio II	3,995
Revolver The Recoil	100
Richard Allen Gold Sub	149
Richard Allen Dim'n Active	499
Richard Allen Magnum Active	679
Rogers AB33	379
Rogers AB1	549
Roksan Ojan 3S	795
Sequence FW120	249
Solid PB100	350
Sony SA-W101	230
Sunfire True Sub	1,600
Tannoy 625ALFie	599
TDL Nucleus SBR	200
Triangle SATIII	650
Velodyne VA-68XII	399
Velodyne VA-79XII	499
Velodyne VA-810XII	599
Velodyne VA-1012XII	699
Velodyne VA-1215XII	999
Velodyne FSR-12	1,099
Velodyne FSR-15	1,299
Velodyne F-1800II	1,999
Wharfedale Modus Sub Bass	180
Wharfedale Modus Powered Sub	350
Wilson Audio Puppy 5.1	8,450
Wilson Audio Whow III	12,500
Yamaha YST-SW40	140
Yamaha YST-SW80	180
Yamaha YST-SW150	280
Yamaha YST-SW300	350

Air Tangent 10B	#	7,777
Air Tangent Ref. Sig.	#	11,000
Audio Note AN-ARM 1		169
Audio Note AN-0s		795
Audio Note AN-1s		995
Audiomeca SL5	#	2,500
Clearaudio TQ-1 Improved		1,950
Dynavector 507		1,995
Graham 1.5 Basic		1,695
Graham Mk 2.0		2,650
Helius Orion 4 Copper		549
Helius Cyalene 2		1,495
Kuzma Stogi		750
Kuzma Stogi Reference		1,250
Linn Akito		500
Linn Ekos		1,500
Manticore Musician II		595
Manticore Magician II		895
Manticore Magician 12		995
Moth Mk I		109
Moth MKIII Stainless		146
Moth Mk III Tungsten		174
Moth Moth 900		598
Naim ARO		1,040
N'ham Space		450
N'ham Paragon 3	#	550
N'ham Paragon 2	#	800
N'ham Mentor		800
N'ham Paragon 1	#	1,600
Rega RB250		109
Rega RB300		174
Rega RB900		598
Roksan Tabriz		320
Roksan Tabriz Zi		420
Roksan Artemis		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		668
SME 310		705
SME 312		802
SME Series IV		983
SME Series V		1,461
Townshend Excalibur		1,499
Wheaton Music Tri-Planar 4i		3,000
Wheaton Music Tri-Planar 5i		3,250
Wilson Benesch ACT1 Std		950
Wilson Benesch ACT2		1,350
Zeta AS		469
Zeta VDH		549

Marantz ST-57	P59	RDS	150
Marantz ST-65	P59	RDS	200
Marantz ST-17	P60	RDS	600
Meridian 504	P30	RDS	695
Meridian 604	P30	RDS	1,350
Michi RHT-10	P16	RDS	895
Micromega Minium FM Mk2	P39	RDS	329
Micromega Tuner	P39	RDS	750
Mission Cyrus FM7	P29	RDS	400
Musical Fidelity E50	P20	RDS	300
NAD 412	P24	RDS	190
NAD 414RDS	P30	RDS	250
NAD 710	P24	RDS	270
NAD 712	P24	RDS	330
Naim NAT03		RDS	595
Naim NAT02		RDS	1,080
Naim NAT01		RDS	1,730
Onkyo T 4210RDS	P30	RDS	180
Onkyo T 409	P30	RDS	230
Onkyo T 411RDS	P30	RDS	260
Pioneer F-204RDS	P30	RDS	140
Pioneer F-304RDS	P40	RDS	190
Pioneer F-504RDS	P40	RDS	250
Quad 77FM	P25	RDS	700
Rega Radio	P24	RDS	229
Roksan Caspian	P50	RDS	495
Rotel RT-935AX	P20	RDS	160
Rotel RT-9908X	P16	RDS	500
Sony ST-SE200	P30	RDS	100
Sony ST-SE300	P30	RDS	120
Sony ST-SE500	P30	RDS	140
Sony ST-SE700	P30	RDS	180
Sony ST-SA3ES	P30	RDS	250
TEAC T-R400	P20	RDS	120
TEAC T-H500	P30	RDS	170
TEAC TB-X10	P20	RDS	400
Technics ST-GT350L	P30	RDS	150
Technics ST-GT550L	P39	RDS	200
Technics ST-GT650L	P39	RDS	250
Thorens TRT-2000	P59	RDS	499
Yamaha TX-480L	P40	RDS	100
Yamaha TX-492RDS	P40	RDS	130
Yamaha TX-590RDS	P40	RDS	180

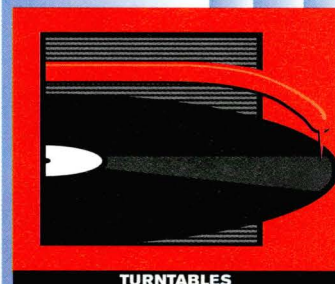
Thorens TD-180 AT91		190
Thorens TD-280 IV/UK		210
Thorens TD-166 VI/UK/RB		400
Thorens TD-318 III TP50		500
<b>Over £500</b>		
Audio Note AN-TT 2		995
Audio Note AN-TT 3		1,995
Audiomeca Romance		1,895
Audiomeca J1		3,500
Basis 2001		2,750
Basis Ovation II		4,800
Basis Debut Gold Std III		7,200
Basis Debut Gold Vacuum		9,250
Clearaudio Evolution		1,790
Clearaudio Reference		4,500
DNM-Reson Rota 1		3,900
DNM-Reson Rota 2		5,600
Impulse Moskito		695
Kuzma Stabi		1,950
Kuzma Stabi Reference		3,750
Linn LP12 Basic		1,100
Linn LP12 Lingo		1,750
Manticore Mantra 97		595
Manticore Mantra		895
Manticore Magister		4,400
Marantz TT-1000		6,000
Michell Gyrodek		825
Michell Orbe		1,950
N'ham Spacedeck		750
N'ham Graphic		1,200
N'ham HyperSpacedeck		1,500
N'ham Mentor		2,600
N'ham Anna Log		5,500
Oracle Paris		1,100
Oracle Delphi		3,370
Oracle Delphi 15th Anniv		3,800
Pink Triangle Tarantella		579
Pink Triangle Anniversary		2,500
Pro-Ject 6/Sumiko		850
Rega Planar 9		1,598
Reson RS1		675
Roksan Xermes 10		1,295
Roksan TMS		2,750
SME Model 20/2		3,403
SME Model 20/2A		4,836
SME Model 30/2		10,675
SME Model 30/2A		12,135
Stratosphere ST1		6,500
Thorens TD-146 VI TP50		550
Thorens TD-2001 TP90		700
Thorens TD-520 SME		1,050
Townshend MkIII Rock		1,499
Well Tempered Record Player		1,850
Well Tempered Classic		2,980
Well Tempered Super		3,900
Well Tempered Reference		5,300
Wilson Benesch WB Turntable		1,775



**TUNERS**

**KEY**  
 'P20' - (etc.) number of presets.  
**RDS** - Radio Data System; receives text information on station, programme type etc.

AMC T7	P30	RDS	130
Arcam Alpha 7	P24	RDS	230
Arcam Alpha 8	P24	RDS	280
Arcam Delta 280	P20	RDS	399
Audiolab 8000T	P39	RDS	800
Aura TU80	P30	RDS	350
AVI S2000MT	P16	RDS	599
AVI S2000MT2	P60	RDS	799
Carver TX-8R	P20	RDS	469
Creek T43	P68	RDS	399
Day Sequerra FM Ref		RDS	5,937
Day Sequerra S B'dcast Mon		RDS	14,640
Denon TU-260L	P20	RDS	120
Denon TU-215RD	P40	RDS	150
Denon TU-425RD	P40	RDS	200
Grundig T12	P59	RDS	170
H/K TU930	P30	RDS	150
H/K TU950	P30	RDS	200
Kanwood KT-2080	P20	RDS	130
Kanwood KT-3080	P30	RDS	180
Linn Kudos	P50	RDS	775
Linn Kremlin	P80	RDS	2,600
Magnum Dynalab FT11		RDS	550
Magnum Dynalab FT-101A		RDS	825
Magnum Dynalab Etude		RDS	1,250
Magnum Dynalab 108		RDS	4,500



**TURNTABLES**

**KEY**  
 ⊙ arm included.  
 ▾ cartridge included.  
 Up to £500

Audio Note AN-TT 1		349
Dual CS435-1		150
Dual CS455		190
Dual 505-4 UK		250
Eclipse TT430		70
Genexxa Lab-710		60
Genexxa Lab-810		70
Grundig TT1		180
Kenwood KD-492F		100
Michell Mycro		435
Moth Alamo		199
Moth Kanoor Mk1 Arm		279
Moth Kanoor Mk3 Arm		329
NAD 533		220
N'ham Interspace		500
Pioneer PL-J2500-C		80
Pioneer PL-990		130
Pro-Ject 0.5/OM10		160
Pro-Ject 1/510		200
Pro-Ject 2/520		300
Pro-Ject 6/MC15		450
Rega Planar 78		214
Rega Planar 7		214
Rega Planar 3		274
Roksan Radius		470
Sherwood PM8550		130
Sony PS-LX150H		90
Sony PS-LX300H		150
Systemdek 1/920		136
Systemdek IIX/900		230
Systemdek I/920/Moth		235
Systemdek IIXE/900Ap		388
Systemdek 960		500
Systemdek 2X2		500
Technics SL-BD20		160
Technics SL-BD22		180
Technics SL-1210MKII		500
Technics SL-1200MKII		500



**TONEARMS**

**KEY**  
 ⊙ - pivoted.  
 # - parallel tracking.

Air Tangent IC	#	3,333
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Remember that all entries printed in **RED** refer to hi-fi products that we have reviewed. Turn to page 122 for a full summary of test results!



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## US - CONTROVERSIAL? Of course

Yes we have to admit that at SOUNDS OF MUSIC we sometimes fall into the controversial category but however, there is a definite purpose here and it is not just for the sake of being different. Our dedication is to find and supply you with the very best products available and that sometimes means that our products may not enjoy your instant recognition. Take the DUNLAVY 4 loudspeakers, 6' tall 5 unit moving coil towers with a performance that has earned them throughout the world a reputation as a true reference far ahead of most others in their respective price range. They are neutral but not bland as some supposedly flat loudspeakers with a startling dynamic and transparent performance giving a full scale of sound akin to a true live performance. They are also easy to drive. And what better amplifiers to drive them with - PASS. A new name to some of you but if you really do follow the high-end, this incredible range will be known to you as a range that leads the solid state world by a considerable distance. Available in stereo or monoblock form from 30-200 watts these incredible amplifiers are top award winners everywhere. And to start and finish the system, the C.A.T. and the STRAT. The C.A.T. (Convergent Audio Technology) is still our number 1 pre-amp under the £10K mark and so far it has seen off all newcomers within this price range. And the STRAT (Lumley Stratosphere turntable complete with Graham arm and Transfiguration cartridge) is the best turntable we have encountered yet to date. If you have not heard your records on the STRAT, you have not heard them at all.

As real enthusiasts, we seek out the best and generally find it. Our one months trial exchange system ensures that if you do not entirely agree with us, you always have an alternative way to achieve your goal. If you are fed up with some of the so called 'State of the Art products' on offer then call us for some unbiased advice on something a bit different which may satisfy you more than you can imagine. There are however, many other very good and well known top products that also have the very best following and reputations. We have most of these available as well.

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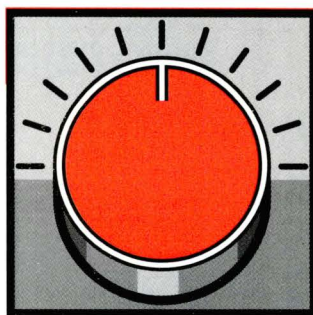
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# Amplifiers Brought to you in association with **audio research** HIGH DEFINITION

The amplifier sits at the heart of the system, processing the outputs from the various music sources as necessary and then driving the loudspeakers. These two (quite separate) functions are integrated into a single box at the low-to-middle price points, but become separated into preamps and power amplifiers. Even separate power supplies become increasingly common as one moves upmarket. Bear in mind that output power and sound quality are not necessarily

related. Some of the finest amplifiers available have outputs as low as 12 Watts, but team them with high-efficiency loudspeakers and you can achieve loudness aplenty. Power output is equally no indication of sound quality.

B
Best buy

R
Recommended

**KEY**

**LINE INPUTS:** Amount of input sockets for non-vinyl sources such as CD players, tuners and cassette decks.  
**MM PHONO INPUT:** If an amp has a vinyl phono input for moving magnet (normal output) cartridges.  
**MC PHONO INPUT:** If an amp has a vinyl phono input for moving coil (low output) cartridges.  
**REMOTE CONTROL:** If amp is couch potato ready.  
**HEADPHONE SOCKET:** If an amp is can friendly.  
**POWER OUTPUT (W):** Lab tested power output in Watts per channel.  
**RECEIVER:** If an amp has a built in radio tuner.  
**FACTSBACK NUMBER:** The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.  
**ISSUE NUMBER:** The issue of Hi-Fi Choice in which the original review appeared.

