

HI-FI CHOICE



THE FINEST HI-FI MAGAZINE IN THE WORLD

ULTIMATE ACCESSORIES!



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CD STORAGE
RACKS
CONTACT
CLEANERS**

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INTERCONNECT CABLES**



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ISOLATION
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CONES**

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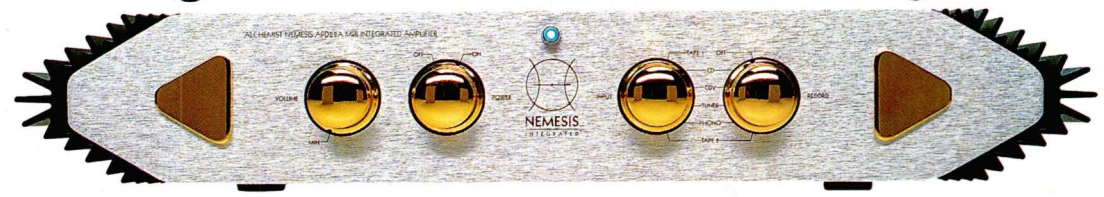
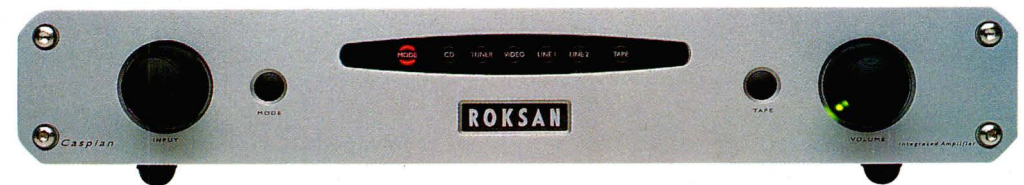
**WE PICK THE
BEST SPEAKER
CABLES**

**EXCLUSIVE: JVC PUTS
HI-FI BACK INTO MIDIS!**



BUYING POWER

Top amps that play LOUD!



**Buyer's
Guide**

**Our experts name the best hi-fi
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**JULY/AUG
1997 \$2.99**
September issue
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Concert



**The Jamo Concert Series.
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Advanced technology, innovative design and refined workmanship is not always the perfect recipe for success, we believe a little more is required.

The Concert series has enabled Jamo to produce a range of loudspeakers which will reproduce music that is clean and neutral. The dynamic range transparency and sound stage are all raised to a higher dimension.

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Web page: <http://www.jamospeakers.com> E-mail: speakers@jamo.dk

● **QUERIES (PAGE 26) AND LETTERS TO THE EDITOR (PAGE 21)**
Accepted by letter only to the fax number, e-mail or postal addresses given. We deeply regret we are unable to speak with readers or answer queries on the telephone.

● **BACK ISSUES – SEE PAGE 129 FOR DETAILS.**
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Editor's Notebook



PHOTO BY SEAN BLOOMBERG

Editor-in-Chief **Stan Vincent** welcomes all readers to the new issue.

This month's special feature (p39) rounds up the extras you can buy for your hi-fi once you want to do more than just listen. Some hi-fi fans get totally absorbed by accessories and how to fine-tune a system. Once hooked they become 'tweakers', and their lives are never the same again. No book sums up the tweaker mentality better than Harvey 'Gizmo' Rosenberg's *Search for Musical Ecstasy*, which I review in the accessories feature. Buy a copy if you plan on getting serious about your hobby!

Survey results... and winners!

We've had the results of this year's *Hi-Fi Choice* reader survey, and the good news is that most respondents think we're doing okay. More than 88 per cent, for example, keep at least part of the magazine for reference. The favourite section is *Hints & Tips*, followed by our comparative product tests. The most popular hi-fi components are loudspeakers, then amplifiers. And half of our sample have connected their VCRs to their hi-fi, which is up on last year.

As you'll recall we offered a prize-draw for everyone who completed and sent in the survey form. On offer were two superb prizes from Talk Electronics, and I am pleased to announce the following winners:

The First Prize, of Talk Electronics' Hurricane 1/Tornado 1 pre/power amps, is awarded to Mr T Klapproth of Burnley, Lancs. The Second Prize, a Talk Electronics Storm 1 integrated amp, is awarded to Mr C Lorenzo of Ipswich, Suffolk.

Now I'll reveal who's won the ten copies of the Sam Brown album *Box* that we gave away last month: S Tuck of Ludlow; D Deeks of Newcastle-upon-Tyne; A Fray of Farnworth; D Ratchford of Stoke-on-Trent; M Tyrrell of Manchester; H Kyriacou of Edgware; L D Leeson of London SE1; C Winkles of Bradford; A Lovatt of Meir, Staffs; and G Peckover of New Barn, Kent.

Ten Classic FM *Absolute Blues* CDs, offered in May's issue, are en route to: A Gilson of Castleford, W. Yorks; D Ellis of Coleford, Glos; M Leach of Erith, Kent; ID Sutherland of Andover; N Bizekis of London N8; M O'Neill of Kidderminster; P Summers of Manchester; T J Maxwell of Exeter; N Barrett of Sowerby Bridge, W. Yorks; and P Drake of Wisbech, Cambs.

The Mana effect spreads

While we're discussing Sam Brown, John Watson of Mana Acoustics rang in recently to reinforce my eulogy over the great sound of her new cut (*Editor's Notebook*, HFC 167). John reckons it might have something to do with the recent arrival of Mana isolation supports at The Astoria studio in Hampton, Middx, where the album was mixed! He also told me that Mana's new 'phone number is ☎ (01753) 655744; new fax number is ☎ (01753) 655766.

Suites of San Francisco

In early May, Reviews Ed Sircom and I spent a week in San Francisco with Dolby Labs Inc. (Its president, Ray Dolby, has just won a top-level award from the US government, as you'll read in *Update*, p6.) The trip proved extra-fruitful when we encountered the superb Bishop Norman Willis jazz trio playing acoustically in the San Francisco Brewing Company pub (where else?). Over several pints of potent home-brewed pale ale we thrilled to the sound of the ultimate hi-fi system. Even the finest recording equipment would not have captured the effect of standing five feet from an acoustic trio on top form. Hi-fi is great but you can't beat live music. And beer.

Banana skin dept

Due to an administrative error, we have printed incorrect bargraph values for the Audible Distortion measurements in Group A of the amplifiers on test this month (feature starts page 56). The correct values are as follows:

AMC CVT3030a	-25%
Cyrus SL	+40%
Marantz PM-66 K I Signature	+80%
NAD 317	+45%
Pioneer A-605R	-30%

On page 51 of HFC 167 we printed a diagram entitled 'What's happening to the sound in your room?' The key to the colour-coded arrows should have read as follows:

Direct.....	thick red lines
Reflected	thin red lines
Diffused	green lines
Absorbed	blue lines

Enjoy your listening (and tweaking!) this month.

Stan Vincent



Zap that static and balance that turntable — as well as loads more useful tips — with the latest vital accessories to transform your hi-fi system's performance. **p39**



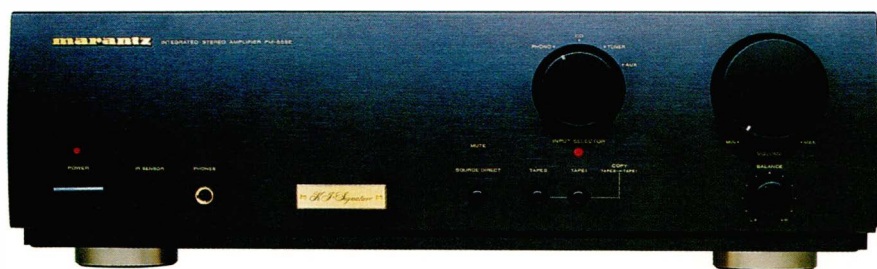
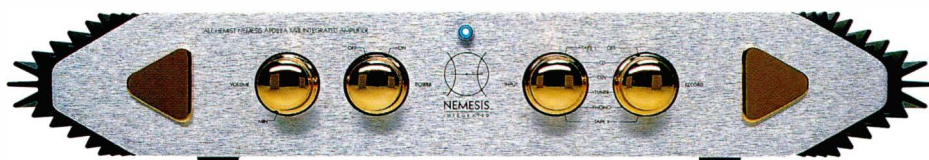
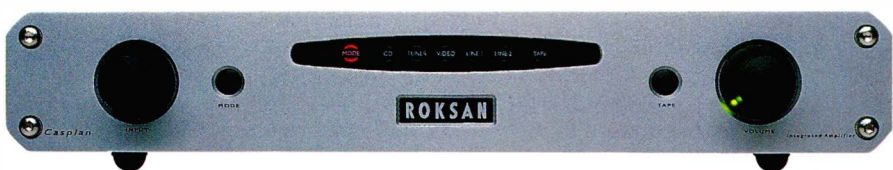
Call JVC's latest 'just a mini system' and it will not be pleased... **p8**

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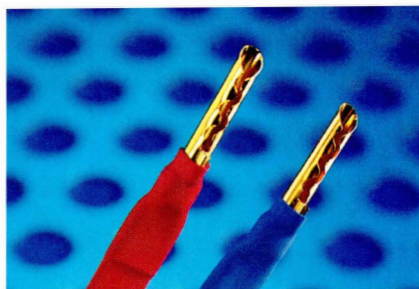
The *Hi-Fi Choice* team brings you the collected works of the accessories market, from the most basic cones or oaken feet to the darkest depths of hi-fi tweaking. Be afraid... be very afraid.

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Richard Black plugs into a dozen of the most significant loudspeaker cables around, ably abetted by the mighty lab of Paul Miller.

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Get yourself connected! Get wired! And other vaguely cable-related clichés. **p46**

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WIN!WIN!WIN!
£3,000 of super
Teac hi-fi systems



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Update

JUST IN THIS MONTH... TECHNICS CD UPGRADE... GLL IMAGIO REVISION... NEW LYRA CARTRIDGE... AND MORE!

In brief

High End Audio Recherché of Belfast has announced new agencies for myriad high-end wonders: Forsell's Air Reference components, Arcici isolation stands, Elliott ASE amplifiers, Purist Audio Design cables, the SigTech TimeField Acoustic Correction System and Altis's digital components. ☎ (01232) 319148

IXOS has launched two new additions to its Scart AV interconnect series. The Scart to Scart 126AV is now available in 3m and 5m lengths, model numbers 130AV and 131AV respectively. Both cables feature the IXOS Ingot Scart plug and IXOS audio video cable. Prices are £49.95 for the 130AV and £59.95 for the 131AV. ☎ (01494) 441736

Rogers has announced the reduction in price of its db101 speakers from £399 to £249. The company is also proposing to refund the difference to any existing UK customers who paid over £249 for the speakers. Customers should produce proof of purchase in order to claim the refund. ☎ (0181) 640 2172



Blackshore Acoustics has launched its Concept range of speakers. The range consists of the Concept 200 at £1,200 and the Concept 300 at £1,800. Both speakers benefit from metal-cone drivers and minimalist cross-overs, and according to Blackshore are best suited to low-power-output valve amplifiers. ☎ (01502) 724301

JBL has expanded its Simply Cinema range with the ESC300 system, which includes a

Technics také two

Technics has upgraded its popular SL-PS770 CD player, which is now in 'D' suffix form and costs £250. Changes from the A version include the use of the company's také bamboo dielectric capacitors and virtual battery operation, plus the S advanced version of its MASH DAC.

The také caps and virtual battery operation are taken from Technics' work on its pre/power amps, which themselves have been upgraded to mkII form with the introduction of the také II capacitor and advanced virtual battery operation (as reported in *Update* last month). All three models feature dual pre-outs to allow for bi-amping, even though the cheaper models can only be bought as pre/power pairs.

In the pipeline is the SH-D100 programmable digital processor. This is like a professional mixing desk in miniature, and offers myriad sound-tailoring options that can be customised with the aid of a PC-compatible computer. It



The upgraded SL-PS770D CD player from Technics.

should be available next year for around £500.

Also new from Technics is the SA-TX30 Pro Logic receiver, equipped to process decoded Dolby Digital signals. It has a 30-station random-preset AM/FM digital tuner, and is priced at £699.95.

Technics ☎ (0990) 357357

Korkin' Kronos kit

Hot news just in from Kronos Distribution of Dungannon. Pierre Lurné's Audiomeca range now includes the Talisman, an £1,850 top-loading transport or £1,250 CD player (available with Trichord mods if preferred).

Also new is the £1,850 Ambrosia DAC (pictured) and The Tube Extension, a £950 valve output stage for both Ambrosia and Talisman.

On the cable front, Kronos now distributes Silver Sounds cables, the £150 Titan mains filter box and Keibelwerk mains cable, offered at an introductory price of £99 and claiming to be "the best mains cable" that Kronos proprietor David Campbell has ever heard. Cables and filters are offered on a 14-day sale-or-return basis.

Finally, French speaker brand Triangle has announced the arrival of the £499 Lunn, a new floor-standing speaker with a claimed 91dB sensitivity and 'easy' impedance. Meanwhile Triangle's £379 Titus and £525 Comete stand-mounts have improved drive units, in common with their £799 Zephyr, £1,099 Antal and £1,750 Zays siblings.

Kronos ☎ (01868) 748632



The new £1,850 Ambrosia DAC from Pierre Lurné's Audiomeca range.

Arise, Ray Dolby

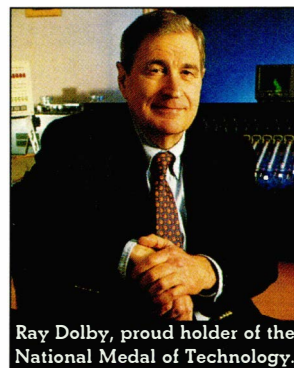
Ray Dolby has been awarded the US National Medal of Technology by President Clinton.

The guru of commercial noise reduction systems and cinematic surround sound was one of only five individuals to be recognised for their technological innovation and advancement of US global competitiveness.

Dolby was cited for "inventing technologies that have dramatically improved the recording and reproduction of sound, fostering their adoption worldwide, and propagating a vision of how innovative audio processing technologies could enable new formats for recording and listening."

"I am delighted and honoured," responded 64-year-old, Stanford/Cambridge-educated Dolby, who founded Dolby Labs. Inc in 1965 and now holds 50 US patents, an Oscar and an Emmy award.

Dolby Labs Inc ☎ (01793) 842101



Ray Dolby, proud holder of the National Medal of Technology.

JPW's new Millennium series is boxing clever

JPW's new Millennium series encompasses five stand-mounts (ML210 to '610, priced £79.99 to £169.99) and four floorstanders (ML710 to '1010, priced £229.99 to £399.99). The key feature is a 'massive sandwich' of MDF and particle board forming an extra-thick front baffle, which, JPW claims, is a much better solution than the plastics mouldings employed in competitors' budget models.

Also notable is a bass drive-unit with a precision-moulded polymer chassis which, claims JPW, matches the stiffness and strength of a metal chassis but avoids its inherent resonances. On the AV side JPW offers four new centre-channel speakers priced from £79.99 to £129.99, and two active subwoofers — of which the SW120 offers remote control at £499.99. JPW ☎ (01752) 607000

GLL's 'i' level

GLL's Imagio range of speakers has been revised to feature an improved version of the company's proprietary Inductive Coupling Technology tweeter. An 'i' suffix denotes the new range, whose numbers will be bolstered by the addition of the IC50i 'baby bookshelf' model and the IC115i floorstander. The latter, at £299.95, slots in below the reduced-price IC120i (£399.95), and the IC130i (499.95), but above the reduced-price IC110i (£259.95), and the IC100i (£169.95). The price of the '50i will be confirmed closer to its September launch date.

Other family revisions include a higher-density cabinet, plus better packaging materials.

GLL ☎ (01705) 492777



Improved tweeters: GLL's new Imagio series.

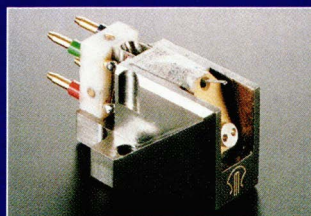
Lyra's above Par

The princely sum of £1,895 buys you the new Lyra Parnassus DCt cartridge. Like its Clavis DC sibling, the new needle is unique for its one-piece machined titanium body which is coupled directly to its moving components. This is claimed to avoid the so-called 'echo distortion' effect alleged to afflict lesser groove-tracers.

Another feature shared with the Clavis DC is a Ceralloy cantilever, but with an added diamond layer. The stylus is 60 microns square (smallest and lowest mass in the world, they say) and is fashioned with an Ogura PA line-contact profile.

A direct-flux magnetic circuit (with dual disc magnets) incorporates a gold-plated iron square wound with copper coils, both of high purity. Output is claimed to be 0.35mV, and internal impedance two Ohms.

Path Premier ☎ (01494) 441736



The new Lyra Parnassus DCt: sibling to the Clavis DC.

In brief

"smart-sub", remote/remotable sensor and small satellites which can be either wall or stand mounted. Prices are £599.99 for the ESC300 system, with FS300 floor stands at £39.99 per pair, WB300BLK wall brackets at £7.99 per pair and XC300BLK extension cables at £7.99 a pair. ☎ (01908) 317707

Jamo has launched a collection of in-wall and ceiling speakers. All incorporate a two-way design and use titanium metal-dome tweeters and polypropylene cone bass units coupled to a Velbex PVC cone surround. Enclosure surround and grille may be painted to match interior décor. Prices vary from £139.99 per pair for Jamo 525s, to £109.99 each for a Jamo 860SW. ☎ (01327) 301300

Sharp's latest offering in the midi market is the CD-C1600H system, a new addition to its SRS range. The system boasts 100 Watts per channel, a 3-way bass reflex speaker system with 20cm woofers and five-mode 3-D surround sound system, three-disc CD player and twin cassette decks. The unit is priced at £399.99. ☎ (0161) 205 2333

The Car Audio, Tuning and Styling Show will be held in Wembley on September 20-21st this year. Replacing ICE, the show will also include the final of the regional Sound Offs, and sections for car styling and tuning. ☎ (01634) 261262

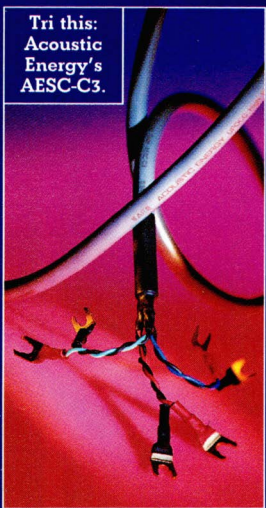
Tri AE for size

AESC-C3 is a custom-made tri-wire cable announced by Acoustic Energy to complement the company's 100 Series speakers, in particular the recently-launched AE120 (£500). The latter, it appears, is internally wired with the same ultra-pure 'single-crystal' copper that constitutes the speaker cable. All 100 Series enclosures will benefit from this wire during 1997.

Inside the AESC-C3 there are three twisted pairs of multi-strand, variable-thickness conductors, all sheathed within a 13mm-diameter grey jacket.

AESC-C3 will cost £11.95 per metre, and may be adapted for bi- or mono-wiring.

Acoustic Energy ☎ (01285) 654432



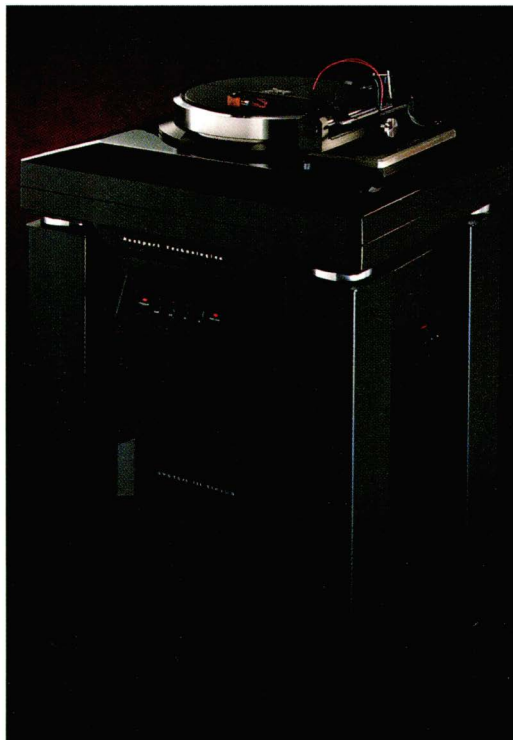
Tri this: Acoustic Energy's AESC-C3.

Any Rockport in a storm

US-based Rockport Technologies has announced the £50,000 Sirius III, a 525lb air-suspended turntable. It includes a 'biaxial air-bearing platter', a vacuum system to hold down LPs being played, and what's described as a "non-contact" drive system. An air-bearing passive linear-tracking tonearm and combined compressor/refrigerator unit complete this 525lb package.

A 'budget' model, the Capella, costs £7,000 but may be upgraded to full air-bearing/vacuum hold-down for £5,000. With the Rockport Series 6000 air-bearing tonearm it's yours for a paltry £14,500.

Vinyl Demand ☎ (01425) 654545



Rockport's new Sirius III: yours for £50,000!

Power rangers

A rechargeable alkaline battery, would you believe? It's here in the guise of amazing new Pure Energy cells, which are being imported by Allied Battery Technologies and distributed nationwide through the 42 shops of Maplin Electronics plc. A four-pack of AA-size cells has an RRP of £4.99, while a plug-top charger with four cells included, costs £17.99.

These new Rechargeable Alkaline Manganese (RAM) cells were designed in Canada, and lack the environmentally-unfriendly mercury content of traditional reusable batteries. It's claimed the 'average British family' could save £100 a year by using RAM cells in place of conventional alkaline manganese designs.

Allied Battery Technologies ☎ (01494) 484050



Pure Energy rechargeable alkaline batteries.

ALBUMS PLAYED IN THE HI-FI CHOICE OFFICE THIS MONTH

Victor Lewis-Smith Tested On Humans For Irritancy
Tom Waits The Heart of Saturday Night FFWD ►► FFWD ►►
Bob Marley & The Wailers Uprising
Ben Harper Welcome to the Cruel World
Joni Mitchell Mingus
Yes Fragile
Ramsey Lewis In Concert 1965
Percy Grainger Orchestral Music Vol. 1 (Chandos)
Boston Boston
The Chemical Brothers Dig Your Own Hole

Separate lives

A JVC system for £5,000? In this UK exclusive, **Jason Kennedy** reveals the new SD1, which matches top-flight construction with ace sound.

You're not a mad hi-fi buff, but you like music and want to listen to it through decent kit. You don't want a stack of black boxes and a sack of remotes — so where do you go? Until recently, this variety of music lover was likely to end up with one of B&O's stylish single-box systems.

These look fantastic and don't blind you with flashing lights or arrays of switches. But other manufacturers have cottoned on to the fact that the abovementioned Danish company is turning over a lot of product. Rival top-notch 'lifestyle' systems are springing up — and this rather tasty JVC SD1 is one of them.

Stylistically, the SD1 is a cross between conventional hi-fi kit and the less conventional designs of B&O, Revox or Bose. The SD1 incorporates separate 'components' (CD player, amp etc), but



they're the width of a midi system, are finished in champagne aluminium with cast side panels, and have discreet displays.

The whole thing hooks up with bus cables so that remote operation is simple. If you want to hear the radio you just press 'tuner', and the amp selects that input and turns on the wireless. The remote could be a bit prettier but it covers a lot of bases, including tuner presets and CD track select. If your coffee table yearns for myriad handsets, you got 'em; each component has its own zapper but all basic functions are actuated by the amp's remote.

For £5,000 you get the AX-SD1 amp, XL-SD1 CD player, TD-SD1 cassette deck, FX-SD1 tuner and SX-SD1 loudspeakers. Each unit is ultra-hefty, thanks to substantial alloy casework and colossal transformers inside. The amp's novel touch is a three-position 'presence' selector with which to enhance the midband; its claim to potential sound quality is an encouraging amount of heat emanating from the ventilation grilles.

The CD player incorporates JVC's K2 20-bit processing, while the cassette deck is a three-head design whose only frill is bias calibration (the only frill that makes a difference to sound except for Dolby S, absent here).

The tuner is an RDS EON model with a rotary knob and presets best accessed via the remote.

The bookshelf speakers appear to be built from solid wood, with a metal-front baffle harbouring a 19mm fabric-dome tweeter and a 100mm paper-cone woofer. This is a classic combination that seems most capable in this twin-ported design.

Unusually, the speaker's base is fitted with three gold-plated nuts, which are designed to locate in a matching stand (not supplied). These should aid sound if you do bookshelf-mount the enclosures; alternatively you can cover the nuts in Blu-Tack for stand-mounting.

Decent-quality interconnect and speaker cables are supplied with the system, which appear to work well even if they're low on designer name cred.

Sounds sweet

When shiny, slick kit turns up from large Japanese corporations, one does not always expect the best. We've all heard too

many pretty but disappointing midi-width components. So when packaged audio surprises with sonic excellence, the impact is so much greater. The SD1 system seems to hit the mark. Its key strength is coherence, implying good timing and transparency that combine to create palpable, fluent music. Inevitably it's not the most dynamic or bone-crunching system, but makes up for this by remaining unflappable up to decent volume levels, producing a clean, even balance that lets through music with the minimum of fuss.

There was real image depth from the CD player, which is an elusive characteristic even in some so-called high end hi-fi. In the fullness of time I'm sure it would be worthwhile investigating the components of this system one at a time, to see which one



Cassette deck and tuner (between amp and CD player) complete JVC's SD1 system.

contributes the most to the system's sound in this critical respect. What I describe here enhances not just to left-right imagery per se, but also naturalness and a listenable relaxed presentation. State-of-the-art design work must be the reason.

Conclusion

The JVC SD1 is well built, easy to use and sounds excellent — a Lexus to most Toyota systems. It's not an edge-of-seat choice for ardent audiophiles, nor a European design classic by appointment to the Danish throne. However I believe this system will reward purchasers with years of faultless service, and sweet sound to boot.

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Second Prize is the Reference 500 A/V System Package, worth £899.95. Here there's the added dimension of Dolby Surround Pro-Logic in the AV-H500 amplifier, which joins the T-H500 tuner, R-H500 cassette deck and PD-H500 CD player to provide total entertainment.

Third Prize is the Reference 500 System Package worth £799.95, as reviewed in *HFC* 160. It comprises the A-H500 integrated amplifier, T-H500 tuner, R-H500 auto-reverse cassette deck and a PD-H500 CD player.

All units feature a 10mm-thick, champagne-coloured anodised aluminium facia for durability and discretion. The A-H500 amp boasts separate left-right circuits, a fully-shielded toroidal transformer and the claimed capacity to drive four-Ohm speaker loads. The PD-H500 CD player offers a one-bit DAC with eight-times over-sampling digital filter, and multi-function digital display with calendar function. The R-H500 cassette deck has full logic transport control, bi-directional record and playback, plus Dolby B/C noise reduction system. Finally the T-H500 has a phase-locked-loop synthesiser tuning system and 30-preset FM/AM station memory.

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- Winners will be notified by post.
- The Editor's decision is final and no correspondence will be entered into.
- The Teac competition is not open to employees of Dennis Publishing Ltd, Teac UK Ltd, nor their suppliers, agents or associates.
- We regret this competition is open to UK residents only.
- No cash alternatives will be offered.
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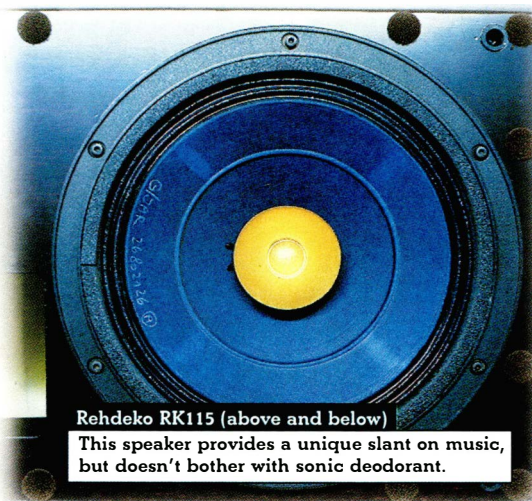
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Ear Waxings

In the wake of last month's mammoth speaker test, **Jason Kennedy** explains why Rehdeko speakers can teach everyone a thing or two about listening techniques.

Rehdeko loudspeakers are controversial. RK115s returned from Paul Messenger's group test (issue 167) recently and we decided to try them out in the office system. Operated for ambience rather than serious listening, this system gets a lot of use with CD and cassette. Its usual loudspeakers are rather war-torn Audio Note AN-J/Bs, the original Snell copy with open balance and useful efficiency. These are particularly prized for their abilities at low volume levels. When a member of staff plays a recording that's either distracting or grim, it would be nicer to have a duller, more innocuous system but on the whole the Js are well suited to the task. Numerous alternatives have been tried and rejected over the years. Art Editor Del, who's a closet audiophile and the most prolific CD buyer in the office, sometimes gets the urge to try different kit. Which is how Rehdeko's least substantial model came to put in an appearance on the end of a Talk Electronics Storm 1 and the pretty Sherwood Tema CD. I warned Del he wouldn't like the Rehds, but encouraged him to give them a try because I was intrigued about the response they would elicit from a largely non hi-fi oriented audience (we share space with the videophiles on *Home Entertainment*).

The response was as expected and not altogether positive — the RK115's balance is just too tinny. Both Alan Sircom and I encouraged everyone to live with them on the basis that such cosmetic factors can be accommodated with exposure, and we almost succeeded: I think they lasted for two days. I liked them almost from the off, especially with electric guitar, which seems to be the Rehdeko forté. In many respects the Fun Loving Criminals became a far more enjoyable record for those of us that didn't much go for it before. I even preached a Zen-style non-listening, just-hearing approach to Del, but on returning from a day out of the office I found the stalwart Audio Notes back in play. The tonal balance barrier could not be surmounted. The Rehdeko's fine sense of timing failed to offset this lack of low frequency extension and drastic coloration for listeners who wanted their records to sound as they had always done.



Rehdeko RK115 (above and below)
This speaker provides a unique slant on music, but doesn't bother with sonic deodorant.

It was interesting to note the reaction when the RK115s were removed. Several staffers realised something crucial had gone from the sound, and that included those whose attention was barely focused on it. I experienced the same thing at Paul Messenger's at the end of the blind listening tests. As the Rehdekos were the last up we left them on during the après-listening banter, then Paul decided to haul in a pair of speakers we hadn't heard that day — the Dynaudios, I believe. The contrast was distinct, the latter's bass was welcome, but a few degrees of rhythmic integrity disappeared and again I realised why Paul had been unable to let go of the big RK175s when he reviewed them two and a half years ago (issue 136). In fact he purchased these behemoths of deck-chair-mount boxes and has yet to find a speaker that suits him better.

Which brings me round to the subject of listening. How we approach it and what we listen to are the defining elements in selecting a system. Do you have a listening ritual like Harvey Rosenberg (author of *The Search For Musical Ecstasy*), methodically preparing yourself for a session; or do you use music to relax and soothe away your troubles? Perhaps you use it as ambience — a background against which you continue your day to day life? I guess most of us end up using music for a variety of purposes and what defines the audio maniac is a propensity for focused, total-immersion listening, where all else is cast aside in the quest for musical ecstasy. That pure, non-intellectual,

almost physiological thrill that great music through great kit can produce.

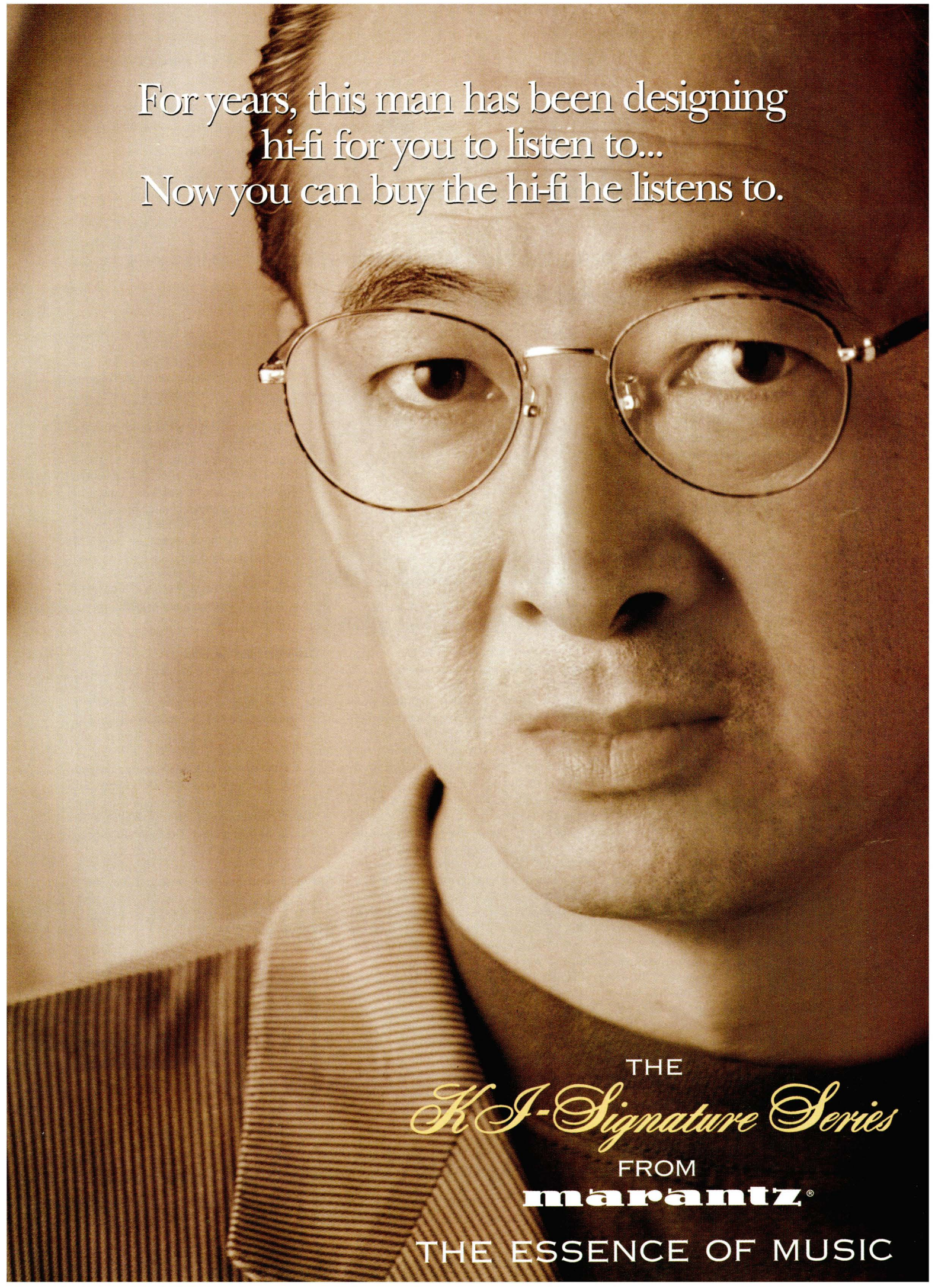
The biggest barrier to achieving our goal is of course psychological: our minds want to control and analyse the situation whereas we should really be engaging our emotions. Perhaps live music is more fun than hi-fi because it gives us the chance to have a couple of drinks and jump about with mates, our intellects not getting much of a look in. I regularly simulate this kind of merriment in my living room — a bunch of pals and some sherbert — and find myself enjoying my music more than usual. Intellectual analysis gives way to air guitar and genuine musical appreciation ensues.