## INTEGRATED AMPLIFIERS

Product	Price(£)	Comments	LINE INPUTS	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT(W)	RECEIVER	ISSUE NUMBER
Alchemist Maxim	319	Vivid and colourful sounding amp that's just too bold and brassy	5	●				30		1737 154
Alchemist Nemesis	700	Good if ultimately undistinguished amplifier whose strengths include warmth, authority and distinctive aesthetics	6					80		168
AMC 3025a	130	Surprisingly potent and easy on the ear, if not especially analytical. Classic bargain basement material in fact.	4	●	●	●	●	30		171
AMC 3050a	170	Tremendous value for money, and a full, big, if rather uninformative sound	4	●	●	●	●	45		167
AMC CVT3030a	400	Beer-budget valve amp, with quintessentially valve-like virtues (euphony with dynamics) and vices (system dependency, noise)	6	●			●	30		168
Arcam Alpha 7	250	Decent, if slightly system-fussy amplifier that generally pulls all the right strings	5	●			●	40		167
Arcam Alpha 8	350	Enjoyably soft-centred amp, won't frighten the animals. Upgradeable via preamp output, and R/C (not supplied)	5	●				50		1853 162
Arcam Alpha 9	500	Not quite as much a star as the Alpha 9/9P combo, the solo integrated is nevertheless colourful and explicitly detailed	7			●	●	70		168
Audio innovations Alto	300	Probably because of a lack of deep bass, this stylish amp sounds open, natural and relaxed	6					35		1540 138
Audio Note Ongaku	56,000	A single-ended, zero negative feedback triode, line-level amplifier and a half. Probably the best amplifier in the world	3					26		C91
Audio Note Oto SE	1,200	Transparent, dynamic, clear and subtle, but limited power	4					24		126
Audiolab 8000A	550	The 8000A remains a highly disciplined and mature-sounding amp	5	●	●		●	60		1581 140
Audiolab 8000S	750	Informative in every sense, only a slight lack of bite detracts. Perhaps Audiolab's best yet!	6			●	●	60		1740 154
Aura VA100 II	350	Big and smooth, yet slightly disjointed sound was equally familiar	5	●			●	70		1541 138
Cambridge Audio A3i	200	Maximum information design, with plenty of usable and reasonably refined power. A snip	4	●				60		167
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
Copland CSA14	1,199	Great sound and looks, but watch out for high capacitance cables	4	●				60		1416 148
Creek 4330	279	Compact, even pretty, but sounds dark and uninviting, with coarse treble and woomy bass	5					40		171
Denon PMA-250SE	160	This amp can sound rough when extended, but within its limits it is open, detailed and likeable	5				●	30		171
Denon PMA-350SE	200	Reinvented in the minimalist tradition, the new SE model is a control freak, but can sound wonderful	5				●	50		1856 162
Denon PMA-425R	230	Well-equipped and generally enjoyable but slightly ragged performer. You can do better	3	●			●	45		167
Denon PMA-725R	350	Warm, bold, up-front presentation, but musically unexciting	5	●	●	●	●	97		1802 157
Densen Beat B-100	600	Low feedback amp with passive internal preamp gives a bold, pacy and thoroughly involving sound. Phono option listed	5					60		1855 162
DPA Renaissance	595	DPA's first integrated amp is typically innovative, but a little too 'crisp 'n dry' for our tastes	5	●			●	40		1582 140
EMF Audio Sequel	450	Relaxed and restrained design from Mike Creek	5	●			●	50		109
Exposure XX Super	700	Rather transistorised, unexciting sound. Good coherence and rhythm. Best played loud	6					55		1743 154
Gamma Acoustics Gemini	699	Genuine single-ended triode design, but low power, mundane sound and poor build	3					12		1416 148
Harman/Kardon HK610	180	Lively and friendly sound, but could prove too exciting for the faint hearted	6	●			●	30		1465 149
Harman/Kardon HK620	250	Capable and musical amplifier which is among the nicest available at the price. Optional add-in MM/MC board available	6				●	40		1858 162
Harman/Kardon HK640	400	Breezy, nimble sounding amp, lacks grip and fortitude – it can sound artificial and insubstantial	6				●	55		1542 138
JoLida 202	695	Well-built and technically accomplished, affordable valve integrated with subtle and refined, if not quite gripping sonic performance	4					40		168
JVC AX-V4	200	Respectable performance for a Pro-Logic AV amplifier. Lacks resolution and sparkle, though	5	●			●	63		1805 157
JVC AX-R5	200	Versatile, and lots of even-handed, articulate detail; but let down by superficiality	5	●			●	45		1466 149
Kenwood KA-3020SE	200	Not a brilliant phono stage, but this is a lively, exuberant sounding amp via CD	5	●			●	50		1130 134
Kenwood KA-5090R	300	Large, well equipped and high tech integrated, but TRAITR output still gives a harsh, unsubtle performance	5	●	●	●	●	65		171
Krell Digital KAV-300i	2,550	EISA Award winner with balanced inputs and AV friendly outlook, sound is confident and three-dimensional (Statements)	5					150		1825 160
LFD Integrated Zero	549	Lively and brisk, but at the same time cold and unsympathetic	6					50		1584 140
Linn Majik (Phono)	800	The cornerstone of Linn's modular hi-fi system is innovative, but sounds vague and confused	5	●	●		●	33		1013 129
Magnum IA120	265	Mirror finish amplifier with a bold, colourful delivery, but needs careful system matching to avoid loss of focus and clarity	6				●	65		171
Magnum IA170	330	Gives a realistic sense of instruments playing within a very believable acoustic, preserves colour and dynamics well	6				●	96		1260 142
Magnum IA-200	495	Sweet, valve-flavoured solid state amplifier flatters where it doesn't cast light. Note: power output listed is peak	7					100		1860 162
Magnum Class A	690	Lashings of rich and compelling music, but the Class A trades lushness for accuracy	4	●	●			60		116
Marantz PM-57	200	Well equipped but ultimately anodyne amplifier which lacks for nothing but star quality	5	●			●	50		171
Marantz PM-66SE	230	A bit lush, and power output is limited, but it communicates well and gives airy, large-scale music. An excellent budget buy	5	●			●	50		167
Marantz PM66 KI-Signature	400	An amplifier that knows how to rock and roll with holographic detail and stereo, but prefers small/medium scale acoustic material	5	●			●	50		168
Micromega Minium Amp	350	Excellent musical performance but doesn't like high levels or low impedance speakers	6	●			●	40		1806 157
Mission Cyrus IIIi	500	Beautifully presented, but mid-dominated balance and other anomalies were not liked. Upgradeable using PSX unit PSU	6	●			●	50		1854 162
Mission Cyrus SL	398	Sharp, articulate amplifier, and superb, outgoing midband with lean though well-extended bass – and build quality to die for	6					50		168
Mission Fidelity A2	499	Lucid, transparent midband and a full upper bass are provided by this highly proficient A1 replacement	5	●				25		1862 162
Musical Fidelity A220	700	Powerful, authoritative and well turned-out amplifier that is easy to match with comparably priced speakers and source components.	5	●				50		168
Musical Fidelity E1	199	Vivid, richly flavoured tonality and realistically scaled imagery distinguish this new entry level Richer Sounds special	6					30		171
Myryad MI 120	530	Despite an ultra-modern appearance, the old-fashioned cold, dry transistor sound	5				●	60		1747 154
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		1468 149
NAD 312	200	Another great budget price NAD, and a worthy all-round successor to the 302	6	●			●	25		171
NAD 314	260	Lively if coloured presentation that is musically engaging and easy on the ear	6	●			●	53		1807 157



# INTEGRATED AMPLIFIERS

Product	Price(£)	Comments	5	4	3	2	1	0	MM PHONO INPUT	MC PHONO INPUT	LINE INPUTS	HEADPHONE SOCKET	REMOTE CONTROL	POWER OUTPUT(W)	FACTSBACK (W)	RECEIVER	ISSUE NUMBER
<b>Naim Nit 3</b>	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes	5											30		1748	154
<b>Orelle SA-100</b>	449	A musically rewarding amplifier that grows on you. Trace of coarseness in treble	5											50		1749	154
<b>Pioneer A-204R</b>	160	The A-204R makes no special claims beyond being well equipped and cheap, but it displayed unexpected talent on test	5	●	●	●	●	●						25			171
<b>Pioneer A-300R</b>	200	Its bright and breezy sound is a natural tonic to those of us worn down by the ongoing stress of life	5	●	●	●	●	●						50		1469	149
<b>Pioneer A-400X</b>	300	On second audition, this amp was tonally unchanged but less compelling	6	●	●	●	●	●						50		1545	138
<b>Pioneer A-300R Precision</b>	400	Sophisticated, breathed-on variant of the A-300R. Not an obvious winner, but will slowly win you over with its subtle charms	5	●	●	●	●	●						35		1863	162
<b>Pioneer A-605R</b>	400	Intriguing technology, but execution is certainly impeded by excessive gadget count	5	●	●	●	●	●						80			168
<b>Prime Design A-100</b>	650	Dynamic but somewhat aggressive powerhouse with limited stereo interest (either MM or MC phono)	4	●	●	●	●	●						100			168
<b>Pro-ject Model 7</b>	300	A minimalist amplifier brimming with good intent, but too quirky for its own good. Either MM or MC	5	●	●	●	●	●						40		1264	142
<b>Quad 77 Integrated</b>	700	Compact and sophisticated Quad system amp, limited range of inputs when used with 'foreign' components (optional system remote)	3											84			168
<b>Rega Elex</b>	398	Minimalist amplifier derived from Elicit, is a little uninspiring, though at least it is not badly behaved	4	●	●	●	●	●						50		1865	162
<b>Roksan Caspian</b>	695	Well-built, open and articulate amplifier, which is also consistent from system to system, and well built	6	●	●	●	●	●						70			168
<b>Rose Scion</b>	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	●	●	●	●	●						65			168
<b>Rotel RA-931</b>	150	Rather dry and unforgiving sound from this internally well specified and attractively priced amplifier	4	●	●	●	●	●						35			171
<b>Rotel RA970BX</b>	250	Lively, fresh and perky with plenty of power, but not so clever with complex recordings	6	●	●	●	●	●						60		1546	138
<b>Sony TA-F246E</b>	200	Relaxed quality that seduces with its guile and subtlety, MM input is a bit laconic but CD is very tidy and composed	3	●	●	●	●	●						40		1471	149
<b>Sony TA-F448BE</b>	250	Classic minimalist interface is matched to carefully considered circuit to broadly satisfactory effect - but keep the volume in check	5	●	●	●	●	●						55			171
<b>Talk Electronics Storm 1</b>	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6	●	●	●	●	●						50		1868	162
<b>TEAC A-BX7R</b>	700	Characterful balance mars an otherwise meticulously designed amplifier. Includes a balanced input, optional MM/MC stage	5	●	●	●	●	●						50		1869	162
<b>Technics SU-A700 Mk 3</b>	250	Fully equipped, high-tech amplifier ultimately fails the 'is it Stork...?' test, and can sound messy and inarticulate	5	●	●	●	●	●						45		1870	162
<b>Woodside ISA230 Disc</b>	1,249	Smooth and inoffensive valve amplifier, though it lacks the sparkle and euphony required for a truly entertaining sound	3	●	●	●	●	●						30			116
<b>Yamaha AX-592</b>	280	Fine, middle ranking amplifier, with a detailed, dynamic midband, and some performance falloff at the frequency extremes	5	●	●	●	●	●						100			171
<b>Preamplifiers</b>																	
<b>Acurus RL11</b>	899	Well-featured US preamp with plenty of grunt and depth when used with the A150 power amp (Sessions)	6	●	●	●	●	●								1624	151
<b>AMC CVT1030A</b>	400	Budget valve preamp, modest build and a bit noisy, with fair sound	6	●	●	●	●	●									165
<b>Audio Innovations L1</b>	369	Reviewed with S800 Anniversary - explicitly detailed, conveys the message of the music as a whole	4	●	●	●	●	●								1300	145
<b>Audiolab 8000C</b>	550	Distinctive, stark neutrality that will not appeal to all. Good value engineering	5	●	●	●	●	●									97
<b>Audiolab 8000Q</b>	1,100	Tested with 8000M monoblocks	6	●	●	●	●	●								1301	145
<b>Aura CA200</b>	700	Flexible, well designed - can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	10	●	●	●	●	●									165
<b>Conrad-Johnson PV-10A</b>	1,295	Beautiful imaging, superb detail, plenty of gain on the phono input; classy build too. Tested in Sessions	4	●	●	●	●	●								1560	139
<b>Copland CTA-301MkII</b>	1,399	Sweet sounding - but never gets bogged down in audio treacle	4	●	●	●	●	●								1630	151
<b>Cyrus Pre</b>	650	Tested with Cyrus Power. High-tech design, punchy, light-footed character with a sense of substance and natural warmth	5	●	●	●	●	●									155
<b>Densen DM-20</b>	1,200	Stylish Danish preamp with a pair of huge knobs and effortless resolution and a slightly dark balance (Statements)	6	●	●	●	●	●									164
<b>EAR 802MC</b>	2,599	Tested with 509 Mk II - see comments in power amp section	4	●	●	●	●	●									63
<b>ECA Vista</b>	760	Wind up the volume and blow a breath of fresh music into your system (tested with Lectern)	5	●	●	●	●	●								1302	145
<b>Exposure XVII</b>	849	Superbly rhythmic; maybe a bit overpowering in the midband. Tested in Sessions with XVIII Super	5	●	●	●	●	●									142
<b>Jadis JP-30MC</b>	5,978	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange. (tested with JA30)	5	●	●	●	●	●									60
<b>LFD Mistral Linestage</b>	499	Strong ergonomics, generally decent sound, but a little lacking in detail	6	●	●	●	●	●									165
<b>Meridian 501</b>	695	Tight, positive sound, but dispassionate; intense at high levels. Tested with 555	5	●	●	●	●	●								1303	145
<b>Meridian 562V</b>	995	Transparent and capable preamp, also features six digital inputs	9	●	●	●	●	●									140
<b>Meridian 502</b>	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation (Statements)	7	●	●	●	●	●									162
<b>Moth 30 Passive</b>	149	Modular system gives cracking results. Passive preamp and power amp warrant Best Buy (tested with 30/Stereo 60)	4	●	●	●	●	●									109
<b>Moth 30 Active Line Stage</b>	349	Excellent sounding ultra-simple miniature preamp	4	●	●	●	●	●									165
<b>Muse Model Three</b>	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp (tested in Statements)	5	●	●	●	●	●									166
<b>Musical Fidelity F2</b>	500	Subtle, sweet-sounding preamp with strong presence	5	●	●	●	●	●									165
<b>NAD 114</b>	270	Beer-budget preamp, sounds focused, detailed and consistent	6	●	●	●	●	●									165
<b>Naim NAC92R</b>	599	Upgradeable preamp uses proprietary socketry, etc. See NAP90 power amp for comments	5	●	●	●	●	●									165
<b>Quad 77 Pre</b>	850	Sophisticated design with 2-way remote control console; open colourful sound and very flexible	4	●	●	●	●	●									165
<b>Rega Hal</b>	998	Dedicated to Exon power amps - passive line stages	6	●	●	●	●	●									165
<b>Rose RV-23</b>	450	You can pay more to get a more transparent sound, but it's hard to criticise at the price	3	●	●	●	●	●									77
<b>Rotel RC970BX MkII</b>	175	Confident, consistent sound. reviewed (in Sessions) with RB970BX MkII power amps	5	●	●	●	●	●									144
<b>Sumo Athena IIB</b>	767	Tested with Polaris III. Big, natural and tidy-sounding with very natural reproduction of acoustic and electric instruments	6	●	●	●	●	●								1305	145
<b>Talk Hurricane 2L</b>	649	Design of integrity which gets to the heart, if not the soul, of the music	6	●	●	●	●	●									165
<b>Thorens TTP2000F</b>	699	Glamorous, shoebox-format, minimalist pre with fine detail and some granularity	3	●	●	●	●	●									165
<b>Woodside SC26 Phono</b>	2,233	Synergistic with STA35, with a cool, controlled sound, good focus and transparency (tested with STA35)	5	●	●	●	●	●									100
<b>Power amplifiers</b>																	
<b>Acurus A150</b>	899	Tested with RL11 preamp. Powerful remote-control US combo with a slightly forward inclination	1											150		1624	151
<b>Alchemist Kraken/Pwr</b>	529	Hardly accurate, but entertaining nevertheless	1											60			124
<b>AMC CVT2100A</b>	600	Astonishing value valve/MOSFET hybrid with K188 output, but lacks the magic of the best valves	1											80			165
<b>Arcam Alpha 9P</b>	400	Clear, colourful and well-disciplined, the Arcam is a strong all-rounder that can compete with conviction	1														165
<b>Art Audio Quintet</b>	1,393	Switchable triode, ultralinear output stage. In triode mode, these are 15 of the sweetest Watts around. Surprisingly gutsy	1											15			109
<b>Aura PA100</b>	700	Can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	1											100			165
<b>Audiolab 8000M</b>	800	Strong, controlled sound; confident bass, but colourless. Tested with 8000Q	1											125		1301	145
<b>Audio Research VT60</b>	2,395	Ranks as 'must try' American cultural item (tested in Statements). Tube design	1											35		1179	136
<b>Copland CTA-505</b>	2,099	Grown-up amplifier with a refined, yet never over-civilised air	1											67		1630	151
<b>Cyrus Power</b>	498	Tested with Cyrus Pre. Punchy, light footed character with a sense of substance and natural warmth (bridgeable)	1											50			155
<b>Densen DM-30</b>	1,200	Fluid, valve-like power amp with effortless resolution and a slightly dark balance (Statements)	2											100			164
<b>EAR 509 Mk II</b>	3,699	Combining sonic strengths of transistors and valves, this amp warrants attention (tested with 802)	1											100			63
<b>ECA Lectern</b>	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1											50		1302	145
<b>Exposure XVIII Super</b>	849	Slight dullness and hardness, but great 'boogie factor'	1											70			142
<b>Jadis JA-30</b>	5,980	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange (tested with £5,978 JP30)	1											30			60
<b>LFD Mistral Power</b>	449	Infectious upper band vitality, but LF dynamics lacking, and lacks 'grip' and transparency	1											60			165



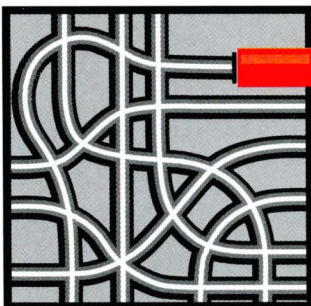
POWER AMPLIFIERS (CONTINUED)

Product	Price(£)	Comments	MC PHONO INPUT	HEADPHONE SOCKET	POWER OUTPUT(W)	FACTSBACK NUMBER	ISSUE NUMBER
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	1303	145
Meridian 557	1,400	Hefty British lump with balanced inputs and a transparent, nimble sound with no shortage of power (Statements)	1		200		162
Michell Alecto	1,150	Open, well focused imagery with natural, refined textures	1		50		165
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse, not comfortable with difficult speaker loads	1		60		165
Moth 30 Series Monoblocks	879	Tested with Active Preamp. While demonstrating solid, even balance it proved adept at delivering vital musical qualities	1		100		155
Muse Model 160	2,290	Transparent muscle amp with minimal character and a natural performer in both scale and tone (tested in Statements)	1		160		166
Musical Fidelity FX2	800	Quality build and imposing presentation is married to strong power yield, tonal colour and finesse	1		100		165
Myryad MA120	450	Based in MI120 integrated – see for comments, but sounds significantly better when bi-amped with MI120	1		60		165
NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1		80		165
Naim NAP90	450	Power amp from a Nait integrated with some improvements	1		30		165
Quad 77 Power	600	Open, bold and colourful, with mild compression	1		85		165
Rega Exon	2,194	Monoblock, priced each, dedicated for Hal preamp. Bold, outgoing, in-command kind of sound	1		125		165
Rotel RB-970BX MkII	225	Tested with RC970BX MkII in Sessions (see preamp section)	1		60		144
Rotel RB-980BX	475	Tames enthusiastically recorded material with a laid-back and occasionally smeared sound (tested with RC980BX)	1		120		155
Sumo Polaris III	950	Tested with Athena IIB. Big, natural and tidy-sounding with very natural reproduction of acoustic and electric instruments	1		164	1305	145
Talk Tornado 2	599	Good, but slightly retiring sound which lacks the authority to stand out in a crowd	1		65		165
Thorens TTA2000	599	Low power shoe-box format, but gutsy and surprisingly subtle and articulate	1		30		165

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Cables

Cables are not just accessories, but an integral part of a system. Inevitably some cables are better than others. The best cable for your system will only be found through trial and error, but by combining our recommendations with those of a dealer, you will end up with something suitable. Generally speaking, budget to spend about 10 per cent of the total system cost on cables.