The ultimate tweak

Whatever your system or tastes, the ultimate tweak is the appreciation of the music you play on it. Because software is not solely a hi-fi product, we haven't mentioned it in our tweaks guide (p39), but it is the most important audiophile ancillary, and one which we could do with spending a little more time and money on. There are hi-fi enthusiasts out there with more demo discs than genuine music for music's sake, a folly that makes hi-fi a joke in the 'real' world, and one which distances enthusiasts from the heart of the matter. So as well as sorting out your mains cables and upgrading your Blu-Tack, don't forget to buy yourself some fantastic music as well. You'll amazed at what it can do. ▲

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THE ESSENCE OF MUSIC

The Jimmy Hughes Experience

The CD format promised the best sound available — so why is there such variance in the quality of individual discs? **Jimmy Hughes** investigates.

Are you happy with the quality of compact discs? Are they a faithful reflection of the original source, for better or worse, or are mastering and pressing limitations beginning to affect quality?

Recently I read a disturbing article on CD mastering in the pro-audio magazine *One To One*. It highlighted the concern some engineers and producers have over the quality of CDs, and how they degrade the pristine sound of the original master tape.

Basically, some professionals feel the 'sound' of finished CDs fails to match the quality of the original master-tape or glass master disc. There seem to be two problem areas: the pre-mastering of the recording and its transfer to glass disc, and losses that occur when the discs are pressed.

Consumers can only speculate on why a disc sounds poor. It might be down to the original tape, or it could be because a good tape has been transferred badly. It isn't the same for those involved in making recordings; they should know how close the CD gets to its master.

This obviously assumes that the chosen CD player can recreate the sound of the original tape in all its glory, given a well mastered disc. But all CD players are not equally good as we know only too well.

In the *One To One* article, Pink Floyd engineer/producer James Guthrie is among the most critical of current mastering standards. He had Floyd's album *Pulse* pressed by EMI from his own pre-mastered glass disc, and was most unimpressed with the finished CD.

EMI's test pressing, in Guthrie's words, "bore no resemblance to the original; it was lifeless and limp, the low-level information had gone, and sounded as though it had been phase-shifted; and there was high frequency distortion and a bump in the low-end, reminiscent of the sound you get when an analogue tape machine is badly out of alignment".

Pulse had been mastered in real time by Doug Sax at the Mastering Lab in Los Angeles on a Sony 1630/Umatic. Guthrie called EMI, who said it had made a straight data transfer

and nothing could be done to change it. EMI then sent two further test discs which should have sounded the same, but didn't.

The *One To One* article encompasses five detailed pages that I can only skim here. But the bottom line is that finished CDs can and do sound different according to how they're mastered and pressed, even if the digital 'numbers' appear to remain unchanged.

The article makes pretty depressing reading, but just how serious is the problem? For those of us who buy lots of CDs it's clearly an issue. When I began collecting CDs in 1984 I wasn't happy with their sound, and wondered if I was wasting my money on soft-

Chandos achieved with this orchestra in their '80s Tchaikovsky symphony cycle.

The EMI recordings had to be played loudly to get any sense of presence, and even then the sound lacked real weight and body. Was it the original recording, or something to do with the mastering? I wasn't sure.

Then in the late '80s I got two CD copies of Olaf Bar's EMI recording of the Schubert song cycle *Die Schöne Müllerin* — one pressed in Japan, the other by Sonopress in Germany. The German copy sounded tonally thin and edgy, with a pronounced sibilance to the voice. EMI used Sonopress a lot, and ever since I've wondered if this was significant to its 'house' sound.

Yet I have to say, since I bought a Meridian 518 digital audio processor (which allows the volume level to be raised or lowered in the digital domain and re-clocks the signal), my 'difficult' EMI CDs now sound very respectable — sometimes to the point where I almost wonder why I had so much trouble with them once.

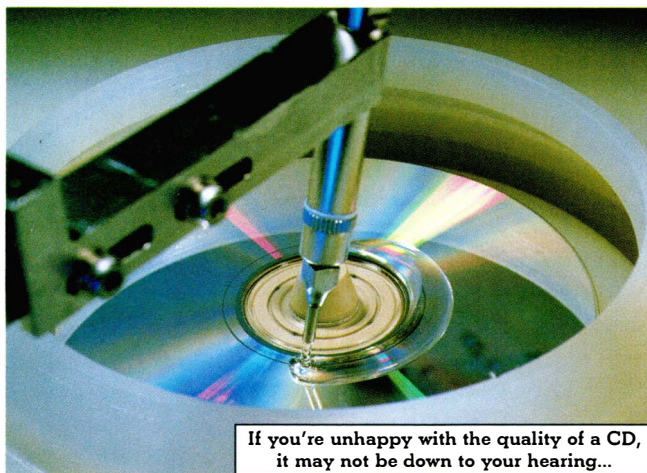
Thus, while the *One To One* piece was alarming to read, it didn't worry me as much as it once would have done; you can get good sound from 'second rate' transfers, providing they're played on good hardware.

Great! But should one have to buy a Meridian 518 to correct low-level CDs? Why not get the transfer level right to begin with; it can't be that difficult, surely?

One great benefit of digital formats is the way corrupted signals can be totally constituted by re-clocking. My PD-75 Pioneer has Trichord's Clock 2 and output stage, plus an external Pulsemaster de-jittering box between transport and DAC — not to mention the Meridian 518 which also re-clocks the signal.

This seems to reduce the variation I used to get between different CDs, allowing one to hear what's right with a disc rather than what's wrong with it.

This doesn't resolve the question of whether or not a problem exists with CD mastering and pressing standards, but does present a solution of sorts. ▲



If you're unhappy with the quality of a CD, it may not be down to your hearing...

ware that was inadequate. Yet as time went on it became clear that the problem was more with the player than the disc.

It's interesting James Guthrie has concerns about EMI's standards. On the classical front, I've long felt the sound of EMI CDs hasn't been all it might. I'm not sure when I first began to have doubts, but I'd say it was during the late '80s.

It didn't seem to matter where a recording was made, or who produced and engineered it, the sound appeared to be 'thin' and lacking in body and weight. Many classical CDs are under-modulated so that peaks fail to reach maximum level. EMI is among the worst offenders.

I used to despair over the series of EMI recordings with Mariss Jansons and the Oslo Philharmonic, comparing EMI's pale one-dimensional sound to the rich vibrance



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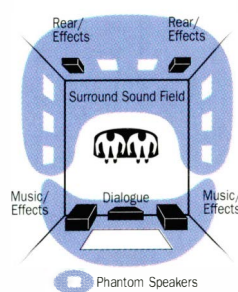
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Paul Miller's Oasis of Sanity

Paul Miller argues that there is no alternative to designing by measurement when it comes to loudspeakers – audiophiles shouldn't accept anything less than the best!

During the compilation of last month's loudspeaker group test, it became impossible to ignore two distinct perspectives of the designers involved. Some were acutely aware of compromises made during the design of their loudspeakers, cautiously treading a line between optimum bass output, distortion, an even response and a decent overall sensitivity. Others had decided to fly in the face of engineering convention and concoct what amounted to a series of expensive but seriously flawed loudspeakers designed largely 'by ear'.

The phrase "we don't believe in measurements" was heard with greater regularity on this occasion than it would be, for example, during a large test of amplifiers or CD players. Frankly, and at the expense of ruffling a few feathers, this might just as easily have been translated as "we're designing on a wing and a prayer". All well and good if you're cobbling together a box on your kitchen table-top, but far from acceptable if you are expecting enthusiasts to shell out large wads of hard-earned cash. Anyone spending over £1,000 on a speaker has a right to expect a high standard of engineering.

What follows is a clear example of just what can go wrong, and regularly does, when hobbyist manufacturers design in the objective dark, with emphasis on achieving a good, clean bass delivery. It also provides an opportunity for me to elaborate on some of the more sophisticated loudspeaker measurement techniques regularly performed behind the scenes at *Hi-Fi Choice* — all thanks to the power of Virtual Instrument technology.

Here's an example (Fig.1) of a reflex-loaded loudspeaker designed by engineers who genuinely understand their craft. The plot combines three sets of data. A nearfield analysis of the speaker's output from 10Hz-1kHz via the port (black trace) and the bass driver (red trace) is superimposed atop its impedance curve (blue shaded trace). The left-hand scale refers to the speaker's SPL (sound pressure level), the right-hand scale its impedance (in Ohms) and the horizontal scale is a logarithmic frequency axis.

At resonance, the output of the bass driver falls to zero (5) and the speaker's impedance (1) is largely determined by the voice-coil and cabinet losses, particularly air leaks around the driver. The 'real' voice-coil value appears at (2) (5.2 Ohms at 170Hz) after the system resonance (3) and before the inductance of the voice coil takes over (4). This is an ideally tuned system. The bass driver's output falls at 12dB/octave (theory suggests 24dB/octave for a reflex-loaded unit, but this rarely occurs in practice), reaching zero output (5) at a frequency that corresponds with the Helmholtz resonance of the port (6).

In this instance, all three traces are coinciding at 43Hz: the maximum output of the port (6), the minimum output of the bass driver (5), and the minima of impedance between the lower and upper system resonances (7) and (3) respectively. Also, note the smooth decay in output of the port through the upper bass (6a), allowing the bass unit (red trace) to take over unencumbered.

However, while this speaker's engineers are busily clapping each other on the back, I'll point out the slight mis-termination between the cone and its surround, reflected in a small blip on the impedance trace (8) and corresponding glitch in its acoustic output (9).

And now (Fig.2) for something completely different: a thoroughly misaligned and mis-tuned speaker, ostensibly designed 'by ear'. In this instance, the bass driver's output falls to zero (10) at 40Hz but the Helmholtz resonance of

the port (11) is tuned to a low 14Hz. This anomaly is caused by the manufacturer's use of a very long port, which depresses the tuned frequency. A shorter port would encompass a lower mass of air and therefore bring the Helmholtz resonance back in line with the diminishing output of the bass driver.

The subjective effect of such a misalignment is to trade a uniformly extended bass response for transient distortion, a ruse attempted to give a small loudspeaker the impression of bass beyond its capacity. And yet, to all intents and purposes the tuned frequency (11) is so low that the speaker might as well do without the reflex port altogether and become a 'sealed box'. Meanwhile, the practical -6dB point in the 'average' room is unlikely to extend below 70Hz.

This speaker is also hampered by the reduced LF output of the port (12) caused by an improperly designed aperture, while at frequencies above this meagre 40Hz peak, a series of high-Q resonances (13-15) punch clear of the upper bass/lower midband. The fundamental resonance (13) at 250Hz is directly linked to the length of the port while the succeeding peaks are its associated harmonics. All of which contrasts with the rapid upper bass roll-off of Speaker 1's port (6a), and contributes to its coloured performance.

And the moral of this tale? The next time you encounter manufacturer's literature with an anti-academic slant or a lack of objective evidence to back-up its claims, be very wary indeed. Designed by ear? Get wise!

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

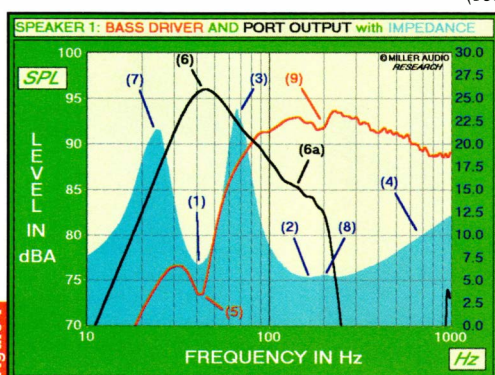


Figure 1

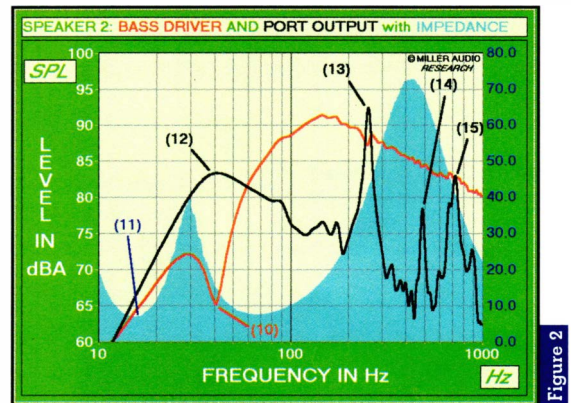


Figure 2

Krell's Angels prize possessions

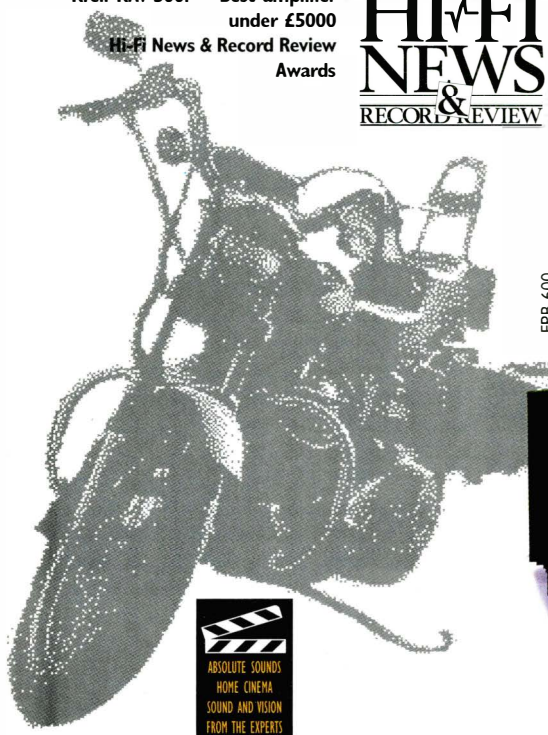
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The **Krell Playback System KPS 20i** sets a totally new standard in digital playback. The KPS 20i is the reference standard integrated transport/digital processor that beats the performance of separates. With balanced DACs, fully discrete output stages and a true high-end line level stage, the 20i brings the highest degree of musical integrity to CD playback. The Krell Playback System is also available in transport only (**KPS 20t**) and full remote control integrated transport/processor versions (**KPS 20iI**). Requiring no preamplifier,



KPS 20i

the KPS 20iI can be partnered with just a Krell power amplifier for the ultimate in high-end performance. The **KPS 30i** high-quality integrated CD transport and converter is the latest addition to the Playback System. Krell amplifiers are known the world over as the very finest solid-state designs. The new range of **Full Power Balanced** designs looks set to re-write history. First implemented in the KRC-3 preamp, current mode gain design has led to the Full Power Balanced amplifiers. Unique in the audio industry, current mode gain is a faster, more linear method of amplification achieved by designing gain stages that operate in the current and not the voltage domain. With fully regulated outputs, pure Class A operation, true balanced configuration for a cleaner, more secure relationship between the loudspeaker and the amplifier's driving force, Sustained Plateau Bias II, direct coupled signal paths and full complementary circuits the FPB amplifiers stand at the very edge of musical technology. Available in 600, 300 and 200-watt outputs each power amplifier (**FPB-600**, **FPB-300** and **FPB-200**) uses output devices manufactured exclusively for Krell by Motorola. The result is an unprecedented level of speed, current drive and musical accuracy, in other words the FPB amps are musical, fast and incredibly strong. Martin Colloms, reviewing the FPB-300 in **Hi-Fi News** (Dec 1996) said it 'must be regarded as a reference, regardless of considerations of price and power'. He concluded that Krell's zero feedback design carries with it 'greater neutrality and musicality' yet making no concessions to the 'traditional amplifier virtues of blockbuster bass, huge power and adverse load driving muscle'.

The natural partner for the FPB range is the Krell **KRC-HR** High Resolution Remote Controlled Preamplifier which offers uncompromised audiophile sound with ease of operation. Digital logic circuits operate gold-contact relays for positive switching with absolute signal integrity. Power supply and gain stages are refinements of classic Krell Class A complimentary circuits with extraordinary levels of transparency and resolution.

Supporting Krell's outstanding **AV Cinema System Controller** (Dolby Pro-Logic, THX, AC-3) are Krell AV amplifiers — a range of 100 watt per channel multi-channel amplifiers (the **KAV-500/3, 14** and **15**), the 2, 3 and 4-channel amplifiers can be extended with an optional add-on channel (the **KAV-500 Rail**).

The **KAV-300i** an integrated two-channel 150 watt amplifier — Krell's first integrated — was launched alongside the AV power amps and has been wildly received, cleaning up awards around the world. This fully discrete, wide-bandwidth, low-feedback design features full Class A dual mono output stage. Its supplied remote control give access to the basic functions of Krell CD players. In fact, a matching CD player is shortly to be launched. The **KAV-300cd** (hoped to retail at £3499) features a Teac CMK-4 drawer loading mechanism, HDCD, 2 x 20 bit Burr-Browns DACs, with Class A direct coupled output stages feeding balanced and single ended outputs.

A stand alone power amplifier the **KAV-250a** will be available April/May '97 offering 250 watt with at a projected price of £3290. A matching preamplifier, designated **KAV-250p**, will be available at the same time at the fantastic price of £1990. The KAV 250p features one balanced input, three single ended inputs and one tape loop.

One single ended input can be configured as a theatre throughput for use in surround sound applications. Single ended and balanced outputs are offered.

To discover where Krell components can work for you — contact Absolute Sounds.

FPB 600



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Personal

Paul Messenger laments the British obsession with miniature loudspeakers. Where are the dynamics?

Messages

Assembling the candidates for a major speaker group test, like the one we printed last month, is a fraught business. It's difficult to reach quorum on schedule, and a last minute rush left our 'first reserve', the Totem Model One Signature, watching from the sidelines.

I'd have like to have included it for several reasons. I loved the original, and it would have been good to have had a high-quality miniature to do battle against the floorstanders. Being a fraction of the size of most equal-priced competition, the Totem brings an intriguing mixture of pluses and minuses, and I reckoned any improvement on the doughty Model One stood a very good chance of doing well.

With hindsight, however, I'm not so sure. Having consigned the last of the review group to the carriers, I brought in and connected the Totem MOSs with some anticipation, only to end up mildly disappointed. Several weeks in the company of 15 larger models had conditioned me to expect a 'bigger' sound than these Totems are able to deliver.

Not that the Totems lack bass. They're no bottom-octave excavators, true, but the Dynaudio main drivers punch much more than size or mass implies. But it wasn't so much the slight lack of bass weight that worried me; rather a more general shortage of expressiveness. The dynamic range as such is good, so you can still hear what's going on, but the dynamics themselves showed a lack of get-up-and-go compared to larger speakers, and in this respect they sounded their size.

In nearly every other respect the new Totems are close to impeccable (which they should be to justify a hefty £1,250 price-tag) and offer a definite, if subtle, improvement over their predecessors. The bass is clearer and less congested than before, and quite astonishingly powerful from one so small, while the balance is quite superb — clear and open without succumbing to harshness, thanks to improved treble smoothness.

The usual small-speaker virtues are there, like minimal cabinet coloration, stunning stereo space and focus and a freedom from boxiness. And it's definitely my favourite amongst the miniatures I've had a chance to try. But I am coming to the conclusion that miniatures per se are not capable of realistic



KEF RDM 2 (above)
Totem Model 2 (right)

Miniature loudspeakers may look cute, but can they cut the sound-quality mustard?

dynamics, and suspect that the small size and/or low sensitivity of the main driver has much to do with it.

I could rattle off numerous examples to support this thesis. From last month's group test, the Neat Petite II/Gravitascombo, which relies on the Petite miniature to do most of the work, also sounded dynamically challenged, whereas the three-way Origin Live Conqueror was far more convincing in this respect. That the Conqueror has comfortably higher sensitivity and one of the biggest bass drivers in the group might well be significant — though the fact that it also has the smallest midrange driver shows the danger of trying to make generalisations.

Big brother is watching...

A more meaningful point of comparison for the Totem is KEF's exceedingly pretty RDM Two. Bigger brother of the equally cute RDM One (*HFC* March 1997), the Two's larger and more generously ported enclosure goes a long way towards countering my main criticism that the One has far too little bass.

Given a price differential of nearly 2:1, it's no surprise that the KEF doesn't really match the Totem for overall sound quality. The miniature wins out on bass drive, mid open-

ness and delicacy, and top-end sweetness.

But the KEF does have the more realistic and entertaining dynamics, which may well be a function of its larger driver cone area (around 118mm diameter against 90mm, which translates into an area differential of about 1.7:1). The box itself is about twice the volume of the Totem, and the port has a much larger diameter, all of which add up to a significant increase in midband sensitivity.

It's almost impossible to separate driver size from sensitivity because the two are usually closely linked (at least as far as conventional dynamic drive units are concerned; horns and panels operate under rather different rules). And there's the further complication that the higher sensitivity speaker is allowing the driving amplifier to work less hard to achieve a similar result.

Whatever the mix of influences at work, I'm now firmly convinced that 'miniature' speakers have very real dynamic limitations, which are probably ultimately defined by one or other of the Laws of Physics.

The fact that they're the most popular loudspeaker solution for the average British hi-fi buyer is easy to explain. They're cheap; they look good and take up very little space; and they do a good job of delivering a decent balance in a typical British lounge. But at the end of the day they leave us short-changed, by selling short the dynamic dimension of the musical experience.

Maybe that doesn't matter to a lot of people. Perhaps they are happy to make the sacrifice for the sake of domestic harmony. Or maybe they're not aware of the advantages of size. (The fondness for miniature speakers is essentially a British phenomenon, so as usual the Continentals are out of step.)

To check whether it matters to you, just pop into your local hi-fi dealer and ask to compare two of Britain's most popular speakers — B&W's £200 DM601 and £300 DM602, as alike as two peas save the latter is about 50 per cent larger. The smaller 601 is actually the smoother, and there's little to choose between them in the bass, but the larger 602 is by far the more communicative and entertaining, to this pair of ears at least. ▲

KEF ☎ (01622) 672261

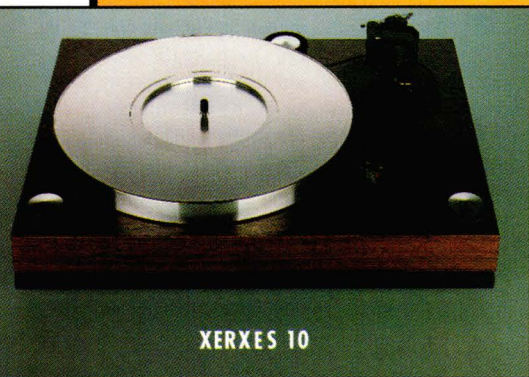
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Write on!

TELL US YOUR VIEWS ON HI-FI AND MUSIC. THE BEST LETTER EVERY MONTH WINS AN M-S POLO-SHIRT!

LETTER OF THE MONTH

A twist in the fabric of space...

I've built a system based around a Musical Fidelity A1 Final Edition, with Castle Durham 900 Speakers and Musical Fidelity E60/Cambridge Audio DACMagic 2.

Despite numerous tweaks I had never managed to dispel a glare in the treble. Originally I bi-wired the speakers with Kelvin K19 cable, but ended up going back to my old favourite, single-wired Ixos Hardcore 6, as bi-wiring seemed to make the sound both brash and muddy.

Recently I rewired with a single length of K19. Result: no brashness, no sharp edges to notes or muddy sound. Nothing for it but new cable. My wife (a hi-fi nut and *Choice* subscriber herself) suggested I should bi-wire using Ixos for the treble and K19 for the bass. Great idea. I tried this, and got a much better sound, but the bass and vocals were still slightly muddy compared with Ixos alone.

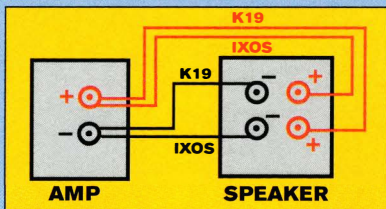
Swapping the cables between bass and treble led to a totally unbalanced sound. But then I cross-wired the terminals so that the Ixos fed one terminal and K19 the other on the bass and treble (see diagram). Result: total musical bliss — better, clearer bass and midrange, and crystal-clear treble with no glare to muddle it.

Is there any technical reason to explain my results? And is it worth rewiring so that both negative terminals are fed by the same type of cable? At the moment the wire is just over-crossed. I have heard that the signal return benefits from thicker cable — would that be the positive terminal on the speaker? Or is this only possible if there are banana plugs big enough to take two thicknesses of K19?

Nick Austin, St. Andrews, Fife

Paul Miller, Technical Editor, replies:

In reverse order: the 'signal return' is marked by the black or -ve loudspeaker terminal and, no, will not necessarily benefit from a thicker length of cabling. With regard to the novel amp/speaker wiring; although this poses no threat to the system, it does fundamentally alter the geometry, and therefore the capacitance (which is reduced) and inductance (which is increased) of the respective bass and treble cable runs. Any influence of Lenz's Law, brought about by the flow of current, will also be reduced as the bass path is now split between two separate lengths of cable. So the system will, likely as not, sound different, and if you perceive the difference as an improvement, stick with it!



Bedtime psychedelia

I used to enjoy reading an article or two in bed before settling down to sleep, but do you know how difficult it is to read print in semi-psychedelic pages such as eight to 13 and 28-33 (*HFC* May 1997) by the light of a bedside lamp? This secondary bed-time pleasure was no problem before *Choice* started appearing like this, and the primary bed-time pleasure, given the old truism "the better the light the better the loving" doesn't exactly require an arc lamp. Pity really...

L G Neville, Tewkesbury, Glos.

Stan Vincent replies... What next? "Something for the weekend" as a cover-mount?

A chest of flaws

Your competitors now have questions about our employment. Do employed people have a better chance of winning?

Your reader survey of a few months ago asked extremely personal questions but did not give the option of refusing to answer any question, nor did it state that the given information would be held in strictest confidence.

The *Write On* page has shrunk to just four letters.

In your *Price Guide* and *Directory* there is no indication of which speakers are bi-wirable; and why not include the new product prices with the reviewed product listing?

The competition forms, when cut out, remove articles on the reverse page which I would keep for reference.

But the *Reader Classified* page is a valuable source of bargains, Jimmy Hughes's *Hints & Tips* are

very useful, *Help!* is invaluable and *Update* informative.

Phew! I've been waiting a long time to get that lot off my chest.

P Cameron, Isle of Skye, Scottish Highlands

On the slab

I'm 16 years of age and eager to try any cheap upgrades I can. Roger Hooton's suggestion (*HFC* February 1997) of placing speakers on £1.00 paving slabs was simply irresistible. So off I trekked to the local DIY store, with slabs I returned, and now my energetic Mission 733s are almost breath-taking. The copious lashings of low frequencies have tightened and yield more punch and definition, allowing treble to soar amazingly. Truly the best £2.00 I have ever spent.

S Ritchie, E. Sussex

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Surround trip

Sony's new digital processor is a new kind of preamp that looks set to shape the future of hi-fi. **Alan Sircom** and **Paul Miller** investigate.



Sony's £600 SDP-EP9ES looks like just another AV processor, and could easily be overlooked as such by the hi-fi fraternity. But closer inspection reveals a component that could change the face of hi-fi. In fact its only real stumbling block is that it's pitched so far into the future as to have limited compatibility with today's systems.

Fortunately, all this technology doesn't mean poor ergonomics. At the sharp end, there is little more than master volume, 10 push buttons, set-up button and two digital control knobs. At the back are five digital inputs (one AC-3 RF input, one coaxial and three Toslink optical connections), a single Toslink digital output for recording, and 5.1 channel inputs and outputs to account for every Dolby Digital eventuality.

And there's the problem: there are no regular analogue inputs whatsoever, which makes it almost completely unusable with all those tuners, cassette decks, turntables and CD players without digital outputs. So a lot of existing hi-fi systems cannot incorporate this preamplifier at all — and that hardly constitutes the future of hi-fi, does it?

At present, no. But, with the continuing digitisation of our musical future, the SDP-EP9ES's worth is self-evident. With CD already well established, MiniDisc and DVD (Digital Versatile Disc) gaining ground as viable formats, and digital radio, satellite and broadcasting waiting in the wings, a completely digital system could be a practical domestic proposition by the year 2000. Such a system could use a multiplicity of digital to analogue converters where only one is necessary.

Sony has been talking about 'convergence' a lot recently. Convergence is about linking hi-fi, home cinema, computers and anything related to home entertainment with a single control centre. The SDP-EP9ES is a superb example of convergence in action: designed as an A/V processor, it also seamlessly blends the digital sources of hi-fi and home cinema.

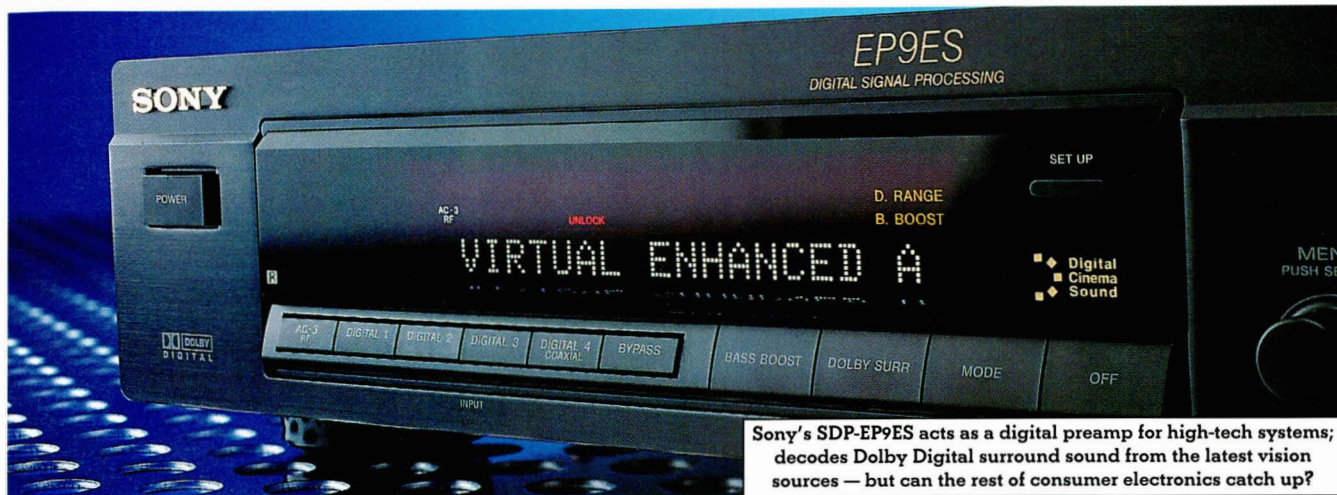
High-end, high-tech companies like Meridian have already developed all-digital systems, converting back to analogue in the body of the loudspeaker itself. But these systems are by their nature expensive, and — as there is no on-board D/A conversion —

difficult to use with regular power amplifiers. The Sony SDP-EP9ES, by contrast, represents a stunning bargain.

The A/V part of the SDP-EP9ES is powerful and among the most up to date available. It sports all the latest Dolby Digital and Dolby Pro-Logic surround processors. It also utilises digital-domain simulations of the sound fields found in Sony's Hollywood movie mixing theatres — the studios which are used to record the soundtracks for a wide variety of films.

It is also possible to alter the time delay of the rear speakers to make the surround sound appear to come from the rear or side of the viewing seat. Plus home cinema modes, all of which are featured in the review that our sister magazine *Home Entertainment* is running this month.

But it is the audio performance that caught our attention on *Hi-Fi Choice*. Being an all-digital system, with more or less the DAC section from the Sony CD player range, the SDP-EP9ES has all the smoothness and detail of these players. It also bestows an even-handedness and sense of consistency to all digital inputs. Fortunately, because of



the level of detail, this consistency does not mean bland mediocrity.