- Analogue interconnects are the leads that connect source components to amplifiers and pre to power amps. The cables in this section are priced for a one-metre terminated pair.

- Digital interconnects connect CD transports to DACs, and are traditionally coaxial with a 75 Ohm impedance. 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 with brands.

**B** Best buy **R** Recommended

KEY	SOLID CORE:	FACTSBACK NUMBER:	ISSUE NUMBER:
SYMMETRICAL: A twisted pair of conductors.	Single or multiple, individually insulated strands.	The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	The issue of Hi-Fi Choice in which the original review appeared.
COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.	COPPER: Material used for conductor.		
STRANDED: Multiple strands with no intervening insulation.	SILVER: Material used for conductor.		
	DIG CABLE TYPE: O - optical digital, E - electrical digital.		

CABLES

Product	Price(£)	Comments	SYMMETRICAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK NUMBER	ISSUE NUMBER
<b>Analogue Interconnects</b>									
Audio Note AN-A	29.50	Not especially impressive, warm but well-rounded balance that restricts 'air' but is not unclear	●	●	●	●			108
Audio Note AN-C	59.50	Neutral but lacking in subtle texture and unable to distinguish fine detail				●	●		1687 131
Audio Note AN-S	139	Up-beat and enthusiastic sound with satisfyingly deep and grumbly bass	●			●			1687 131
Audio Note AN-V	219	15 individually insulated silver strands make up this very clean and dynamically unchallenged cable	●		●		●		1687 131
Audioquest Turquoise	40	A 'fit and forget' cable that sounds distinctly lazy	●		●		●		160
Bandridge AL421	5	Light and airy sound lacks authority, splashy treble		●	●		●		1688 131
Bandridge AL426G	10	Gold-plated plug OFC version of AL421 with same ineffectual sound quality		●	●		●		1688 131
Bandridge SG AL4720	13	4N OF copper, full smooth balance but a little plodding and relentless, lacks panache		●	●		●		1688 131
Bandridge SG+ AL4820	25	4N OF copper, distinctly teutonic, thrusting detail forward but still plodding and relentless		●	●		●		1688 131
Bandridge ProfiGold PG301	65	A perfect cable for enlivening a system, but too cold for most systems		●	●		●		160
Cable Talk Studio 2	65	A first-class performer from tonal, dynamic and rhythmic standpoints	●		●		●		160
Cambridge Audio Studio Ref	60	Dynamic cable with strong soundstaging and only a slight lack of detail		●	●		●		160
Chord Chameleon	48	Anomalous treble with a dry but vaguely sibilant quality, sometimes sounds smooth, sometimes harsh!			●		●		108
Chord Solid	99	Thin but very stiff with excellent resolution of subtle timbral detail and fine dynamics		●		●	●		108
Connections Midas HD	39	Canary yellow cable with excellent plugs and an open sound. Slight treble glare	●		●		●		160
DNM TC75	34	Price for 0.75m length. High resolution cable, but best in short runs due to higher than average series impedance				●	●		1690 131
DPA Slink	41	Slightly bright and zingy sound with flat soundstaging and hollow sounding bass, vocals and strings sound convincing though				●	●		1690 131
DPA White Slink	75	Highly expressive, very easy on the ear and attractively detailed though not entirely characterless at high frequencies				●	●		1691 131
DPA Black Slink	220	Initially dark and meaty but becoming lucid and transparent with running in. Quad geometry, Gore-tex dielectric	●			●	●		1691 131
Ixos 104	20	Open and detailed presentation, full bass and silky if overly smooth treble		●	●		●		1692 131
Ixos 103	40	Even-handed and generous sound, bass has a well-rounded, bouncy quality		●	●		●		1692 131
Ixos 102	60	A bit bright and undynamic, this cable is nevertheless a good all-rounder, whose faults are largely subtractive		●	●		●		160
Ixos 101	100	A cable with personality, its veiled and shut in quality brings an earthiness to vocals and rhythm guitar alike		●	●		●		1693 131
LFD Spirolink I	35	Price for 0.7m length. Dynamic but smoothly detailed performance, but gives the impression of looking down on the music				●	●		1694 131



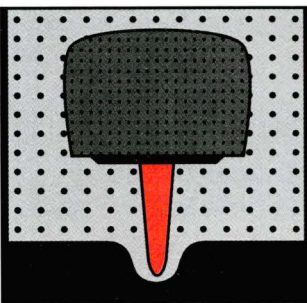




# CABLES (CONTINUED)

SYMMETRICAL COAXIAL STRANDED SOLID CORE COPPER  
FACTSBACK NUMBER  
ISSUE NUMBER

Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	FACTSBACK NUMBER	ISSUE NUMBER
Audioquest Crystal	18	Neutral balance is spoiled by some graininess and smearing	●		●	●			168
Bandridge SF LC1070	42p	Basic figure 8 bellwire, lightweight balance and a softness that dilutes even the strongest bass	●		●	●		1713	133
<b>A</b> Bandridge SF LC1259	1	Fresh and open, bubbly and naturally colourful soundstage that's neither forced or unduly edgy. Treble is slightly messy	●		●	●		1713	133
Bandridge Highflex LC2604	3.50	Substantial 6mm2 conductor produces weighty but ploddy music that lacks transparency	●		●	●		1714	133
<b>A</b> Bandridge LC7409	3.85	Detailed and up-beat cable. A bit too steely for classical strings	●		●	●		1800	157
<b>A</b> Cable Talk Talk 3.1	2.25	Quite well-balanced but tends to lose bass lines in complex music	●		●	●			168
Cable Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained	●		●	●		1800	157
Chord Myth	5.95	Light and airy tonality may please, but bass is recessed and detail not outstanding	●		●	●			168
DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension	●		●	●			168
<b>A</b> DNM LSCB500	5.95	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire	●		●	●		1716	133
<b>A</b> DPA Black Sixteen	90	Unflappable resolution of fine musical details, there's no dampening of dynamics, simply oodles of taut information	●		●	●	●	1717	133
<b>A</b> Gale XL189	0.99	Slightly bright and not that subtle, but a perfectly acceptable cable for any starter system	●		●	●			168
<b>A</b> Gale XL315	2	A little lacking in detail but plenty of life and excellent value	●		●	●		1800	157
<b>A</b> Gale XL160-2	2.50	Rhythmic and bouncy-sounding bi-wire cable. Can be slightly manipulative	●		●	●		1800	157
<b>A</b> Goertz M2	20	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility	●		●	●			168
Heybrook Heywire	4	This well-meaning facsimile of earlier ribbon cables ends up sounding lumpy and uneven	●		●	●			109
<b>A</b> Ixos 603	2	Big and expansive-sounding cable, full and engaging while retaining a high degree of neutrality	●		●	●		1718	133
Ixos 604	5	Midrange is detailed and surprisingly smooth but treble is hard and synthetic and the bass no better	●		●	●		1719	133
<b>A</b> Kimber 4TC	19.68	A well-balanced cable with good performance in all areas	●		●	●			168
Kimber 4TC Double-wire	40	A variation on a Kimber classic which produces a rich and weighty sound, but isn't quite as transparent as single runs	●		●	●			133
Mission Quartet	7.90	Mixed, inoffensive sound, adds guttural resonance to vocals and could be generally more coherent. Bi-wire	●		●	●		1722	133
Monster Cable XP	1.50	XP offers plenty of slightly soft bass and a slightly rounded treble, a relaxed cable whose indiscretions are not bothersome	●		●	●		1723	133
Naim NACA 5	5.11	Described as a 'dinosaur of a cable', this stiff wire rod doesn't belong outside Naim systems. But it works a treat in them	●		●	●			109
Nordost Octava	2.95	Fair bass but confused treble and some coloration	●		●	●			168
Ortofon SPK100	3	Grey-sounding and strips instruments of their natural richness and resonance, a bit bass shy too	●		●	●			133
<b>A</b> Ortofon SPK300	8	Tremendously open and atmospheric with robust full blooded bass, and dynamic too if slightly bright at times	●		●	●			133
Puresonic 7845	1.95	Big, weighty sound — but too messy and bloated for its own good	●		●	●		1800	157
Puresonic 7891	2.85	Chunky cable design, shame about the sound quality	●		●	●		1800	157
QED Qudos	2.50	Despite high-tech design and excellent Air-Loc plugs, the music failed to gel	●		●	●		1800	157
QED Profile	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding	●		●	●			168
QED Profile 8	5	Sophisticated flat cable that lacks decent bass and get up and go	●		●	●		1800	157
Silver Sounds 12 gauge	12	Basic 'homemade' construction gives fairly neutral sound, though not outstandingly competitive	●		●	●			168
Sonic Link S300	18	Happiest with simple music; tends to smudge detail in complex pieces	●		●	●			168
<b>A</b> SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced	●		●	●		1800	157
<b>A</b> Transparent Audio Musichord	11.42	Sweet, open and refined treble, a bit of breathy exuberance and can sound slightly lackadaisical	●		●	●		1728	133
<b>A</b> Transparent Audio Wave	22.84	Very close to the sound of 'no cable', one of the very best. Slightly softens treble detail	●		●	●		1728	133
Tech + Link OFC79	1	Bargain basement cable that sounds cosy, but suffers from a wobbly bass	●		●	●		1800	157
van den Hul The Clearwater	6	Despite its evocative title, the Clearwater turns out to be a disappointingly murky-sounding cable	●		●	●			109
van den Hul CS122	19	Smooth and articulate with superb focus and control, its sheer coherence makes it a winner (tested in Sessions)	●		●	●			153
van den Hul The Magnum	31	Touted as vdH's most prestigious twinlead cable, Magnum sounds soft and old fashioned	●		●	●			109
<b>A</b> van den Hul The Wind	35	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass!	●		●	●			109
van den Hul Revolution	64	Silver-plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble	●		●	●		1726	133
XLO Pro Type 625	4	Lively but natural and relaxed-sounding but a hint of congestion at frequency extremes	●		●	●		1726	133
XLO Pro 600	16.60	Basically neutral tonality but can become aggressive and two-dimensional	●		●	●			168



# Cartridges

**C**artridges 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 designs need a

transformer to cope with MC cartridges.

■ Cartridge/amplifier interfacing can be very subtle, but even basic high output MM designs benefit in overall balance from optimised amplifier capacitance loading.

**B** Best buy **R** Recommended

**KEY**  
 MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.  
 MC: Moving coil cartridge with a low output only suitable for high-sensitivity vinyl disc amplifier inputs.  
 REPLACEMENT STYLUS: Most MM cartridges have a stylus that can be removed and replaced.  
 OUTPUT (MV): Cartridge output in millivolts.  
 MASS (g): Cartridge mass can affect arm choice.  
 FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review.  
 ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.

# CARTRIDGES

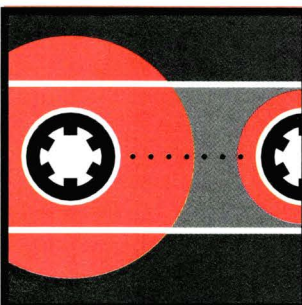
Product	Price(£)	Comment	REPLACEMENT STYLUS	OUTPUT (MV)	MASS (g)	FACTSBACK NUMBER	ISSUE NUMBER
<b>A</b> Audio Note Io IIV	1,695	One of the best, giving an extraordinarily relaxing midrange clarity. Needs a transformer	●	●	0.1		100
<b>A</b> Audio Technica AT-95E	19	Clear and dynamic, though richly balanced	●	●	2.8		48
<b>A</b> Audio Technica ART-1	944	This is a delicate and very fluid-sounding MC that tracks well	●	●	0.4	9	72
<b>A</b> 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
<b>A</b> Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether and a bargain too	●	●			103



REPLACEABLE STYLUS  
MM MC  
OUTPUT (mV)  
FACTSBACK MASS (g)  
ISSUE NUMBER

# CARTRIDGES (CONTINUED)

Product	Price(£)	Comment	REPLACEABLE STYLUS	MM	MC	OUTPUT (mV)	FACTSBACK MASS (g)	ISSUE NUMBER
Dynavector Karat 17D2 mk2	449	Clean and controlled sound with taut, tuneful bass. Detailed and musically cogent	●			0.15	5.3	158
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 colouration 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 has a certain dirtiness	●			0.5	8	103
Grado Prestige Gold	150	Rich sounding with an unusually refined top-end for a moving magnet-type cartridge	●			4	6	158
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	339	Immediate and detailed, but coloured, nonlinear with a questionable effect on records	●			5.0	6	84
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
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, the 520/P has a lively, effervescent sound	●			3.0	5	67
Ortofon MC10 Super	100	"What a delightfully sweet-sounding cartridge this is..." we said	●			0.3	7	48
Ortofon MC3 Turbo	130	The 3 Turbo is bright, cheerful and bouncy, but unsubtle – take it as it comes	●			3.3	4	103
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	249	A bit too stark and honest, but faithful to what's on the LP	●			0.5	11	139
Ortofon MC30 Supreme	525	Highly detailed and even-sounding cartridge that has a special affinity with female vocal recordings	●			0.5	10.7	158
Ortofon MC3000II	1,100	A real eye-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 build, the Bias offers a gentle, refined sound	●			5	4	67
Rega Elys	85	Clearly superior to the Bias, the Elys is more detailed, accurate and convincing	●			5.0	5	67
Roksan Corus Black	130	Recognisably related to the Corus Blue, but smoother and more civilised	●			6.5	5	91
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	699	Outstanding stereo imaging and neutral balance are appealing, but rhythmically the DDT-II is a bit lazy	●			0.35	7.6	158
van den Hul MC-10	799	A neutral, balanced performer, gives fine depth and focus and a firm, extended bass	●			0.4	6	60
van den Hul MC-One	999	This extended all the positive qualities of the 10, but added greater authority and scale – worth all the extra money	●			0.4	6	60
van den Hul MC-Two	1,349	MC-Two rewards with a highly detailed yet fluid and musically convincing portrayal	●			0.4	6	72
van den Hul G' hopper HIGLA	2,999	Undoubtedly one of the finest cartridges available, it has tremendous bandwidth, energy and finesse	●			0.4	6	122
Wilson benesch Matrix	786	Extraordinarily well balanced cartridge: neutral and detailed yet lively and rhythmically assertive	●			0.58	6	158



# Cassette Decks

The compact cassette is still the world's most versatile and ubiquitous music storage medium. Buffs may wrinkle their noses, but they all use it.

There should be no problems in connecting a cassette deck to any normal amplifier, but some care needs to be taken in choosing the best tapes for a specific machine. (Trial and error is one effective technique, but many decks have manual bias adjustment and some match up to the tape automatically.)

Twin decks offer the option to dub tapes and play two cassettes sequentially. Autoreverse is a useful feature, but usually implies some mechanical compromise. Useful facilities include tape monitor switching and Dolby S.

**Best buy**

**Recommended**

KEY			
DOLBY C: A rather extreme noise-reduction system not usually associated with high sound quality.	for cassette recording	AUTOREVERSE: Automatically plays both sides of the cassette.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
DOLBY S: A desirable derivative of the Dolby SR professional noise-reduction system.	3-HEAD: If you want to monitor a recording, while you are making it, a third head is essential.	AUTO CALIBRATION: The deck will automatically set up bias and EQ for any tape.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
DOLBY HX-PRO: System designed by B&O to extend headroom	TWIN DECK: Contains two decks for dubbing and continuous play. In most instances only one deck will record.	ADJUSTABLE BIAS: Bias can be manually set to suit the tape being used.	