Connect it to a decent CD transport and you get a terrific soundstage from this processor. The soundstage stands wide of the loudspeakers but is not the ultimate in terms of depth or height. The only sonic quibble is with the bass, where there is a slight lack of solidity. It's not that the sound is bass light as such, it's just that you get slightly ethereal drums and bass guitars. That aside, it is the transparency of the SDP-EP9ES that wins the listener over: it revels in detail but stops short of overkill.

All of this is with the SDP-EP9ES used in straight stereo mode. The DSP modes without Dolby all affect the soundstage in a subtle manner that befits a purist product like this. Some hairshirt hi-fi types still balk at tampering with the signal, but some of the DSP modes are really rather good, especially the third soundstage simulation, which has been used for many well-known classical recordings. Granted, most recordings do not need such digital additions, but those that do can benefit from its subtle touch in a way that few other DSP units have achieved. The more cinematic elements of the processor are equally adept, but we'll leave their description to *Home Entertainment*.

Of course, shoe-horning so much technology into such a competitively-priced product means that the performance of the DAC is about in line with last season's £250 Sony CD players. If you are a potential Wadia customer, this may be a bit of a come-down, but for middle-market players there may be considerable improvement to be had, especially in single-source pre/power systems that can now do without the preamplifier.

This is a 'twirly' product from Sony. It has arrived a little too early to reap the rewards it so obviously deserves; while as a hi-fi or AV preamplifier, it is truly state-of-the-art, it can only be used with a fraction of today's products. If you buy one now though, you could 'lay it down' for a few years like a fine wine. When audio has matured into a full-bodied digital multimedia system, the SDP-EP9ES will be there waiting for you as an ideal audio digestif. AS

Sony (0181) 784 1144

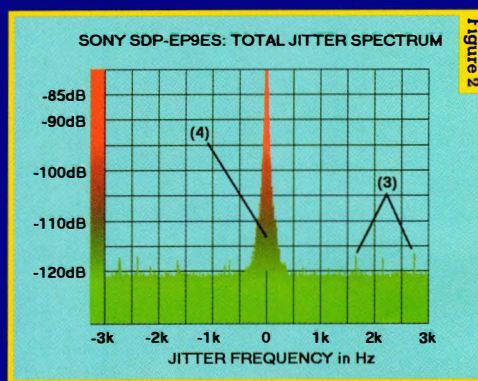
LAB REPORT: SONY SDP-EP9ES

Although the SDP-EP9ES has facilities to service the most advanced home cinema system, here at *Hi-Fi Choice* we are more concerned with its potential as a digital preamp in a high-end two-channel audio system. Stripped to this most basic of its various guises, the SDP-EP9ES offers both coaxial and optical inputs to handle the digital output(s) of a CD, MD or DAT player.

The front L/R analogue outputs would then be connected to your choice of power amp, with Sony's sophisticated digital attenuator acting as a volume control for the system.

Connected directly to a power amplifier, I seriously doubt whether many users will find the need to advance the volume setting beyond -16dB, this being equal to the 2V peak output typical of today's CD players. The processor's maximum output is an outrageous 10.89V, though Sony's internal DSP is clipped at this point, even in standard stereo mode. With a 0dB (peak level) digital input, the processor's digital volume control cannot realistically be advanced beyond -3dB or 9.419V, which, quite frankly, is more than sufficient for any foreseeable application.

With the volume control set no lower than, say, -20dB or -30dB, the processor offers a performance comparable with Sony's budget CD players. Distortion disappears below the noise (1) at between 0.0025-0.018 per cent (re. -30dB digital signal), the response is ruler flat and low-

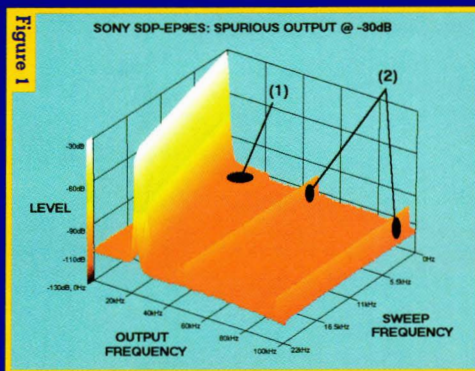


level linearity holds true to within -0.0/+2.7dB. Nevertheless, in common with Sony's MD recorders, this processor appears to use a sample rate converter, as evidenced by 'leaky' (though inaudible) tones at 48kHz and 96kHz (2), despite the fact that the incoming CD-derived signal is coded at 44.1kHz....

The processor only really achieves a true 16-bit performance between 0dB and -10dB volume settings where the overall S/N ratio varies between 99.4dB and 91.5dB respectively. Nevertheless even with a S/N >87dB at volume settings >-30dB, the 'dithering' effect of a little extra noise could, in practice, be of subjective benefit.

Arguably, the biggest departure of the SDP-EP9ES from the performance of a traditional outboard DAC is revealed in its jitter spectrum. Here we see very little evidence of gritty-sounding high-rate jitter (3) but,

instead, a clump of very low-rate, almost noise-like jitter (4). Close analysis reveals this to have a repetition rate around 11Hz and would, strictly speaking, amount to a huge total of some 65,000psec — about 300x higher than that suffered by Sony's CD players. In practice, this type of jitter will tend to affect the focus of stereo images (which will seem larger and 'softer') rather than contribute to a change in the music's balance. As a result, the SDP-EP9ES may 'get away with it' though improvements to its central DSP will inevitably reap further reward. PM



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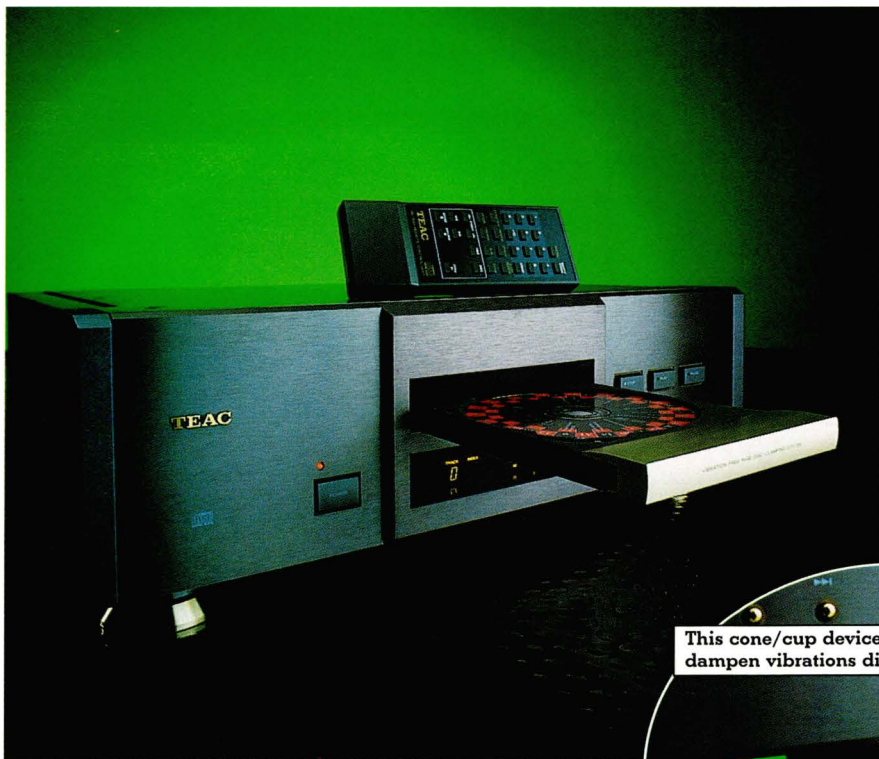
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Transport of delight

Alan Sircom discovers Teac's new P-30 has charms to soothe the most savage DACs.



The P-30 sports phono co-axial, XLR-balanced and ST-optical cable sockets.

On its best behaviour

I tried out the P-30 with a selection of digital-to-analogue converters (DACs) old and new, good and bad. Not once did it trip up, even with the fussiest DAC. Inevitably some pairings were more fortuitous than others: the Audio Note DAC-1 valve converter was a notable one. From experience I

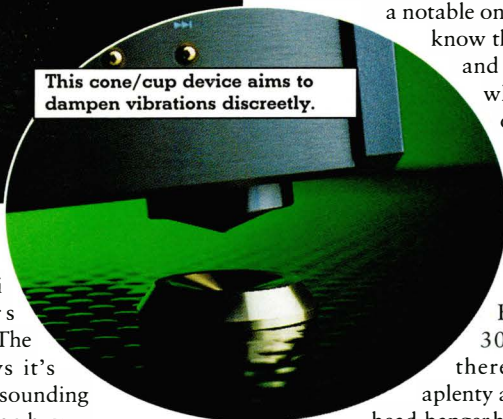
know this DAC is timbrally and temporally spot on when warmed up, but often lacks dynamics and bass. So often has this been the case that until now

I've assumed it was the innate character of the DAC-1. But from the P-30/DAC-1 combo there were dynamics aplenty and bass to keep any head-banger happy. Is it just a coincidence that Audio Note's own transports are based on Teac's VRDS mechanism?

So often is a transport's performance dogged by DAC quality, it's easy to become blasé about the transport's rôle. The P-30 forces one to reconsider such presumptions. While it can't improve a duff DAC, it will push such a component to limits only surpassable with the likes of a Mark Levinson transport in tow. The P-30 has almost no intrinsic character to colour the sound.

Only in the fabled 'boogie factor' stakes could Teac's P-30 be marked down. This might be ascribed to its even-handedness, but it does seem to lack the raw, heads-down energy that the very best players can do well. To play Devil's Advocate, I'd venture that foot-tapping timing is only available with single-box players or combinations that are in some way designed for each other. Maybe there's a DAC out there somewhere that will lead even the P-30 to surpass itself. ▲

Teac ☎ (01923) 819630



This cone/cup device aims to dampen vibrations discreetly.

No Japanese CD manufacturers can match Teac's reputation for building epically-proportioned transport mechanisms. The new P-30, costing £2,499.95, serves only to fuel such a reputation.

Built to near-military standards, the P-30 is engineered to perfection from top to bottom. It passes the beloved high-mass-audio tyre-kicking test with flying colours: weighing in at over 14 kilos, the P-30 is one of the heaviest CD transports around.

One particularly clever feature is the package of feet supplied with the P-30. There are three screw-in cones that mate with three brass cups, so that the unit can benefit from vibration-reduction without damaging the surface it's placed upon. The feet may be screwed in and out to make light work of levelling the player, or removed completely to fulfil the requirements of exotic equipment support systems.

Behind the chunky, dark-champagne façade lurks a centre-mounted CD mechanism, which is the very latest heavy-duty Vibration-free Rigid Disc-clamping System (VRDS) transport designed by Teac itself. In purely physical terms, the mechanism embodies the overkill, flagship standards that one would expect to find in a tank. Notwithstanding its machismo, Teac's

VRDS transport is the choice of many top hi-fi manufacturers around the world. The smart money says it's among the finest-sounding mechanisms you can buy.

The front panel supports only the bare minimum of controls, but the P-30 is packed to the gills with features. The majority of track-handling, programming and editing functions require the button-stuffed remote control, so make sure you don't lose it down the back of the sofa!

Turn to the rear panel to observe a display of the P-30's true colours. Many transports are merely CD players without converters, so a simple 75 Ohm co-axial socket is all you'll find at the rear. On the Teac there are phono co-axial, XLR-balanced and ST-optical cable sockets (the latter in place of the more common but inferior Toslink cable). Even the 75 Ohm digital cable packaged with the unit is a cut above the usual anonymous flex: van den Hul D 102 mkIII.

Remarkably the P-30 is one of those rare high-end components that does not need to warm up in order to give of its best. During hours of use in my system, its sonic character did not seem to change much at all.

Help!

Alan Sircom 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

Levelling the land

I have been struggling to find a replacement for a rather dated Marantz SD-45II cassette deck. I'm no recording expert, but I am aware of two fairly important facts. First, most Type I and II tapes can be pushed to around 2 or 3dB, while Type IV can be taken to the dizzy heights of 5dB before distortion sets in. Secondly, an increase of 3dB doubles the loudness of a recording.

Trouble is, how am I supposed to acquire optimum recordings from blank tape when the decks in my price range — such as the Yamaha KX-580 and Technics RS-BX601 — continue to use VU meters with 2dB steps and small record dials that make for lousy adjustment? Do I have a point or am I just far too fussy?

NA Hilleard, Peterborough

I'm afraid your discerning nature has overstretched your budget. While tape decks of the type you mention do great things for the budget, something has to give. If you make the jump up to the £230 price bracket (roughly the price your SD-45II would be if it were currently available), decks like the superb Technics RS-AZ6 have all the control and display you need, plus the bonus of Technics' own Amorphous-Z playback head.



Technics RS-AZ6

It's worth investing a little extra to get the best from cassette recordings.

Doin' the Kan-Kan

My system comprises Rega Planar 3, Linn K5 cartridge, Arcam Alpha 5+ CD, Naim Nait 2 amplifier and Linn Kan I speakers. My room is 4m x 3m.

I like the system but I'm losing octaves at the lower end. Should I buy a pair of Naim Intro speakers to replace the Kans or add a subwoofer, like the REL Strata? Or, should I add a NAP 140 to my Nait?

NS Thorpe, Birmingham

If you like the sound of the Kans, there is precious little today that can match them. They have a very odd tonal balance, however, geared towards optimising the LP12 of the time. If they are on original Kan I stands and you can't get hold of a pair of the later Kan II stands, go for the Intros. If you have the later stands, adding a REL Strata or similar may well give you the oomph you need to get the best from the system.



Quad 77

This pre/power combination is ideally suited to Linn Keilidh LS300 speakers.

Keilidh konundrum

I wish to upgrade my integrated amplifier with a preamp and power amplifier combination. However, I have difficulties in creating a shortlist that satisfies the minimum requirements of my Linn Keilidh LS300 speakers: 80W per channel into four Ohms.

I listen to classical, soul and jazz on my Meridian 206B and I am planning to upgrade in 1999.

I will be pleased to receive your recommendation to drive my CD-only system, within a £1,400 budget.

D Best, Weymouth, Dorset

The specifications quoted in speaker brochures and manuals can be rather misleading. The requirements of the Keilidh should be taken as a benchmark, not an absolute. If you were to partner the Keilidh with a three-Watt or a kiloWatt amplifier you might cause the speaker distress, but otherwise how it performs musically is more important than any on-paper specs.

Actually, there are a number of amplifier combinations that suit the Keilidh speakers down to the ground, without busting your budget. Although technically not a pre/power combination, the Arcam Alpha 9/9P integrated/power amp combo is a perfect match for the kit you currently own. The Quad 77 pre/power combination is also ideally suited. Other products that may not have garnered a Swing Tag but produce great synergistic results with the Keilidh are the Naim NAC92R/NAP90 and Talk Electronics Hurricane 2L/Tornado 2.

Finally, if you have not already done so, fit the Keilidh bases and use good speaker cables, such as Cable Talk 3.1. This will improve the sound of the speaker no end.



The drab Lab

I have the following set of Audiolabs: two 8000Ms, an 8000C and an 8000DAC. I've tried them with many loudspeakers, such as the Heybrook Sextet, ProAc Response 2, Monitor Audio Studio 10, KEF 103/5. Unfortunately, whatever I try, the sound is very dry, lacks life and sounds shut-in. I am not sure if it is because I use a Micromega Stage 1 CD player as a transport or because I have yet to find compatible speakers.

I am very upset because I've just bought another cheap system comprising Sony CDP-561E CD player, NAD 304 amplifier and KEF Coda 7 speakers and I found that the sound it produces is warmer and more relaxing than the more expensive system.

Could you please recommend a pair of speakers or even a new CD player (I plan to sell the 8000DAC)? Otherwise, should I sell the whole lot and buy a new system?

Tull Traisorat, via the Internet

While the Audiolab set-up is very well respected, even its closest ally will admit that its fundamentally ascerbic character can sound rather too lifeless to some ears and can also sound too shut-in with the wrong speakers. Consequently, I'd suggest scrapping the whole lot and starting again, this time a little more carefully.

Get yourself to your nearest specialist dealer and book a demonstration with a handful of your own CDs. The dealers should play you one or more complete systems in your price range to find one that suits you. When you find that special system, buy it and stick with that dealer.

As you seek warmth and relaxation from your hi-fi, you may want to try something like the Pioneer PD-S505 Precision CD player, A-300R Precision amplifier and Musical Technology Harrier or even the more expensive Castle Harlech loudspeakers, hooked to the amp with runs of Goertz speaker cable.

help to pro...
and relaxation.

Time for a change?

My system comprises a Marantz CD-63SE (with Chord Cobra interconnect), Yamaha KX-580 tape deck and TX-L400 tuner, Naim Nait 3 integrated amplifier and a pair of KEF 102 loudspeakers (with the KUBE equaliser disconnected) on Linn Kan II stands using old QED cables. I listen to a lot of jazz, folk and Ladysmith Back Mambazo stuff.

My tuner is on the way out, but I can't think of a better one for the price. I plan to get an old Nakamichi 582 cassette deck and hopefully a Rega Planet CD, which I have been informed is in the same league as the Naim CDS. I also need more powerful amplification, and the Naim NAC 92/NAP 90 pre/power combo are my next possible step. I do not want to neglect the speaker section, so I will invest in the new Naim Intro loudspeakers and NAC A5 cable.

*W Chakawata
Carmarthen, Wales*

Starting from the top, only change the tuner for a Denon TU-260L or similar if it is near the end of its life; a well-sorted system and decent aerial may make you reconsider. Secondly, I love the old Nak 582 too, even though it is now old enough to vote. If you are not worried about using a deck of that vintage — go for it.

The Planet is in the same league as the CDS, eh? This is like saying a Mini is in the same league as a Ferrari because they both have four wheels. The Planet is not far off the Naim CD3, though, a noble feat as it is half the cost.

My recommendation is simply to audition the Planet and CD3 side by side in a Nait 3/Intro combination, then try the same test with the Nait 3 and 92/90 amps to see if you need that extra lift. But get that NAC A5 in there, pronto!

Sweet sixteen

My system consists of a Rotel RCD-965BX CD player, Naim 42/110 pre/power amplification and 16-year old Mission 700 loudspeakers on Linn Index stands, with Naim speaker cable. I listen to Björk, Tindersticks and Dubstar etc in a 4m square room.

The sound is harsh and congested, especially with complex recordings, and the bass is rather soft. The speakers are old budget models and may not be capable of partnering the rest of the system. Could you recommend speakers which would solve the problem and do the rest of the system justice? My budget is around £350-£600.

Also, would a D/A converter for my Rotel CD player help?

Derek Gabbitas, South Yorks



Royd Doublet

This floorstanding speaker suits the Naim 42/110 pre/power amp combo.

Given your amplification, floorstanding loudspeakers like the Rega Ela II, Musical Technology Harrier, Royd Doublet or stand-mounted speakers like B&W's CDM1 or Professional Monitor Company's TB1 would suit your system perfectly. In truth, however, your biggest problem is that the room is square, which causes strange standing-wave problems and really needs to be decked out in soft furnishings to help absorb excess bass.

On the digital side, I'd consider holding back on the DAC upgrade. The '965 was a superb integrated CD of its day, but improving it will take mucho cash. Why not save the money in the short term and replace the Rotel with a more up-to-date integrated player that will suit the Naim sound, such as the Orelle CD100e or the Naim CD3?





HELP!

Pioneer A-303R Precision
Partnered with the PD-S505 Precision CD, a good match with Castle Severns.

◀ Grain, grain go away

My current system comprises an Arcam Alpha 6 CD player, Audiolab 8000A amplifier and a pair of Castle Severns. Chord Company Siren interconnect cables and a Musical Fidelity X10-D enhancer separate CD and amplifier, and the amp and speakers are separated by Cable Talk 3 cables.

The system has a lush and elegant presentation but there is room for improvement. The bass could be tighter, but the most pressing problem is an occasional gritty, grainy treble that can make vocals sound electronic and raspy.

To address this I have considered adding Audiolab's 8000P but have noticed an ex-dem or second-hand Arcam Delta 250 CD transport and BB50 DAC — or even Musical Fidelity's X-DAC with the same transport.

The problem with this option is that auditioning potential purchases will be impossible. Help!
A Moses, Durham

As the problem is only an occasional one, I wonder if it is likely to be resolved with any of the equipment you mention. Replacing the Alpha 6 front-end with the Delta 250/BB50 combination will improve the spatial and tonal qualities of the system and may well alleviate the problem. As may the Delta 250/X-DAC. But I think that the problem is not one that can be fixed quickly and if the gritty treble is due to a handful of bright CDs, that is throwing good money after bad.

Each component in your system is even and warm in tone, but likewise, each has a touch of brightness about it. This could combine to make too gritty a sound. Otherwise, you'll have to start again, mixing the speakers with something like the Pioneer Precision CD and amplifier, and connecting up with an inherently neutral interconnect like Moth Ley Line Black, and Goertz speaker cable.

Searching high and low

A month ago, I upgraded my system with an Arcam Alpha 7 CD player, and Alpha 8/8P integrated/power amps bi-amping Acoustic Energy AE109 loudspeakers. I have Cable Talk 3.1 bi-wire cable and Monster interconnects. Components are supported on Sorbothane feet.

Although the clarity of the sound is a great improvement on my old system, I find the frequency extremes lacking. I confirmed this with a test CD where frequencies above 16kHz and below 50Hz were suppressed. I listen to all types of classical music including opera and organ where I am completely aware of the lack of deep bass (no matter how I position the speakers).

Do you have any suggestions about how to improve extreme frequency response.

AF Turner, Bexley, Kent

Low frequencies are easy to improve. Simply add a REL Q100e subwoofer and set it to blend in with the speakers. That will dig down at least to 40Hz. Any deeper takes bigger, better and more expensive subwoofers and very large rooms.

To get frequencies above 16kHz is slightly harder. Either arrange for a pre-teenage boy to donate his ears, or find a time machine, go back to puberty and have a sex change. Unfortunately, by the time you reach your early 20s, the 18+kHz region is little more than a memory for most men — and it's downhill all the way from there, I'm afraid!



Linn LP12
The Linn LP12 turntable works best with a Linn Ekos arm and Klyde cartridge.

Linn line-up

I have a £2,000 budget to spend on a tonearm and cartridge for my LP12 with Lingo, Cirkus and Trampolin. Do I follow the obvious path of Ekos arm and Klyde cartridge, or Naim Aro arm and Lyra Lydian cartridge, or do I go for the Wilson benesch Act Two arm with Matrix cartridge?

The rest of my system is a Linn Akito arm, K18II cartridge, Intek amplifier and Keilidh speakers. I know my amplifier is the weak link, but I want to get my LP12 up to full spec before addressing other areas.

Harry Passley, E London

I'm a Naim Aro user, but I'm honour bound to recommend the Linn Ekos arm and Klyde cartridge combo, over the other two. Why? Simply because it will cause less long-term disruption to your system.

Here's why. Dismissing the Wilson benesch arm is easy, because you would have to get a custom arm-board made, and I am not wholly sure that the arm will fit at all; the Rega RB 300, for example, fouls the cross bracing of the plinth and can't be fitted into a LP12 deck without surgery to the wood itself. The Naim Aro is the more logical unipivot here, but its distinctive character is less suited to an all-Linn system. You'll begin to talk about Armageddon power supplies, Prefix phono stages and Hi-Cap power supplies and before you know where you are only a handful of parts come from Glasgow. Not that this is a bad thing, but if you have already chosen Linn's way of doing things, why break up a beautiful relationship?



Bass desires

"If you seek a system that digs deep into dub Reggae, look elsewhere," said Alan Sircom, referring to the Meridian/Arcam/Triangle combination in issue 164's Instant System.

Could Alan put together a system of that very nature for people like myself who crave really deep bass? My personal budget is £1,500. Can you also recommend two or three examples of

large, high-quality 'satellite'

speakers for use with an active subwoofer of

the REL variety? Are satellites best pinned to the wall on

brackets, or can they be standmounts or even floorstanders?

D Pepper, Brighton

To get true deep and accurate bass is hard to achieve at any price: at £1,500 it is almost impossible. But here goes — try a Marantz CD-67SE hooked up to a Talk Electronics Storm 1 amplifier and a pair of Tannoy 635 loudspeakers. Ally this system to the new REL Q100e subwoofer and you have a system that can really grunt if required.

Most satellite speakers are designed to be used with a specific subwoofer. They are also considerably lacking in bass: satellites can be used almost anywhere. A few are worthy of note, however, and the most exciting at the moment is the Boston Micro 90 system. While one of the best satellite/subwoofer systems around it's no match for the sound quality the Tannoy/REL system could produce, no matter where the satellites are positioned.

Does digital do it better?

My current system is as follows: Micromega Drive 2 and DAC, Project 6.1 turntable with a Nagaoka Boron TP12 cartridge and Audio Alchemy VAC in the box, plus a Kenwood KX-7050S cassette deck. These are all connected to a Restek Challenger integrated amplifier and a pair of UKD Opera Callas Gold speaker cables bi-wired with Cable Talk 3 speaker cable. My room is 4.5m x 3.5m and heavily furnished with the speakers up against the wall on shelves.

I am happy with the sound from tape and turntable, but my problem lies with the CD player — I don't get a sound that justifies the cost. The turntable and tape deck sound almost as good as the CD combo. Can you give me some advice on what is wrong with the system, as well as some comments about the system as a whole?

Nazif, Bracknell, Berks

In many respects, that you like the sound from both your analogue sources says a lot about your tastes in this matter. While CD rules the roost when it comes to sources at the moment, there are many who prefer the sound of analogue — be it records or tapes. Such folks disregard background noise and bask in the musicality inherent to these non-digital systems. Fortunately, however, you have one of the least-digital-sounding CD combos around. I believe that careful use of cables and isolation platforms (I'd opt for the expensive vdH The First digital and analogue interconnects and a pair of Base baseboards) will give your CD the extra lift it requires.

In terms of the rest of your system, one obvious point is clear — get those speakers on stands. If it is at all possible, putting the speakers on heavy, high-quality stands (like Target's R1s) will transform the sound of your system, both on analogue and digital material.

Bi-Bi sound quality

My system comprises a Pioneer PD-S602 CD player, Arcam Delta 290 amp, Leak Sandwich loudspeakers (over 20 years old) bi-wired with Monster XP and Monster Interlink 300 interconnects and XP-HP speaker cables. I sometimes listen with my AKG 270 headphones.

I am using another integrated amp to bi-amp the tweeters (with the 290 driving the bass units). After I bought the 290, I found CD was not so satisfying. The treble lacks air and bass is not so rounded. I want to upgrade it without exceeding the 290's capabilities.

Recently I have seen that Pioneer's models are the basis of many modifications. Do you think I should relock my CD (perhaps changing its PSU as well) or add a £300 D/A converter?

I have auditioned the CD-63 KI Sig, Arcam 6 and Pioneer 904. The 63 gives bass but not good treble. The 904 could be a basis for future upgrades and has a coaxial output. I'd like to use the 290 for a few more years. Do I have to consider a player at more than £500? Dimitris Panagiotidis, via the Internet

Your system is doing a serious unbalancing act. Using a bi-amped system with two separate amplifier brands undermines the sound of the system, as you can never balance the output characteristics. If you have £500 to spend, an Arcam Alpha 9P or second-hand Delta 290P is more likely to benefit the sound quality in the long term.

I'd take a look at the Leak speakers. No matter how many modifications are made, the frequency extremes do not match up to today's models and the rubber surrounds will be rather aged. Look at a pair of Castle Harlech speakers as a possible replacement.

Only at this point would I suggest a CD player change. Rather than upgrading your player by Trichord modification or DAC, try something like the Pioneer PD-S505 Precision, Acurus ACD11 or Orelle CD-100e CD players.



To subwoof or not to subwoof

I begin with reference to your recent opinion on the Rogers LS3/5a "...a beguiling, but ultimately limited and compressed loudspeaker." I have a pair sitting on Partington stands, along with a Sugden A28 II amplifier and a Marantz CD-50SE, and I am looking at a general upgrade. The logical route seemed to be the Arcam 9/9P duo, Marantz 63 KI Signature and a pair of Rogers AB1 subwoofers.

Would this be the best way to advance the system? Or what would you suggest as a replacement to the Rogers? This hi-fi will be housed in a room of 4m x 7.5m with a 2.65m ceiling, the speakers facing across one end of the room approximately 3.5m apart.

John Moneta, Norway, via the Internet

First, while the LS3/5a sounds a little dated, it is still a classic product. The addition of the AB1 will add bass and make the mid-band more transparent, but may only offer short-term satisfaction.

However, to find a better speaker is so very subjective that one has to consider musical tastes, how loud you play your music and what you think about your existing speakers. The Harbeth HL-K6 may prove a perfect upgrade, as it sounds bigger, bassier and more dynamic. Or you may prefer the more vivid presentation of a Mission 753 Freedom, or the laid-back warmth of a Castle Harlech.



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Naim newcomer

I recently upgraded my old H/K PM660 integrated amplifier to the Naim Nait 3. The rest of my modest system consists of Monitor Audio 202s with medium-priced speaker wire and a Marantz CD-63SE with a Chord Prodac interconnect (a big help). Although my speakers are now very clear, they lack depth, imaging, and warmth. Very focused. I've heard a similar system driving MA's 703s and they sound pretty good. What speakers would you recommend? I would like to spend about £750.

Rick Shuster, Singapore, via the Internet

Before you change speakers, what medium-price speaker wire are you using? If it ain't Naim NAC A5 cable, change it. Naim amplifiers are designed to work with the company's own cable and unless you use NAC A5 — or a handful of similar cables like Cable Talk 3.1 — the results are unpredictable at best.

When it comes to loudspeakers, the obvious choice would be Naim's new Intro floorstander, but you might also want to investigate the Castle Harlech, Celestion A1, Neat Mystique, Mission 753 Freedom or the Spendor 2030.

Mission 753

An alternative to the Naim Intro. Mission loudspeakers work well with Naim systems.

Fishing for speakers

My system is a Sony CDP-561E, Pioneer A-400X and Fisher speakers. I listen to jazz and classical, so depth and detail are important.

I want to upgrade my speakers. My short list includes the KEF Coda 9, Sony SS176EB, Acoustic Energy AE109 and the Mordaunt-Short MS25i. My budget is £250-£350.

Which speaker could you recommend? I've tried listening to the Tangent Monitor 11, but the bass quality wasn't too clear.

Israel Idowu, via the Internet

The speakers are indeed the weak link in your hi-fi chain. However, speakers must also reflect the size of your listening room — a pair fine for a small room will be bass light in a larger one.

Assuming your room is of average British proportions then, I believe that you should check out the AE109 and MS25i from your shortlist, as well as trying a pair of B&W DM305s, stand-mounted Heybrook Heylios or even the Musical Technology Kestrel SE. Hook any of these to a set of Goertz or Kimber speaker cables.

HINTS & TIPS

CONTROL FREAK

Jimmy Hughes abandons hi-fi laws and extols the virtues of a tone control.

With transformer-coupled valve amps it's important to achieve a correct impedance match to the loudspeakers in order to ensure minimal losses of volume level. This doesn't apply to transistor amplifiers in quite the same way; in the latter, the current provided increases as the load impedance falls, giving increasing output levels providing the amp can maintain current delivery.

Some valve amps have several taps on the output transformer to allow the user to select the right impedance for the speakers being used. How to tell what's correct? Usually the tap that gives the loudest sound is the most ideally matched, and one might assume it would sound best.

However at a friend's house recently with Audio Innovations' Second Audio power amps, I found I preferred the sound of the lowest impedance output tap, even though this resulted in a loss of volume. Basically the sound was tighter and more controlled at the low impedance setting. Bass was firmer and cleaner and overall the music seemed subtler and more expressive. Rhythmically the music had more shape, and there was a greater sense of ebb and flow.

The loss of volume level was perhaps as much as 4dB to 6dB — quite a lot with less than 15 Watts, but using efficient speakers it was not a problem here. If your valve amp has several output taps, why not try them all and see what you think?

You know how we tend to use cables as tone controls to try and correct tonal aberrations in our systems for a truer, more natural balance? Well, have you ever thought of adding tone controls to your system for this purpose? Daft question, I know...

Musical Fidelity's X-Tone allows you to shape bass and treble extremes to give a more pleasing tonal balance. Of course we all know it's totally wrong to even think about using tone controls,

and a sign of manhood that your amp is as simple and purist as possible. But the X-Tone really does work. It has virtually no effect on things when switched out, so the purity of your signal is uncompromised. With judicious adjustment you can tailor the sound to correct for excessive brightness or heavy bass, and do so without adversely affecting the mid-range.

With three turnover frequencies to choose from, the X-Tone is far more subtle than ordinary tone controls which hinge around 1kHz and thus affect the midband. With the X-Tone you can roll off the extreme highs without dulling treble impact and tonal brilliance. Or boost the deep bass to bolster the bottom end of small speakers without creating boom.

At £129 it's a steal, and probably just what many systems are crying out for if only people knew about it. I've set mine to give a slight treble cut above 15kHz, plus a shallow bass cut below 120Hz. This brings the middle frequencies forward, firming-up the sound beautifully. There's no loss of articulation or brilliance, but the sound is definitely cleaner and more natural with it in.

You owe it to your system to investigate!

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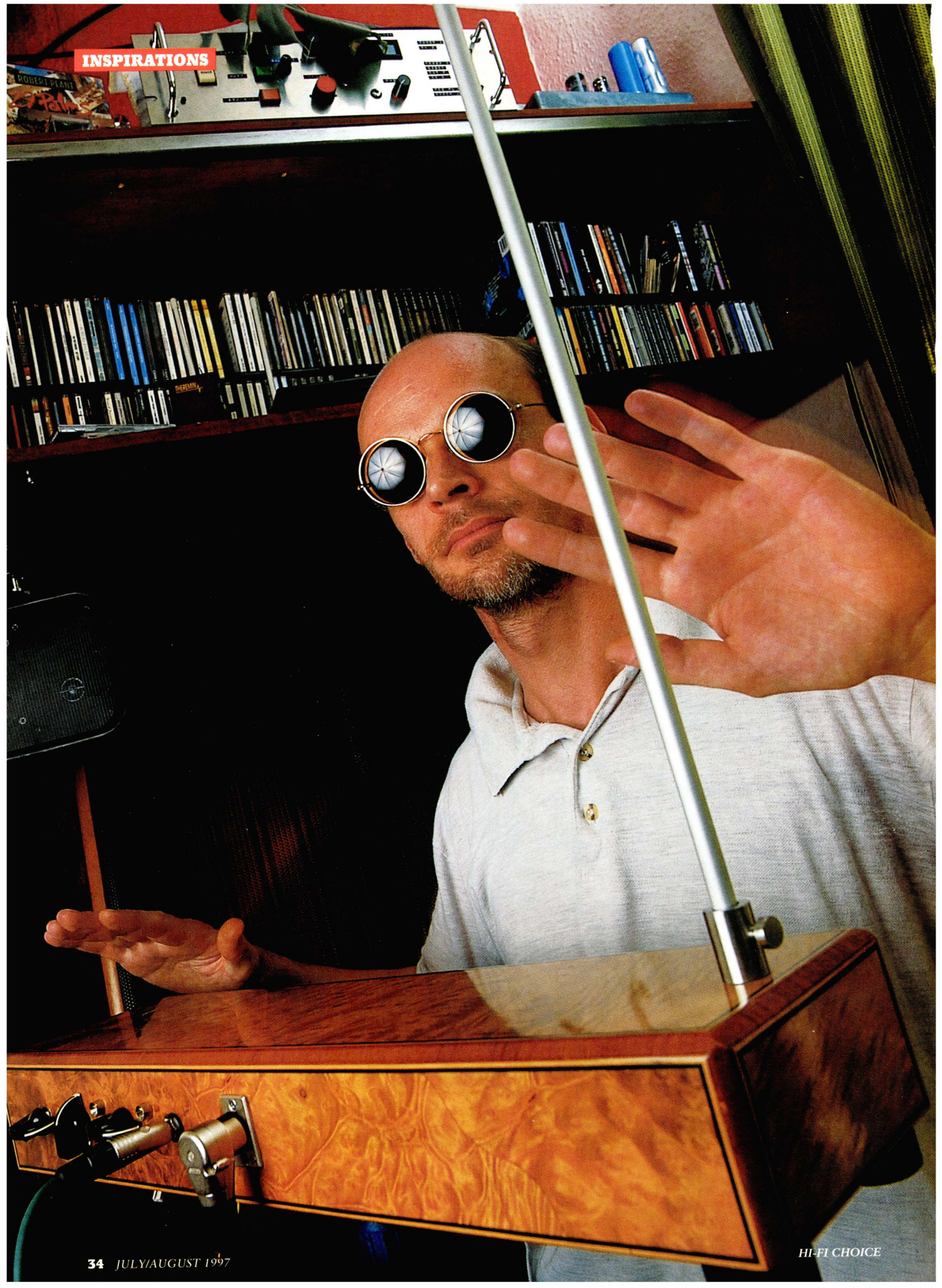


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Good vibrations

Remember the spooky warbles on the Beach Boys' *Pet Sounds* album? All down to the amazing Theremin, father of modern synthesisers, and now back in production courtesy of this month's Inspirations subject. **Jason Kennedy** reports.

The last few *Inspirations* candidates have been out-and-out hi-fi enthusiasts, so we decided — in common with the British electorate — that it was time for a change. This month's candidate, Barry Wooding, derives more pleasure from what he can produce with his hi-fi, rather than the kit itself. Barry works in the left field of the music industry, supplying ideas and unusual instruments to a broad

range of musicians. His client list includes such luminaries as Alex Paterson of The Orb, Julian Cope's soundscape meister Thighpaul Sandra, and old Led wallet himself Jimmy Page. What Barry sells is a version of an original electric instrument, the Theremin.

In November 1993, Barry saw a film about Leon Theremin, a Russian born in 1896, who in 1920 invented the extraordinary instrument which bears his name. To

generate its characteristically eerie, almost human-vocal sound requires no actual physical contact. Instead there are two antennae, one to control the pitch of the signal, the other to control volume. Mastery of Theremin technique requires the operator to stand stock still and exert almost superhuman muscular control.

The day after the film was shown Theremin died, and Barry became inspired



Barry Wooding's hi-fi spec includes a Sony TCK-611S cassette recorder and Sony TCD-D8 DAT recorder, feeding JBL Control Ones.

POWER AND PURITY



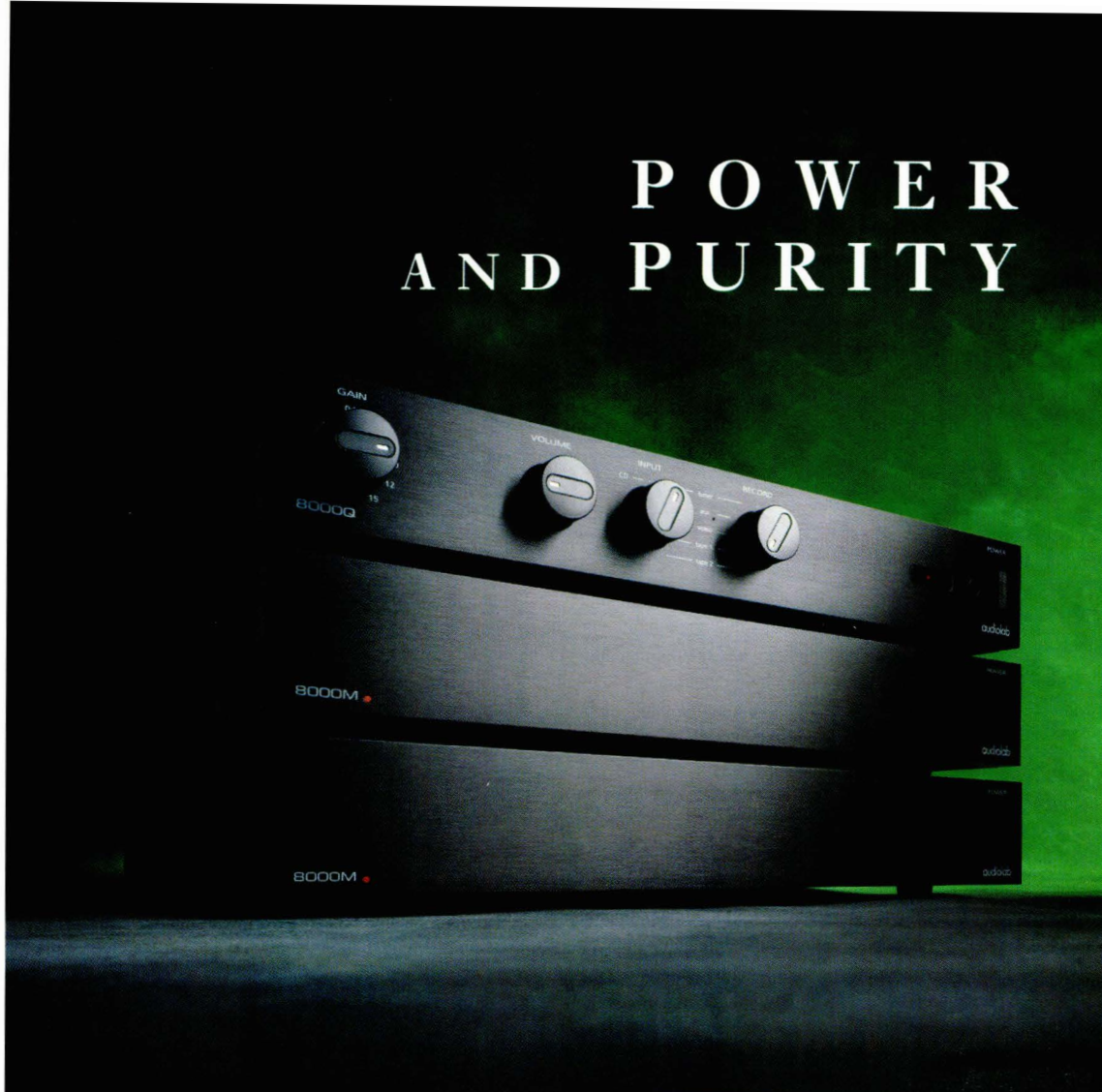
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Audiolab 8000S



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AUDIOLAB

◀ by the man and his extraordinary instrument. So much so, in fact, that he took it upon himself to obtain an instrument and record a tribute. This proved difficult: originals are scarce and fetch up to £10,000, and even Bob Moog's Big Briar Theremins are expensive and hard to find. So Barry decided to build one himself.

He met his partner in this venture, Jake Rothman, through an ad in a music paper, and the two of them formed Longwave Instruments. Since then the company has opened up a market for kit-form Theremins, and developed the pocket-size 'Thereman' which has an onboard speaker and an output for use with effects and amplification.

Barry is clearly a major fan of this peculiar instrument. He has contacted Leon Theremin's niece, Lydia Kavina, who has made records of solo and accompanied Theremin, and sent her a Thereman which she uses in lectures on the subject. Inevitably Barry has an extensive collection of discs showcasing the instrument, including the Beach Boys' *Pet Sounds*, which has a track specifically written for the instrument: *I Wasn't Made For These Times*.

Barry's attention was first drawn to the theremin when he saw the Led Zeppelin film *The Song Remains The Same*, in which Jimmy Page plays the instrument on an extended version of *Whole Lotta Love*.

Barry's Zep fever runs pretty deep, as illustrated by the evening of LZ music he organised with local bands — preceded by a solo performance on the Theremin!

Dual hi-fi

In effect Barry has two hi-fi systems set up in his child-proof studio (all the precious stuff is kept away from keen young fingers). The source roster includes a Sony ST-S370 tuner, Sony TCD-D8 DAT recorder and infra-red receiver, Denon DCD-920 CD player and Sony TC-K611 S cassette deck, plus two amp/speaker combos. In the red corner, JBL Control Ones and a Denon PMA-720 integrated chosen for its seven inputs; in the blue corner Quad ESLs, driven by a pair of EPE valve monoblocks (see below) and a passive pre-amp designed and built by Jake Rothman. Naturally this diversity lends itself to input permutation, but the current preference is for CD through the Quads, and everything else via the JBLs.

Jake's article on building the EPE appears in the June '95 *Everyday with Practical Electronics*; it sounds and looks like a neat, economical design. Two years ago the parts for one of these 25 Watts units cost £110, but bear in mind this amp is not a project for absolute beginners.

If Jake is the electronics brain in the crew, Barry definitely knows his marketing. His greatest coup was getting the chance to demonstrate his instrument to Alex Paterson shortly before a gig in Southampton and hearing it played on stage on the same night!



Top: Quad ESLs are Barry's CD transducers. Above: Longwave Instruments' pocket-size Theremin checks in at £99; the full-size version starts at £545. Sci-fi soundtracks ahoy!

Barry has set up his hi-fi rather like a recording studio without the mixing desk. Apparently he would rather have a preamp with myriad inputs and outputs — I'll bet this project is already absorbing Jake's spare time! The system evolved largely as a result of getting the best possible gear for the minimum outlay. Of course that's the way we all do it, but Barry's system contains more than a couple of second-hand units. The DCD-920, for instance, came with the amp, replacing a Marantz CD-65, and was much appreciated for the improvements it wrought. The whole system is supported on a tubular steel structure with three spiked feet and some decoupling for the box that supports the electronics.

The Quad ESLs (which will be augmented by a subwoofer in future) were supplied by Barry's mate at Beam Echo, a company that like Longwave Instruments has devoted itself to the resurrection of historical

electronic products (valve amps, actually, manufactured with more concern for authenticity than economy of production). Barry's Theremins are not slaves to the original valve technology with which they were conceived, which is why he's able to produce the pocket unit for £99 and the full-size device (in leather finish) for £545. I believe the craftsman-built marquetry cabinet in the pictures is more expensive. Longwave Instruments is clearly in touch with the modern musician's requirements, however, and offers a MIDI/CV interface for the Theremin to facilitate sampling of the instrument's continuous pitch-bending capabilities.

Barry and his pals have picked a good time to start making their Theremin — demand is high from bands like Pulp, Blur and Portishead. (On the latter's *Dummy* album a synthetic Theremin did the honours in the absence of the real McCoy). It's thought there are only 70 of Theremin's original instruments left in the world, with artists like Brian Eno among the users.

Barry's head resounds with novel ideas. Launching a receiver into space to capture broadcasts from the past, anyone? But it's only by thinking like this that one day he'll hit on a lucrative idea that everyone else has written off. His system might not admit him to the Audio Maniac Society, but his retro-eclecticism is enough to bestow honorary membership. All together now: ooooooee...
Longwave Instruments ☎ (01425) 610849 ▲

Tweaking For Pleasure

Hi-Fi Choice brings you a one-stop guide to all the best tweaks and accessories!

The joy of hi-fi separates is the way you can fine-tune them to your own musical tastes. Accessories, the little things, are the nuts and bolts in the fine-tuner's tool-kit. And many hi-fi fans discover that before long, a whole new hobby develops in experimenting with accessories, buying new widgets and swapping them with friends. This is known as tweaking, and its remit extends from cables to contact enhancers. In this feature we've condensed into six pages a complete beginner's guide to accessories and tweaking. There's a contents list (see right) detailing the areas we've covered. Where applicable we've reprised products already reviewed in *Hi-Fi Choice*. Otherwise we've trawled the most eclectic regions of hi-fi to report on the gizmos and gadgets that await your pleasure. This is all about personalising your hi-fi system; it is all about making your mark as an audio individual. Experiment, peruse, reflect and enjoy!

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SPEAKER STANDS

It's generally accepted that speaker stands make a difference to the sound of any speaker, for two distinct reasons. First, the height of the speaker above the floor makes a difference to its bass response and general clarity of sound. This is due to the effect of reflections from the floor reaching your ear and adding to the direct sound from the speaker. Even so-called floorstanding speakers benefit from being hoisted off the floor. Speaker elevation is definitely worth experimenting with. It can also affect the amount of extreme high frequencies (HF) reaching your ear, since few speakers have uniform vertical response off-axis at HF.

Second, the stand acts as a vibration coupling between the speaker and the floor, affecting not only the output from the speaker cabinet but also that of the floorboards and indeed the stand itself. The business about 'rigidly fixing the speaker to the floor' could be a red herring, though; in fact some prefer to insert a thick piece of high-density

foam rubber between speakers and stands to keep vibrational energy out of the floor.

A further, largely ignored effect of stands is speaker tilt. Due to the construction and crossover alignment of many two-way speakers, the best driver integration occurs on a line tilting downward from a point between the drivers. If the speaker is tilted back, this line will become horizontal and point at the listener's head.

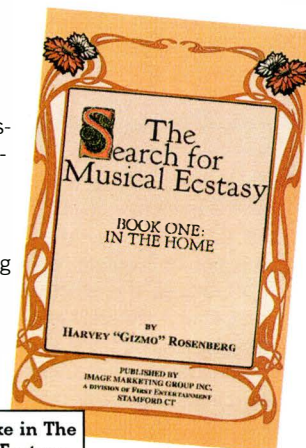
Unfortunately, some high treble will probably be lost so the ideal amount of tilt should be set by ear. It's an easy thing to experiment with, though — you'll need some cones, as pictured right.

Not surprisingly, speaker stand performance varies with the speaker that's put on it, but the following models have done well in *Hi-Fi Choice* tests: **Atacama SE24** (61cm high, £69.99); **Kudos S100** (63cm, £269.95); **Partington Discovery** and **Trophy** (£79.90 and £99.90); and **Soundstyle 124** (65cm, £100).

ESSENTIAL READING

If you like hi-fi but can't understand the tweaker mentality, this'll enlighten you. **The Search For Musical Ecstasy, Book One: In The Home** is Harvey "Gizmo" Rosenberg's sprawling eulogy to the pursuit of hi-fi as a "typical male monumental activity". Either you'll love Gizmo's relentless philosophising about music and male bonding — the "expanded gizmological metacontext" — or you'll gag on his endless drug, sex and Harley-Davidson references. Be prepared for a no-compromise puff for valve amps (of which the author was once a manufacturer, natch) and an omnipresent undercurrent blaming women for spoiling men's audio fun. Recommended for the broad-minded reader, but don't take it too seriously!

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You too could partake in The Search for Musical Ecstasy.

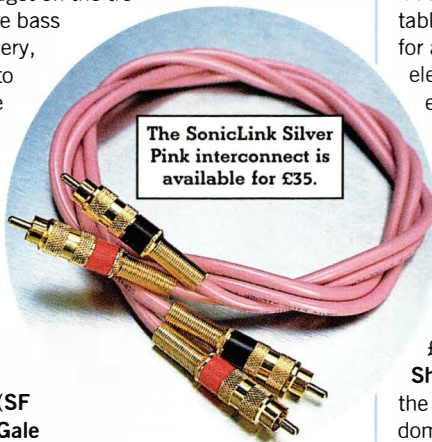


The shiny Soundstyle 124 stand — a Hi-Fi Choice Best Buy.

CABLES : SPEAKER AND INTERCONNECT

Cables are apt to be a huge minefield, and the choice available is pretty bewildering. As with special supports, benefits are hard to prove but often easy to hear; unfortunately they also depend heavily on the precise circumstances, hence the many cables available. Generally, with better cables you can expect to hear more subtle information in your music. You may also find a slight change in tonal balance, but be careful here: what at first sounds impressive can in time become tiring. Home audition is ideal, and many dealers will allow this. If you live near any kind of radio transmitter unshielded interconnects are not recommended — ferrite clamps (see p40) can also help here. Bi-wiring, where separate speaker cable runs are used for treble and bass drivers (if the speaker has the appropriate terminals, as many do) can give worthwhile gains, although of course it increases cost. A hot tip here is to use a cheap cable for bass and spend most of the budget on the treble cable; the benefits this can give to subjective bass quality are surprising! For the ultimate in tweakerly, remove the speaker's crossover and put it next to the amplifier, using separate, high-quality cable runs from it to each driver. Of course, this will invalidate any warranties in effect.

Cables noted in *Hi-Fi Choice* tests include interconnects from **DNM (TCC75, £34)**, **Ixos (104, £19.95; from Path)**, **Linn (£47)**, **SonicLink (Silver Pink, £35)** and **XLO (Type 0.1, £180)**; digital interconnects from **Audioquest (Video Z, £60)**, **Audio Note (AN-V, £219)**, **DPA (Digi-Link, £27.50)**, **The Chord Company (Prodac, £50/50cm)** and **QED (£19.95)**; and speaker cables from **Bandridge (SF LC1259, £1/m)**, **DNM (LSCB500, £6.95/m)**, **Gale (XL315, £1.99/m)**, **Ixos (603, £2/m)**, **Sonolith (Monolith 20/20, £40/m)** and **Sonic Link (AST50, £2/m)**. See also this month's tests (p46).



The SonicLink Silver Pink interconnect is available for £35.



ISOLATION RESOURCES

An isolation platform might be little more than a paving slab or a headstone — but we recommend paying a visit to a monumental mason, as grave-robbing is still illegal.

Platforms are also designed to act as a form of suspension, damping the effects of vibration with springs, elastic materials or even air bags. Often they'll take the form an MDF sheet with springy feet like the £35 **Mission Isoflat**, but as the price increases, so does the level of sophistication. Other products to try include the £60 **Audiophile Furniture Base**, the

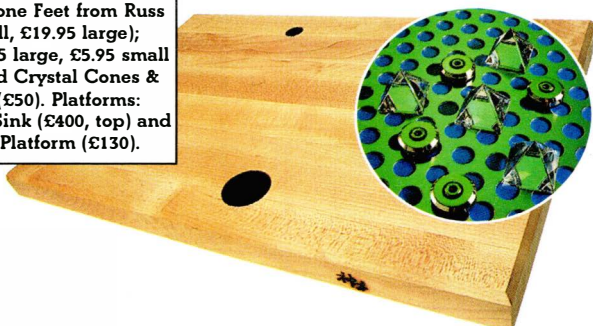
£129 **Perfect Sound**

Absorber Platform from Goldring and the £150 **Acoustic Precision Inertial Slab**.

High-end supports use everything from air-suspension (the £400 **Townshend 3D Seismic Sink**) to glass, MDF and steel (**Mana Acoustics' £125 SoundFrame**) to isolate the product from its surroundings. Others, like the £130 **Shun Mook Isolation Platform** (via **Audiofreaks**) use wood and other materials to tune system resonances.



Cones, from top: Oak Cone Feet from Russ Andrews (£14.95 small, £19.95 large); Michell Tenderfeet (£8.95 large, £5.95 small for three); Perfect Sound Crystal Cones & Discs from Goldring (£50). Platforms: Townshend 3D Seismic Sink (£400, top) and Shun Mook Isolation Platform (£130).



No self-respecting hi-fi home should be without the Cardas Sweep record, Densen DeMagic CD or Russ Andrews CD Cleaner.

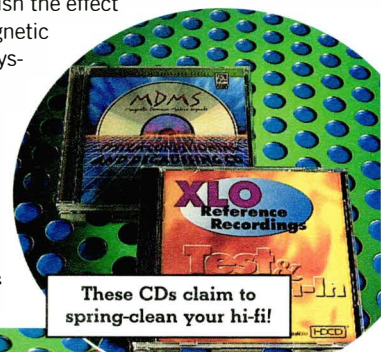


WIDGETS

Welcome to the Twilight Zone of hi-fi, where scientific explanations are thin on the ground and arcane principles rule. Take the **Bedini CD Clarifier** (Pear Audio) for example. Priced at £59.95 for a hand-held version, or £149 for a table-top device, this US-built unit spins your CDs for about 20 seconds, and in doing so claims to electromagnetically 'polarise' stored data to enhance it. Sounds kooky, but golden ears reckon it works, if only on some discs.

A number of special CDs are available that claim to banish the effect of unwanted magnetic fields from hi-fi systems. **Densen's DeMagic** (Moth Marketing) costs £10, while

Sheffield Labs offers the **MDMS** (magnetic domain matrix signals) **System Conditioning & Degaussing CD**



These CDs claim to spring-clean your hi-fi!



The £25 Milty Zerostat 3 once zapped static out of vinyl! — can it do the same for CDs?

(£24.95), and **XLO/Reference Recordings** has a **Test & Burn-In Disc** (£25) — both from Wollaton Audio. All of these CDs contain special signals to play through your system and give it a good clear-out, like a spring clean for its internal workings. Analogue enthusiasts can join in the fun with the **Cardas Sweep** — this £15 LP is claimed to de-gauss whole systems and demagnetise cartridges (Audiophile International).

Complete system demagnetisation can be achieved with the **Gryphon Exorcist** (£69, Moth Marketing). An active device sends a signal through the system with the aim of improving clarity and instrumental separation.

Cable itself can be tweaked with **Nordost's ECO 3** static inhibitor (£29.99, QLN UK Ltd) which claims to reduce your system's noise floor by zapping stray static built up in the insulation. You can even treat the label side of CDs!

The **Milty Zerostat 3** (£25, Goldring), originally developed to reduce static on vinyl, claims benefits can be had by 'statting' CDs. Given that two companies are claiming static is an issue with CDs, perhaps there's something in it!

MAINS SUPPLY

The whole business of mains cables, mains plugs, fuses and other such tweaks must be prefaced by a very important note on safety. MAINS VOLTAGE CAN KILL! And mains current can cause fires and damage to equipment if treated without respect. If you have the slightest doubt about the correctness of what you are doing, leave well alone.

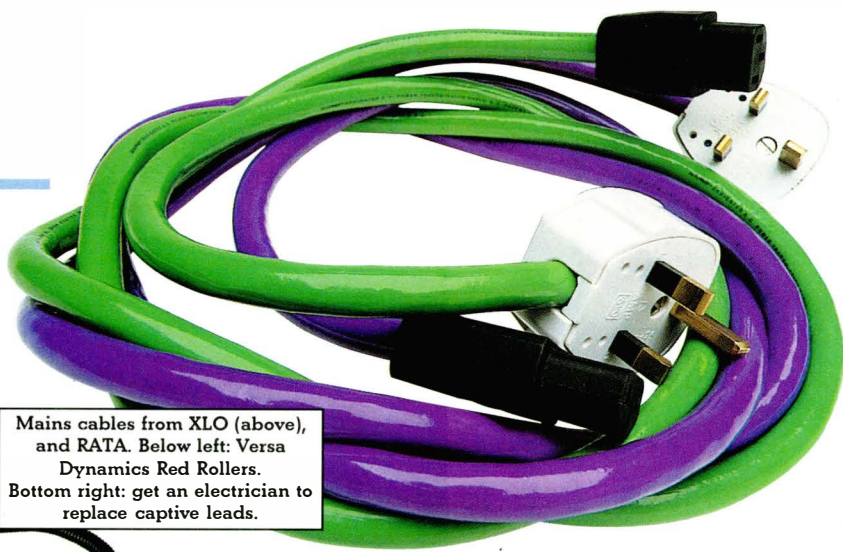
The jury is still out on mains tweaks, maybe because mains cable 'sound' comes from reactions between the cable and the mains transformer, rectifier and storage capacitors in the equipment, which will make results variable between components.

Souped-up mains cables can certainly make a difference to a good system, and as long as your equipment has an IEC mains inlet, this is a very simple and safe tweak. Replacing captive mains cables is not a good idea unless you are highly experienced in electronics. Expect to pay between £25 and £100 for most mains cables; brands to look at include **SonicLink** (vast range), **Kimber** (e.g. **Powerkord 4TCM**, £60/3ft), **XLO (PL10)**, £225/6ft and **PL1000**, £125/6ft), **Living Voice** (£69), **Kebelwerk** (which has an RF filtering effect, Kronos) and **DNM** (£25).

Most special mains cables come fitted with plugs. These often feature precious-metal-plated pins; corroded contacts passing electric current are a great source of radio frequency interference. These tend to cost from £20 upwards. Dedicated tweakers adopt theatre-lighting-style 15A round-pin plugs, which are unfused and so should be used with high current cable, giving greater contact area and reliability. **SonicLink** has a range of rhodium plugs and **Kontak** from Path does a gold plated MK plug for £13.95.

Fuses are a necessary evil, protecting against fire risk if various components should fail. Don't be tempted to remove them. However, you may wish to replace fuses with special 'audio-grade' types having gold-plated ends.

These are made by **Bussmann**, one of the world's largest fuse manufacturers, and should be on sale by the time you read this. Alternatively, the experienced might try replacing equipment fuses with thermal circuit breakers, which are supposed to sound better (available from **Farnell Components**).



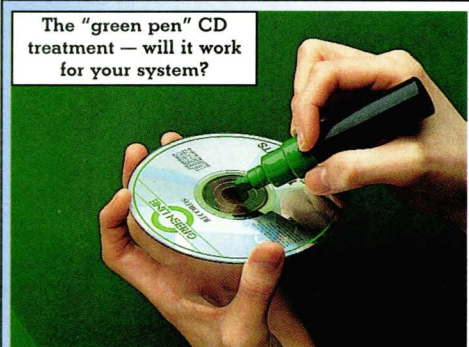
Mains cables from XLO (above), and RATA. Below left: Versa Dynamics Red Rollers. Bottom right: get an electrician to replace captive leads.



Mains filters are available in various forms, including filtered plugs (e.g. the **RATA Superclamp** plug, £15.95), filtered distribution boards (e.g. **Kimber 6-way** £199/3ft also from RATA), standalone boxes (e.g. **Acoustic Precision Black Box**, £149) and replacement mains inlet sockets (RATA). **Schaffner** inlet filters feature inductors on all three mains lines — many filters do not have one on the earth wire. Note that noisy thermostats etc. should be treated at source; ask an electrician to fit a suppressor to the contacts.

The simplest filter is the ferrite clamp, a split-sleeve made of ferrite magnetic material, clamped over any cable near its entry. **Tandy** clamps are about £6/pair, **Townshend Purifiers** are £12/pair, **Versa Labs Red Roller** £99/pair, and **A.R.T. Q-Ring** £12.99. They can be fitted and removed in seconds and are safe. They are also suitable for interconnects and speaker cables.

Finally in this area, two really dedicated tweaks. Some folks go to the trouble of having a separate mains spur run from the switchbox to the hi-fi, to avoid some of the contamination due to other electric equipment in the house. This is expensive and troublesome and should be left to a professional electrician, but can be worthwhile. Good results have also been reported from a separate external earth spike hammered into the ground and connected in parallel with the mains earth. If you want to give it a try, RATA sells a suitable spike for £28.95.

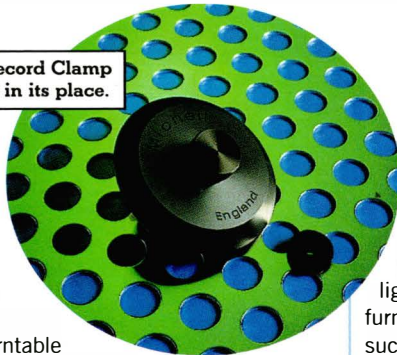


The "green pen" CD treatment — will it work for your system?

FIVE FREE TWEAKS by Jimmy Hughes

- 1) It caused much hilarity at the time, but giving your CDs a brief spell in the freezer is a worthwhile thing to do. The secret is to allow the disc to reach room temperature as slowly as possible after freezing (wrap it in a cold towel and slowly 'thaw' in the fridge) then take out the disc, still wrapped in the towel and leave for about 12 hours. Result? A slightly cleaner, firmer sound, with greater immediacy and control.
- 2) Putting green ink from a felt-tip pen around the circumference of a CD is another worthwhile and inexpensive improvement, as is keeping the disc surface clear of scratches, dust and fingermarks. It's not free, but **Russ Andrews' Reveel** cleaning fluid is superb at taking off surface debris, leaving even new CDs looking and sounding noticeably cleaner and more transparent.
- 3) If your CD player has a display-off facility, you may find things sound a little bit cleaner with the display extinguished. Putting shorting plugs into unused digital output sockets (and unused amplifier signal inputs) also helps improve clarity. Also, some inputs on an amplifier can sound better than others; so if CD is your main source listen to it through all available inputs and see what you think. Often 'tape monitor' sounds best, because it provides the shortest signal path, avoiding the main input selector.
- 4) Integrated amps with two sets of speaker outputs, A and B, sometimes sound better on B, because these terminals are closer to the main circuit board and thereby have a shorter signal path. However, if set A is designated 'direct', they should sound best.
- 5) Equally don't just assume speakers always sound best with their grilles off; tonally the sound may seem more open and perhaps slightly sharper, but see if the overall sound isn't more integrated with the grilles in place.

Michell's Record Clamp keeps vinyl in its place.



TURNTABLE ACCESSORIES

Audiophiles bemoan the demise of the turntable as the most tweakable hi-fi component in the system. Operating on relatively straightforward principles, the turntable offers tremendous scope for experimentation. Metal parts of the plinth can be damped with sheeting, as can platters, so long as you are careful to apply it evenly.

A.R.T. makes graphite Q-Dampers in the form of the **Head** (£17.99), a lump that sits between cartridge and headshell, and the **Disc Q-Damper** (£169), which is a record clamp. **Shun Mook** (Audiofreaks) also makes a record clamp, using rare hardwoods. It has damping qualities and improves record-to-platter contact, and costs £600. The best-value record clamp we've seen is the **Michell**; at £20 this is a steal.

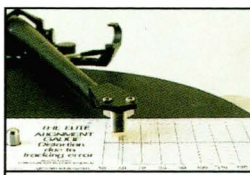
Mats are another area of interest. **Nottingham Analogue** offers the graphite **Space Mat**, while the **Ringmat** (from RATA) does the same but is made of a cardboard disc with cork rings to decouple and damp simultaneously. These are claimed to redefine the art of turntable matter; prices start at £27.50 for the **200** model.



The Mana Spirit Level: every deck deserves one!

Tweaking turntables requires a number of specialist tools, including a stylus gauge like the classic **Shure** design available from **Moth** at £12.95. A particularly essential tool is the **Mana Spirit Level** (£25)

which sits on the spindle to allow perfect suspension levelling. Cartridge alignment can be tricky but the **Polaris** protractor (£7.95) from **Russ Andrews** makes it pretty simple. The same company also supplies the **Armony** arm base which gives Rega arm users the freedom to adjust VTA.



Get your needle perfectly aligned with a protractor.

SOFTWARE STORAGE

Collect a few CDs and you have a storage challenge — both for discs within their protective jewel cases and those travelling light for a listening session. CD storage furniture is readily available from stores such as Ikea, Habitat and the John Lewis Partnership, but those who can afford something better might consider the wares of cabinetmakers such as **Philip Koomen** (01491) 681122. His new CD cabinet holds approximately 284 CDs and 96 cassettes, is finished in walnut with boxwood, and commands the princely price-tag of £3,720.

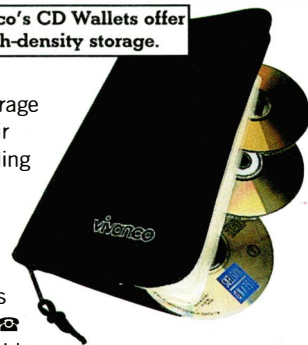
Another hand-crafter is **Ian Edwards** (01423) 500442. He offers a large range of real-wood-veneered storage furniture, for example the £880 **Charlotte** chest of drawers (480 CDs and 75 cassettes) or the £2,250

Wizard that takes 1,550 CDs. Those in seeking more contemporary design should check out the **KDA 'W'** rack for walls or shelves at £45 per 60 discs (0181) 806 2515.