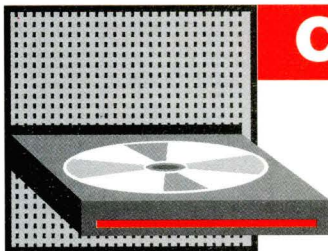
# CASSETTE DECKS

Product	Price(£)	Comments	DOLBY C	DOLBY S	DOLBY HX PRO	3-HEAD	TWIN HEAD	AUTO CALIBRATION	ADJUSTABLE BIAS	FACTSBACK NUM.	ISSUE NUMBER	
Aiwa AD-F450	120	Basic but well-designed budget deck, astonishing value, only the poor metering gives the game away	●							1513	136	
Aiwa AD-WX727	170	High-class twin for those who want bells, whistles - and music	●							1377	146	
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	
Denon DRS-640	200	Draw-loading deck, with simple facilities and smooth, well-adjusted sound	●							1591	140	
Denon DRM-650S	230	An all-round improvement on predecessors, offers a wide-ranging, disciplined 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	●								1514	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	●								1592	140
Harman/Kardon TD450	350	Draw loader with poor tape navigation features; good midband but shallow bass	●								164	
JVC TD-R472	200	Excellent auto-reverse deck which doesn't suffer the usual disadvantages and is very sharply priced	●								158	
JVC TD-V62BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque	●								123	
JVC TD-V62BK	270	Assured, clean and agile sounding recorder, if not quite the most refined in its class	●							1380	146	
JVC TD-W718	300	Twin deck. Good for creative live recording, but no timer standby. Respectable though not earth-shattering performance	●								171	



CASSETTE DECKS (CONTINUED)

Product	Price(£)	Comments	DOLBY B	DOLBY S	DOLBY C	DOLBY HX PRO	3-HEAD	TWIN HEAD	AUTO CALIBRATION	AUTOREVERSE	FACTSBACK ADJUSTABLE BIAS	ISSUE NUMBER
Kenwood KX-W6080	200	Modestly decent sounding twin deck, with some transport instability and ragged bass. The features list is also strong	●	●	●	●	●	●	●	●	●	171
NAD 613	230	Rough and ready, but enjoyable sound, though marred by mechanical motor noise	●	●	●	●	●	●	●	●	●	158
NAD 614	270	Solid, workmanlike and ungimmicky player with a sound to match, a little pricey by the standards of its class	●	●	●	●	●	●	●	●	●	164
NAD 616	300	Primitive twin deck with basic features. No Dolby setting memory, transports are too unstable for serious quality first use.	●	●	●	●	●	●	●	●	●	171
Onkyo K-611	460	Cute drawer loading mini-size component with 3-heads and dual capstan transport	●	●	●	●	●	●	●	●	●	1384 146
Pioneer CT-W806DR	300	Had it not been for the iffy transport quality, this ultra-sophisticated twin would have been recommended.	●	●	●	●	●	●	●	●	●	171
Pioneer CT-S830S	500	High-class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	●	●	●	1385 146
Sony TC-KE600S	300	Mild setting-up problems notwithstanding, this UK-tweaked design has a smooth, open and un-cassette-like sound	●	●	●	●	●	●	●	●	●	158
Technics RS-AZ6	230	For those who can't afford the RS-AZ7; exquisite clarity over the widest bandwidth thanks to AZ thin-film head	●	●	●	●	●	●	●	●	●	164
Technics RS-AZ7	300	Thin-film head gives a solid, almost CD-like bass and midrange. A clear advance in the state-of-the-art	●	●	●	●	●	●	●	●	●	158
Yamaha KX-490	199	Electrifyingly transparent and capable deck whose only flaw is a trace of audible wow and flutter	●	●	●	●	●	●	●	●	●	158
Yamaha KX-580SE	250	Subtle, engaging and transparent sounding deck, with a lightweight tonality, but good stability and strong detail	●	●	●	●	●	●	●	●	●	171



CD Players brought to you in association with MISSION

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 below). To do this the player needs a digital output of either electrical or optical persuasion; sonically the former is preferable. A CD player can be split into two basic components: the disc drive or

transport, and a device which turns the digital bitstream coming off the disc into an analogue audio signal. This is called a digital to analogue convertor, or DAC. Although most players are contained in a single box, expensive players are usually two-box affairs.

**B** Best buy **R** Recommended

**KEY**

**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.

**AT&T 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, volume-controlled output.

**MULTI-DISC:** Equipped with a carousel or multi-tray system for continuous play of multiple discs.  
**DAC TYPE:** Digital to analogue convertor: BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bit-stream technologies. 1bit - single bit types such as MASH, bitstream, PWM, etc

**FACTSBACK NUMBER:** The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.  
**ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which the original review appeared.

CD PLAYERS

Product	Price(£)	Comments	AES/EBU ELEC DIG OUTPUT	OPTICAL DIGITAL OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK DAC TYPE	ISSUE NUMBER
Alchemist Nexus APD32A	597	Refined treble, constrained yet capable bass and attractive all-round presentation distinguish this player from the crowd	●	●	●	●	●	●	●	Hyb	169
Acurus ACD11	899	First-rate if costly player from the US, which combines a delightful transparency with an uncontrived naturalness	●	●	●	●	●	●	●	1bit	166
Arcam Alpha 7	320	Very detailed for a budget player with a slick and free sense of dynamics, needs careful ancillary matching	●	●	●	●	●	●	●	Hyb	1872 163
Arcam Alpha 8	520	Refined, intricately detailed but a little cautious, this should be broadly compatible with a variety of amps	●	●	●	●	●	●	●	BS	1873 163
Audio Innovations Alto	399	Refreshing piece of audio sculpture belies inconsistent audio behaviour	●	●	●	●	●	●	●	BS	1635 151
Audiolab 8000CD	1,000	Developed according to the Green Cross Code of digital audio with an elegant but safe musical presentation	●	●	●	●	●	●	●	BS	1874 160
Audio Research CD1	3,290	Suspends disbelief with a frighteningly real yet obviously coloured sound. A rare proposition among CD players	●	●	●	●	●	●	●	BS	1875 163
AVI S2000MC Reference	1,399	Lean, dry, high resolution player, built to outlast most of us, and a fine performer in a sympathetic system	●	●	●	●	●	●	●	MB	169
Cambridge Audio CD4	150	Basic appearance and sluggish track access/track search belies its up and at 'em sound quality	●	●	●	●	●	●	●	Hyb	1268 147
Cambridge Audio CD4SE	200	Among the best players we have encountered at the price, considerably more refined and convincing than CD4	●	●	●	●	●	●	●	BS	1877 163
Cambridge Audio CD6	250	A sharp, lively and articulate player, a real thoroughbred in fact, perhaps too sharp and lively for some systems	●	●	●	●	●	●	●	BS	159
Copland CDA-288	2,199	A gentle giant of a player that errs in favour of pastel shades rather than bold daubs of colour, one for refined tastes	●	●	●	●	●	●	●	MB	1880 163
Denon DCD-625	200	DCD-615 replacement is generously equipped but lacks sophisticated sound of its forebear	●	●	●	●	●	●	●	MB	1269 147
Denon DCD-825	240	Despite extensive revisions, this latest player still sounds like a typical 18-bit Denon, which is no bad thing!	●	●	●	●	●	●	●	MB	1531 137
Denon DCD-1015	350	Excellent, mid-range player - fast, fluid and lean	●	●	●	●	●	●	●	MB	1599 141
Denon DCD-3000	1,000	Sings with the temperament of a huge orchestra under the baton of a timid conductor, but very agreeable at that	●	●	●	●	●	●	●	MB	1881 163
Eclipse CD101a	80	If you want to know the sound of high order distortion, this is probably as good a place to start as any	●	●	●	●	●	●	●	MB	144
Harman/Kardon HD710	200	A player of integrity, but can sound a bit hard and rough when extended, and is somewhat amplifier fussy	●	●	●	●	●	●	●	1bit	159
Harman/Kardon HD730	300	Competitive at the price, with a coloured but dynamic and outgoing sound supported by a raft of user features	●	●	●	●	●	●	●	BS	166
Heybrook Signature	989	Coarse, edgy and sometimes inconsistent sound, which is incompatible with the ambitious specification and engineering	●	●	●	●	●	●	●	MB	169
JVC XL-V284BK	140	Featuring a new set of bitstream innards, this flexible player has a refined, if occasionally unpredictable sound	●	●	●	●	●	●	●	1bit	1270 147
JVC XL-2574	250	Strong resolving power and good midband and dynamics, but slightly raw and thin	●	●	●	●	●	●	●	1bit	159
JVC XL-2674BK	300	Even-handed, but glosses over the most intimate moments	●	●	●	●	●	●	●	1bit	1637 151
Kenwood DP-3080	170	Bold, dynamic and outgoing sound, though somewhat aggressive. Poor build quality and finish	●	●	●	●	●	●	●	1bit	159
Kenwood DP-7090	400	A lively and compelling performer with an even-handed and coherent disposition	●	●	●	●	●	●	●	MB	1885 163
Krell KPS 20i	9,990	Forthright, edge-of-the-seat sound with outstanding bass performance (tested in Statements)	●	●	●	●	●	●	●	MB	1734 155
Linn Mimik	875	Useful multi-room features matched to strong bass, but poor imagery and transparency	●	●	●	●	●	●	●	Hyb	1762 155
Marantz CD63MKII KI Sig	500	It's the quintessential sound of Marantz - warm, open, and smooth almost to a fault	●	●	●	●	●	●	●	Hyb	169
Marantz CD-67	270	Dynamic, authoritative, and wide tonal response, but also shut-in and mid-forward balance	●	●	●	●	●	●	●	1 bit	159
Marantz CD-67SE	350	Refined, enjoyable player, though ultimately a little soft-centred	●	●	●	●	●	●	●	BS	166
Marantz CD-17	800	Fabulous packaging and an excellent all round performer: smooth, detailed and consistent	●	●	●	●	●	●	●	BS	1763 155
Meracus Tanto	1,395	Believable tonal colours and textures, refinement takes preference over dynamics - but it's not cheap	●	●	●	●	●	●	●	DS	169
Meridian 508 (20-bit)	1,685	Combines a delicate mid and treble with rich, opulent bass and has impressive low-level resolution	●	●	●	●	●	●	●	BS	1886 163
Micromega Minium	400	Dynamically weak and some roughness offsets the pleasing tonal balance, articulate mid and strong bass	●	●	●	●	●	●	●	1 bit	159
Micromega Stage 6	960	Lucid, open sound quality with some dynamic limitations with certain discs. Upgradeable from lesser Stage models	●	●	●	●	●	●	●	BS	169
Mission dAD3	598	This front loader has a relaxed style of delivery that convinces with guile and subtlety rather than orchestral ordnance	●	●	●	●	●	●	●	BS	1887 163
Mission Cyrus dAD3Q	898	Lucid, transparent and uncontrived sound quality, superb build, and readily upgradeable	●	●	●	●	●	●	●	MB	169



AES/EBU ELEC DIGITAL OUTPUT  
OPTICAL DIGITAL OUT  
AT&T OPT DIG OUT  
BAL ANALOGUE OUTPUT  
HEADPHONE OUTPUT  
VARIABLE OUTPUT SOCKET  
FACTSBACK MULTI-DISC  
ISSUE NUMBER  
DAC TYPE

**CD PLAYERS (CONTINUED)**

Product	Price(£)	Comments	AES/EBU ELEC DIGITAL OUTPUT	OPTICAL DIGITAL OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUTPUT	HEADPHONE OUTPUT	VARIABLE OUTPUT SOCKET	FACTSBACK MULTI-DISC	ISSUE NUMBER	DAC TYPE
Monrio Privilege	995	Costly and well-engineered, but ultimately rather heavy-handed and dull, if refined player	●							MB	166
Musical Fidelity A2	499	Warm (too warm), attractive and open player, a great improvement on (related) E60	●			●	●			BS	169
Musical Fidelity E60	299	This entry-level player lacks proper stereo localisation and clarity	●			●				-	166
Musical Fidelity FCD	1,500	A forward disposition makes this perfect for Fenders but less appropriate to Guarneris	●					●		BS	163
Myryad MC100	700	A little extra get-up-and-go wouldn't go amiss, but its sheer maturity and composure ensure listenability	●							BS	1889 163
NAD 512	250	Simple, well-focused presentation, and articulate with it, though hard-nosed quality is not everyone's cup of tea	●							1 bit	159
NAD 514	370	Boisterous sound, but undeniably attractive	●							BS	1639 151
Naim Audio CD3	1,000	The idiosyncratically packaged CD3 is solid and highly articulate. Always has its feet on the ground though	●							MB	1765 155
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	1890 163
Onkyo DX-7210	260	Well-bred CD player features an unusual digital filter, is smooth and cultured without appearing grey or boring	●			●				BS	1273 147
Onkyo DX-7510	400	Strongly flavoured, assertive sound	●			●				BS	1640 151
Orelle CD-100EA	649	Excellent imagery, timing and transparency, and readily upgraded or reconfigured	●	●		●				MB	166
Philips CD-721	130	Surprisingly well-sorted, articulate if slightly glossy and attractively presented sound. Captive signal lead	●							1 bit	159
Pioneer PD-204	150	Generally easy on the ear, but can bite back, especially with complex high-frequency music content. Well endowed	●							1 bit	159
Pioneer PD-S705	300	A dichotomy, this machine was loved by some for its articulacy and disliked by others for sounding too impressive!	●			●				BS	1891 163
Pioneer PD-S904	400	Too much legato – literally – in sound, but a very smooth performer	●			●				1 bit	1641 151
Pioneer PD-S505 Precision	460	Assured, fluid-sounding player, with great spatial coherence	●							1 bit	166
Quad 77	900	A true thoroughbred combining a penetrating insight into detail with poise rarely found at the price	●							Hyb	1893 163
Roksan DP3P	1,495	Dramatic and compelling, classical listeners should be ready to 'air conduct' when auditioning this player	●							BS	1896 163
Roksan Caspian	895	Solid, articulate, and fundamentally well-engineered player, but with some subtle low-level limitations	●							Hyb	169
Rotel RCD-970BX	375	A combination of solid build, useful facilities and an attention grabbing sound make this a winner	●							BS	1897 163
Sherwood CD-4030R	180	Easy on the ear, smooth-sounding player, with limits set by the slightly soft, compressed quality – and messy fascia	●			●				BS	159
Sherwood CD1	1,100	A very neutral, even handed sounding player with a rather flat, lifeless sound. Beautiful construction	●			●				BS	1899 163
Sony CDP-XE900E	300	Refined and analytical disc scavenging tool, but there are some distinctive colourations making auditioning vital	●							BS	159
Sony CDP-XA2ES	350	Strong willed, heavyweight sound; not for the faint hearted	●			●				BS	1642 151
Sony CDP-X3000S	500	Shoebbox format player, with looks to die for, and switchable digital filters to tweak the already excellent sound	●			●				-	169
Teac 3450SE	200	For once a budget player where the gadgets take second place to respectable, budget amplifier-friendly sonics	●			●				1 bit	166
Teac CD-5	350	Bright, breezy and up-beat – but short in the trouser department	●			●				BS	1643 151
Teac VRDS-7	599	Although bold and outgoing, this player can sound both intrusive yet lacking in fine detail	●			●				BS	1769 155
Teac VRDS-10SE	850	Superbly built and presented, but rather leaden bass, with an over-prominent and not ideally refined mid/top	●			●				BS	169
Teac VRDS-25	1,300	A solid player in all respects combining powerful sound with state-of-the-art technology	●			●				MB	1903 163
Technics SL-PG480A	140	Full driving sound, but somewhat uneven in balance with a unsubtle, slightly harsh top end	●							1 bit	159
Technics SL-PS770A	250	A mellow-sounding player that never quite rouses from its slumber to really tackle the music at hand	●			●				BS	1278 147
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	●							1 bit	166
Yamaha CDX-490	170	Big, blowsy sound, is undermined by lack of precision and focus	●			●				1 bit	159
Yamaha CD-X890	350	Clearly a quality product in every sense, the Yamaha provides a spacious, refined and tuneful account of the music	●			●				●	166
<b>TRANSPORTS</b>											
Arcam Delta 250	800	Arcam's best effort yet is a new design based on Philips CDM9 transport. Specification includes Sync Lock facility	●			●				-	1491 130
Audiolab 8000CDM	1,400	Superb-slick transport and basically very honest sound, but lacking the last degree of fine detail	●	●		●				-	162
Audiomeca Kreatura SE	1,400	Superb combo for those who like the sound of valves (tested with Elixir DAC in Sessions)	●			●				MB	141
Audiomeca Mephisto	2,350	Tested with Trichord Pulsar, the duo provides a highly composed and tactile sound	●			●				-	1320 144
Linn Karik	1,850	Based on early Linn transport, the Karik is dry but very positive, detailed and engrossing	●			●				-	1323 144
Meridian 500	1,245	Used with the 563 DAC, the combination is thin, brash and uncomfortable	●			●				-	1103 133
Mission Discmaster	1,900	Powerful performance – large and beefy without sounding fierce or aggressive (price includes Dacmaster)	●							-	1104 133
PS Audio Lambda	2,250	With Ultralink Two, sound positively sparkles with colour and resonant detail	●	●		●				-	1106 133
Roksan Attesa ATT-DP3	1,295	Not the most detailed or refined but capable of good excitement with the right material	●			●				1 bit	162
Teac VRDS-T1	550	Superb quality engineering is mated to tidy and composed sound (tested with D-T1)	●			●				-	1325 144
Teac P-700	900	Tested with D-700, low resolution sound is warm, bubbly and entertaining	●			●				-	120
Theta Data Basic II	2,397	Uses a Philips CDM-9 Pro mechanism and works a treat with more lively DACs	●			●				-	1494 130
Thorens TCD2000	999	Lively and up-front presentation not helped by rather loose bass and splashy treble	●			●				-	162
Trichord Digital Turntable	699	Very detailed, precise, controlled yet involving; a first-rank performer	●			●				-	162
Wadia 8	3,195	Budget version of Teac's VRDS mechanism in a fancy case; just too expensive for the performance on offer	●	●		●	●			-	1495 130
<b>DACS</b>											
Arcam Black Box 50	480	Measured and sophisticated sound from a DAC that leaves plenty in reserve for future upgrades								Hyb	1506 133
Arcam Black Box 500	750	Sophisticated unit with sync lock and discrete DAC								BS	1519 136
Audio Note DAC1	675	Oddball DAC with manual de-emphasis switch. Needs a high preamp input impedance or bass will suffer								MB	127
Audiolab 8000DAC	900	Basically very honest sound, but lacking the last degree of fine detail								BS	162
Audiomeca Elixir	799	DAC was tested with Kreatura SE – see above								BS	141
DPA PDM256	3,650	Highly advanced, with adjustable dither. but the different settings only lead to compromise								BS	133
Linn Numerik	1,500	A new 20-bit DAC and revised Karik transport have cleaned up; but sounds a bit dry and humourless								MB	1323 144
Meridian 563	795	Warmer but no less detailed than the earlier 200-series, the 563 flies with a top-rate transport								DS	1103 127
Mission Dacmaster	1,900	Powerful performance – large and beefy without sounding fierce or aggressive (price includes Discmaster)								MB	1104 133
PS Audio UltraLink 2 HDCD	2,590	With Lambda transport, the sound positively sparkles with colour and resonant detail								MB	1106 133
PS Audio Ref Link	4,550	Consolidates reputation of PS Audio for high performance digital electronics						●		MB	1069 132
Roksan Attesa ATT-DA2/DS5	1,145	Not the most detailed or refined but capable of good excitement with the right material								1 bit	162
Teac D-T1	500	Teamed with VRDS-T1 for test, this superb quality unit is tidy and composed								BS	1325 144
Teac D-700	600	With P-700, the D-700 may lack the resolution, but is bubbly and entertaining								MB	120
Thorens TDA 2000	700	Lively and up-front presentation not helped by rather loose bass and splashy treble								BS	162
Trichord Pulsar Series One	1,395	Very detailed, precise, controlled yet involving; a first-rank performer. Switchable phase, dither etc								Hyb	162