Case Logic offers a number of CD storage solutions for fixed and mobile applications. The range, distributed by Path, varies from bags to carry jewel-cases, disc-only wallet systems, the 120-CD **Skydisc** storage tower (£69.99), and **ProSleeve**, in which disc and booklet slide into an index-card-style holder. 30 ProSleeves and a carry case cost £17.99.

The **CD Projects** system from **Bib** also relies on individual sleeves for discs and booklets, and provides a variety of filing systems both desk-top and wallet based. Pictured is the **CC-24** carry case (£9.99) and **RDC-25** home storage unit (£12.99).

Vivanco also has a range of CD wallets and jewel-case carriers.



Vivanco's CD Wallets offer high-density storage.



Bib offers the CD Projects range of CD sleeves.



CD jewel cases ensconced in a Case Logic carrier.

CONTACT ENHANCERS

Unless you change cables on a regular basis, all of your plugs and sockets will tend to oxidise and thus reduce the quality of electrical connections they are making. This applies all the way down the chain, from mains plugs and sockets, through interconnects between components, to speaker cables. The simplest way to improve contact quality is to remove and re-insert all of your plugs once every few months, however, using a proprietary cleaning fluid should prove even more effective.



Kontak cleaner brings a sparkle to plugs.

There are plenty of different types to choose from and many alternative application methods to boot. **XLO TPC** (£1.50) is a moist tissue, so you don't need a cloth to wipe with. **Russ Andrews** seems to specialise in cleaners with one for every occasion; **Deoxit** (£13.95) is a spray that's suitable for any type of plug or socket whereas **Pro-Gold** mini-spray (£13.95) is specifically for plated surfaces such as gold phono plugs. Russ also does **Caig Cramolin** (£29.95), a two-part deoxidiser and contact enhancer. **Reson's Licon** (DNM, £22) is claimed to fill in the microscopic fissures in the contact surface and increase contact area. Alternative cleaner brands include Path Premier's **Kontak** (£14.95) and its extensive **Allsop** range.



Deoxit from Russ Andrews (above) can be sprayed on any plug or socket. Reson's Licon (left) claims to fill in microscopic fissures.

Wall to Wall Magic!



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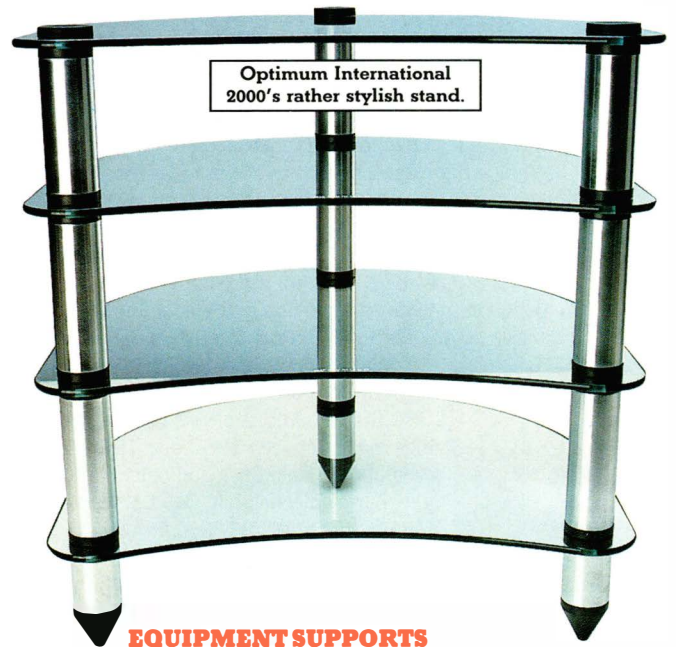
JBL, HARMAN/KARDON, JAMO, BOSTON, B&W, KENWOOD, PIONEER, PROCEED, REL, ROTEL, G.E., SHARP, DALITE, RUNCO.

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RATA's Ringmat range works for LPs and CDs.



Optimum International 2000's rather stylish stand.

DAMPING

Perhaps the main sources of distortion within hi-fi components are the resonances created by the music being reproduced. The case-work and components all react with the energy produced by the speakers, and damping can be used to minimise this effect.

Damping products come in a variety of forms, the most common being soft rubbery materials such as **AudioQuest Sorbothane** and **Spectra Dynamics' Deflex**, which are designed to turn energy into heat. Used in sheet form these materials can be stuck onto casework panels and even individual components, so long as you avoid the ones that get hot. Adventurous souls can try it on integrated circuits' chips and parts of CD transports. The damping panels sold in car parts shops can also be used for the same purpose.

Valve damping can be achieved with **Pearl Coolers** from **Russ Andrews**. These improve cooling efficiency, and the rubber rings used to hold them on offer a degree of damping. Prices start at just over a fiver.

CDs can also be damped, either with stick-on devices or with a mat such as the **A.R.T. Q-Damper**, which also claims to stop electromagnetic radiation. Neither of these are compatible with Pioneer's Stable Platter CD players.



Pearl Coolers keep your valves from overheating.

EQUIPMENT SUPPORTS

Equipment supports work by reducing the amount of external vibration (from all kinds of sources) reaching your hi-fi equipment. The extent and type of this effect depends on the equipment in question, with the greatest benefits occurring in turntables, particularly in those with little or no suspension. However, it seems that even amplifiers, and certainly CD players, can benefit also. Some supports, such as the various **Townshend Seismic Sink** models (£110 upwards), seek to provide mechanical isolation by the use of springs, damping materials and other kinds of decoupling, while others such as the **Mana** range of supports (e.g. **Reference Table**, £350, or **5-Tier Sound Table**, £600) act effectively as tuned filters. Try also the **Quadraspire Q4** rack (£200), **Sound Organisation Z560** (£150) and **Optimum International 2000 OPT490** (£349.95 and unusually stylish).

SOFTWARE CLEANING

CDs are almost as susceptible to dust and damage as LPs. Mould-release agent, fingerprints and general goo all get in the way of good sound.

Cleaners fall into two camps. Some strip away accumulated gunk: the £14.95 **Reveel** from **RATA**, the £7 **Milty** wipes from **Goldring** or **AudioQuest's** £14.95 **LaserGuide**. Others fill in minute scratches and divots in the polycarbonate itself, such as **Allsop's** CD restoration kit for £12.99.

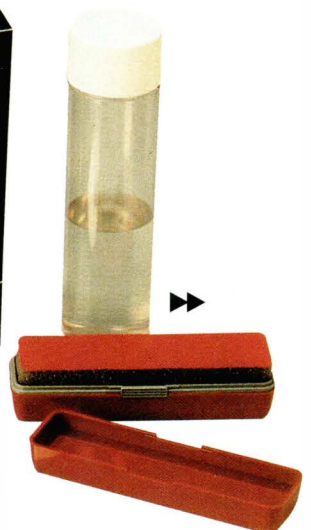
Keep your LPs clean with a swipe of carbon-fibre brush. Go for a good one, either **Decca's** £12.95 mk 3 brush (**Moth**) or **Milty's** £12

Permaclean, which comes with a cleaning fluid.

An occasional clean with a wet record cleaner is also useful. The most popular ranges still available are **Nitty Gritty** from **KJ West One**, or **Moth** and **VPI** (from **Vinyl Demand**). These vary in price from £220 for the **Nitty Gritty Basic** cleaner up to £799 for the professional **VPI HW 17 F**.



CD repair kits: Allsop has an extensive range.



Russ Andrews' CD Cleaner pack — every emollient a CD could need!



The Allsop CD micro-fibre cleaning cloth.

ULTIMATE ACCESSORIES

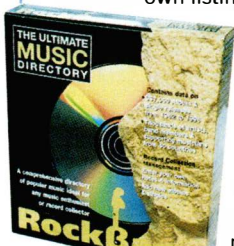
AudioFile record-cataloguing software

PC SOFTWARE

How do you catalogue your software collection? On your PC, no! Well you could do it easily with **Dobleware's AudioFile** database. This US software (available in the UK for \$50 inc. shipping) runs on Windows 3.1 upwards and makes light work of designing databases for records, CDs, tapes etc. Its standard categories cover everything from title to genre, price paid and where kept. If you want to add fields of your own, you can do that too. It includes pretty well everything the avid record collector might consider. Fax +1 (216) 871 2242 for more info.

If you just want the info and can't be bothered with creating your own listing, the £39.95 **RockBase Plus** CD-ROM for DOS or Windows-compatible PCs is probably right up your alley. With information on over 330,000 albums, it covers popular recordings made between 1952 and 1996. You can even update RockBase and personalise it to suit your own collection. Call **Cravenplan Computers Ltd** ☎ (01895) 444603.

If you've got access to the Internet and newsgroups you'll hook up to a plethora of tweaky tips. Just conducting a Web search on 'tweaks' elicits several interesting pages on the topic, one being Better Hi-Fi Sound — Tweaks & Ideas, at <http://home.pacific.net.sg/~erickoh/hifitweaks.htm>.



Rockbase is every trivia geek's ideal CD-ROM!

GREAT TWEAKERS IN HISTORY by Jimmy Hughes

■ **Enid Lumley** became something of legend on both sides of the Atlantic, for her highly individual approach to hi-fi. Clearly hypersensitive, she told us to hang our cables via thread at precise distances, and reckoned to be able to tell by the way her system sounded whether her electric power was supplied from coal, gas, or nuclear power stations. Once she transformed a mediocre sound at a hi-fi show into something good simply by removing a picture hanging on the wall!

■ **Peter Belt** sees himself as the man who discovered a wholly new science of perception and understanding. In the late '80s he 'treated' the room used by *New Hi-Fi Sound* magazine at one of the London hi-fi shows, transforming the sound from 'lost cause' into one of the best demonstrated that autumn. His methods included 'polarising' everything from water and lightswitches, to a cream for lightbulbs! Nowadays he's keeping a low profile.



One of Peter Belt's arcane system enhancements.



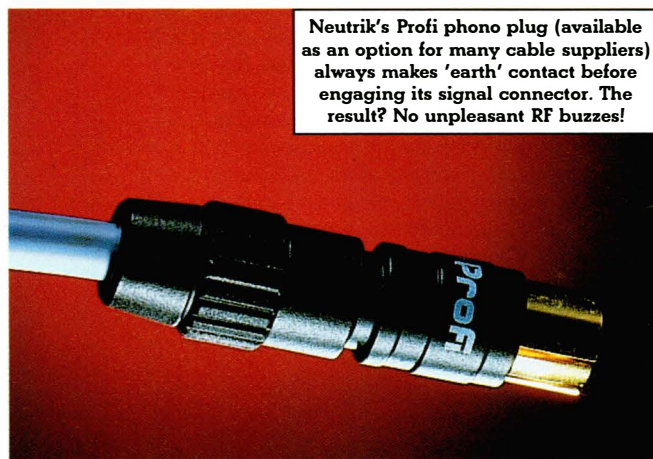
WBT phono plugs and sockets.

PLUGS AND SOLDER

Standard solder uses lead, but an alternative is silver solder from **WBT** (Path Premier) at £7.95 or **Audio Note** at £23.44 for 50g. Or why not try the low-lead **Wondersolder** by RATA, for £2.35/m?

You can also upgrade phono plugs and the sockets they mate with. Try **Audio Note's** £30 **AN-P** plug and £4.29 **AN-CS** socket, **WBT's** phono plugs (from £50 to £73 per quartet) and sockets, and the £11.75 **PureSonic 6123** metal-bodied phono plug from **Tech+Link**.

If your amp accepts 4mm speaker connections, change your plugs to solderless cold-welded **Airloc** plugs (£2.50 inc fitting) from **QED**.



Neutrik's Profi phono plug (available as an option for many cable suppliers) always makes 'earth' contact before engaging its signal connector. The result? No unpleasant RF buzzes!

CONTACT NUMBERS

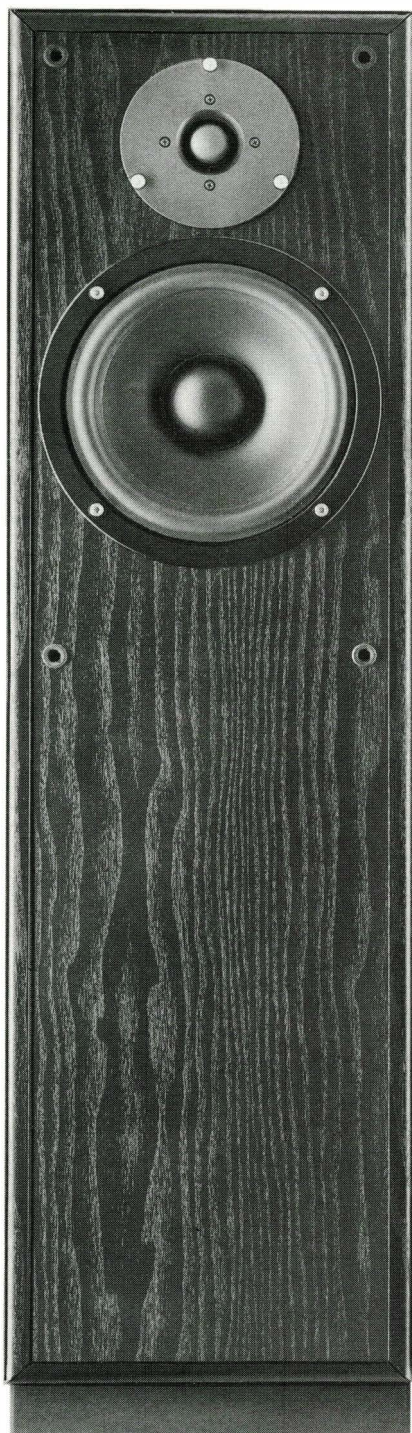
Acoustic Precision (01483) 267516	Mission (01480) 451777
Allsop (0121) 749 2240	Moth Marketing (01234) 741152
A.R.T. (01359) 240687	Neutrik (01983) 811441
Atacama (01455) 283251	Nottingham Analogue (01773) 762947
Audiofreaks (0181) 948 4153	Optimum International (01274) 583249
Audio Note UK (01273) 220511	Partington Discovery (01322) 383712
Audiophile Furniture (01342) 826262	Path Distribution (0121) 749 2240
Audiophile International (01276) 855578	Path Premier (01494) 441736
Audioquest (01223) 440964	QED (01276) 451166
Bandridge (0181) 543 3633	QLN UK Ltd (01352) 730251
Bib (01442) 233233	Quadraspire (01634) 296615
Bussmann (01509) 882737	RATA/Russ Andrews (01539) 823247
Deflex (01745) 360070	Schaffner (0113) 263 6311
DNM (01277) 227355	SonicLink (01332) 674929
DPA (01222) 795621	Sonolith (0171) 247 0813
Farnell Components (0113) 263 6311	Sound Organisation (01284) 701101
Gale (0500) 101112	Soundstyle (01284) 70110
Goldring (01284) 701101	Tech+Link (0181) 771 8388
Ixos (0121) 749 2240	The Chord Company (01722) 331674
KJ West One (0171) 486 8262	Townshend (0181) 979 2155
Kronos Distribution (018687) 48632	Vinyl Demand (01425) 654545
Kudos stands (01903) 750750	Vivanco (01442) 231616
Linn (0500) 888909	Wollaton Audio (0115) 9284147
Living Voice (0115) 981 3562	XLO (0115) 928 4147
Mana Acoustics (01753) 655744	
Michell (0181) 953 0771	



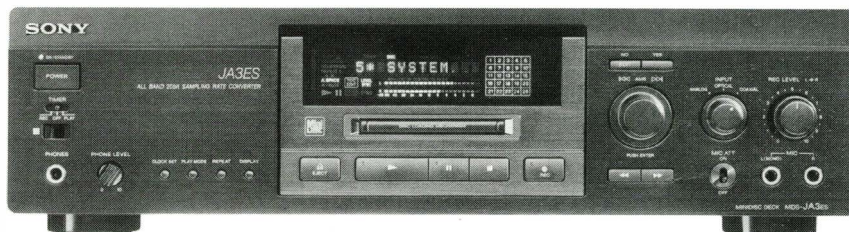
WHAT HI-FI?

Déjà vu.

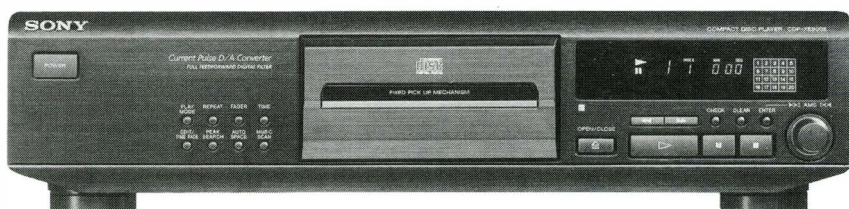
Last year we became the first ever manufacturer to gain five stars for five separates. This year we've done it again. We're speechless. We'll leave it to "WHAT HI-FI" to say a few words.



TA-F448E AMPLIFIER. "...sounds clean and totally in control. This amp is good – very good." (JULY '96)



MDS-JA3ES MINIDISC SYSTEM. "The Sony makes recordings virtually indistinguishable from the original!" (DEC '95)



CDP-XE 900E CD PLAYER. "...feels built to last, looks smart and sounds very classy: it deserves to do well!" (AUG '96)



TC-KA6ES TAPE DECK. "...a very superior piece of machinery. Superbly built, this deck mixes luxury and functionality." (JUNE '96)

SS176EB SPEAKERS. "...their space, presence and rich authority make for a wholly satisfying listen." (SEPT '96)

SONY

*Sony is a trademark of the Sony Corporation, Japan.

Wired science

Everyone wants to upgrade without breaking the bank. **Richard Black** (listening test) and **Paul Miller** (lab test) show you how with a selection of speaker cables.

Nearly two decades after the original cable 'heresy' was first propounded, now it is widely accepted that cables *do* affect the overall sound of a hi-fi system. At the simplest level, speaker cables of great length and/or very small cross-section will have enough resistance to alter the frequency response of most loudspeakers by a significant amount, but even when these variations are held to vanishingly small levels, many listeners still report upon very noticeable differences between cables.

Do these differences really exist? Despite the evidence from many pro-audio, double-blind tests to the contrary, anecdotal evidence from the hi-fi community is, I think, overwhelming. Cables do have an effect. However it's difficult to be sure whether a change is in fact an improvement. Also, a cable might turn out to be complementary

to one kind of system but unsatisfactory in another; or does it just hide or cancel some particular weakness? It's a can of worms.

In the best *Hi-Fi Choice* tradition, the following reviews attempt to be as objective as possible, but as always there's nothing better than deciding for yourself, with the co-operation of a good hi-fi dealer.

Despite various pseudo-scientific claims by some of the cable manufacturers, no totally convincing explanation for the audibility of cable differences has been put forward. In fact it must be said that rather a lot of the 'explanations' are not just speculative but openly in contradiction to basic physics and electronics, and often probably untrue. Still, there must be some reason for the differences, so what's going on?

Any cable has four basic parameters: resistance, capacitance, inductance and 'dielectric loss'. The last is effectively a

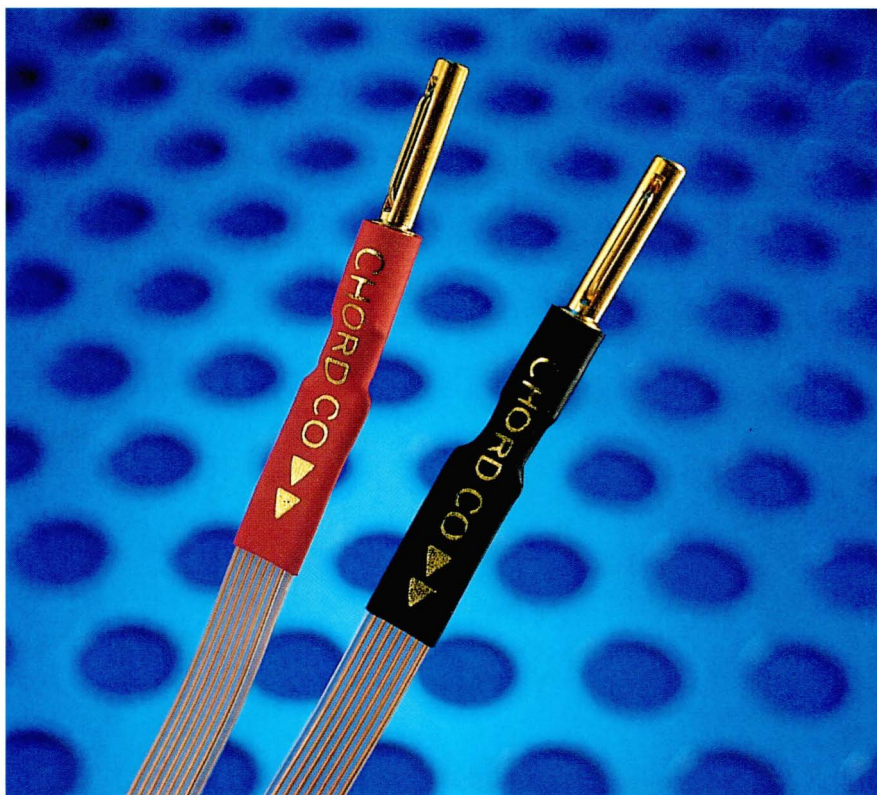
THE CAST LIST

Audioquest Crystal	£18.00/m
Cable Talk Talk 3.1.....	£2.25/m
Chord Myth	£5.95/m
DNM LSC350.....	£6.95/m
Gale XL189	£0.99/m
Goertz M1	£16.00/m
Kimber 4TC.....	£19.68/m
Nordost Octava.....	£2.99/m
QED Profile 4x4.....	£9.00/m
Silver Sounds 12 gauge.....	£12.00/m
Sonic Link Silver Aero S300 ...	£18.00/m
XLO Pro 600.....	£16.50/m

leakage resistance that appears between the conductors of the cable, but it varies with frequency. In the vast majority of audio cables it is effectively infinite at DC. Its value depends on the cable's capacitance and on the type of dielectric (insulator) used. Capacitance is a measure of coupling between the cable's conductors, and inductance measures how hard it is to push high frequencies round the cable. Resistance defines how much of the electrical energy passing along the cable gets turned into heat, and is defined effectively by the amount of copper (or other conductor) in the cable. At high frequencies resistance may rise due to 'skin effect', which is often cited as important but is usually swamped by inductance. Capacitance and inductance in practically all real-world cables are inversely related and any manufacturer who claims 'low inductance *and* capacitance' is being economical with the truth.

A fifth parameter sometimes mentioned is 'characteristic impedance', which is itself a function of the other four. Its direct relevance really crops up at high frequencies, where the wavelength of the electrical signal is of similar size to the length of cable — hence around 50MHz for a cable 1m long, or for audio frequencies of up to 20kHz in cables a couple of miles long. However, it still has a meaning at lower frequencies and can be a useful shorthand for expressing a cable's parameters.

In my opinion, for the flattest possible frequency response of an amplifier/cable/speaker system, the cable should have zero



resistance and a characteristic impedance that equals the resistance of the speaker. There are three major 'buts': all speakers, and many amplifiers, have a frequency response with bigger 'wiggles' in it than most cables will introduce; the cable's resistance appears, electrically, in series with the output impedance of the amplifier and the resistance of the speaker; and no speaker has a resistance that is constant at all frequencies — in most box speakers it varies by as much as 10:1 across the audio range. Also, such a cable will have a very high capacitance which for various reasons can result in certain amplifiers becoming unstable and oscillating, with disastrous consequences for sound and the risk of damage. However, that's really a problem for amplifier manufacturers to address.

Many other qualities are cited by manufacturers: purity of the metals used, methods of winding strands together, ways of damping mechanical vibrations — there may be something here, but to the best of my knowledge no tests have ever substantiated these claims. A wide-ranging and sophisticated test programme by a noted hi-fi researcher, written up in various learned journals, ultimately succeeded in measuring nothing more than the four parameters mentioned above. Anyone used to designing cables for RF use can estimate all the parameters just from looking at a cable, which ought, one might think, to dispel much of the magic surrounding the subject. So let's see what occurs in practice! *RB*

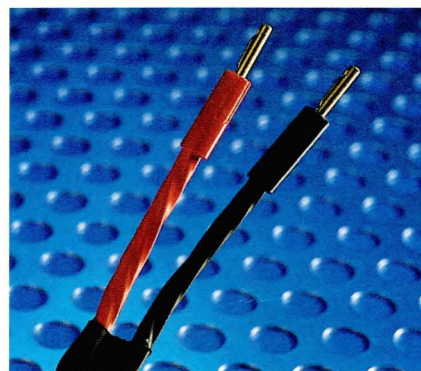


AUDIOQUEST CRYSTAL

This large, forbidding cable is a so-called 'Hyperlitz' design, which if the illustration on the box is anything to go by, means that several conductors are spiralled round a central core with alternate conductors connected to hot and return. It is only supplied terminated and the review sample was in fact fitted with four plugs at the speaker end, to allow for bi-wiring. As no other cable was thus equipped, and my ATC speakers only have single input terminals, I simply connected both pairs of plugs together to end up with single wiring.

Crystal turned out to be a moderate performer, neither remarkably detailed nor particularly lacking in any area. On the positive side, it had a good tonal balance which preserved both deep bass and high treble, even though it lacked the last word in impact.

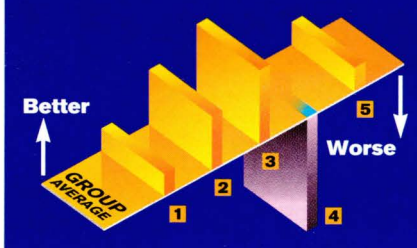
Against this should be set a degree of graininess which coarsened many kinds of music and slightly smeared detail. With a good piano recording, for instance, this meant that one's concentration started to wane after a few minutes because of the extra effort involved in keeping focused on the sound. Funnily enough, dense textures such as orchestra or a large drum kit seemed less affected by this and came across as quite detailed and with moderate imaging. Not bad, then, but I feel a cable at this price should offer a little more. *RB*



THE LAB REPORT

The Crystal is not atypical of Audioquest's earlier, more complex so-called 'Hyperlitz' cable designs. This version utilises a helical array of both 18 and 20-gauge conductors, drawn from long-grain and 'functionally-perfect' (cf PC-OCC) grades of copper respectively. The tight winding helps drag the inductance down to a moderate 2.75µH while reducing the high frequency impedance en route, though the surprisingly high 712pF capacitance and 37 MOhm leakage suggests the cable's dielectric is not of the highest quality. This overall performance is akin to that of earlier Audioquest cables which had a decidedly 'manipulative' quality. *PMI*

1	INDUCTANCE	17%
2	CAPACITANCE	39%
3	RESISTANCE	53%
4	DIELECTRIC QUALITY	-80%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	17%



UNDERSTANDING THE SPEAKER CABLE BARGRAPHS

INDUCTANCE This is related to the current flowing through the cable and the magnetic flux associated with it. Parallel, spaced-conductor cables tend to have a higher inductance which adds to their reactance at treble frequencies (see final bargraph category).

CAPACITANCE Another electrical constant related to the electrical field and charge maintained across the two 'halves' of the cable. Tightly-twisted or braided cables with thin, poor-quality insulation will have a high capacitance. Some amplifiers may become unstable driving very high capacitance cables (see final bargraph category).

RESISTANCE This is determined by the total cross-sectional area and conductivity of the cable's metal core. High resistance introduces a greater power loss and reduced speaker damping factor (see final bargraph).

DIELECTRIC QUALITY High quality insulators, such as Teflon (PTFE), possess superior dielectric properties to cheaper alternatives like PVC, helping to reduce capacitance, leakage and various RF effects.

EFFECT ON SPEAKER'S FREQUENCY RESPONSE This is determined by both the resistive and reactive properties of the cable which may exaggerate any existing 'wobbles' in the speaker's response.

Note: all measurements are normalised to a five-metre length.

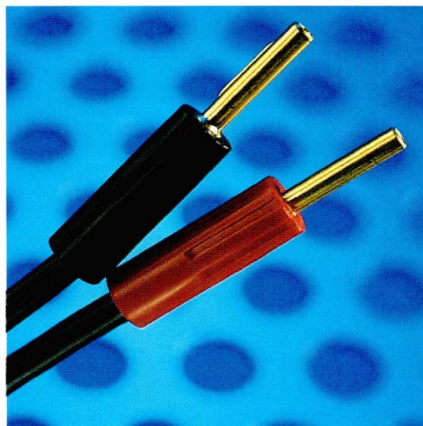
AUDIOQUEST CRYSTAL - VERDICT

- SOUND** ★★★★★
- VALUE** ★★★★★
- PRICE** £18/m STEREO (UNTERMINATED)
- ▲ Neutral balance, no major flaws.
- ▼ A little grain and smearing.
- ✉ Arcam, Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB.
- ☎ (01223) 203203

CABLE TALK TALK 3.1

A classic variation on the standard 'figure-eight' type, this cable has two quite thick stranded conductors (3mm² or thereabouts) insulated with thick PVC and spaced apart by some 5mm. It is moderately flexible. It was supplied for review fitted with the same cheap but good-quality Deltron gold-plated banana plugs as were used on at least half the cables.

Initial impressions of this cable were of a slightly harsh and brittle sound, but on extended listening it became clear that this was only a relatively minor effect to which one became accustomed. In fact this may be more of a sin of omission, as bass seems rather subdued. This tends to heighten the effect on midrange and treble. It's not that



low frequencies are missing — very low sounds, such as organ pedal stops, come through just fine — but when there's a lot going on in the music, bass lines tend to recede somehow. Likewise solo piano, which has a very wide spectrum, seems to lack some weight although its basic tonal qualities are quite well preserved. Apart from that, however, the sound is quite well

CABLE TALK TALK 3.1 - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £2.25/m MONO

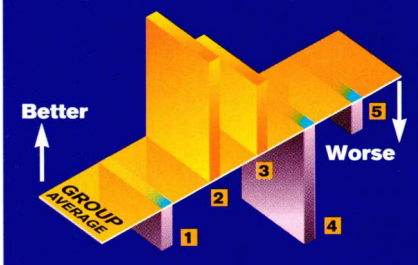
▲ A fair all-rounder.
 ▼ Tends to lose the bass in complex music.

✉ Cable Talk, Unit 12, Farnborough Business Centre, Eelmoor Rd, Farnborough, Hants, GU14 7XA (01252) 373434

THE LAB REPORT

Last tested in issue 133, Talk 3 has been upgraded to 3.1 with a higher-grade (6N purity) copper, arranged as 42x0.3mm strands per 'side' of this symmetrical cable. Furthermore, both signal and return conductors are reversed in their 'directionality', i.e. from amp to speaker (hot or signal) and speaker to amp (return). The loop resistance has now improved from 56 mOhms to 50 mOhms and the series inductance from 5.5 to 5.1µH. Nevertheless, this still amounts to a total impedance of 0.64 Ohms at 20kHz, a fact appreciated by Cable Talk which is deliberately attempting to 'smooth' the potentially bright sound of some budget amplifiers. *PMI*

1	INDUCTANCE	-28%
2	CAPACITANCE	86%
3	RESISTANCE	50%
4	DIELECTRIC QUALITY	-75%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	-21%



balanced and moderately detailed with a fair stab at imaging. It's not up with the best of the pricey cables here, but is very respectable at this modest price. It seems in order, then, to issue a Recommendation. *RB*



CHORD MYTH

This flat cable consists of 14 single-strand conductors laid side-by-side, seven hot and seven return, with a 5mm gap between hot and return sides, giving very low capacitance. It is insulated in hard polythene and is rather inflexible, although it will stay where it's put if bent quite sharply. Only 1.4mm thick, it is evidently suitable for installation

under carpets. It was supplied fitted with Deltron 4mm banana plugs.

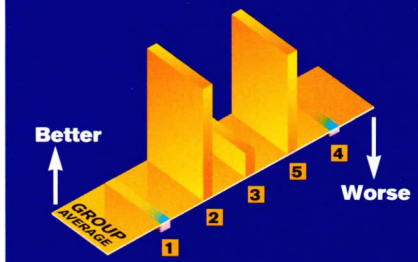
The Myth's sound turned out to be predominantly of the airy and light variety, with good midrange and treble but rather recessed bass. Superficially, detail seems to be excellent but in fact on prolonged exposure it becomes clear that the cable's apparent clarity is more a result of its tonal quality than a true delineation of separate musical strands, and it is hard to distinguish all the inner lines in a piece of music. It's an odd effect, and what's even odder is that music such as rock, which one would expect to be heavily compromised by such characteristics, actually seemed to be most flattered, while a simple violin and piano recording sounded rather thin and wiry. Orchestral music showed that the cable's imaging is fair but not great. Myth

is arguably not the most neutral or honest cable around, but its subtle filtering effect is not necessarily unpleasant and it might be worth an audition. *RB*

THE LAB REPORT

Superficially, Chord's Myth looks a close technological cousin to Nordost's Octava. Both are flat cables employing a spaced array of parallel, single-strand conductors, though by employing a total of 7 cores for signal and 7 for return, Chord's Myth enjoys a lower 82 mOhm 5m loop resistance. Nevertheless, it's the geometry of the cable that increases its inductance and, in turn, the cable's treble impedance to some 0.48 Ohms. Meanwhile, the low capacitance and very low 340 MOhm leakage demonstrate the Myth's improved dielectric property. *PMI*

1	INDUCTANCE	-5%
2	CAPACITANCE	90%
3	RESISTANCE	20%
4	DIELECTRIC QUALITY	80%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	-3%

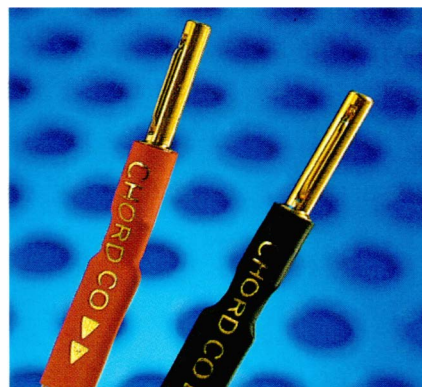


CHORD MYTH - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £5.95/M MONO
 (£30 TERMINATION CHARGE)

▲ Light, airy quality may please.
 ▼ Bass rather recessed, detail not outstanding.

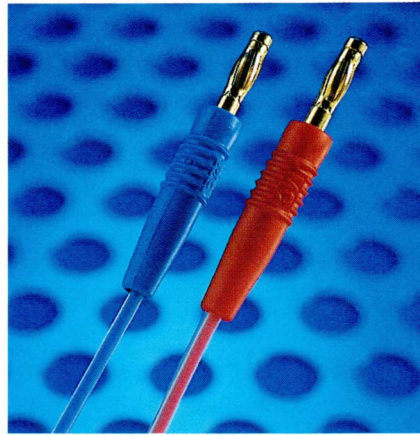
✉ The Chord Company, 30a Sarum Business Park, Portway, Wilts, SP4 6EA (01722) 331674



DNM LSC350

DNM was one of the first cable specialists, largely responsible for the founding of the solid-core movement in this country. This cable is typical of DNM speaker cables, with two thin single strands separated by a wide web, giving very low capacitance and high inductance — high enough to give a treble roll-off of undoubtedly audible magnitude. It also has high resistance and in very high power systems with low impedance speakers may even run warm. It is supplied with high-quality gold-plated banana plugs.

The DNM cable sound has been the subject of much debate. Certainly it's rather distinctive. Essentially it is light and airy, a little bass-shy but with good definition in the treble. As such, it suits certain musical



styles better than others, for instance being well attuned to unaccompanied female voice but less so to Mahlerian orchestra or heavy stride piano. Ultimately, however, I found it lacking in detail and rather two-dimensional, and although at first hearing it seems very detailed it is in fact difficult to keep a grasp on complex musical strands. The lack



DNM LSC350 - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £6.95/m MONO

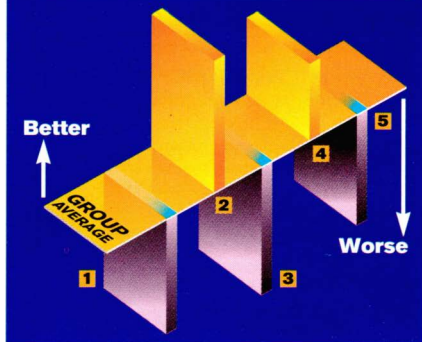
▲ The classic solid-core sound; fine upper midrange.
 ▼ Bass and extreme treble suffer.

✉ Virtual Reality Audio Systems, PO Box 383, Brentwood, Essex, CM14 4GB
 ☎ (01277) 227355

THE LAB REPORT

Last tested as DNM Rainbow speaker cable way back in issue 109, this latest derivative is sticking to the tried-and-tested, single-strand, solid-core philosophy. Pros include a fabulously low 36pF capacitance and low 300 MOhm leakage, both linked to the dielectric quality and physical geometry of the cable. Cons include the high 536 mOhm 5m loop resistance, which influences bass quality, and the massive 8.2µH inductance which increases the cable's impedance to 1.16 Ohms at 20kHz, and will influence the treble balance of many loudspeakers. *PMi*

1	INDUCTANCE	-80%
2	CAPACITANCE	94%
3	RESISTANCE	-90%
4	DIELECTRIC QUALITY	55%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	-78%



of bass is also a drawback. Nevertheless it is still worth auditioning as it clearly appeals to some tastes and is one of the most individual cables around. *RB*



GALE XL189

This simple cable, highly reminiscent of some Monster Cable types of years gone by, is sold exclusively by Richer Sounds' shops at a budget 99p/m. Attractively (but malodorously) insulated in transparent polyurethane, it actually has rather less copper in its construction than it appears, thanks to the lens effect of the insulation. But it is still fairly chunky with about 1.5mm² of conductor. It is very flexible and easy to strip; it was supplied unterminated but we fitted cheap gold-plated banana plugs of the same sort as were used on the majority of other cables in the group.

At this price a cable is apt not to have any pretensions, and the Gale did a basically honest job without disgrace. On the one

hand it didn't have anything like the refinement and detail of the best cables in the test (at 20 times the price, mind); on the other, beyond a certain rather bright and harsh quality, there was little to criticise. Everything's there: bass seems to go pretty deep and treble pretty high, and it is perfectly possible to listen for long periods with-

GALE XL189 - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £0.99/m MONO

▲ Cheap and cheerful.
 ▼ A little bright and not that subtle.

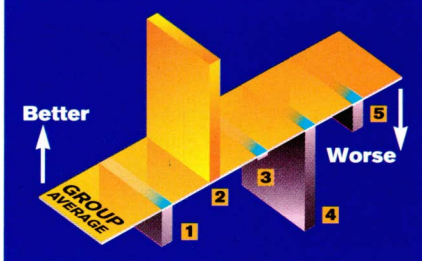
✉ Audio Partnership plc, Units 3-4, Richer House, Hankey Place, London, SE1 4BB
 ☎ (0171) 357 9090

out distress. In the sort of system where any individual component will only cost as much as the most expensive cables in this test, this Gale is clearly a perfect choice and very cheap for its type. Which makes it, I think, an inevitable Best Buy. *RB*

THE LAB REPORT

As the little brother to Gale's XL315 reviewed in issue 157, this XL189 derivative shares many of its features. The reduced cross-sectional area of each spaced, multi-stranded conductor has caused its resistance to rise from 69 mOhms to 115 mOhms, while the physical geometry of the cable maintains a high 4.9µH series inductance (5m loop). This, in turn, bumps up the cable's impedance to some 0.63 Ohms at 20kHz. As with Cable Talk's 3.1, this may moderate inherent multi-strand grittiness while combating the treble 'brightness' of some amp/speaker combinations. *PMi*

1	INDUCTANCE	-25%
2	CAPACITANCE	86%
3	RESISTANCE	-2%
4	DIELECTRIC QUALITY	-70%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	-19%





GOERTZ M1

Representing the opposite extreme to DNM's thin, wide-spaced conductors, the M1 features two flat strips of copper some 20mm wide, spaced apart only by a thin layer of polyester insula-



tion. This gives a claimed characteristic impedance of four Ohms (I found it to be nearer two Ohms), hence very high capacitance which may give strange results with a few amplifiers. One down-side of the construction is its fragility, and although it is fine for 'fit-and-forget' use, inveterate tweekers should beware of kinking the cable and splitting the insulation or even cracking the conductors. Special banana plugs clamp directly on to the copper.

Practical or not, this cable certainly sounds the business. Of all the cables in the group, it clearly gave the widest, deepest and most clearly defined soundstage. Hitherto incognito instruments suddenly turned out to have important lines to play and the general tonal balance seemed to relax into place. Marc-André Hamelin's piano playing took on the same weight and authority it possesses live, and full orchestra clearly consisted of 70 or so players in a large space, rather than an ill-defined blob somewhere between the speakers. It really does appear to justify its price — but do consult your amplifier's manufacturer (or your dealer) before purchase, to ensure M1's eclectic character will not upset your amp. *RB*

GOERTZ M1 - VERDICT

SOUND ★★★★★
VALUE ★★★★★☆
PRICE £14/m MONO

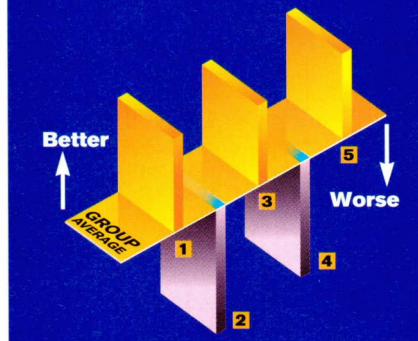
- ▲ Excellent sound right across the board.
- ▼ May upset some amplifiers; slightly impractical.

✉ Townshend Audio, 7 Bridge Rd, Hampton Court, Surrey, KT8 9EU
 ☎ (0181) 979 2155

THE LAB REPORT

Comprising two thin strips of enamelled copper, laid on top of each other and isolated by a fine tape-like insulation, Goertz M1 is by any other name a capacitor unwound from its can. As the separating layer is none too secure, the cable's capacitance does vary with positioning, though a figure of around 11nF per 5m run is very close to the mark. This is 20-100 times higher than anticipated and could add extra 'zing' or 'edge' to the performance of your system if your amplifier's stability margins are compromised. This, rather than claims of 'impedance matching', is the key to Goertz's M1. *PMI*

1	INDUCTANCE	75%
2	CAPACITANCE	-99%
3	RESISTANCE	65%
4	DIELECTRIC QUALITY	-91%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	68%



KIMBER 4TC

Kimber has been making cables similar to this one for a number of years, and it's clearly a very successful formula. There are eight individually-insulated strands (four per conductor), each in turn stranded beneath Teflon insulation, twisted together to give quite high capacitance in a sort of Litz construction. The cable is both flexible and rugged, and for review was fitted with good quality rhodium-plated banana plugs.

Kimber makes great claims for its advanced metallurgy and special techniques for applying the insulation, and also marks the cables for directionality — a highly arguable topic! (Yes, I did try it, and if there's a difference it's darned small).

Directional or not, this cable is clearly capable of fine performance. It gives a solid, three-dimensional image and has no obvious tonal aberrations. In a Chandos recording of Grainger orchestral works, it was one of the few cables that allowed listeners to hear clearly all the subtle changes in orchestration that characterise Grainger's writing, and it also presented the positioning of the various instruments well. Ultimately it was perhaps not quite as extended in the bass as the Goertz cable, and although it certainly did go down pretty

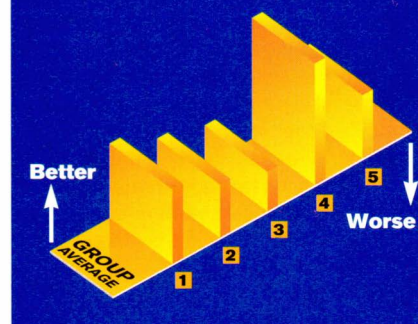


deep there was still some more weight to be brought out in various piano recordings I used. Overall, however, it's a very satisfactory cable of wide applicability and deserves Recommendation. *RB*

THE LAB REPORT

I last tested this popular, long-standing cable nine years ago in issue 64. Since that time, while its distinctive multi-core/multi-gauge construction has remained intact, its technical performance has changed slightly. Whether this reflects slight changes in material quality over time is uncertain, but the resistance has reduced from 95 mOhms to 73 mOhms, and leakage has improved from 78 mOhms to >350 mOhms. Nine years on, this 4TC is probably wound fractionally tighter, causing a slight increase in capacitance to 734pF. Overall, the 4TC remains as impressive as ever. *PMI*

1	INDUCTANCE	53%
2	CAPACITANCE	38%
3	RESISTANCE	29%
4	DIELECTRIC QUALITY	87%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	46%



KIMBER 4TC - VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £16.68/m UNTERMINATED MONO

- ▲ Good balance of virtues and no real weak points.
- ▼ Not quite the ultimate in bass or detail.

✉ RATA Ltd, Edge Bank House, Skelsmergh, Kendal, Cumbria, LA8 9AS
 ☎ (0800) 373467

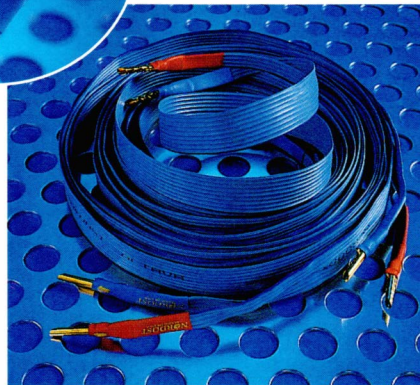
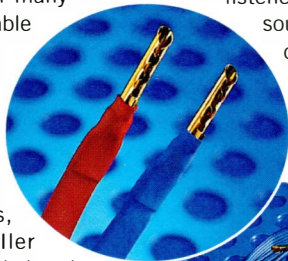
NORDOST OCTAVA

This very slim (1.3mm) flat cable looks a lot like computer data cable, and is probably made on the same machines, but it uses single-strand conductors and has a single 'dummy' spacer in the middle. Four conductors per side are terminated in cheap but good-quality gold banana plugs. Because of the solid conductors and its thin PVC insulation, the cable is moderately flexible and can easily be formed to shape. In many ways it resembles the Chord cable also included in this group.

The resemblance doesn't entirely stop at looks, either, with Octava sharing the same essential lightness of touch. It perhaps has just the edge over Chord in its handling of bass, which seemed slightly fuller though still not quite as extended and effortless as it might be. Where it seemed to

do a little less well was in its handling of treble detail, which was a little confused and grainy at times. This was particularly noticeable in orchestral music, where simultaneous strings, woodwind and percussion tended to merge and become indistinct. On piano recordings, there was more than a hint of 'zing' on high notes, and solo voices somehow seemed louder and more piercing than with many of the other cables. One

listener also felt that the orchestra sounded louder than with other cables. Imaging was no better than fair. Not so good, then; but cheap if you want an under-carpet cable. *RB*



NORDOST OCTAVA - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £2.99/m MONO

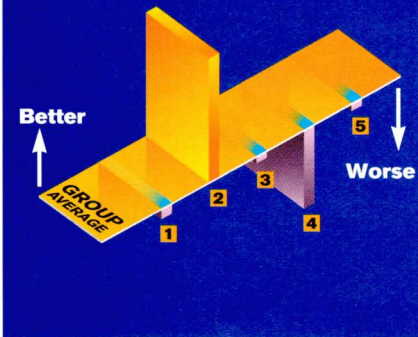
▲ Fair bass; cheap for a flat cable.
 ▼ Rather grainy and indistinct.

✉ QLN, Unit 7, Aber Park Ind. Est., Aber Rd, Flint Flintshire, CH6 5EX
 ☎ (01352) 730251

THE LAB REPORT

Aside from the sheer, carpet-friendly convenience of flat cables like the Nordost Octava, their spaced geometry usually promotes an exceptionally low capacitance, as do the Chord and DNM derivatives. The Octava's dielectric quality is slightly less impressive than its competitors, however, because both its capacitance and leakage are slightly higher than expected. The four solid conductors for signal, and a matching four for return, also increase its resistance to 125 mOhms, though this figure is still far smaller than the half-Ohm rating accorded to DNM's solid-core cable! *PMI*

1	INDUCTANCE	-8%
2	CAPACITANCE	88%
3	RESISTANCE	-4%
4	DIELECTRIC QUALITY	-54%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	-4%

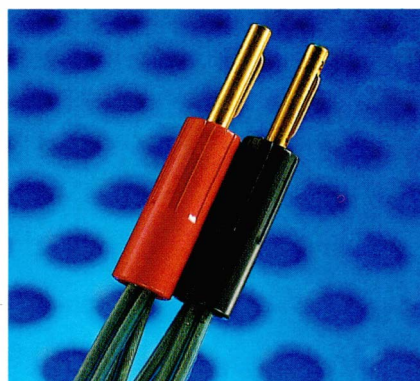


QED PROFILE 4X4

This flat cable looks effectively like four sets of bell wire laid side by side, although the connections actually have the two outer pairs combined as one conductor and the inner wires as the other, giving slightly higher capacitance than the otherwise similar Nordost and Chord cables in the test. The translucent insulation is quite soft and the conductors are stranded, so the cable ends

up quite flexible. It is also available in a bi-wire form. Deltron banana plugs are cold-welded, rather than soldered, to the ends.

Another fairly middling performer, this QED cable showed more aptitude with the upper frequencies than the lower, and although bass was only very slightly subdued it was definitely reduced in impact compared with the Goertz and Kimber cables. Extreme treble seemed to develop a very slight glaze which became somewhat irritating on some recordings, but for the most part the midrange and treble seemed well balanced and clearly defined. Once again, detail and imaging were the real stumbling blocks, and the full orchestra tended to become slightly indistinct and homogenised. In rock music, rhythms seemed a little less distinct than they should be; percussion and bass guitar were both



QED PROFILE 4X4 - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £9.00/m MONO

▲ Good midrange and treble balance.
 ▼ Slack bass and lack of detail.

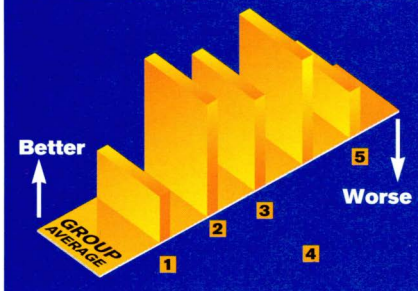
✉ QED Audio Products Ltd, Ridgeway House, Ridgeway Close, Lightwater, Surrey, GU18 5XU
 ☎ (01276) 451166

slightly slack and recessed. Solo piano lacked both weight and some of the subtle detail on the attack of single notes. Overall, then, this cable seems to offer little not available from cheaper types. *RB*

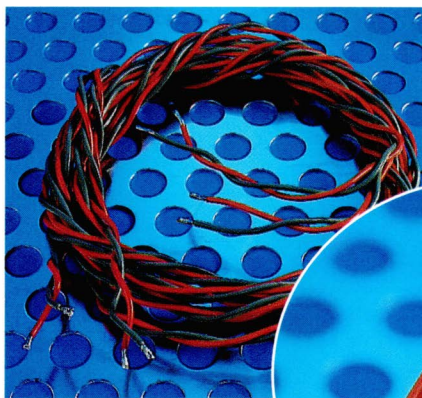
THE LAB REPORT

In common with other flat cables of this ilk, QED's Profile uses four parallel, multi-stranded conductors for signal and return. However, by combining the inner pairs of conductors for return (ground) and the outer pairs for signal, QED has reduced the cable's inductance from around 3.5µH to just 2.0µH for a 5m loop, reducing its overall impedance at high treble frequencies. Sure enough, the parallel capacitance is increased to 223pF by way of recompense, but this will be of little or no consequence. All this plus a low 35 mOhm/5m loop resistance, adds up to pretty compatible speaker cable. *PMI*

1	INDUCTANCE	34%
2	CAPACITANCE	80%
3	RESISTANCE	64%
4	DIELECTRIC QUALITY	75%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	33%

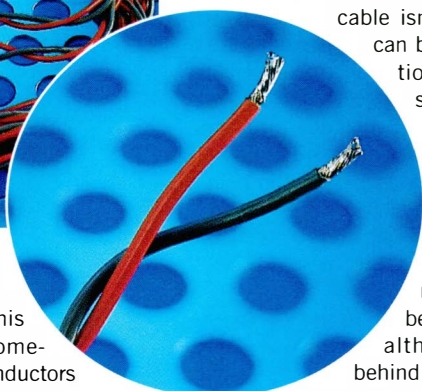


ON TEST: SPEAKER CABLES



SILVER SOUNDS 12 GAUGE

Supplied unterminated, this cable has a distinctly home-made feel to it; the two conductors are loosely twisted together and can easily be separated. In fact each conductor



SILVER SOUNDS 12 GAUGE - VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £12/m MONO

- ▲ Quite neutral and with good solidity.
- ▼ Not the most detailed at the price.
- ✉ Kronos Distribution, 35 Farlough Rd, Newmills, Dungannon, Co. Tyrone, BT71 4DU
- ☎ (01868) 748632

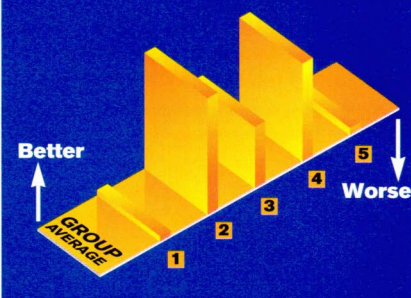
is nothing more than standard Teflon-insulated equipment wire with 19 strands of silver-plated copper. Fair enough; but Silver Sounds might at least have made it look more finished, if only by binding the ends so that the twist doesn't unravel. The cable isn't very flexible but can be bent in any direction and will tend to stay where it's put. It's also quite slender for the amount of copper in it.

Fitted with decent banana plugs, this cable ranked as one of the better ones in the test, although it was still behind the Goertz. It exhibited good solidity with most recordings and had a generally neutral tonal balance, although there was just a hint of 'zing' on solo piano. Bass was even and well extended, and in rock recordings a good solid rhythm section was not compromised. However, detail was not quite of the best and in the Grainger recording with its shifting orchestration it was not always possible to discern where in the orchestra the tune had in fact gone. This was not helped by some rather condensed stereo images. On

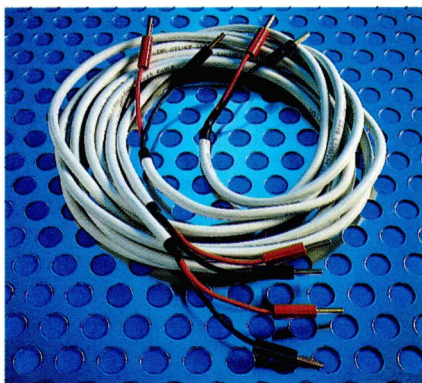
THE LAB REPORT

Whatever the origins of this cable, its sonic performance is more likely linked to its traditional multi-stranded topology and choice of conductor purity than the equally traditional twisted-pair geometry. This tried-and-tested regime yields a modest 3.3µH inductance and low 57 mOhm resistance, adding up to a worst-case impedance of 0.42 Ohms, which is still sufficient to modify the balance of some loudspeakers in runs exceeding 5m or so. Leakage is low at 330 MOhms, thanks to Silver Sounds' choice of a high quality PTFE insulation. Low on innovation, nonetheless. *PMI*

1	INDUCTANCE	4%
2	CAPACITANCE	83%
3	RESISTANCE	44%
4	DIELECTRIC QUALITY	70%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	6%



balance, then, a fair performer but not outstanding at the price. *RB*



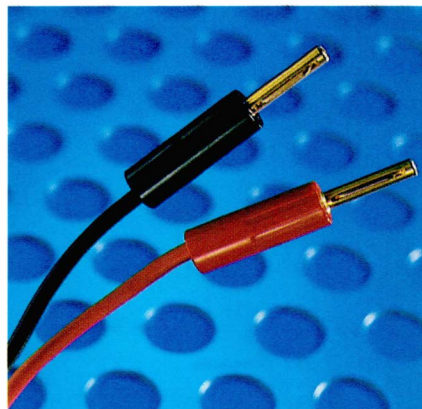
SONIC LINK SILVER AERO S300

This chunky round cable is a simple 'figure-eight' type, with two stranded conductors, each about 2.5mm² of silver-plated copper, insulated in silicone rubber and surrounded overall in white silicone rubber. It is moderately flexible and came for review fitted with Deltron gold-plated banana plugs.

S300 did poorly on the listening tests, with the principal criticism being of muddiness and smearing of detail. Although its

tonal balance seems largely neutral, it has a distinct tendency to smear the bass particularly, making rhythms sound lazy and bass lines unclear. There was also some loss of clarity in the midrange and treble, and overall it was quite hard to follow threads in the music. It should be said in mitigation that as with most cable transgressions this is quite a minor effect in the overall scheme of things, but it is still definitely audible and comes between the listener and the music.

Thus orchestral music and dense rock textures become impenetrable when they should be lucid; lighter textures, however, such as solo piano or voice, are less hampered and in fact piano had rather good attack, only becoming somewhat indistinct in the heaviest passages. Tenor saxophone lost some of its bite and an electric guitar



SONIC LINK SILVER AERO - VERDICT

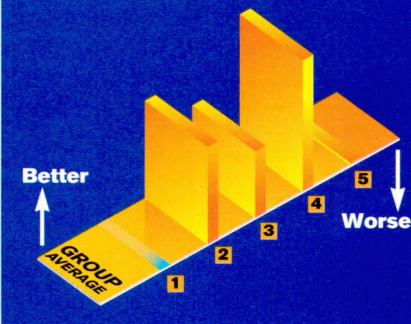
SOUND ★★★★★
VALUE ★★★★★
PRICE £18/m MONO

- ▲ Happy enough with piano and voice.
- ▼ Tendency to muddiness and smearing with many types of music.
- ✉ Audiokits, 15 Derwent Business Centre, Clarke St, Derby, DE1 2BU
- ☎ (01332) 674929

THE LAB REPORT

Rather like the Silver Sounds cable that proceeds it, the failure of Sonic Link's Silver Aero S300 has more to do with the very traditional choice of tight, multi-stranding (which encourages non-linear inter-strand conduction) than any significant deviation in its basic LCR characteristics. As I explained nine years ago in issue 59 (June 1988), the effects of conductor purity, crystal structure, grain boundaries, skin-effect and non-linear surface conduction all contribute to the potential muddling and harshness imposed by a length of cable. And that's as true in 1997 as 1988. *PMI*

1	INDUCTANCE	0%
2	CAPACITANCE	70%
3	RESISTANCE	48%
4	DIELECTRIC QUALITY	95%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	10%





XLO PRO 600

This is another variation on the 'figure-eight' theme, this time with two conductors loosely twisted together and enclosed overall in a transparent sheath of what looks like unshrunk heatshrink sleeve. Each conductor appears to consist of a tightly wound spiral of strands under a hard plastic insulation. Like the Kimber, the cable is marked for directionality, and again I failed to confirm this in practice.

Although the Pro 600 has a neutral enough signature, it seems somehow to give a slightly strangulated sound in which



XLO PRO 600 - VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £16.5/m MONO

▲ Neutral at best, and can be exciting.
 ▼ Aggressive in complex music.

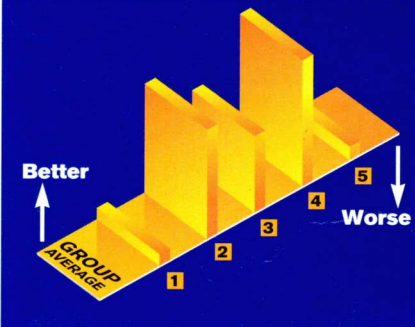
✉ Wollaton Audio, 134 Parkside, Wollaton, Notts NG8 2NP
 ☎ (0115) 928 4147

instruments almost sound as if they have been piled together in a heap. As long as there isn't too much going on everything is pretty much fine, with only a hint of grain detracting from a basically open sound, but when the going gets tough everything starts to collapse towards the centre of the image and detail is considerably compromised. It's not a gross effect but it was observed repeatedly with orchestral, jazz and rock music and while it can make for quite an exciting and immediate presentation in some ways, it is essentially a loss of information. Bass on the whole is quite solid, but tends to become recessed because of the collapsing image, which leads to brightness. Extreme treble seems just a shade bright and solo piano is in consequence slightly metallic, but gener-

THE LAB REPORT

Sifting back through my archives revealed XLO's Pro 600 to be a cost-effective derivative of the Type 0.6, reviewed in issue 133. Both cables share a similar geometry with around 24 strands wound in helical fashion around a core of high quality insulation. Both signal and return conductors are fashioned in the same way, then insulated and bound together as a twisted pair. This yields a mix of a moderate 233pF capacitance and 3.1µH inductance which, together with the low 45 mOhm resistance, gives a better-than-average 0.39 Ohm 20kHz impedance. Another generally compatible cable. *PMI*

1	INDUCTANCE	9%
2	CAPACITANCE	78%
3	RESISTANCE	55%
4	DIELECTRIC QUALITY	90%
5	EFFECT ON SPEAKER'S FREQUENCY RESPONSE	10%



ally believable. A cable that might suit lovers of fast'n'loud music. *RB*

C O N C L U S I O N S

In concluding this review, there is an obvious question: how much is it worth spending on a speaker cable? The answer hinges not on what more expensive cables seem to offer, but on the degree of difference they are likely to make in a system at a given price.

While the most satisfactory cable in this test is in fact the dearest (just), the cheapest was not necessarily the least pleasing, and in fact two of the more expensive cables came in for quite strong criticism. So it seems clear that cost alone is not necessarily a sure guide to cable quality. The notorious concept of 'system synergy' also applies, but even more important perhaps are the various ways in which different people hear the same sound. This has just been brought home to me anew by the writings of the noted French audiologist Prof. Tomatis, whose published curves of listeners' sensitivity to different frequencies show very large variations between individuals and probably go a long way towards explaining the question of 'taste' in hi-fi.

Given all those considerations, then, I am going to suggest that you don't initially spend too much on cables. Instead, I find it more logical to concentrate on finding a basic ensemble of components that suits your tastes and only then splash out on fancy wires. They will almost certainly make a difference, but the point is that trying to balance up a system by juggling wires is often at best a compromise, at worst a nightmare. If instead you find a sound you like and then seek out cables which do the same thing, you are more likely to have happy results in the long term.

And finally, look at it this way: the difference between, say, a couple of good-quality 100 Watts power amplifiers could easily be a couple of hundred pounds. Any of the cables reviewed here, terminated and all, will come in for that much or less. If a good cable can save you an upgrade, surely it has been money well spent.

In awarding only one Best Buy and three Recommendations, I am not trying to imply that all the other cables are not worth trying.

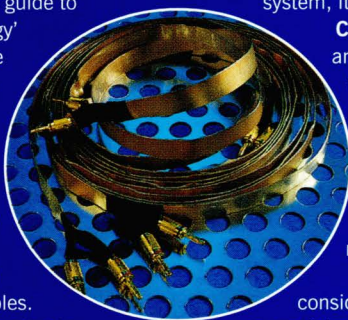
Nevertheless, those four seemed on test to offer particularly fine results for their price. **Gale's XL189** is hard to fault, given that it costs barely more than 13A mains cable and is a lot more practical. It represents a rough-and-ready average of different cable 'flavours' that you might find on offer, and as such is as good a place as any to start out from. So particularly for the first-time system buyer and those seeking to replace some lamentable bit of bell-wire given away with an existing system, it is certainly a Best Buy.

Cable Talk's Talk 3.1 may not be the ultimate in balance and refinement either, but it is a decent performer for a modest price. It is also fairly representative of quite a few similarly constructed cables, several costing rather more, and is therefore worth trying as an alternative you might like. If you find yourself drawn to hi-fi components described in reviews as 'giving good control' or 'punchy' I suspect this cable may be much to your tastes.

Kimber 4TC (also available in bi-wire version) is a considerably more refined piece of wire capable of effecting a surprising improvement in detail and smoothness. As high-end cables go it's very practical, and unlikely to upset amplifiers.

However, my vote for 'best of the test' goes to **Goertz M1**, a revealing cable with astonishing subjective bass performance and a relaxed, detailed, extended midrange and treble. The only rider to this is that some amplifiers will become unstable when connected via such a high capacitance cable. Goertz distributor Townshend Audio offers a small terminating network which, connected across the speaker terminals, claims to restore a largely resistive load condition and ensure stability. But anyone worried about possible deleterious effects should consult their amplifier manufacturer and/or dealer before investing in this wire.

Subjective tests were carried out with cables inserted between a pair of EAR 519 amplifiers (valve, 100W, output impedance 0.4 Ohm resistive) and a pair of ATC SMC20 speakers (2-way sealed box). *RB*



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Field 0121 622 2323 Richer Sounds 0121 643 1516 Sevenoaks Hi-Fi 0121 233 2977 Superfi 0121 631 2875</p> <p>BISHOP'S STORTFORD The Audio File 01279 506576</p> <p>BLACKBURN Cryers 01245 51842 Romers Hi-Fi 01254 887799</p> <p>BLACKPOOL Practical Hi-Fi 01253 300599</p> <p>BLOXWICH Sound Academy 01922 473499</p> <p>BODMIN E.T.S. 01208 75579</p> <p>BOLTON Clearstone 01204 531423 Practical Hi-Fi 01204 395789 Sound & Vision 01204 701711</p> <p>BOURNEMOUTH Movement Audio 01202 529988 Suttons 01202 555512</p> <p>BRACKNELL B&B Hi-Fi 01344 424556</p> <p>BRADFORD Erricks 01274 309266</p> <p>BRENTWOOD Hi-Spek Electronics 01277 226303</p> <p>BRIGHTON Richer Sounds 01273 678333 The Powerplant 01273 775978</p> <p>BRISTOL Audio Excellence 0117 926 4975 Richer Sounds 0117 973 4397</p> <p>BROMBOROUGH CROSS Peter's Hi-Fi 0151 344 1874</p> <p>BROMSGROVE Spains 01527 872460</p> <p>BURY ST. EDMUNDS Sevenoaks Hi-Fi 01284 753776</p> <p>CAMBORNE E.T.S. 01209 712344</p> <p>CAMBRIDGE Campkins Hi-Fi 01223 312240 The Audio File 01223 368305 University Audio 01223 354237</p> <p>CANTERBURY Canterbury Hi-Fi 01227 765315</p> <p>CARDIFF Audio Excellence 01222 228565 Richer Sounds 01222 465654</p> <p>CARLISLE Practical Hi-Fi 01228 44792</p> <p>CASTLEFORD Eric Wiley Hi-Fi 01977 556774</p> <p>CHELMSFORD Richer Sounds 01245 355666</p> <p>CHELTEMHAM Audio T 01242 583960 Sevenoaks Hi-Fi 01242 241171</p> <p>CHESTER Audio Excellence 01244 345576 Peter's Hi-Fi 01244 319392</p> <p>CHIPPENHAM JD Stereo Center 01249 654357</p> <p>CHORLEY Monitor Sound 01257 271935</p> <p>CONGLETON The Hi-Fi Showrooms 01260 280017</p> <p>COVENTRY Frank Harvey Hi-Fi 01203 525200 Superfi 01203 232354</p> <p>CREVE Cloughs A.V. 01270 257030</p> <p>CROYDON Audio Tech 0181 680 1177 Richer Sounds 0181 667 1100 Sevenoaks Hi-Fi 0181 477 4167</p> <p>GLASGOW Bill Hutchinson 0141 248 2857 Spaldings Hi-Fi 0181 654 1231 Zebra 0181 688 2093</p> <p>DARLINGTON Hi-Fi Experience 01325 481418</p> <p>DERBY Superfi 01332 360303</p> <p>DEVIZES Rutters Hi-Fi 01380 722268</p> <p>DOUGLAS Island C.D. 01624 674505</p> <p>DUBLIN 2 Hi-Fi Corner 0 1 671 4343</p> <p>DUBLIN 4 The Sony Centre 0 1 667 0990</p> <p>DUNDEE J.D. 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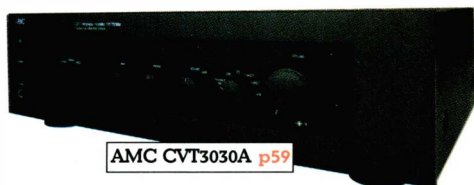
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CURRENT



Alchemist Nemesis p69



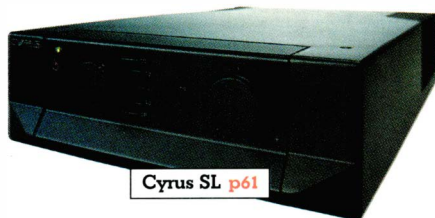
AMC CVT3030A p59



Arcam Alpha 9 p71



Copland CSA8 p77



Cyrus SL p61



Jolida 202 p78



Marantz PM-66 KI Sig p63

Alvin Gold (listening test) and Paul Miller (lab test) round up 14 of the best amplifiers from the mid-priced sector of the market.