**You must listen to**  **For details of your nearest stockist, call 01480 451777. Or visit the company's WorldWideWeb site – <http://www.mission-cyrus.com>**



# Digital Recorders



**D**igital recorders come in a variety of different guises, but have yet to make much of an impact on the domestic market. At present there are three types to choose from: DAT (digital audio tape), MD (MiniDisc), and CD-R (CD Recordable). MD's claim to fame is its optical disc format, which offers instant track access and can't be worn out like a tape. DAT has been on the market for quite some time now, but has never really 'made it' as a consumer medium due to the dearth of pre-recorded material. However it has begun to carve itself a

niche in the top end of the market, replacing reel-to-reel as the audiophile's tape based medium. Home CD-R is coming into its own with Pioneer's PD-R05 machine attempting to set a trend.

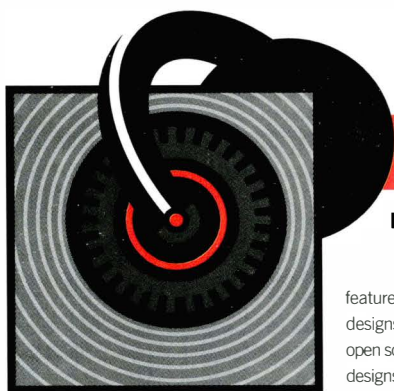
**B Best buy** **R Recommended**

**KEY**

**FORMAT:** Type of recorder, see above for descriptions.  
**DAC TYPE:** Digital to analogue convertor. BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bitstream technologies, 1bit - single bit types such as MASH, bitstream, PWM etc.  
**ADC TYPE:** Analogue to digital convertor types as per DACs.  
**PORTABLE:** Can be run off batteries but not necessarily personal stereo size.  
**OPTICAL IN/OUTPUTS:** Digital socketry for optical cable.  
**ELECTRICAL IN/OUTPUTS:** Digital socketry for electrical cable.  
**FACTSBACK NUMBER:** The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.  
**ISSUE NUMBER:** The issue of *Hi-Fi Choice* in which the original review appeared.

## DIGITAL RECORDERS

Product	Price(£)	Comments	FORMAT	DAC TYPE	ADC TYPE	PORTABLE	ELECTRICAL IN/OUTPUTS	FACTSBACK NUMBER	ISSUE NUMBER
Pioneer D-05	900	Second generation 96kHz DAT recorder can offer startling realism with the right software - ie first generation	DAT	BS	BS		● ●	1652	152
Pioneer PDR-05	1,000	CD recorder that uses domestic blanks only (limited to 62 minutes), write once but excellent sound quality	CD-R	BS	BS		● ●	1652	152
Pioneer D-C88	2,000	State-of-the-art portable 96kHz DAT recorder, the size of a lap-top computer this Nagra country on the cheap	DAT	BS	BS	● ●	● ● ●	1431	150
Sony MDA-JA3ES	700	Full-width MD recorder that makes a decent job of recordings but is less impressive with pre-recorded material	MD	BS	BS		● ●	1216	152



# Headphones

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**T**here are a variety of different approaches to headphone design. Among the more expensive models, electrostatic drivers are used in open-backed phones. Most models feature dynamic (moving coil) drivers in circular, open or closed-back designs. The advantage of open backs seems to be a correspondingly open sound, but one can also hear external noise, of course. Closed-back designs are useful in situations where it is necessary to block out noise.

There are three styles of headphone: circumaural models enclose the ear; supra-aural designs feature a flat pad which presses on the outer ear; and intra-aurals (in-ear) rest inside the ear itself, à la personal stereo. For best results a separate headphone amplifier is recommended.

**B Best Buy** **R Recommended**

**KEY**

**TYPE:** Operating principle: D - dynamic, E - electrostatic.  
**SUPRA-AURAL:** Style where a flat pad presses on the outer ear.  
**CIRCUM-AURAL:** Style which encloses the ear.  
**OPEN BACK:** Offers an open sound but lets in noise.  
**CLOSED BACK:** Keeps out external noise.  
**WEIGHT (G):** Mass in grams  
**IMPEDANCE (Ω):** Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given amplifier output.  
**3.5MM JACK ADAPTOR:** Can be used with mini-jack-equipped components such as personal stereos.  
**FACTSBACK NUMBER:** The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.  
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## HEADPHONES

Product	Price(£)	Comments	CIRCUM-AURAL TYPE	SUPRA-AURAL	OPEN BACK	CLOSED BACK	3.5mm JACK ADAPTOR	IMPEDANCE(Ω)	WEIGHT(G)	FACTSBACK NUMBER	ISSUE NUMBER
AKG K1000	700	One of the best dynamics on the market, hooks directly into speaker outputs	D	●	●			270	120		99
Audio Technica ATH910PRO	90	The closed back 910s are an improvement on the 909s, with a nice rhythmic quality rarely found with headphones	D	●		●		280	40		55
Beyer DT100	152	Rugged, modular professional design, but bass is woolly and treble lacks detail	D	●		●		350	600		157
Beyer DT311	57	Uncharacteristically tight, unrefined sound quality from this otherwise well engineered 'phone	D	●		●		124	40	1098	133
Beyer DT331	82	Tonally bright and deficient in bass, but exceptionally comfortable, articulate, detailed and refined	D	●	●	●		210	40	1801	157
Beyer DT411	69	A reasonable but not very thrilling headphone that doesn't really offer enough at the price	D	●		●		120	250		111
Beyer DT531	135	A good buy for serious, heavy-duty music making	D	●	●	●		245	250		144
Beyer DT911	235	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	1801	157
Grado SR-80	100	Clear, open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D	●		●		60	8	1801	157
Grado SR225	200	Warn, darkly-coloured tonally and ultimately lacking in clarity, but true to the spirit of the music if not the letter	D	●		●		200	32	1883	163
Jacklin Float Model 1	79	While very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	D	●	●	●		400	200		55
Jacklin Float Model 2	99	Helmet shaped, but open sounding and comfortable in the long term, despite lack of adjustment	D	●	●	●		400	200		63
JVC HA-D910	65	Broadly acceptable if unexciting design with low level losses and some colourations	D	●		●		220	32		121
Kenwood KH-1000	20	First step-up from a true mini: a near miniature which is cheap, comfortable and inoffensive	D	●		●		30	32		121
Maxell HP-3000	30	Solid, smooth-sounding supra-aural headphone, but congested and undynamic. Includes in-lead controls	D	●		●		120	32	1099	133
Pracide Ergo Model 2	140	Still has much of the spaciousness and detachment of the Float from which it is derived, but has a coarse mid/top	D	●		●		380	100	1892	163
Ross RDH-300CD	17	In-lead controls are the highlights of this shoddy, sometimes aggressive-sounding design	D	●		●		155	8		133
Sennheiser HD455	55	Inoffensive, if nondescript sound, modular, but can become dislodged from head	D	●	●	●		185	60	1801	157
Sennheiser HD565 Ovation	150	Wide bandwidth design which is refined, expressive and extremely comfortable	D	●	●	●		255	150	1801	157
Sennheiser HE-60/HEV70/UK	998	Very nearly a superb electrostatic, with an aching pure midband, but top end is sibilant and edgy	E	●	●	●		260	n/a	1898	163
Sony MDR-CD770	100	Neutrality and comfort make the Sony easy to live with. Technically correct-sounding too, yet musically unrewarding	D	●		●		-	-	1801	157

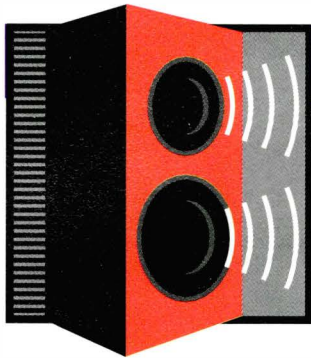


## HEADPHONES (CONTINUED)

Product	Price (£)	Comments	SUPRA-AURAL TYPE	CIRCUMAURAL	OPEN BACK	CLOSED BACK	3.5mm JACK ADAPTOR	FACTSBACK NUMBER	ISSUE NUMBER	
<b>Sony MDR-CD1700</b>	199	Astonishingly detailed, uncoloured and free of the usual artefacts from a sealed back headphone. Tremendous value it is fed. Nevertheless, the distortions introduced by	D	●	●	●	325	32	●	1901 163
<b>Stax Lambda Nova Basic</b>	449	Refined, articulate, yet with real presence – and a notable bargain by electrostatic standards	E	●	●	●	347	n/a	●	1902 163
<b>Technics RP-HT700</b>	70	Well-finished but physically crass and grubby sounding	D	●	●	●	255	-	●	1801 157
<b>Vivanco SR650</b>	50	Unusually comfortable 'phone with excellent detail resolution but aggressive, thanks to tweeter resonance	D	●	●	●	175	-	●	1801 157
<b>Vivanco SR750</b>	60	Cossetting physical design, attractive sound an pricing, though suffers overhang and lacks ultimate dynamics	D	●	●	●	188	-	●	1801 157
<b>Vivanco IR7100</b>	120	Infra-red phones that work well but suffer from the limitations of the medium ie compression and hiss (Sessions)	D	●	●	●	265	-	●	149

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## Hi-Fi Loudspeakers

Brought to you in association with



**A**s the last item in the hi-fi chain, the loudspeaker is merely the slave of what has gone before; it is only as good as the signal it is fed. Nevertheless, the distortions introduced by loudspeakers (and rooms) tend to be the most obvious. The average loudspeaker consists of an enclosure plus a couple of drive units behind a removable grille. Inside the box lurks a simple electrical circuit known as a crossover, which divides the incoming (full range) signal into the right bits for the drivers to handle. The designer's primary

task is to balance the 'sensitivity' of the loudspeaker (how loud it goes for a given electrical input) against the bass extension (how low it goes), for the given box size.

Subwoofers augment the bass and come in passive and amplified active form. They are less sensitive to placement than regular speakers.



### KEY

**SIZE WxHxD (cm):** Width by height by depth in centimetres.  
**FLOORSTANDER:** As opposed to requiring a dedicated stand.  
**SENSITIVITY (dB/W):** Efficiency: how much volume you get for a given input; the higher the louder.

**IMPEDANCE (Ω):** Measured in Ohms impedance it is a measure of how hard a loudspeaker is to drive: the lower the number the more powerful the amplifier needs to be.  
**BASS FROM (Hz):** The lowest frequency that a speaker can

reproduce, based on in-room measurements.  
**FREE SPACE:** Speakers should be placed away from walls.  
**CLOSE TO WALL:** It is recommended that these speakers be placed close (between 3 and 12cm) to the rear wall.

**FACTSBACK NUMBER:** The reference for ordering a fax copy of the review. Use the contents page to find the Factsback page.  
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## HI-FI LOUDSPEAKERS

Product	Price (£)	Comments	SIZE WxHxD (CM)	FLOORSTANDER	SENSITIVITY (DB/W)	IMPEDANCE (Ω)	BASS FROM (Hz)	FREE SPACE	CLOSE TO WALL	FACTSBACK NUMBER	ISSUE NUMBER
<b>Acoustic Energy AE109</b>	350	Lots of mass-loaded twin-driver speaker for the money, especially for loud, driving bass	18,90,25	●	88	4	25	●	●	1904	164
<b>Acoustic Energy AE120</b>	500	Attractive presentation and good sonic headroom, but a heavy, uneven overall balance, and a difficult amp load too	18,98,28	●	89	4	25	●	●	170	
<b>ATC SCM20</b>	1,599	Massively built, invariably informative but the rather forward presentation can be uncomfortable	24,44,31	●	83	8	25	●	●	86	
<b>Audio Gem Emerald</b>	540	Pretty compact floorstander with lively if lightweight sound	18,94,21	●	87	6	40	●	●	1905	164
<b>Audio Note AN-J/D</b>	930	Light damping and local unevenness add some colouration, but don't spoil the speaker	38,58,25	●	93	8	25	●	●	110	
<b>Audio Note AN-E/D</b>	1,520	Coherent, dynamic and transparent, with extended bass and high sensitivity - but ugly!	36,84,28	●	94	8	20	●	●	106	
<b>Audio Physic Tempo</b>	1,999	Tall and unusually-styled floorstander has stunning stereo but suspect bass tuning	22,107,47	●	88	8	28	●	●	1344	143
<b>Audiovector 3X</b>	1,500	Superior time coherence, a wide dynamic range and exception bass/mid balance	19,32,98	●	89	8	20	●	●	1345	143
<b>B&amp;W DM302</b>	150	Highly competent and neutral all rounder; clever Prism enclosure	19,32,22	●	88	4	45	●	●	1778	156
<b>B&amp;W DM601</b>	200	Great main driver for the price, entertaining dynamics	20,5,35,5,23	●	88	6	30	●	●	1779	156
<b>B&amp;W DM602</b>	300	Prefers tall stands and space, but offers impressive midband dynamics and musical tension	24,49,31	●	90	8	30	●	●	1654	152
<b>B&amp;W 305</b>	350	Ridged paper cone gives lively sound, clever box, but a little uneven	22,87,31	●	89	4	40	●	●	1908	164
<b>B&amp;W 603</b>	500	Squat floorstander with decent dynamics and well-judged, restrained balance; bass could go deeper	23,5,88,29	●	89	7	45	●	●	170	
<b>B&amp;W P4</b>	675	Strikes a nice balance between all-out studio monitor sound and bass-filled crowd pleaser (tested in Sessions)	20,81,25,6	●	88	8	50	●	●	156	
<b>B&amp;W CDM1</b>	600	Gorgeous stand-mount delivers unusually good bass for its size	22,38,28	●	88	6	30	●	●	1818	160
<b>B&amp;W Matrix 805 V</b>	1095	Stylish, remarkable imaging, good balance and low colouration	33,33,21	●	87	8	30	●	●	98	
<b>B&amp;W Matrix 804</b>	1695	A great all-rounder which combines exceptional bass extension with fine sensitivity	26,96,26	●	88	4	20	●	●	167	
<b>B&amp;W Matrix 801S3</b>	3,995	Lacks transparency and the drama of the best dynamics, but acoustically a tour de force	44,100,56	●	87	8	20	●	●	81	
<b>B&amp;W Nautilus</b>	35,000	Radical design results in one of the finest loudspeakers available. Active x-over needs 4 power amps (Statements)	42,105,90	●	87	4	10	●	●	166	
<b>Bose 305</b>	430	Fine dynamic liveliness and a good room match counter strange imaging and treble	23,45,28	●	-	8	40	●	●	78	
<b>Bose 401</b>	500	Cheaply built but distinctively styled, the 401 suffers from heavy midband	30,30,76	●	-	4	28	●	●	110	
<b>Cadence ES</b>	3,500	Hybrid electrostatic/dynamic design from India that excels with classical material (Statements)	33,108,37	●	91	8	35	●	●	1798	157
<b>Ca le Isis</b>	230	A great miniature at a very competitive price. Sound is lightweight but very coherent, with a fine overall balance	17,35,5,21	●	87	8	45	●	●	170	
<b>Castle Severn</b>	539	Light and bright, but sound is open and communicative. Looks good too	23,77,20	●	88	8	47	●	●	1655	152
<b>Castle Avon</b>	700	Lovely box and lovely voices from carbon-fibre composite cone	22,91,28	●	85	8	22	●	●	1909	164
<b>Castle Harlech</b>	849	Handsome big-sounding floorstander, great value and dynamic midrange	20,96,33	●	88	8	28	●	●	1820	160
<b>Castle Howard S2</b>	1,200	Able to fill the gap between Chester and Winchester; has a rich, laid-back balance	26,104,41	●	90	8	40	●	●	1078	132
<b>Celestion A1</b>	899	Rich, warm and laid-back, but a true quality sound; lovely build	24,41,35	●	88	6	25	●	●	1910	164
<b>Cerwin-Vega VS10</b>	350	Not all that refined but ballsy as heck, these rock boxes have no shortage of gung-ho	33,70,29	●	95	6	37	●	●	1758	155
<b>Chario Syntar 100</b>	250	Pretty with a pleasantly easygoing balance, but not the most communicative or exciting sound around	18,32,27	●	87	6	45	●	●	170	
<b>Dali 104B</b>	370	Lively, rich sounding and communicative. Shame about bland styling and dull balance	22,86,27	●	93	4	28	●	●	1657	152
<b>Dynaudio Contour 1.8</b>	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	
<b>Electrofluidics Sonolith 2.2xi</b>	5,999	Polymer concrete cabinet with aluminium cones produces world class imaging and very serious bass (Statements)	38,95,42,5	●	86	4	n/a	●	●	139	
<b>Epos ES12</b>	500	High quality luxury stand-mount has great midband and stereo imaging	20,38,25	●	85	8	45	●	●	1823	160
<b>Epos ES14</b>	675	Substantial stand-mount delivers delightful midrange focus and delicacy with good bass control	23,49,29	●	87	8	25	●	●	98	
<b>Epos ES22</b>	1,185	Elegant floorstander with 'safe' balance that can be enlivened with the right cable and energetic material (Sessions)	21,88,25	●	87	6	58	●	●	1629	151
<b>Epos ES25</b>	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	●	88	6	22	●	●	1346	143
<b>Faraday Siren</b>	445	High mass concrete cabinet is let down by imbalance of ageing driver combination	25,27,46	●	90	4	48	●	●	94	



# HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(dB/W)	FLOORSTANDER	IMPEDANCE(Ω)	BASS FROM (Hz)	FACTSBACK NUMBER	ISSUE NUMBER
								CLOSE TO WALL	
								FREE SPACE	
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
GLL Imagio IC130	530	Lots of speaker for the money, but sound is decidedly dull and shut in	22,112,29	●	88	4	20	●	1824 160
Harbeth BBC LS3/5A	699	Still a classic miniature, though not to every taste, and none the better for the recent update	19,30,18	82	10	80	●	●	66
Heybrook Prima	139	Fine pace and timing, but balance is forward and bass is tight	20,29,18	87	6	50	●	●	110
Heybrook Heylette	269	Attractive traditional-style near-miniature has fine bass-to-mid integrity, but dull and shut-in top end	19,5,30,20	89	6	45	●	●	170
Heybrook Heylios	389	Great all-round performance in a pretty package at a sharp price	24,36,27	87	6	25	●	●	164
Heybrook Heylo	439	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	●	88	8	30	●	1658 152
Heybrook Quartet	649	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22	90	8	48	●	●	122
Heybrook Sextet	1,299	Coherent and highly analytical, partly due to distinct upper-mid forwardness	27,90,20	●	88	8	25	●	102
Infinity Reference 1i	150	Although not to our tastes, this is a competent speaker, and decent material value	20,34,20	89	6	50	●	●	1403 148
Jamo BX100A	350	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	●	●	1758 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	●	1659 152
Jamo 477A	500	Very prettily styled, but build and sound quality are disappointing at the price	19,77,28	●	88	4	40	●	1549 138
Jamo Concert 8	1,300	Employing a die cast magnesium cone with a charming open and detailed midband (Statements)	24,5,38,31	90	4	38	●	●	1822 160
JBL LX2	250	Lively and invigorating, if a touch crude, this good-hearted speaker reproduces music with considerable enthusiasm	22,40,27	87	8	40	●	●	170
JBL L20	700	Pricy, 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	●	●	1550 138
JBL L40	1,000	Classic, large, stand-mount 3-way is full of vim and vigour, with a superb sense of balance	30,65,31	88	4	23	●	●	167
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	●	1348 143
Jordan Watts JH400	565	Piano-finish hexagon has controversial sound, with uneven balance but delightful mid	28,38,21	86	8	50	●	●	106
JPW Mini Monitor	60	Ultra-cheap miniature works well in a limited way	18,27,17.5	86	8	50	●	●	1781 156
JPW Gold Monitor	80	More informative than Mini Monitor - but fiercer too	18,27,17.5	86	8	50	●	●	1782 156
JPW ML510	140	Lots of good-quality speaker for the price, but not an ideal match for cheap budget components	20,34,22	88	5	50	●	●	169
JPW MS1010	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	●	●	1572 139
KEF Coda 7	130	Lovely open voice reproduction, but bass could be tauter; build tougher	18,30,23	88	6	50	●	●	1783 156
KEF Coda 8	190	Outstandingly well-balanced, bass is deep but a little vague	20,32,5,29	86	6	28	●	●	1784 156
KEF Coda 9	300	Uneven budget 3-way floorstander with poor bass definition	20,86,28	●	89	6	30	●	1785 156
KEF RDM One	500	Cute and tiny, nice midband but lack of bass warmth and weight	23,30,24	88	6	70	●	●	164
KEF Reference Model 2	1,599	Classy, large floorstander that has massive headroom and clean mid-to-treble, but limited deep bass for size	23,103,34	●	89	4	30	●	167
Keswick Audio Aria II	329	Confident and dynamic sound, if a little crude and shut in	21,42,24	89	8	20	●	●	1405 148
Keswick Audio Torino	900	Good value, lively contender with distinctive shape and styling. Goes loud and deep but could be smoother	18-26, 93,28	●	90	4	20	●	167
Linn Keilidh Passive	750	Stunning timing and coherence, and awesome bass drive	20,83,28	●	87	4	22	●	1552 138
Linn Kaber Passive	2,000	Dry, bright balance emphasises dynamics and transients, but can sound unforgiving	20,90,28	●	87	4	25	●	118
Living Voice Airscout	19,500	You want dynamics? Get a horn, get a very, very good horn. This is a very, very good horn. Tested with RW24 horn sub	62,5,115,57	●	104	8	60	●	163
Living Voice Air Partner S	37,200	Outstanding transparency and dynamics from remarkably solid and fast mega horn	64,160,90	●	108	8	40	●	138
Meridian DSP6000	9,400	Sophisticated digital design, with a wide-ranging, refined and detailed sound. Has on-board amplification	28,133,43	●	-	-	35	●	1226 140
Mission 731 PRO	140	Cautious balance makes a fine match with budget equipment. A classy baby for smaller rooms	17,5,31,5,20	89	8	55	●	●	169
Mission 733i	330	New tweeter gives this floorstander a more open sound; a good all-rounder that doesn't sound as big as it looks	20,5,88,30	●	88	8	45	●	170
Mission 753 Freedom	798	Great styling. New, more restrained tweeter reveals fine midband dynamics	21,90,31	●	89	4	40	●	164
Mission 754 Freedom 5	1,298	Tall but exceptionally elegant floorstander gives fine midband projection; goes loud but limited deep bass for size	22,111,31	●	88	4	40	●	167
Monitor Audio Monitor 3	400	An exceptionally discreet floorstander; sonically uneven, it's capable of fine results if used in a sympathetic system	16,91,21	●	88	5	30	●	170
Monitor Audio MA700 PMC	600	Good-looking luxury compact with all-metal diaphragms, lovely midrange, but occasionally edgy	22,35,26	89	8	45	●	●	1661 152
Monitor Audio MA703 PMC	800	Lovely but pricey floorstander has up-front, coherent 'shiny' sound	20,89,27	●	88	8	50	●	1826 160
Monitor Audio Studio 12	1,000	A real looker, but sound and content are a bit on the small side for the price	17,92,20	●	90	8	28	●	1349 143
Mordaunt-Short MS10i	140	Up front, bouncy and a whole lot of fun	18,5,30,5,20	86	8	50	●	●	1789 156
Mordaunt-Short MS30i	275	Slightly shut-in and coloured quality is compensated by fine bass and impressive communication	25,43,28	90	8	28	●	●	1662 152
Mordaunt-Short Perf 860	1,895	Although a very neutral loudspeaker it can, with the right ancillaries, pack a serious punch (Statements)	26,86,35	●	90	6	35	●	1367 146
Musical Technology Kestrel SE	300	Brighter and drier-sounding than the standard Kestrel (and not the better for it)	20,84,19	●	84	5	50	●	164
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	●	1663 152
Naim Intro	660	Great dynamic range and info retrieval, but thin, lacks warmth	24,89,27	●	89	6	30	●	164
Naim SBL Passive	1,970	Lively and punchy - smoother but more upfront than before	27,89,27	●	88	6	25	●	1352 143
Neat Mystique	575	Elegant compact floorstander has good all-round sound and value	20,85,18	●	84	8	25	●	1827 160
Neat Petite II	745	Compact design now utilising ribbon tweeter with a fine sense of timing and surprising musicality (tested in Sessions)	20,30,18	86	8	33	●	●	160
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 SuperOne	358	A fine compromise between size and performance, though sensitivity and loudness capability is modest	18,5,29,5,23	85	8	30	●	●	170
Origin Live Conqueror	1,650	Chunky floorstanding 3-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	●	88	8	30	●	167
Pink Triangle Ventrical	999	If you are after Quad Electrostatic-type transparency but can't afford the price... (Sessions)	15,80,32	86	11	●	●	●	142
PMC TBI	410	Superb transparency, subtle laid-back sound, well worth seeking out	20,40,31	87	8	45	●	●	1830 160
PMC LB1	935	Delightful smoothness and transparency, though bass and treble are both limited	18,53,25	89	4	33	●	●	110
PMC AB1	1,496	Lovely panel-like transparency, slightly shut-in balance, needs a big room	26,79,43	89	6	22	●	●	114
Polk LS50	800	No enthusiast tweaks here, but powerful and beautiful balance	27,83,29	●	89	8	25	●	1155 138
Polk RT16	800	Bass rich, lively and powerful, but suspect top end; big and not very pretty	22,105,39	●	91	4	22	●	1831 160
Polk LS70	1,200	High sensitivity, but balance has too much midbass boom; mid-top is laid back	31,94,37	●	90	8	22	●	1084 132
Proac Response 2.5	2,700	For aspirant high-enders looking for seriously good conventional boxes, this speaker should be first port of call	22,107,25	●	86	8	30	●	1457 149
QLN Quatic 222	400	Ugly but good value floorstander with loads of bass and a smooth balance	21,87,29	●	88	6	25	●	1832 160
QLN Signature	1,000	Attractive pyramidal stand-mount with heavy, laid-back balance but remarkably unboxy sound; superb stereo	27,37,36	●	83	4	25	●	167
Quad ESL-63	3,450	Classic electrostatic lacks punch, but has strengths some can't live without	66,93,27	●	86	8	34	●	60
Rega Kyte	198	Has splendid timing and coherence, sounds very explicit and informative	19,31,19	87	8	50	●	●	114
Rega EL8	298	Kyle drivers in compact floorstander gives more bass but less coherence	17,72,20	●	86	8	55	●	122
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	●	1578 139
Rega XEL	1,040	Looks and sounds great: balance bright but even, with delightful coherence and timing	20,82,30	●	89	6	40	●	1083 132
Rehdeko RK 115a	1,700	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic and temporal coherence	34,42,27	95	8	55	●	●	167



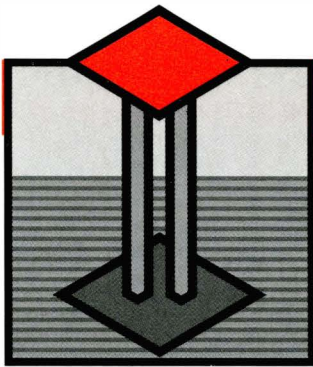
SIZE WxHxD(CM) SENSITIVITY(OB/1W) IMPEDANCE(O) BASS FROM (Hz) FACTSBACK NUMBER CLOSE TO WALL FREE SPACE ISSUE NUMBER

# HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	Price	Sensitivity	Impedance	Bass from	Close to wall	Free space	Issue number	
Revolver Baretta	100	Great bass for the price, a bit crude further up	19,35,22	87	8	45	●	1790	156	
Revolver Colt	139	A good all-rounder, if a little bland, and excellent value for money	30,19,22	88	6	48	●	1407	148	
Revolver 250	250	A nice price for a floorstander, but over-bright sound balance has potentially fatiguing consequences	21,85,5,25	●	87	8	22	●	170	
Revolver 260	350	A no-nonsense presenter of rock with plenty of dynamics, not too refined (tested in Sessions)	21,5,91,6,30	●	89	6	40	●	1731	154
RMS Revelation Series 1	1,300	Innovative metal-box compact with integral port/stand – clean with good timing but very laid-back balance	20,99,24	●	81	8	22	●	167	
Rogers LS1	149	High grade miniature	20,20,30	87	6	●	●	1408	143	
Rogers dB101	250	Style par excellence, this shapely sub-miniature is fast and agile but lightweight and forward: great voices; lacks bass	20,26,20	88	6	45	●	170		
Rogers Studio 3	499	Pricey LS3/5A derived miniature, excitingly coherent if lightweight, can't go loud	19,30,16	85	8	30	●	118		
Rogers LS3/5A	699	Clever AB1 stand/subwoofer helps the classic 3/5A monitor give its best shot	19,31,17	●	82	12	45	●	1354	143
Rogers Studio 5	699	Luxury finish bookshelf-size model has genuine monitoring capabilities	25,25,48	89	8	40	●	1556	138	
Rogers Studio 7	899	Latest variation on classic BBC-monitor theme has beautifully voiced, laid-back sound	30,63,30	90	8	30	●	122		
Rogers C6/28	1,303	Large floorstander with carbon-fibre tweeter. Sounds much better than it looks, especially through the midband	25,103,29	●	88	6	20	●	167	
Roksan ROKone	595	Large stand-mount is musically very communicative if a little coloured	21,45,33	89	6	30	●	1834	160	
Roksan Ojan 3 Black	795	Squat, stylish and black, great bass extension and somewhat uneven balance	28,76,46	●	88	8	20	●	1082	132
Roksan OJ3X Black	995	Innovative low-line, 2-way floorstander with decoupled tweeter; great bass and fine dynamic range	28,79,46	●	84	8	20	●	167	
Royd Minstrel	269	Not much wellie or loudness but fine coherence and timing, a bit bright	18,69,12	86	8	30	●	1167	135	
Royd Doublet	450	Great value compact floorstander; lively and very informative, if a little uneven	18,93,19	●	90	4	28	●	1835	160
Royd The Sorcerer	595	Extremely musical and communicative speaker that's fun to listen to. Aesthetics could use improving though	20,31,18	86	8	35	●	139		
Royd Abbot	665	Dynamic and fine transient qualities are hampered by a rather coloured mid-forward balance	20,81,30	●	90	8	43	●	118	
Ruark Talisman II	749	Less ideologically committed than some, strength lies in fine all-round coherence	23,84,32	●	88	8	30	●	118	
Ruark Crusader	1,600	Elegant luxury 3-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 remove itself from the picture	25,88,34	●	88	6	45	●	1227	140
SD Acoustics SD3R	649	New SD3 has the agility and charm of a quality miniature, good bass and low sensitivity	20,38,30	87	8	25	●	106		
SD Acoustics SD5	1,549	Bass suspect but forward midband is delightfully smooth. Has ribbon tweeter	20,110,30	●	88	8	30	●	1081	132
SD Acoustics SD1E	2,995	Two-part design with four rear firing bass drivers that has vibrancy, transparency and energy (Statements)	25,120,40	●	90	6	25	●	159	
Sequence 400	330	Clever hang-on-wall panel is well voiced, though bass isn't too great	25,100,7	86	8	45	●	164		
Shahinian Arc	1,875	Occasionally wonderful small floorstanding omni; bright but coherent and revealing	35,69,25	88	6	24	●	110		
Silverado Raider	695	Beautifully built audiophile compact, neutral if bright, tough work for amps	20,40,25	83	3	30	●	164		
Sonus Faber Concerto	1,098	Beautiful Italian bookshelf design with superb midrange but limited loudness capabilities (Statements)	22,5,36,34	87	8	45	●	165		
Spendor 2020	399	Utilising an oval drive unit in a stylish cabinet, this is a neutral design with AV inclinations (tested in Sessions)	18,34,26	87	8	●	●	1756	155	
Spendor 2030	599	Discreet slimline floorstander with delicately coherent, laid-back sound	18,89,27	●	87	8	30	●	1836	160
Tangent Monitor 5	80	An uneven performer best suited to small rooms and generous volume levels	17,5,27,18	83	8	55	●	169		
Tangent Monitor 9	150	Budget floorstander that can motor when the music demands with a solid bass but occasionally raw treble	19,5,75,5,22,5	●	90	6	45	●	165	
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 Profile 631	150	Balanced, open, unboxy and quite lively, but lacks muscle	19,34,15	87	6	60	●	1616	141	
Tannoy Profile 631SE	170	Very refined midband; maybe too laid-back for some	19,34,16	86	7	45	●	1791	156	
Tannoy Mercury M3	230	Good-looking fine value floorstander is very neutral and evenhanded, with fine midband but weak dynamics and drive	20,5,87,28	●	87	7	20	●	170	
Tannoy Profile 633	300	Impressive bass and balance from very compact floorstander. Upper midband could be cleaner	29,75,28	●	89	85	20	●	1665	152
Tannoy Profile 635	450	Beefy low-line floorstander packs real bass punch and an up-front balance	17-29,85,27	●	90	6	22	●	1665	160
Tannoy Profile 637	550	Good value package but a rather heavy, thick, big-bass sound	17-29,84,27	●	90	3	20	●	164	
Tannoy D300	1,000	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	●	1355	143
Tannoy Westminster TW	6,600	These awesome horn-loaded speakers are remarkably controlled and impressive	large	●	99	8	38	●	C93	
TDL Near Field Monitor	120	Despite low price, this is an unimpressive performer, poor low frequency resolution and analysis being main flaws	18,30,17	87	8	50	●	1043	130	
TDL RTL2	280	Spacious, weighty and enveloping sound if you can accept the laid-back balance	20,73,22	87	8	25	●	1412	148	
TDL RTL3	400	Bargain-price floorstander has rich, heavy and bright sound with a good scale	20,90,37	●	90	8	25	●	126	
TDL T-Line 3	750	Plenty of bass and treble, but broad midband is rather repressed	20,97,38	●	86	8	20	●	164	
TDL Studio 1m	899	Transmission line helps bring the best from metal cone driver	23,77,34	86	8	20	●	118		
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	●	1413	148	
Technics SB-M500	450	This model offers a clean, open sound, offset by midbass, heavy balance and low sensitivity	25,78,37	●	100	8	25	●	1666	152
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		
Vandersteen 2Ce	1,395	Elegant staggered baffle contributes to a refreshing freedom from boxiness	41,101,27	●	88	7	23	●	86	
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	8	45	●	169		
Wharfedale Valds 400	199	Goes very loud with a minimum of amplification, but the sound is very thick and uneven, with a heavy upper bass	25,80,26	●	91	8	30	●	1414	148
Wharfedale Valds 500	299	Offering a large version of events these rock boxes can move plenty of air, albeit not as subtly as alternatives	25,108,26,5	●	91	4	40	●	1758	155
Wharfedale MFM-3	350	Smooth broad midband gives fine voice rendition; bass could be better	22,89,28	●	87	8	40	●	164	
Wilson benesch ACT1	6,400	Stylish, technically advanced and sonically as clean as a whistle, this is truly a high-end loudspeaker (Statements)	23,108,37	●	89	6	40	●	1852	162
ZYP AI	199	Cute metal cased micro-miniature is quite coloured but great fun	14,22,12	88	8	30	●	110		
<b>SUBWOOFERS</b>										
B&W AS6	500	Good material value with a fair amount of low bass from 100W active design	45,51,45,5	●	●	30	●	1736	154	
Celestion CS135	139	Compact hideaway passive sub lacks deep bass for high sensitivity speakers	52,19,34	●	86	8	45	●	128	
Jamo SW600	530	Has some neat styling touches and remote control but deep bass is limited (active)	38,41,53	●	●	30	●	1736	154	
KEF Model 30B	500	Commendably discreet with good sense of timing but limited extension (active)	38,5,37,43	●	●	45	●	1736	154	
KEF AV1	2,500	Works well, looks great, shakes the windows but costs a lot and is bulky	56,43,50	●	●	45	●	128		
Living Voice RW24	11,500	The only horn subwoofer on the UK market brings new meaning to low frequency energy, speed and resolution	146,84,59	●	104	8	40	●	163	
M&K VX-7B	450	Baby of a big range this active design delivers deep, plenteous bass albeit lacking in transparency	35,25,37	●	●	40	●	1736	154	
Rogers AB1	549	Subwoofer-cum-stand designed as partner for LS3/5a or similar miniatures	19,57,16	●	82	8	●	1354	143	

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# Stands & Supports

**H**i-fi furniture is more important than you might imagine. The effect it can have on the sound of your system is far from subtle. Hi-fi furniture can be split up into two categories — equipment supports and loudspeaker stands. It is not entirely clear what makes a great equipment support, but some are definitely more equal than others. There's a variety of approaches and materials used, including particle board, glass and

all manner of steel tube and section. Speaker stands come in a variety of sizes and styles to suit different models. Use dealer or manufacturer recommendations to narrow down the choice, but as a rule you want the tweeter at ear height.



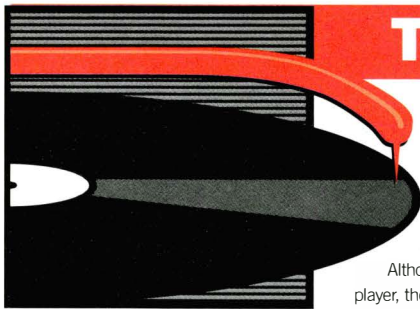
KEY	
<b>HEIGHT (CM):</b> Height of stand or equipment shelf.	lead to increase mass, which affects sound.
<b>TOP PLATE SIZE (CM):</b> Dimensions of top plate on speaker stand or equipment support.	<b>WELDED:</b> The better stands and supports are welded rather than bolted together.
<b>FILLABLE:</b> Some speaker stands can be filled with sand and/or	<b>NUMBER OF SHELVES:</b> The amount of tiers on an equipment
	<b>rack or support.</b>
	<b>SHELF TYPE:</b> Material that shelves are made of on an equipment rack. Wood generally means MDF.
	<b>FACTSBACK NUMBER:</b> The Factsback reference for ordering a fax
	copy of the review. Use the contents page to find the Factsback information page.
	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

## STANDS & SUPPORTS

Product	Price(£)	Comments	HEIGHT (CM)	TOP PLATE SIZE (CM)	FILLABLE	WELDED	FACTSBACK NUMBER	ISSUE NUMBER	
<b>Equipment Supports</b>									
<b>A</b> Audiophile Furniture Base	480	Easy to set up, well-ordered sound	40				4	Wood 1633 151	
Custom Design Classic Four	270	Glass-shelved stand with octagonal wooden uprights with upward facing spikes isolating the top shelf, adjustable shelf height	81	46,37			4	Glass 166	
Fi-Rax R4	250	Lively, exuberant sound, slightly weak bass					5	Glass 1633 151	
<b>B</b> Frameworks H500/H175	404	Two-shelf stand and isolation platform combo in tubular steel that made a spectacular impression on audition	70	52,34		●	3	Glass 166	
<b>B</b> Mana Acoustics Ref. Table	350	King of its type, angle iron, chipboard and glass combined to make a significant difference to sound quality					●	1	Glass 147
<b>B</b> Mana 5 Tier Sound Table	600	Infinitely upgradeable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth to components upon it					●	5	Glass 1633 151
<b>A</b> Optimum Int 2000 OPT490	350	25kg stand with shelves sandwiched between variable height tubular uprights. Sounds smooth and relaxed with sturdy bass	50	60,40			4	Glass 166	
<b>B</b> Quadraspire Q4	200	Easy to live with, and tonally neutral					4	MDF 1633 151	
<b>A</b> Sound Organisation Z038	130	Too lively and lacking order — but cheap	50	84,40		●	5	Wood 1633 151	
<b>A</b> Organisation Z560	150	A mix of welded and bolted members gives good structural integrity. While performance is not up with the best, it's great value	90	46,36		●	5	Wood 166	
<b>A</b> Soundstyle Select 6105	280	Respectable sonics, structurally solid and smart					5	Glass 1633 151	
Soundstyle Finewoods W105	320	Veneered shelves clamped between tubular uprights that delivers with classical material	82	48,27			4	Wood 166	
Stands Unique Sound Tower	249	Wooden uprights combine with glass shelves to provide a fresh, forward sound, but bass could be quicker	81	72,42			5	Glass 1633 151	
<b>A</b> Target B5	175	Free of colorations, fine grip and good value					●	5	Wood 1633 151
<b>Speaker Stands</b>									
Alphason NC I	45	Filled single-column design without threaded spike holes that's appropriate for non-critical applications	40-60	16,16	●			1373 146	
Alphason NCH	80	Tall, slim and elegant, though sound and value are unexceptional	40-60	17,17	●			159	
Alphason Titan	120	Excels in the midband and allows voices to come across in a detailed and expressive fashion	40-60	16,16	●	●		1373 146	
Apollo AZ6	80	Fine engineering value, but sound unexceptional and top-plate small	66	15,13	●	●		159	
<b>A</b> Atacama BD21	55	Good-looking and good value but doesn't match the SE24's sound quality	56	15,17	●			159	
<b>B</b> Atacama SE24	70	Stands out from the budget crowd because of the consistency and overall quality of the performance	61	19,5,17	●	●		1373 146	
AVF Tower 400	35	Ridiculously cheap and much better than no stand at all	54	17,20	●			159	
Ixos Deadrock 903	50	Smooth and tonally even but short on definition. Deep bass is soft which doesn't help timing	60					1373 146	
<b>B</b> Gale Reference 600	60	Smooth sounding with impressive bass well suited to less civilised speakers				●	●	1373 146	
<b>B</b> Kudos S50	100	Better sound than the budget stands, particularly at the bottom end	60	15,21	●			159	
<b>A</b> Kudos S100	270	The best all-round stand around. . . Probably. . .	63	15,21	●			159	
<b>A</b> Mana Soundframes	125	For use under floorstanders and equipment racks, these make music effortless and natural, can be stacked for greater effect	5			●		1373 146	
Partington New Merlin	60	Although light in weight, the stand's performance seemed remarkably muscular but musical rendering lacked a little precision				●	●	1373 146	
<b>B</b> Partington Discovery	80	The depth and substance of the presentation truly added to the convincing nature of the system's portrayal				●	●	1373 146	
<b>B</b> Partington Trophy	100	Four-column design with damped top and base plates, sound is tight and cogent with smoothly integrated detail				●	●	1373 146	
Revolver RS1	70	A good blend of performance and appearance for the price	53	18,18	●			159	
<b>A</b> RMS/Stands Unique Vivus	550	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A				159	
<b>B</b> Soundstyle 124	100	Big, shiny and solid, with fine midband projection	65	17,16	●			159	
<b>A</b> Stands Unique HP	220	Real wood disguises high performance tuned technology	59	22,23				159	
<b>A</b> Target R1	280	Truly high-mass four-pillar design with superb weight and speed, giving music delicious attack and outstanding imagery	53	15,21	●	●		1373 146	
<b>A</b> Target TR60	68	Lively, dynamic midrange and detailed treble from a less-than audiophile oriented twin column design	60	15,15	●			1373 14	

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# Tonearms

**T**urntables at the cheaper end of the market tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units and tonearms. Careful partnering and set-up is essential for these components.

Although the turntable is the most important part of a record player, the tonearm is the second most important, and the quality of

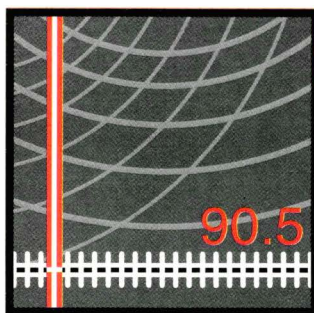
its construction and design have a significant bearing on sound quality. There are three basic types of arms listed in the key and each has its strengths, but pivoted designs are the most popular, for reasons both practical and economical.

**B** Best buy **R** Recommended

KEY	
<b>EFFECTIVE MASS:</b> This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.	<b>PARALLEL TRACKING:</b> An arm which allows the cartridge to track the disc in a linearfashion.
<b>PIVOTED:</b> Arms which allow the cartridge to describe an arc as they traverse the record.	<b>UNI-PIVOT:</b> Pivoted arms with a bearing that allows movement in two planes.
<b>EFFECTIVE LENGTH (cm):</b> Length of arm from bearing to cartridge mounting.	<b>ADJUSTABLE HEIGHT:</b> Important for accurate cartridge set-up.
<b>FACTSBACK NUMBER:</b> The reference for ordering a fax copy of the review. Use the contents page to find the Factsback.	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

## TONEARMS

Product	Price(£)	Comments	PARALLEL TRACKING	EFFECTIVE MASS	PIVOTED	UNI-PIVOT	EFFECTIVE LENGTH (cm)	ADJUSTABLE HEIGHT	FACTSBACK NUMBER	ISSUE NUMBER
<b>Alphason HR100S</b>	490	S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	Medium	●	●	●	229	●	229	86
<b>Kuzma Stogi Ref</b>	1,000	Large, solid and well-made arm, gives exceptionally clear sound with just a hint of brightness	High	●	●	●	229	●	229	79
<b>Linn Ekos</b>	1,297	Superb, state-of-the-art design which builds significantly on predecessor's strengths	Medium	●	●	●	229	●	229	6
<b>Moth Arm</b>	95	The ultimate budget arm? Refined, sweet, detailed and natural	Low	●	●	●	237	●	237	60
<b>Rega RB300</b>	139	Despite its modest price it sets exceptional standards and could be used on many high-end turntables	Low	●	●	●	237	●	237	60
<b>Roksan Tabriz Basic</b>	275	Targeted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	Low	●	●	●	240	●	240	91
<b>SME Series 300-309</b>	657	Beautifully made and finished: fully adjustable and a highly neutral performer	Low	●	●	●	238	●	238	79
<b>SME Series IV</b>	936	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low	●	●	●	233	●	233	60
<b>SME Series V</b>	1,391	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low	●	●	●	233	●	233	60



# Tuners

**T**he radio medium operates at a lower profile than TV, but in areas outside pop music the BBC service is the envy of the world. Live concerts rival all other sources from a hi-fi perspective. Though tuners might seem something of a hi-fi afterthought, the task they discharge is far from simple, since it requires the skills of RF (reception) and audio (signal processing) engineering. The importance of the former will depend on reception conditions, but a high-quality aerial system is

well worth having. Tuners come in two basic types. Analogue models tune gradually and can have analogue or digital displays; they are often preferred for sound quality. Digital tuners offer convenient automatic tune facilities and pre-set memories.

**B** Best buy **R** Recommended

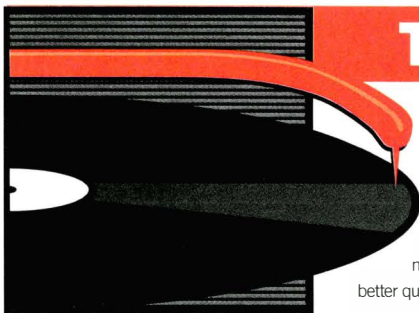
KEY	
<b>WAVEBANDS:</b> Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for receiving certain transmissions in the UK.	<b>APPLICATIONS:</b> Basically RDS tuners can identify and display the name of the radio station being received, but they offer a variety of other features as well.
<b>PRESETS:</b> Number of station frequencies that can be stored.	<b>REMOTE CONTROL:</b> Couch-potato friendly.
<b>RDS:</b> (radio data system) was originally designed for in-car applications.	<b>SIGNAL STRENGTH METER:</b> Indicates strength of signal from aerial, useful for aligning your 'twig' during installation
	<b>ROTARY TUNING KNOB:</b> The ergonomically attractive approach to dial-surfing.
	<b>FACTSBACK NUMBER:</b> The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.
	<b>ISSUE NUMBER:</b> The issue of <i>Hi-Fi Choice</i> in which the original review appeared.