Last month, as a prequel to this month's test, we looked at a small group of five inexpensive integrated amplifiers. This month we continue with the same theme, except that the price band starts at just under £400 and goes through to £945, and the number of amplifiers tested has jumped up to 14. The range covers an important band broadly aimed at the second-time buyer, where price remains an important issue, but performance takes precedence.

At first sight, it's difficult to pin down the benefit delivered by spending more than you'd have forked out for last month's contenders. Extra Wattage is one obvious advantage, but on examination the real volume gain is seldom more than 2-3dB, and is sometimes less than that. Is it features, then? Not likely. Only two of this month's testees are seriously well kitted out (Arcam Alpha 9 and Pioneer A-605R) and the bot-

tom line is that on average, this month's models have probably less controls than last month's.

There is one rather obvious difference. Most of this month's units are quite a bit

THE CAST LIST

MODEL.....	PRICE	PAGE
Alchemist Nemesis	£650.00	p69
AMC CVT3030A	£399.95	p59
Arcam Alpha 9	£499.90	p71
Copland CSA8	£945.00	p77
Cyrus SL	£398.00	p61
JoLida 202	£695.00	p78
Marantz PM-66 KI Signature ...	£399.90	p63
Musical Fidelity A220	£699.99	p79
NAD 317	£469.95	p65
Pioneer A-605R	£399.95	p67
Prime Design A-100	£650.00	p73
Quad 77	from £699.95	p80
Roksan Caspian	£695.00	p81
Rose Scion	£615.00	p75

HOW THE TESTS WERE DONE

Our 14 amplifiers were subject to a full battery of tests, including a close physical examination, unsighted panel-based listening tests in a high-grade system, hands-on listening using a range of speakers and source components (including records) and a computerised measurement test programme. Each amplifier was run in and warmed up prior to being auditioned. In total this represents by far the most involved programme of tests that any magazine employs to judge hi-fi products.

Listening panel testing was conducted over a period of two days, and included a number of repeats, with no panel member knowing the identity of the equipment on test, and with levels carefully equalised between test runs. The system used for these tests included a Copland CDA-277 CD player and Castle Howard S2 loudspeakers, with cables from Nordost, and Alphason equipment supports. The hands-on listening was widened to include Sonus Faber Concertos and Ruark Crusader II floorstanding speakers, Tannoy Mercury M2 compacts, a Roksan Caspian CD player and an Alphason Solo turntable with Goldring MM cartridge. All equipment was sited on Mana isolation supports.

WHAT MUSIC DID WE USE?

Allison Krauss: *I Will* from *Now That I've Found You*; on Rounder CDO325

Poulenc: *Allegro Tristamente* from *Sonata for Clarinet and Piano*. Victoria Soames (clarinet), Julius Drake (piano); on AVM AVZ3031

Ry Cooder: *Flashes* from *Jazz*; on Warner Bros 7599-27355-2

Walton: *In Babylon Belshazzar the King* from *Belshazzar's Feast*. Bournemouth SO, Wayflete Singers/Andrew Litton (cond); on London 448 134-2
Assorted other albums used for hands-on testing.

THE LISTENING PANEL

Our unsighted listening tests were conducted by a team of 'golden ears' drawn from the ranks of the hi-fi industry:

David Inman (The Audio Marketing Department)

Alan O'Rourke (Ruark Loudspeakers)

Alan Shore (Harbeth Loudspeakers)

Jonathan Jordan (The Audio Partnership)

Robin Marshall (Mission)

Jason Kennedy (Hi-Fi Choice)

AFFAIRS

heavier than last month's, though at first sight it's not obvious how this translates into improved sound quality. However larger transformers, heftier power supplies and bigger heat sinks should mean more real-world dynamic power; while the combined effect of extra voltage and current should reduce an amp's dependency on the

load it has to drive and the volume level it is aiming to reproduce. A good design should perform more consistently within the volume range it is asked to encompass.

Of course there are other differences. Fewer knobs and controls bestow their own advantage, as does every measure taken by the manufacturer to reduce complexity and shorten signal paths. Anyone who's owned a half-decent system will surely have discovered that tone controls and suchlike do very little to help, in most circumstances anyway.

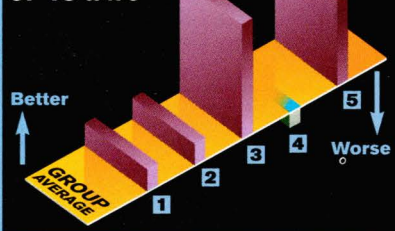
This month's group also boast improved components, tighter tolerances, and more extravagant circuit techniques. None of these things in themselves necessarily guarantee better sound quality, but on the whole this month's group is a strong showing which has thrown up a handful of genuinely talented amplifiers. To find out which I'm referring to, turn the page! *ac*

UNDERSTANDING OUR BAR-GRAPHS AND GROUP AVERAGES

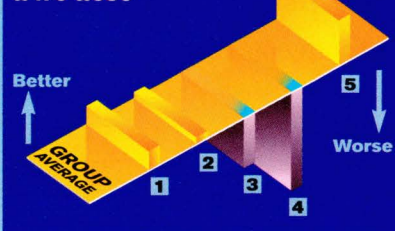
There will be significant differences between the cheapest product in our test and the most expensive. For this reason we always segregate our test candidates into two or more categories based on price. Our aim is to assess every product's performance in the context of its closest rivals.

Each lab-report panel is colour-coded according to the key given below:

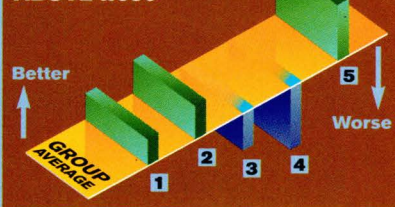
GROUP A EXAMPLE UP TO £470



GROUP B EXAMPLE £470-£650



GROUP C EXAMPLE ABOVE £650



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, more difficult speaker loads.

3 Audible Distortion

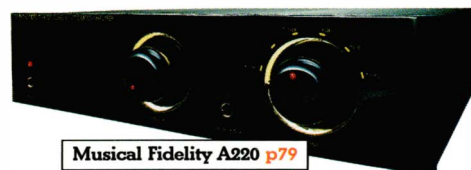
Rather than quote a single figure for distortion at one frequency and level, this bar value represents a measure of distortion and its consistency across both the whole audioband and the amplifier's entire dynamic range.

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.



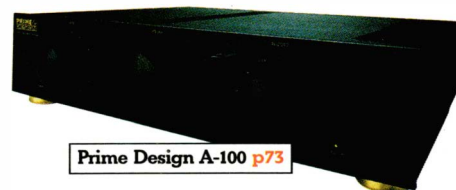
Musical Fidelity A220 p79



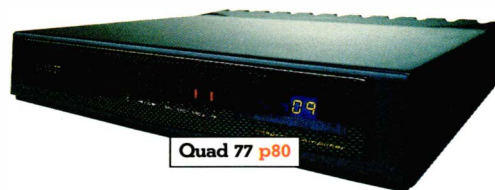
NAD 317 p65



Pioneer A-605R p67



Prime Design A-100 p73



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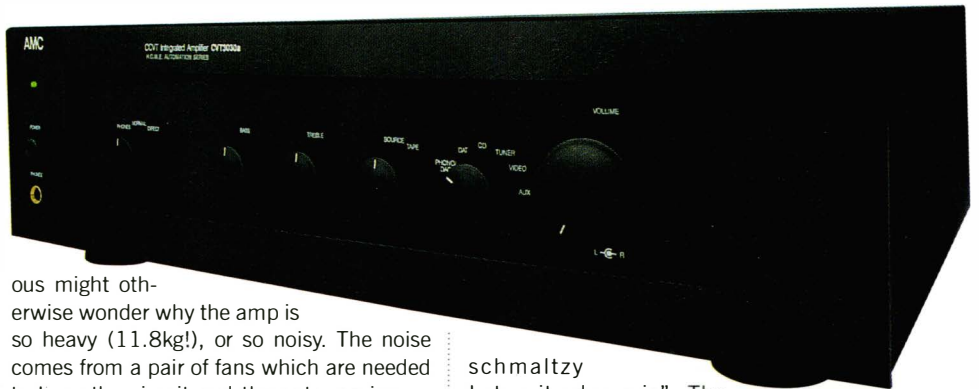
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AMC CVT3030a

“The world’s most competitively-priced valve amplifier” screams the promotional copy (para 2, line 9), and for once this may be the case. Certainly, a fully-fledged valve amp (well, a hybrid MOS-FET design with a valve output stage) which tips the scale at just £400, sounds like remarkable value. The output stage employs a pair of EL34s on each channel, for a rated 30 Watts per channel power output, though it sounds like more.

At this price you would not expect, and neither do you get, Rolls-Royce standards of construction, but build quality does appear to be adequate. The 3030a is based on the now long-running 3030, but with improvements aimed at increasing reliability and performance. The amp has a moving magnet phono input, five line inputs and a tape circuit with off-tape monitoring, plus tone controls with a ‘direct’ bypass facility (switchover is very noisy if activated before the temperature stabilises) and a headphone socket. Balance is adjustable, but no user biasing of the output valves is allowed.

The amplifier is boxed like a standard solid state design; only the orange gleam of the vacuum tubes through the perforated cover gives the game away, though the curi-



ous might otherwise wonder why the amp is so heavy (11.8kg!), or so noisy. The noise comes from a pair of fans which are needed to keep the circuit and the outer casing on the right side of the law. The noise character is fairly benign, but high enough in level to be potentially irritating. Electrical noise through the line inputs is low, though it may be audible, especially with speakers which are very bright or very sensitive, and the phono input was marred by hum with a significant high-frequency harmonic content.

Sound quality

The AMC scored impressively on test, none of the panel apparently recognising that it was a valve amplifier (which is as it should be, of course), though they would probably have guessed had they been any closer to the unit, and been able to hear the healthy swishing noise from its twin cooling fans. A lack of absolute neutrality was also recognised at least by one panel member, who scored the amp highly “because I like a mellow sound!”.

Other panel members were less trenchant in their comments, but the 3030a’s “naturalness”, “warmth” and “smoothness” were widely recognised. One described the Alison Krauss track as having a “firmer bass line” than usual, and for being “a little

schmaltzy but quite dynamic”. The Ry Cooder track was described as “feeling good” with “plenty of presence”, and the Walton as “suitably spacious, with an airy bass, and a breathing quality”, all attributes frequently associated with valve amplifiers.

I was surprised at the AMC’s ability to rock and roll. The balance is a bit rich, and it lacks the delicacy and subtlety of the best valves (or the JoLida — see page 78) but the AMC has an energetic, driving quality unusual at the price, irrespective of technology. With refined, detailed speakers like the Sonus-Fabers, however, the amplifier sometimes sounded congested and lacking in fine detail, and the character of its sound does change markedly from speaker to speaker.

Conclusion

Although too particular in its virtues and vices for a blanket endorsement, the CVT3030a hints at the grace and euphony of more costly valve amps, backed by a surprisingly solid low-frequency performance. Not the most neutral choice at the price then, but with benign electrical loads (look for an easy impedance curve — or consult your dealer) this is a very interesting option. *AG*

VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £399.95

- ▲ A great amplifier for the shortlist, which hints at high-end valve virtues for a giveaway price.
 - ▼ Modest build quality, slightly untidy and load-dependent performance which can lack refinement.
- ✉ Tangent Acoustics UK, 115 New London Road, Chelmsford, Essex CM2 0QT.
 ☎ (0500) 828620

THE LAB REPORT

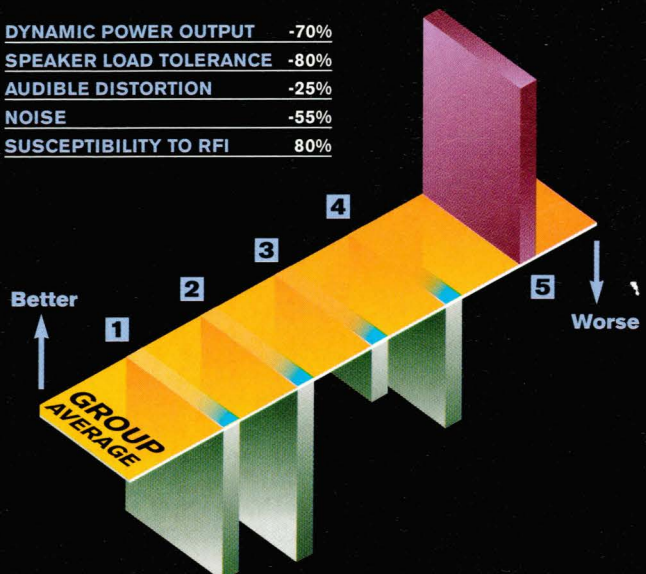
The ‘a’ suffix refers to AMC’s enhancement of its basic 3030 amplifier with higher quality valve and passive components, but as we’ve not tested the 3030, no direct comparison can be mounted. Either way, the 3030a is traditional enough to suffer a limited low frequency power output (just 7W at 3 per cent THD at 20Hz) while its 1.2 Ohm source impedance will surely modify the response of many speakers. The ‘rich’ balance reported by our listeners is a direct reflection of this.

As expected, its output picks up to 37W through the midrange with a dynamic output of 42W that’s still some way behind the other amplifiers in this test. High sensitivity, easy-to-drive speakers will be vital. Meanwhile, rejection of RF interference is surprisingly good for a valve design, but this must surely be linked to AMC’s brick-wall filtering which features an almost CD-like cut-off beyond 43kHz — very unusual.

Within the audioband, noise is some 5-10dB higher than that achieved by its solid-state competitors, helping (in part at least) to disguise the odd-order distortions that increase with growing power through bass and midrange (0.04-0.35 per cent), and leaving a stronger second harmonic to dominate at higher (treble) frequencies. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-70%
2	SPEAKER LOAD TOLERANCE	-80%
3	AUDIBLE DISTORTION	-25%
4	NOISE	-55%
5	SUSCEPTIBILITY TO RFI	80%



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Cyrus SL

The idea behind the Cyrus SL (Straight Line) is so obvious and sensible, it is surprising it's taken so long to see the light of day. This new entry-level Cyrus amplifier uses the same non-magnetic alloy body castings with integral heatsink fins as other Cyrus products, but with simplified features and controls, the latter consisting of a six-way input selector, a tape-monitor switch and a volume control. Forget about headphone sockets or a phono input; and the front-panel standby switching is something of an orphan in the absence of remote control. There isn't even provision to add an outboard PSX power supply, but a preamp-level output is provided, for bi-amplified systems perhaps.

Cyrus has retained its favoured 3mm loudspeaker connector standard, but the competing Camcon standard seems more likely to succeed, if any connector other than the familiar 4mm standard with the obligatory blanking pegs achieves any success at all. I used short adapter leads for this test to allow use with the standard speaker cables, though this will have had limited impact on sound quality.

Highlights include a new short, highly symmetrical circuit layout based on surface mount (SMD) technology, and a proprietary

current feedback amplifier design, for which a high slew rate and low distortion are claimed, fed from a 180VA transformer and slit-foil reservoir capacitors (remember DNM?). The SL is designed to be good for 50 Watts into eight Ohms, or 70 Watts into four Ohms. The amplifier runs cool, and both build and finish rank as superb.

Sound quality

Although described by the panel as "forward and gritty" and "close" (Ry Cooder, but similar comments were made about other test tracks), this amplifier was generally well-liked, and scored fairly well with the panel, with a high level of consistency between listeners — both numerically and in the nature of the comments made.

More than one listener commented on an apparent similarity in sound with the Marantz PM-66 KI Signature (which was unidentified, of course), though they were not confused with each other: the Cyrus generally came out of the comparison slightly worse. The SL was generally felt to be a clean, consistent and detailed amplifier, with a strong sense of detail. "Instruments and voices are well defined and separated" wrote one of the Walton; another spoke of the SL's "open sounding top", while noting some "congestion" in the bass.

While the last comment was not widely held, there was a general feeling that the frequency extremes, and the bass in particular,

were slightly constrained, though the real-world midrange output was surprisingly potent, especially for such a compact amplifier.

Hands-on listening pointed to some alteration of dynamics and spatial perspectives when driven at high volume levels, but at more everyday settings the SL sounded every inch a Cyrus amplifier, with the expected precision and transparency, and a suggestion of tonal leanness implying the amp could help tame some richer sounding speakers like the middle-price floorstanding Tannoys. This comment is based on form rather than direct experience. Listening notes also point to a very clean treble that sometimes veers towards brashness — a jangly piano being one specific complaint.

Conclusion

The SL marks a welcome return to affordability from the increasingly costly Cyrus range, but without any noticeable loss of musical performance. The sound can be a bit lean and forward, but within its power limits this is an extremely finely-controlled and highly-articulate design that should not be overlooked. Recommended. *AG*



VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £398.00

- ▲ Clean, exquisitely detailed and controlled sound, yet does not lack for grace or musical expressiveness.
- ▼ Bass is lean in balance (though notably well extended), and treble can sound gritty if pushed.

✉ Centraforce Ltd, Stonehill, Huntingdon, Cambs PE18 6ED
 ☎ (01480) 451777

THE LAB REPORT

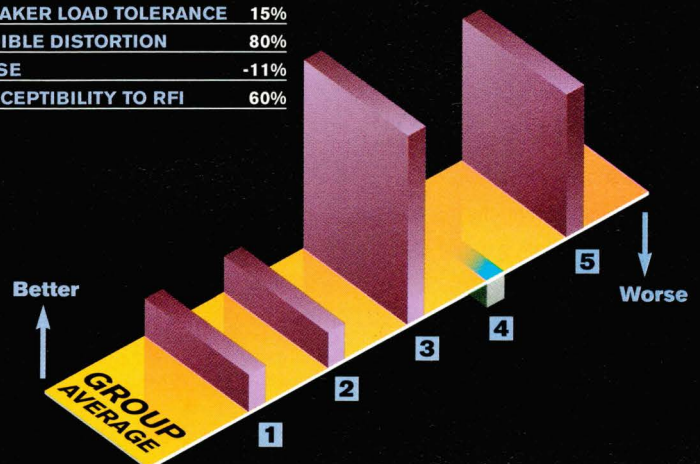
Mission's Cyrus 3i is the 'parent' model to this SL sibling (see issue 162), which has shed the logic circuitry, error lights, remote control and PSX upgradeability to become a 'core' amplifier of, by all accounts, superior performance. Both amplifiers share the same complementary Toshiba-based power amp and patented slit-foil capacitors but the SL's simplified circuit has improved the overall S/N ratio by some 3dB.


At 74/103W into 8/4 Ohms respectively, the SL's power output comfortably exceeds Mission's 50W specification while matching up well enough to the 3i's 75/111W. Small, but very robust, this little amplifier puts up a good show of dealing with difficult speakers, its *dynamic* output reaching a maximum of 310W into 2 Ohms before dropping back to 275W into 1 Ohm as Mission's electronic protection limits the current delivery to 15.9A.

Channel balance is very tight (within 0.8dB over a 60dB range) but the performance of the volume control falls off very rapidly thereafter. Unlike, I must add, the more sophisticated digital attenuator used in the 3i. Distortion also mirrors the 3i, proving to be more consistent with output level rather than frequency. *PM*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	15%
2	SPEAKER LOAD TOLERANCE	15%
3	AUDIBLE DISTORTION	80%
4	NOISE	-11%
5	SUSCEPTIBILITY TO RFI	60%





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Marantz PM-66 K I Signature

In the past, Marantz used to produce 'SE' (Special Edition) versions of basic products, but there was never a basic version of the PM-66. Tested here is an unusual, highly-symmetrical, dual-mono circuit topology which extends through to the heatsinks, and which started life as an SE. The £229.90 PM-66SE is now supplemented by the KI Signature, a further enhanced version of the same basic design. KI is the personal imprimatur of Ken Ishiwata, who has a guru-like status within the hi-fi industry based on his acknowledged technical understanding and the musical sensibilities that allow him to hone products by ear when the slide-rule runs out of answers.

The PM-66 KI lacks tone controls or other unnecessary complications, but you do get a headphone circuit, a phono (MM only) input, three line and two tape circuits, one with off-tape monitoring. Remote control is provided via a system handset (supplied) and by system wire links using rear panel sockets. A source direct switch bypasses the balance control, tape switching and the remote-accessed mute function.

The KI Signature builds on the basic SE model in various ways. The power supply frame transformer has, allegedly, been

replaced by a highly-specified toroid, and reservoir capacity increased by about 20 per cent, though the power spec remains unaltered at 50 Watts per channel at eight Ohms and 70 Watts per four Ohms. The chassis has been extensively copper plated to reduce eddy current effects; even the back panel has a copper mirror finish, making this one of the few amplifiers that looks good back and front. Key passive components have been upgraded, and the moving-magnet phono stage incorporates 'major' but unspecified improvements. Extended testing, front badging and an authentication certificate complete the KI Signature package.

Sound quality

The test amp bypassed the pre-listening soak test, and promptly failed with a dry joint half way through the listening. This was promptly fixed, and the tests completed without further incident.

The PM-66 KI Signature is a very precise, highly articulate piece of kit that knows how to rock and roll, with a quick, rhythmic feel in difficult material, and a secure sense of pitch that shows up many of the competing amplifiers as vague and/or leaden by comparison. It also excels in the areas of timing and stereo soundstaging in which it comes within a whisker of having the ability to generate aural holograms, and it was scarcely less capable via its phono input. The down-side is that the Marantz doesn't have the weight or solidity of

some competitors, which tended to undermine the sense of gravitas with large-scale Mahler symphonies and some rock material too.

The panel was marginally less fulsome in its praise, but still scored the Marantz well. Most of the negatives concentrated on the lack of bass weight, and a couple of comments were made about some 'spittiness' in the treble, though hands-on testing with other speakers and source components suggested that the latter was more system-related than a fault of the Marantz. The following refers to the Allison Krauss track, which is typical of the type of acoustic, medium-scale music that suits the Marantz best, and sums this amp up well: "confident, nicely timed, tidy and natural", he wrote our listener, "the bass could be more distinct, but it keeps time well".

Conclusion

Certainly the most precise, articulate amplifier on test, the PM-66 KI Signature also excels in the areas of timing and stereo soundstaging, and these far outweigh a slight lack of 'slam'. A clear Best Buy. **AG**



VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £399.90

▲ Expressive, transparent amplifier with superb stereo imaging and utter precision.

▼ Lightweight bass sometimes leads to diminished scale and sense of occasion.

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

THE LAB REPORT

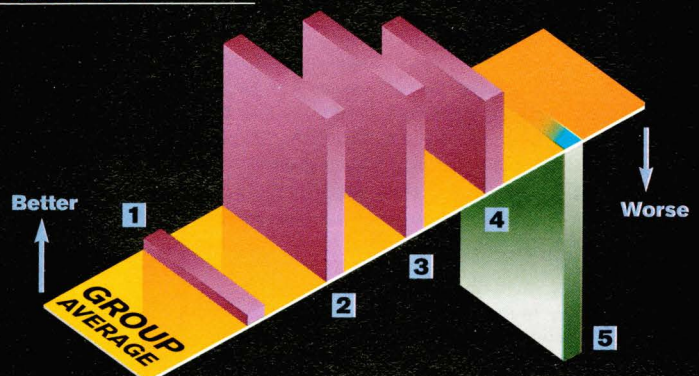
When all the enthusiastic dust has settled and the expanses of copper plating have lost their subjective lustre, just what *really* separates the KI Signature from the basic PM-66SE tested in issue 167? Certain areas of performance have not witnessed any change at all, notably the S/N ratio (88dB re. 1W/8ohm), stereo separation and channel balance — parameters linked to the common board layout and selector technology in the PM-66 series.

Otherwise there *are* some potent improvements. Power output has increased from 69/105W to 79/132W into 8/4 Ohms respectively while the output impedance is reduced to 0.03 Ohms. The maximum current remains steady at 21.8A (equal to bursts of 475W into 1 Ohm), ensuring the PM-66KI Sig is just as tolerant of difficult speakers as NAD's 317, despite the apparent difference in power output.

Most important of all is the dramatic improvement in the Sig's linearity. Whereas distortion increased from 0.0016 to 0.02 per cent across the audioband with the PM-66SE, it holds true to within 0.0009-0.0015 per cent under the same conditions with the PM-66KI Sig. Oh yes, and its response is now flat beyond 100kHz! *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	5%
2	SPEAKER LOAD TOLERANCE	69%
3	AUDIBLE DISTORTION	60%
4	NOISE	39%
5	SUSCEPTIBILITY TO RFI	-90%



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NAD 317

For those with some knowledge of NAD genealogy, the 317 is a 214 power amp with an added preamp. To the rest of us, this is a big, muscle-bound amplifier, with enormous potential for expansion via bridging and bi-amping options. The 317 also follows in the established pattern of previous NADs. A removable preamp-out/power-amp-in link is included, along with 'soft clipping', which is a simple limiter that can be invoked for parties and other hazardous situations.

The issue of power is an important one here. The 317 claims to possess a big, stiffly-regulated power supply (including a Holmgren toroidal transformer, of near 500VA capacity, allegedly, with properties that on paper at least make it more capable than traditional toroids). The power-supply reservoir is said to include multiple small-value capacitors connected in parallel to minimise output impedance and inductance and to minimise recovery times.

NAD claims this results in a high-current amplifier (35 amps peak) capable of delivering 80 Watts into eight Ohms, and which can operate safely into sub-1 Ohm loads. The 317 can also be bridged, so NAD says, to deliver 240 Watts, or bi-amped with a 214 power amp, which shares the same



input sensitivity as the 317's power amp section.

The 317 boasts remote control (a system handset is included), tone controls and tone defeat, and inputs for four line-source components and two tape decks. There is no provision for a phono input, but headphones can be accommodated. Build quality is on the utilitarian side, but the butch internal construction (the transformer alone weighs around 10lb) is indicative of altogether more ambitiously-priced hardware.

Sound quality

A nondescript panel score reflected a wide spread of individual scores. There was much to enjoy for some of the listeners at least, one pointing to the 317's "good midband resolution and transparency", though even he tempered his enthusiasm with comments of "slight compression" and of "slight grain and muddle" in the Walton piece.

This is a powerful amplifier, capable of driving a wide range of speakers hard, always exhibiting fine control and discipline, and sounding consistent in each case. Consistent, however, is not to be taken as synonymous with consistently good, and I can only add my own backing to the majority panel view that the NAD is "muddled and dynamically constrained"

(Walton again, played well within the NAD's power envelope), and "a biggish sound, but the guitar and banjo are sour and nasal, and the top octave is missing" on Allison Krauss. Another made the general observation that the NAD sounded "bleached", and a third declared that "it sounds like a musical stew: timing, dynamics, resolution, enjoyment are all missing".

Harsh words, and some may feel happier with another sum-up line: "slight grain and muddle, but communicative — a nice one" for a powerful and upgradeable amplifier that doesn't exactly cost the earth. But unless you really need bucketloads of power, it would make sense to go elsewhere for fewer, more cultured Watts.

Conclusion

Plenty of raw power here, but the 317 has a rather cluttered quality which deteriorates sharply with complex and densely scored music, the Walton piece being typical of the kind of music that made the NAD seem least comfortable. Simpler music often sounded big, vibrant and colourful, but even so the level of detail remained deficient. **AG**

VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £469.95

- ▲ A real powerhouse of an amplifier, and readily expandable with bi-amp and bridging options.
- ▼ Lacks detail, and can sound hard and muddled, especially with complex music.

✉ The Audio Club, Unit 15, Faraday Rd, Aylesbury, Bucks, HP19 3RY

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THE LAB REPORT

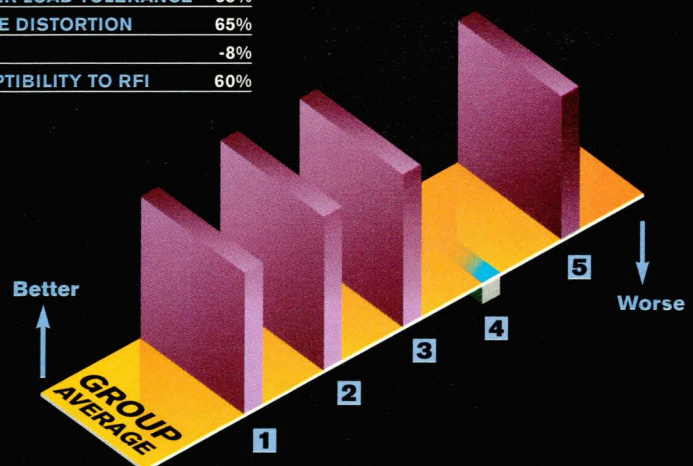
I was rather looking forward to subjecting the 317 to our new Dynamic Output Profiling test, and with momentary outputs close to 535W (2 Ohms) and 840W (1 Ohm), this beefy amplifier surely did not disappoint. However, despite grabbing any likely loudspeaker confidently by its voice-coils, the test did reveal an almost uniform increase in distortion with reducing load impedance: approximately 8dB for each halving of the load for a given (voltage) output.

This means that under realistic, dynamic conditions, distortion is around 35 times higher (typically 0.5 per cent) into momentary 1 Ohm loads as it would for an 8 Ohm load, for the same voltage output. This, in turn, is not ideal for good sound quality, despite its massive 27A current reserve — quality rather than quantity is the key.

Channel balance deteriorates to 2.8dB at -60dB while the 500pF input capacitance suggests a slavish adherence to EMC regulations. Conventional harmonic distortion is otherwise very low at 0.0014 per cent through the midband and only slightly higher at 0.009 per cent through the extreme treble. This consistency is a positive sign, only bettered in this group by the Marantz PM-66KI Sig. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	60%
2	SPEAKER LOAD TOLERANCE	65%
3	AUDIBLE DISTORTION	65%
4	NOISE	-8%
5	SUSCEPTIBILITY TO RFI	60%





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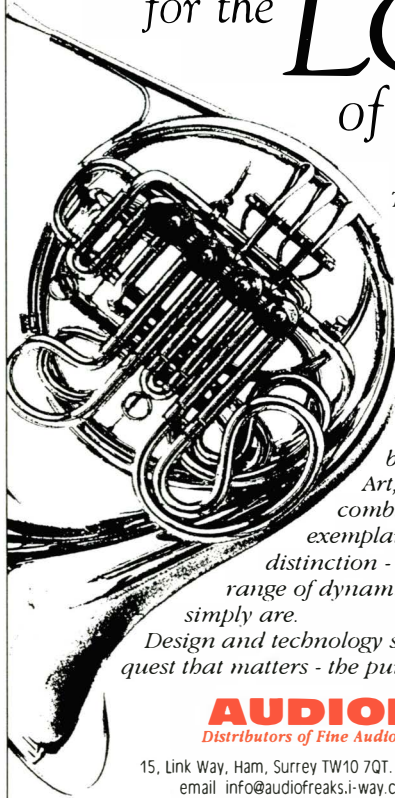
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Pioneer A-605R

There's something reassuringly retro about this large and well-equipped amplifier, which boasts a full set of traditional amplifier-ware, including tone and loudness controls, -20dB mute, switching for two pairs of speakers, source direct, independent source and record selection. It also has a mini figure-of-8 mains socket which allows you to change the polarity of the mains lead and alter the sound. There are also some features you wouldn't have found on a typical amp in the past, including 4mm speaker sockets (blanked off as usual) and remote control. Naturally there's a phono input in moving-magnet flavour only, and a system control socket. Rated power output is a chunky 80 Watts per channel at eight Ohms (90 Watts at four Ohms), so if you want it bold and brassy, this is where to come. It's a far cry from the minimalist Pioneer Precision A-300R we reviewed in issue 162 though most of the '605's less important features can be hidden behind a front panel flap.