## Tuners

Product	Price(£)	Comments	WAVEBANDS	PRESETS	RDS	SIGNAL STRENGTH METER	ROTARY TUNING KNOB	FACTSBACK NUMBER	ISSUE NUMBER
<b>AMC T7</b>	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30	●	●	●	166	166
<b>Arcam Alpha 7</b>	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM, M, L	24	●	●	●	120	120
<b>Arcam Delta 280</b>	399	Fine sound quality marred by mild synthesiser whine, RF performance only average. Remote £60 extra	FM	20	●	●	●	1254	142
<b>Audiolab 8000T</b>	750	Unusual combination of fine sound quality and RF performance (inc AM), and superb ergonomics	FM, M, L	39	●	●	●	1254	142
<b>Denon TU-260L</b>	120	Careful minimalist design promises a surprisingly open and vivacious sound	FM, M, L	20	●	●	●	1810	157
<b>Denon TU-425RD</b>	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M, L	40	●	●	●	1254	142
<b>Harman/Kardon TU950</b>	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30	●	●	●	1254	142
<b>Linn Kremlin</b>	2,600	Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	FM	80	●	●	●	1254	142
<b>Magnum Dynalab FT101</b>	825	Although fairly expensive given its minimum set of facilities, its excellent sound provided ample compensation	FM	39	●	●	●	1810	157
<b>Micromega Tuner</b>	700	Has digital output but even without the Micromega DAC, this provides exceptional sound quality. Looks good too	FM	29	●	●	●	1254	142
<b>Mission Cyrus FM7</b>	400	Open, generous soundstaging gives the music plenty of foundation, if a touch shut-in at the top	FM	20	●	●	●	1810	157
<b>Musical Fidelity E50</b>	300	Sounds involving if coloured and with a subjectively larger-than-life presentation	FM	20	●	●	●	1254	142
<b>Naim NAT01</b>	1,645	There may be better sounding tuners in the world, but we have yet to hear one	FM	40	●	●	●	166	166
<b>Pioneer F-504RDS</b>	250	Cable-friendly with advanced RDS and excellent RF performance, slightly disappointing sound	FM, M	20	●	●	●	166	166
<b>Rotel RT-935AX</b>	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M, L	30	●	●	●	1810	157
<b>Sony ST-SA3ES</b>	250	Clean, lean presentation but needs a quality aerial to perform at its best	FM, M, L	30	●	●	●	1254	142
<b>Technics ST-GT350L</b>	150	Decent RF performance is offset by sound quality more typical of a mini/midi system	FM, M	59	●	●	●	1810	157
<b>Thorens TRT2000</b>	450	Not exactly neutral sounding, it nonetheless makes listening fun							



# Turntables



Specialist turntables are what high fidelity sound is all about. CD players may offer silent backgrounds and flat frequency responses, but they can't match the dynamics and superlative timing that serious turntable users take for granted. Turntables at the cheaper end of the market tend to be supplied with a matching tonearm, and often include a 'starter' cartridge. Still better quality is found at higher prices among the separate motor units

and tonearms. Careful partnering and set-up is essential for these components, but many so-called 'sympathetic' combinations exist.

Because turntables are mechanical devices that are designed to retrieve modulations as small as a micron, engineering quality is of paramount importance. It is also the reason why turntables cost as much as they do, and require high quality support systems.



**KEY**

**MANUAL:** You do it all: put the needle on the record and take it off.  
**AUTO:** The record player does it all.  
**SEMI-AUTO:** You share the work: you put it on, it takes it off.  
**SPEEDS:** In RPM to correspond with your platters.  
**SUSPENDED SUBCHASSIS:** Sprung suspension to minimise

structural interference.  
**EXTERNAL PSU:** Outboard power supply; generally it indicates high quality.  
**SUPPLIED WITH ARM:** Many turntables require a separate arm to be fitted; if not, this tells you so.

**SUPPLIED WITH CARTRIDGE:** Most turntables do not come supplied with a needle.  
**FACTSBACK NUMBER:** The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.

**ISSUE NUMBER:** The issue of Hi-Fi Choice in which the original review appeared.

## TURNTABLES

Product	Price(£)	Comments	MANUAL	AUTO	SEMI-AUTO	SPEEDS	SUSPENDED SUBCHASSIS	EXTERNAL ELECTRONIC PSU	SUPPLIED WITH CARTRIDGE	FACTSBACK NUMBER	ISSUE NUMBER	
Alphason Sonata	835	Good sound in all areas - bass, clarity and neutrality all in top class (tested with HR100S MCS)	●						33	●	●	79
Clearaudio Reference	2,500	Opulent beast tested with Souther TQ-1 arm. Tends to gloss over detail with a fizzy character but is quite bold	●						33/45			1328 144
DNM Rota 2	4,800	Tonally slightly bleached, but extracts detail like few others. Works well on own table	●						33/45	●	●	1328 144
Dual 505-4 UK	200	Consistent sounding and well isolated turntable. It is slightly lacking in oomph				●			33/45	●	●	103
Kuzma Stabi/PS	1,200	(Tested with Stogi Reference) Solid oak plinth; sound is very clear, detailed and extended	●						33/45	●	●	91
Linn LP12 Basic	1,050	Trails the full LP12 significantly, but pace, rhythm, timing etc still top rank	●						33	●	●	103
Linn LP12 Lingo	1,750	The classic reference is improved by the Lingo, but charming character remains	●						33/45	●	●	91
Michell Gyrodec	765	Sweet and natural-sounding player, well matched to Rega RB300 arm	●						33/45	●	●	55
Moth Kanoot	329	Rather coarse-sounding deck that requires decent isolation and comes with a Rega RB300 arm	●						33/45		●	164
Notts Analogue Spacedeck/Arm 1.125	1,125	No frills, just a first-rate, outstandingly natural-sounding deck that will last forever	●						33/45	●	●	159
Pink Triangle Anniversary	1,980	Possibly the most detailed, clear and neutral-sounding deck around. Likeness to master tape is uncanny	●						33/45	●	●	91
Pro-ject 2	299	Remarkably effective at the price with decent timing and a generally well defined sound	●						33/45		●	164
Pro-ject 6/Sumiko	699	Don't think of this as a mid-price deck with a good arm, but as a scaled-down Oracle Delphi - it's that good	●						33/45	●	●	138
Rega Planar 2	214	A remarkable product at the price, surprisingly articulate and confident	●						33/45		●	48
Rega Planar 3	274	The '3 sounds musical in a balanced and coherent manner, needs decent isolation and suffers a little pitch instability	●						33/45		●	164
Rega Planar 9	1,598	Featuring the RB900 arm and a ceramic plinth, this deck puts Rega into contention with the best decks available	●						33/45		●	151
Reson RS1	675	Supplied set-up and ready-tuned, this unconventional deck is packed with mid-band detail	●						33/45	●	●	159
Rivelin Eclipse	1,100	Tested with SME 309. Tends to simplify things and add a slightly ragged edge to the proceedings	●						33/45			1328 144
Roksan Radius 3/Tabriz zi	890	Elegant-looking turntable with a tidy, ordered sound. Bright and breezy if a shade lightweight	●						33/45	●	●	159
SME Model 20A	4,631	Supplied with Series V arm. Engineered to last a lifetime, giving excellent stereo and detail retrieval	●						33/45/78	●	●	118
Systemdek I/920/Moth	235	The motor is derivative of the Rega Planar 2 with a Moth arm. Up-tempo, even bright at times but never lacks enthusiasm	●						33/45	●	●	115
Systemdek 2X2	499	Neutral, flexible and dynamic deck that begs to be used with a good arm and cartridge	●						33/45	●	●	159
Thorens TD166 VI/UK/RB	300	Refined and solid sound with well-focused imagery; suitable for use with good MM and budget MC cartridges	●						33/45	●	●	103
Thorens TD2001	700	Balances convenience and sound well, but deck lacks detail and bass could be better controlled	●						33/45	●	●	159
Well Tempered Record Player	1,800	Intriguing and challenging. Musically it is not ideal, but has a limpid quality and a lack of artificiality that sets standards	●						33/45	●	●	1180 136
Wilson-benesch TT/Act 2	3,249	Carbon fibre is extensively used in this neutral and well-resolved turntable with its fabulous unipivot tonearm (Statements)	●						33/45	●	●	1775 156

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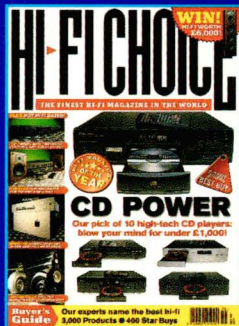
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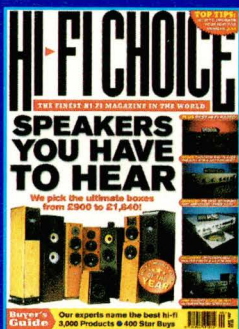
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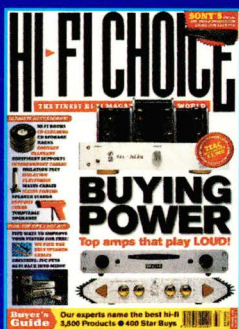
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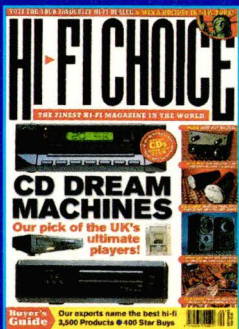
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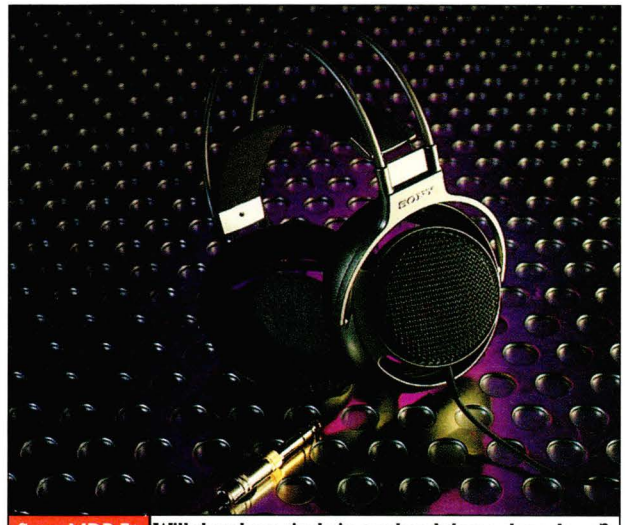
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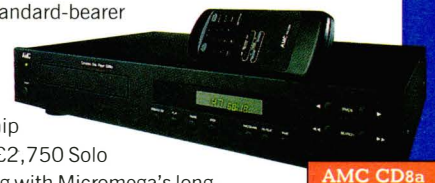
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**AMC CD8a**

### GOING SOLO

Micromega's latest flagship one-box CD player is the £2,750 Solo CDP. It is styled in keeping with Micromega's long-established high-end format — but does it mark a new epoch in the company's 10-year history?

### ACOUSTIC PRECISION SPEAKERS — EXCLUSIVE!

Make sure you catch our exclusive review of Acoustic Precision's



brand new Eikos FR1 speakers (left), hot on the heels of the Eikos CD we reviewed in *HFC* 165.

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**THE DECEMBER 1997 EDITION OF HI-FI CHOICE WILL BE ON SALE THURSDAY OCTOBER 23, 1997. DON'T MISS IT!**



**Ultra** Computer screen-savers aren't always a waste of time... the B&W variety are intrinsic to better-sounding speakers! **David Vivian** reports.

# Vivian Scene

**I**'ve been thinking about the amount of time I spend staring at computer screen-savers every day, and wondering whether I'm chewing too much eye candy. I actually look forward to those pretty swirling patterns and cute animations that kick in when I don't know what to write next. Please don't take them away. Not After Dark 4.0; especially not that 'Bad Dog' routine where a deranged mutt skids around the screen ripping open folders and chomping chunks out of the menu bars. It's too much mindless fun. Quality non-productivity.

But you know how it is when a deadline's looming; any excuse to gaze blankly into the middle distance. If you're going to read any further here, I'll have to snap out of it.

I'm sure of this. If I worked at Bowers & Wilkins research and development centre in Steyning, West Sussex, I wouldn't get anything done. One possible reason is that I don't know a bean about cutting-edge, laser-assisted loudspeaker design. Not a sausage. But even if I did manage to con my way behind one of the company's high-res 21-inch monitors, with their mountains of VRAM and 3D graphics accelerator cards, I'd be transfixed instantly by the startlingly weird (yet strangely beautiful) animations of speaker cones behaving badly — or, indeed, like model citizens if the designers have done their sums right. Which, at B&W, seems to be most of the time. Believe me, these babies make After Dark look like Etch-a-Sketch.

And there's more. During my recent visit to Steyning, I was led through the R&D department's house of fun. Standing in the middle of an anechoic chamber was surreal — my ears were suffocating. I watched naked drive units being wobbled at absurdly low frequencies; I poked around the insides of long defunct enclosures with wires hanging out of the apertures absented by their drivers (odd attraction, this). And I goggled at lots of multi-layered graphs.

If I had any lingering notions that speakers are designed in comfortably-furnished rooms littered with assorted enclosures, drive units, crossovers and empty bottles of Veuve Clicquot, they were soon snuffed out. The researchers at B&W have sensitive ears but they can tell if something's going to sound any good simply by studying a squiggly line. It's physics. That's it. So if you've ever wondered why today's B&W designs, whatever their price or sonic nuances, always do well in *Hi-Fi Choice's* blind listening tests, now

you know. Science and the best screen-savers in the business. And Kevlar; we'll come to that in a moment. Still didn't understand the advanced stuff, though.

But I did take away something valuable from the visit: a pair of CDM7s, the new £1,000 floorstanding derivative of the justly acclaimed CDM1. In the smaller of my two main systems — currently Denon-based — I already use the baby £400 CDM2s, and I love them to bits, not least for their imaging abilities and fast, powerful bass. I had no doubt that the '7s would build on the qualities I appreciated in the '2s. It would be tougher following the less expensive (£650) but significantly bigger Mission 735s I reviewed in this column a couple of issues ago.

### Quality not quantity

Mission-style size-statements have never been up B&W's street. Or, come to that, the ruse of doubling-up drive units to achieve more radiating area. For £1k floorstanders, the '7s are quite petite: slim, elegant and not all that deep. They are heavy, though, and exquisitely finished in real cherry-wood



B&W CDM7

This loudspeaker is proof that graphs work!

vener. The '7 is a '1 with more welly; they share diffraction-quelling rounded cabinet edges and a sloping upper baffle to time-align the 25mm alloy dome tweeter with the 165mm Kevlar bass/mid unit.

Kevlar, of course, has become a staple B&W cone material in recent years. Why? Well, the light, stiffweave randomises the way bending waves move from the voice coil to the edge of the cone, reducing the standing waves you get with plastic cones. What the '7 brings to the party is an additional 165mm Cobex bass driver, more cabinet volume and weight, an extra 16Hz of bass extension (down to 30Hz at -6dB, they claim), 90 rather than 87dB sensitivity, allegedly, and power handling of 150 Watts rather than 120. It should go louder and deeper.

B&W's goal has remained consistent: faithfulness to musical accuracy, communication and pleasure. Ear-splitting sound-pressure levels and nauseating bass aren't the company's bag.

First up some funky jazz fusion from Steps Ahead. This sounded simply terrific: dynamic yet beautifully integrated. Sax in particular came across powerfully with great attack and presence. Yet the soundstage was big, expansive and appropriately glamorous with a great sense of stereo and production effects laid bare. The upper octaves were very well detailed and transparent.

Moving on to the blues and John Hammond, the '7s again impressed with their immediacy, attack and sheer balls. Mouth organ was palpable while guitar had a beautifully warm and natural timbre. But the speakers did it all without denuding the depth and subtlety of the music. It's a rare talent, this: a polished, graceful presentation that doesn't get in the way of explicit, neck-tingling musicianship. The B&Ws also lapped up Rickie Lee Jones and the wonderful *Danny's All-Star Joint*, music with startling life and authority. Taut, twangy bass; effortless volume on the B&Ws.

So there you have it. Pretty computer-generated patterns aren't a waste of time, and the CDM7s are living proof: fast, rhythmic and involving, yet able to resolve spatial information beyond the wildest dreams of the bigger, beefier Missions. Both work beautifully in my small room and the Missions still sound bigger and more effortless. But the '7s provide even easier access to the emotional power of the music. ▲

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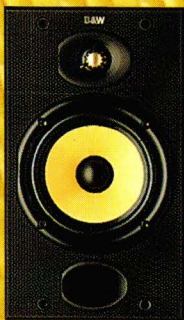


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