The A-605R may have been designed for a broad and general constituency, specifically perhaps for those who buy off the page, but it is very far from being just another amplifier under the skin. The principal claim

to fame is an output stage deploying, apparently, a new HEX MOSFET output device, which is claimed to be highly efficient, producing less waste heat, reducing power consumption, and producing a low output impedance over a wider than normal bandwidth, without the need for high levels of feedback and with only single pole (6dB/octave) filtering. With a range of other power reducing components, including non-scanning microprocessors in the control section, Pioneer claims it has designed a compact, highly symmetrical, physically compact circuit with a reduced power demand. Power is drawn from a toroidal transformer.

Sound quality

Sample number one decided to throw a wobbly in the panel tests, but another was promptly supplied for Day Two, and listening proceeded as usual. A middling score concealed some differences between panelists, one of whom pointed to what he perceived as an increased output in the 4-6kHz range, and a "degree of hardness" (though which observation springs from which is not clear), while another commented on a "big, airy though somewhat insubstantial bass".

For my money, this is a broad, spacious and surprisingly powerful amplifier, but it lacks subtlety, which is apparent as a rather rigid lack of expression with many recordings. Percussive sounds — classical piano

for example — tended to sound rather electronic, with perceptibly clipped decay sounds, and clearly different character with changes in musical dynamics. The A-605R lacks the consistency of the very best (including Pioneer's own Precision amplifier, which was on hand for comparison in the hands-on testing), and perhaps for this reason fails to set up a tangible sense of solidity and presence with known good recordings. The phono stage was adequate rather than inspired — brash with light bass, say the notes on the Karajan/EMI Sibelius Finlandia — and that perhaps is the A-605R's principal weakness.

Conclusion

The promise inherent in the technology is not entirely fulfilled on test, and it would be interesting to see if its design will be adopted by the Precision design team, as exploited in ostensibly less promising material from Pioneer's mainstream range. The A-605R is not a bad amplifier though, being unusually powerful at the price, though not without a suggestion of changing sound as the volume level is altered. AG ▶▶



VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £399.95

- ▲ Powerful, well (too well?) equipped, generally open sound.
- ▼ Lacks fine detail, consistency with volume level and fine discrimination of the best at this price.
- ✉ Pioneer High Fidelity (GB) Ltd, Pioneer House, Hollybush Hill, Stoke Poges, Slough, Bucks SL2 4QP
- ☎ (01753) 789500

THE LAB REPORT

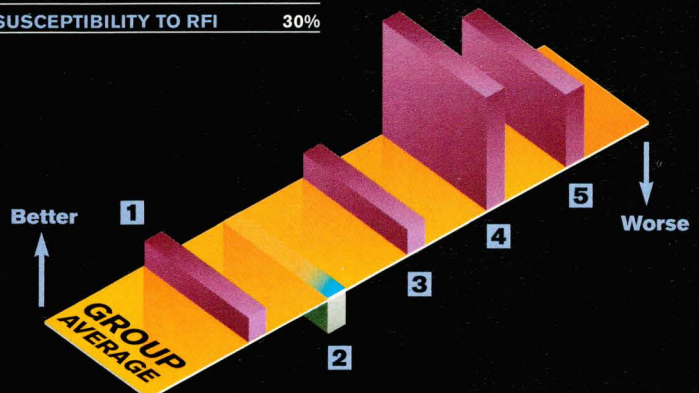
As far as I can tell, there are no outrageous claims being made by Pioneer for the A-605R which emerges, relatively unscathed, as a powerful if relatively conventional amplifier. If our listeners reported a slightly hard, bright and forward sound there's nothing so obvious as a rising frequency response to serve as explanation. The clues are actually more subtle.

For example, the S/N ratio is pretty much the widest in the group at 89dB (re. 1W/8 Ohms) though this, in turn, could make the effects of its RF susceptibility (in the low 1-10MHz) band more obvious. The substantial 20x jump in distortion that occurs between midband and treble sounds (0.002 to 0.045 per cent), almost regardless of power output, is also likely to have an impact on sound quality. Perceptions of brightness and early listening fatigue are just symptoms of phenomena that make our enjoyment of music rather too much like 'hard work'.

Otherwise, the A-605R offers a full 80W output into 8 Ohms and 140W into 4 Ohms, though its electronic protection cuts in rather prematurely to limit its maximum current to 12.6A (equal to bursts of 160W into 1 Ohm). Safe and flexible, but hardly invigorating stuff. PM

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	10%
2	SPEAKER LOAD TOLERANCE	-15%
3	AUDIBLE DISTORTION	10%
4	NOISE	48%
5	SUSCEPTIBILITY TO RFI	30%



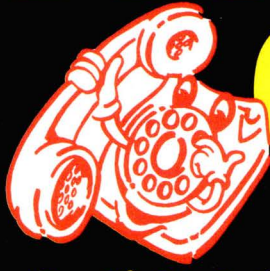
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Alchemist Nemesis

Alchemist was founded a few years ago, and has acquired a loyal, specialist following for its uniquely-styled amplifiers, partly in the UK, but mainly, I hear, in Far Eastern markets. The Nemesis is a powerful, minimalist design with a claimed power rating of 80 Watts per side. The bipolar output devices are biased more heavily than usual towards Class A, and consequently the amplifier runs a little hotter than most, even though the instruction manual's opening sentence states that "the Nemesis integrated amplifier is a class A/B device, and as such does not need to dissipate much heat".

This is a minimum-features design. There are four line inputs and two tape circuits, with off-tape monitoring using independent record and listen selectors. One of the inputs can be used as a phono input for MM or MC cartridges, but this means plumbing in an accessory circuit board at extra cost. The only other control provided over the input is by adjusting the volume. There is no balance control, tone control or speaker switching, and no headphone circuit or remote control. There are two preamp

output circuits, which could be used to drive outboard power amplifiers.

Looks are very much an issue here. The black, silver and gold finishes make a strong statement, and this is undoubtedly an amplifier whose looks you will love or hate, rather than be indifferent to. It is, however, well-built, the controls especially so, though there are too many sharp edges and visible fixing screws in contrasting colours for my liking.

Sound quality

The test sample of this amplifier was quickly replaced by a revised version, which forms the basis of this test. The new model is much more accurate tonally — the old one was clearly a little soft-centred and dull in the extreme treble — and I am convinced that most would find it a clear improvement over the original, which is the one that most will have heard to date in dealer demo rooms.

Not enough of an improvement to be completely convincing to the panel, however, which turned in a wide variation of opinions, ranging from "rather unimpressed" to "rather impressed". One described the Nemesis as "smooth and mellow" in the Allison Krauss track, but the amplifier appeared to sharpen up with more

aggressive, wide-ranging material, and the Poulenc for example was described as "confused and strident" by one, and as "vibrant but a little messy" by another. Perhaps the fairest sum-up comment, in that it comes closest to expressing a consensus view, is that the Nemesis offers "average resolution", being neither "distinguished nor dull".

Hands-on listening showed that this is a well-balanced, engaging performer that rises to the challenge of busy, agitated musical orchestral passages, and which had a fruity, well-timed bass line. There were limitations, though: a slightly 'enclosed' quality which was noticed with a wide variety of material, and a loss of high frequency harmonics, which deprived piano recordings, for example, of 'ring' and air.

Conclusion

A true individual, though less idiosyncratic than of old, the Nemesis is a powerful and musical amplifier, but it can sound a little restrained by the best standards, and it needs to work a little harder to really justify its price. It's a great looking unit, though, and a real talking point in its own right. **AG**

VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £650.00

▲ Interesting amplifier, improved in its latest form, which combines warmth and solidity with a strong power yield.

▼ Provides a slightly distant and constrained view of the music.

✉ Alchemist Products, Unit 1, Furzewood House, Cranbourne Industrial Estate, Potters Bar, Herts EN6 3JN
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THE LAB REPORT

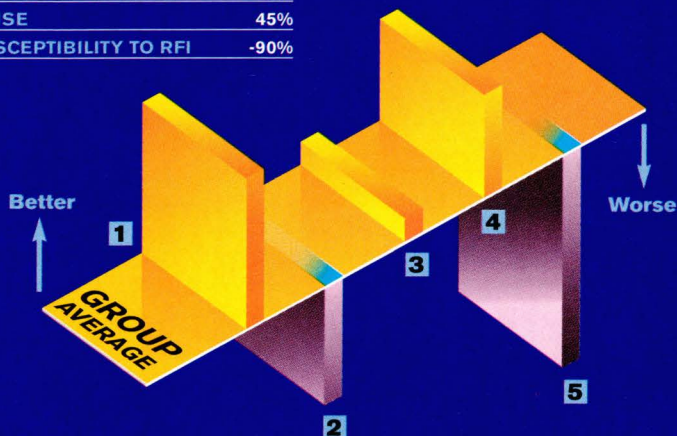
In common with previous Alchemist amplifiers, the Nemesis runs hot, causing one or two areas of performance to shift slightly in parallel with changes in temperature. Distortion, for example, finally settles to a low 0.06-0.014 per cent (re 1W/8 Ohms) over the first hour the amplifier is switched on, increasing by some 10dB between 8 and 4 Ohm loads. Into these lower loads, its power output is limited, not by a reasonably well defined clip (as it is into a moderate 8 Ohms), but by a 'creeping' distortion that grows with decreasing load and increasing frequency.

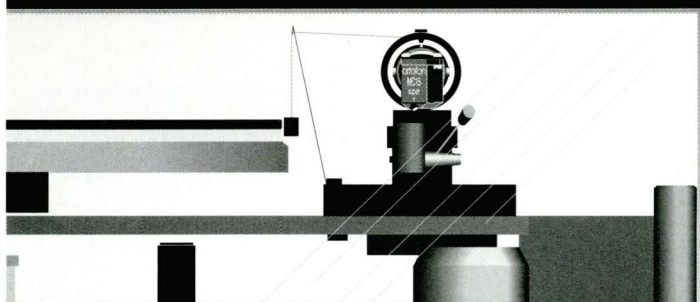
Using the new Dynamic Output Profiling test described in Oasis of Sanity (issue 166), Alchemist's VI-limiting was clearly revealed beyond 5A into any load below 8 Ohms, leading to a limit of 6.8A into all 4, 2 and 1 Ohm loads under dynamic conditions.

As a result, though the amplifier can sustain between 103-125W across the audioband into 8 Ohms, this collapses to a maximum of just 49W under dynamic conditions into momentary loads as low as 1 Ohm. So, however powerful the Nemesis might seem on paper, its handling of 'real-world' speakers is likely to be variable. Add to this a moderate 0.17 Ohm output impedance and a huge susceptibility to RFI and I'd not be surprised to hear the Nemesis sounding very different from system to system. *PM*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	65%
2	SPEAKER LOAD TOLERANCE	-50%
3	AUDIBLE DISTORTION	10%
4	NOISE	45%
5	SUSCEPTIBILITY TO RFI	-90%





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Arcam Alpha 9

The Alpha 9 is the top integrated amplifier in the current Arcam line-up, and one of the more powerful models tested here, claiming 70 Watts per channel (eight Ohms) output from its VMOS output stage. This model was featured in issue 165 as part of a combination that also included the matching Alpha 9P power amp. Here it is used on its own, but readers should refer back to learn how the Alpha 9 may be upgraded via its rear-panel pre-amplifier output sockets.

This is an all-singing amplifier, offering separate record and listen source selectors, tone controls (with the obligatory 'direct' option), a headphone socket and connections for two pairs of independently switched speakers, though it is possible to use both pairs of outputs for bi-wiring with standard cables. There are also some more sophisticated options, including a preamp-out/power-amp-in circuit which can be used to patch in external processors (for home cinema applications, for example) at fixed level, or at a level dependent on the volume control. This circuit can be selected from the front panel. It is also possible to add in a phono circuit-board with independent MM and MC inputs, but this is an extra-cost option that was not supplied for this test.



The Alpha 9P is supplied with a system remote handset that operates the basic features of the amplifier.

The familiar styling of the current range is an organic development of older Arcam ranges, with smaller, less angular and more fluid lines, which will nevertheless blend in successfully with most third-party components. Control feel is good, and the layout, though rather busy, is professionally conceived and likeable in operation.

Sound quality

The panel test verdict was consistent with the previous occasion on which this amp was tested by the panel; indeed the panel test was done in the same way (see *HFC* April 1997) so this result is not unexpected. That said, the average score was a little better than last time around, though for obvious reasons scores cannot be directly transferred between sessions.

Although there were some critical remarks ("ordinary — flat — lifeless" wrote one, and another described the Walton as "not really dynamic enough" and "a bit grainy"), the general view was better represented by comments such as the following: "Ry Cooder at his best, (this amplifier is) transparent to all the nuances of tempo and detail". Or this, on the Walton: "good attack

— very detailed, well integrated top to bottom". Finally, on the Poulenc extract: "this piece has a sense of drama".

Hands-on listening told a similar story, with particular comments being made of a realistically percussive piano sound (using a Beethoven recording), though timing seemed slightly slack, and the music content occasionally appeared to modulate the output, a form of dynamic compression which was also identified by one of the panel members, and which can be resolved by bi-amping the Alpha 9 with an Alpha 9P power amp. Stereo depth sometimes seemed somewhat curtailed too, but detail was always strong, and tonal colours were vivid and colourful — a good result at the price.

Conclusion

A fine mid-market amplifier which is well equipped, powerful and which sounds colourful and detailed. Only a slight loss of discipline and some foreshortening of stereo depth count against this amp, but it's as well to remember the upgrading possibilities of the matching Alpha 9P power amp and the add-in phono input. Recommended. *AG*

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £499.90

- ▲ Good performance, concentrates on transparency and tonal variety.
- ▼ Stereo soundstaging is slightly deficient, and the amp sounds slightly wayward at low levels.
- ✉ A&R Cambridge Ltd, Pembroke Avenue, Denny Industrial Centre, Waterbeach, Cambridge CB5 9PB
- ☎ (01223) 203203

THE LAB REPORT

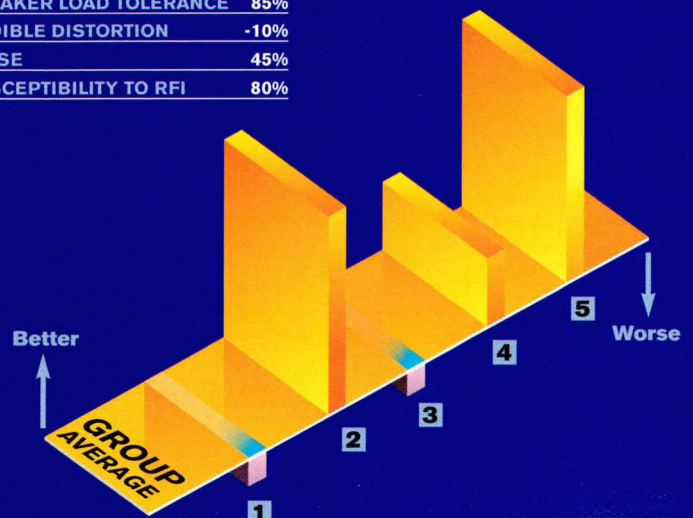
Quite by chance, our last amplifier survey (issue 167) contained five of the sturdiest, most load-tolerant designs available. So much so, that the bar-graphs failed to truly represent their prodigious outputs relative to the average amplifier. One of those amplifiers was the Alpha 7, little brother to the appropriately more powerful Alpha 9. Needless to say, Arcam's tried and tested MOSFET power amp endows this top end model with equally vast reserves of clean, dynamic power.

How much? 105W/193W/332W/467W into 8/4/2/1 Ohm loads respectively, which, when viewed against the Alchemist, Prime Design and Rose (all of which have a notionally similar 8 Ohm power rating) is now properly revealed by the 'Load Tolerance' bargraph. Speakers of any ilk hold no fear for the Alpha 9.

The fly in Arcam's ointment, however, concerns its poor control over HF distortion which limits the treble power delivery from 90W to 67W as THD cruises up from a low 0.0028 per cent midband to 0.14 per cent at 20kHz (a 50x increase). The 4.5k Ohm input load will also put the willies up many CD players, adding to 'roughness' through the treble. *PMi*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-11%
2	SPEAKER LOAD TOLERANCE	85%
3	AUDIBLE DISTORTION	-10%
4	NOISE	45%
5	SUSCEPTIBILITY TO RFI	80%



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Prime Design A-100

P rime Design is a new brand whose range includes the A-100 amplifier and some loudspeakers of similarly elaborate design due to be rolled out soon. Other products are scheduled to follow.

The A-100 specification is nothing if not ambitious. The eight Ohms power rating of 100 Watts per channel is said to double into four Ohms, on paper justifying the efforts spent on design of cost-critical components like the heatsinks and power supply. The latter, allegedly, is built around a massive 500VA transformer and 80,000 μ F of reservoir capacity. The power amp is described as a symmetrical ultra-linear bipolar design, with a fully complementary output working in Class A up to 15 Watts, and Class B thereafter, but the amplifier runs too cool for this to be entirely credible. Electronic and fuse protection is provided.

The amplifier itself is generally well turned out, but the panel graphics are questionable, the mains on/off switch looks agricultural and the fascia corners are too sharp. There is some untidiness internally which will be eliminated shortly according to the manufacturer, though the unit supplied for review is said to be from a full production run and is not a prototype. The rest of the metal

work is exemplary, and the same is true of the quite superb lathe-turned controls, which address both listen and record selectors, and a volume control. The individual selectors facilitate off-tape monitoring, and the pre and power amps can be unhooked for upgrading purposes. A second preamp output is fitted. There is one line input, three tape circuits (which can double as line inputs) and a phono input with user-specifiable parameters (moving magnet in the test sample, by request) which is identified on the front panel as a second line input.

Sound quality

The amplifier went silent part way through the tests, but by the time it was returned to base the fault had resolved itself. A second sample briefly failed to respond after some hours use, and then reset itself (it has not subsequently failed), and it seems probable that the protection circuitry may have been to blame in both instances. The mains transformer was also noisy mechanically.

Musically the amp was quite impressive, especially if you like your music bold and dynamic, but subtlety is not its forte. Our listening panel disagreed among themselves about its overall balance, though not about the nature of that balance. "Noticeably hard", wrote one of the Allison Krauss track. "There's a lot of energy in the 4-6kHz range, which is initially impressive, but is actually rather aggressive and biting. There appears to be some channel imbalance favouring the

left".

Others reacted with greater overall enthusiasm. "Nicely integrated presentation, but voice a little synthetic and quite hard on peaks", another said of the same track; "open, clear presentation on instruments with good stereo imagery — also well controlled and natural" was a third. The Walton was described in these terms: "good dynamic control and speed — a convincing performance".

The A-100 ultimately lacks the fluidity and grace needed to make speakers like the Sonus Fabers sing, and its stereo performance was curiously under-developed, possibly indicating some mutual dependence between channels. But the amplifier is immediate and incisive, and presents music in an unusually vivid and dynamic way. The phono input was entirely consistent with the line stages — a measure of its transparency.

Conclusion

This is a dynamic product. The A-100 has certain Naim-like qualities and there is no suggestion of tonal inadequacies. With a little further development it could easily be Recommendable. There is some suggestion that the amp is designed to be synergistic with Prime Design's own loudspeakers. **AG**

VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £650.00

- ▲ Authoritative, stable and solid delivery, even at high volume levels; good overall build.
- ▼ Some rough edges, musically and physically; some loss of subtlety and stereo interest.
- ✉ Prime Design Ltd, Unit 2-6 170 Deans Lane, Edgware, Middlesex HA8 9NT
- ☎ (0181) 906 0181

THE LAB REPORT

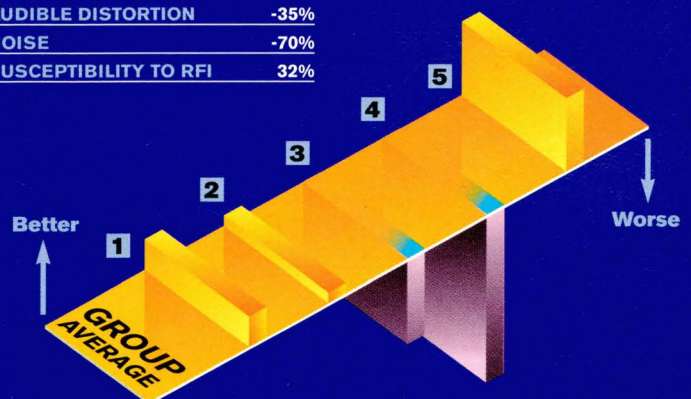
There is a lot of very heavyweight amplifier in the Prime Design A-100 — engineering capable of delivering 110/183W into 8/4 Ohms respectively. However, distortion rises markedly with increasing frequency. So much so, that THD at 20kHz is typically between 0.6-0.8 per cent over 90-odd per cent of its dynamic range, the true 'clip' point being reached at 106W/8 Ohms (110W re. 1kHz).

The dynamic output into lower impedances also suffers, with a maximum current of just 9.2A limited both by inherently high THD (>1.5 per cent) and pre-emptive protection circuitry. The nature of Prime Design's distortion looks fairly contrived, however, with strong 2nd and 4th-order harmonics increasing tenfold from, typically, 0.07 per cent midband to around 0.7 per cent at very high treble frequencies. This encourages a 'colour' that's quite distinct from the odd-order character incurred by most solid-state amplifiers.

Noise is also higher than expected, with -56dBV worth of hum (1.54mV) and -68.2dB worth of A-wtd 'white noise' (re. 1W/8 Ohms) putting the A-100 some 15-20dB behind the S/N ratio of other amplifiers in this survey. Hence the plummeting bargraph. *PMi*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	13%
2	SPEAKER LOAD TOLERANCE	5%
3	AUDIBLE DISTORTION	-35%
4	NOISE	-70%
5	SUSCEPTIBILITY TO RFI	32%



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Rose Scion

At first sight, it looks as though we've broken with our self-imposed decision to stick to integrated amplifiers in this test, but the Scion is in effect an integrated amplifier that happens to come in two boxes. The two units are uniquely configured, each dedicated to the other and unavailable separately.

The two boxes are designated as a (mostly) passive input selector, through which all source components are routed; and an output amplifier, which is a power amplifier, but also includes the system volume control. The only active circuitry housed in the input selector is the MM/MC phono preamplifier, there to be shielded from magnetic fields associated with the power amp. Output is specified at 65 Watts per channel, though typical output in the UK (with a 240V input) is said to be around 80 Watts. Inputs: two tape, three line and the previously mentioned phono, a zero feedback circuit. No tone controls or other such impediments have been included.

Build quality is adequate but unexciting. The controls are ill-differentiated, poorly labelled, and feel horribly imprecise. I'm pretty sure I recognise some of the components from a popular parts catalogue, and the sharp-edged heatsinks must be handled with care. A surprisingly long power lead is

used between the two units, which are not marked as CE compliant, though the makers say that this has been addressed with subsequent production runs.

Sound quality

Technically the Scion is all about allowing the low-level circuits to work without interference from the high-voltage power amp and supply circuits. The idea is to ensure good organisation of sound down to the lowest levels. By and large, these efforts have succeeded, but unevenly.

The Rose Scion was scored very consistently by all panellists, just above average. They were also in agreement about how it sounded. "Pleasant, if slightly romantic", and "copes agreeably" seemed to be popular sum-up lines, with most of the praise directed at the open midband.

The frequency extremes, however, attracted some criticism, the bass especially. "(It) tends to be a bit one-note, slow, and the bass is lethargic" was typical of the comments submitted, and the treble extreme was the subject of some criticism too: "leading edges are a bit rounded" (Ry Cooder), and "soft-centred" (Poulenc). My own listening pointed to some sibilance, mostly in female vocal tracks (Jennifer Warnes and others), but I was impressed with the lively, open-sounding phono input (tested in MM trim only).



On balance this is an agreeable amplifier, with an emphasis on resolution and excellent "local" dynamics: the subtle and expressive shadings that allow instruments and musicianship to be painted realistically, even when they are half buried in a complex mix. Large scale dynamic ability, which defines the range between very low and very high volume levels, is less impressive, and the Scion does indeed have a rather lightweight feel. In no sense is this a muscle amp.

Conclusion

This is not an easy amplifier to sum up. It has many fine qualities, some rough edges, and a physical presentation that appears to offer some advantages, but which looks a little primitive in execution. It's not cheap either, which makes it hard to excuse the shortcomings. Perhaps the Scion should best be regarded as work in progress. It's already a decent amplifier with some real potential that has not yet been fully realised. *AG*

VERDICT

SOUND ★★☆☆☆
VALUE ★★☆☆☆
PRICE £615.00

- ▲ Subtle, engaging two-box integrated; odd but interesting.
- ▼ Indifferent build, slack frequency extremes; lacks authority.

✉ Rose Industries Ltd, PO Box 13, Abingdon, Oxon OX14 4XE
 ☎ (01235) 847023

THE LAB REPORT

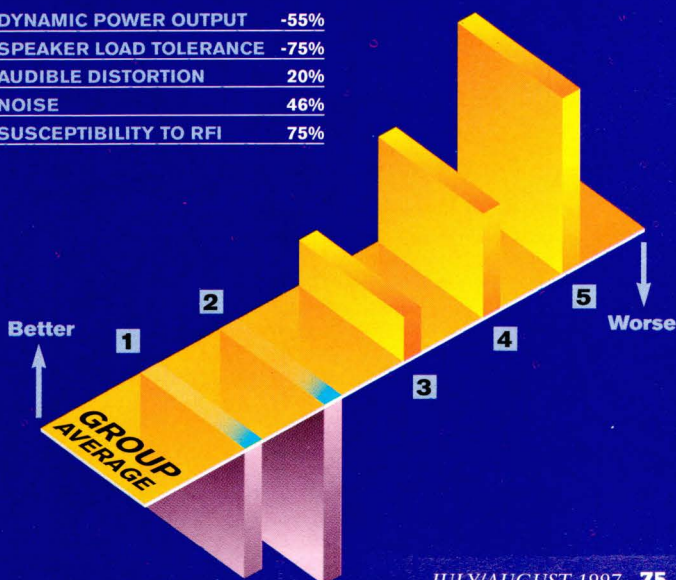
Though Rose makes no bold claims for the Scion's power output, this amplifier is, as Alvin has suggested, nonetheless very shy of moderate-to-low impedance loudspeaker loads. VI-limiting seems to set in very early, with the result that its *dynamic* output actually falls from 90W to 75W to 41W to 23W (8, 4, 2, 1 Ohm respectively). Even under standard, continuous output conditions, the Scion's 76W/8 Ohm performance struggles to maintain 75W/4 Ohms where, arguably, something closer to 100-120W might be more typical of competing amplifiers.

This is highly relevant, because it suggests the Scion will only perform at its best with sensitive, easy-load loudspeakers unless, of course, you like the sound of an amplifier struggling! Ironically, and despite Rose's use of two 'isolated' boxes, the Scion also suffers an obvious 50Hz hum component (-62.8dBV), lying well above an otherwise unperturbed noise floor (S/N = 83.7dB, 1W/8 Ohm).

On a more positive note, the 0.02 per cent midband distortion of the Scion may increase to 0.22 per cent at higher frequencies, but both the level and extended-order character of this distortion stays remarkably consistent with power output. As Alvin says, 'work in progress'. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	-55%
2	SPEAKER LOAD TOLERANCE	-75%
3	AUDIBLE DISTORTION	20%
4	NOISE	46%
5	SUSCEPTIBILITY TO RFI	75%



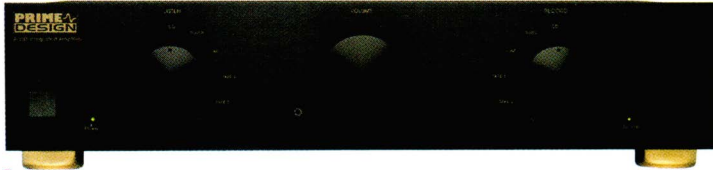
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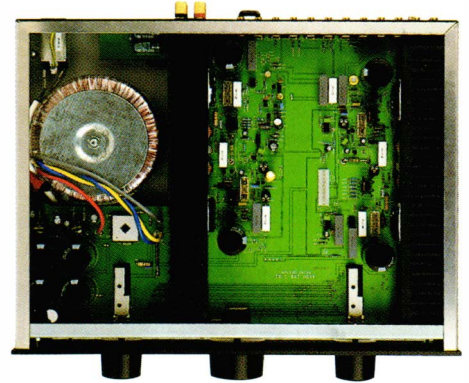
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200 WPC
into 4 ohms

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R.R.P. £650

A-100 Internal View From Above - Designed for Overkill Absolutely no expense spared, see what we mean !

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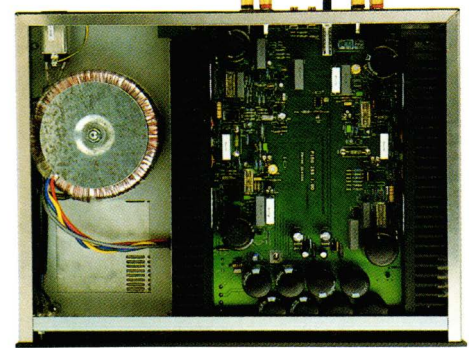
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P-150 Stereo Power Amplifier



150 WPC
into 8 ohms



Features

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- 300 WPC into 4 Ohms from 20-20,000 Hz
- 0.005 % Distortion at 1Khz
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300 WPC
into 4 ohms

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Copland CSA8

Here is the entry-level amplifier from a manufacturer with a carefully cultivated image as an entry-level high-end brand. All the right elements are present: engineering standards, inside and out, are very conservative and of the highest quality, though the identically-priced bright metal alternative is an altogether classier-looking product.

From the outside, the CSA8 could not be simpler. A central level control is flanked on one side by a source selector and on the other by an on/off switch. On the back there are three line inputs, though by user request this figure has been increased to five. Off-tape monitoring is not allowed on this model. 4mm brass speaker binding post speaker terminals and an IEC mains socket complete the list. No feature of this product is there just for the ride. This is not simply Scandinavian cool; with every line and detail perfectly proportioned it is Scandinavian minimalism.

The design of the amplifier itself is based on the CSA14 hybrid valve/semiconductor design, except that the two valves in the input differential section of the voltage amplifier have been replaced by transis-

tors. Copland claims no loss of quality or power (60 Watts into eight Ohms) but it does accede to a different, more forward-sounding balance.

Sound quality

There were few major complaints from the panel, but little real enthusiasm emanated from some panellists for this amplifier. One heard it as "lacking excitement" and "acceptable but boring (giving) a 'wrong end of a telescope' view", which could be a complaint of a lack of drama and passion.

This was not a unanimous view however. One listener held precisely the opposite view, specifically commenting on what he heard as "plenty of drama" in the Walton, and a "tactile, gritty and piquant" performance in the Ry Cooder. Another wrote of a "forward midrange, a reasonable soundstage and a fluid midrange", though he did suggest that the sound "wasn't entirely natural". This disagreement was reflected in the scoring, and as always in such situations, the average 58 per cent score fails to tell the whole story.

My own sympathies are with those who took a more positive view. My hands-on listening (the amplifier has been in almost daily use for some months) tells the story of

a neutral, transparent amplifier which rarely imposes its own character on the sound, for better or for worse. Those looking for a lead, an obviously characterful sound, will be disappointed.

This is not to say it is bland. Good female vocal recordings (eg Jennifer Warnes) sounded bright, open and clear, while classical piano was resonant and realistic. The bass is simply extended, tuneful and 'breathes' naturally, and the treble is full of life and vitality, rarely sounding under pressure. The CSA8 has the happy knack of sounding consistent as musical dynamics and volume levels change, though if pressed it could be described as slightly forward and glassy.

Conclusion

This is an amplifier whose qualities tend to insinuate themselves through extended use. It is arguably a little too neutral and transparent to impress in the short-term. It is also the most expensive model in the group, but its excellent musical manners and superb build quality make Recommendation mandatory. **AC**



VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £945.00

▲ A real quality act, down to the tiniest component, and the subtlest musical detail.

▼ Balance is a little shiny and forward, though only by Copland's usual relaxed standards.

✉ Absolute Sounds, 58 Durham Road, London SW20 0DE
 ☎ (0181) 947 5047

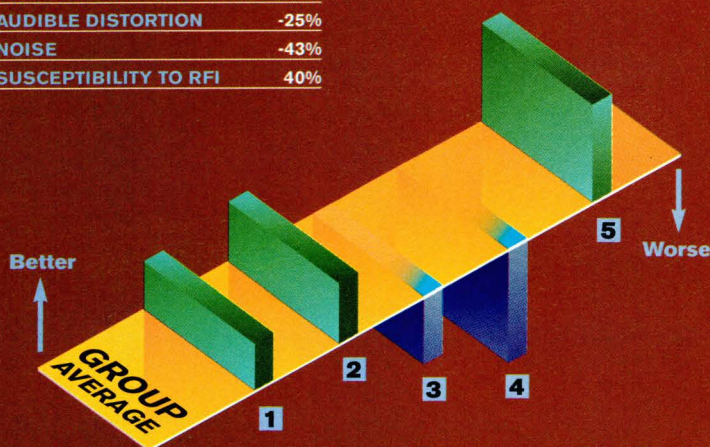
THE LAB REPORT

Though not quite on a par with Naim's amplifiers in this regard, the Copland CSA8 is unusually sensitive, requiring an input of just 10mV for 1W/8 Ohms where figures of 30-50mV are more common. The dynamic output of 91W/165W into 8/4 Ohms respectively, looks solid enough but then the amplifier begins to struggle, offering a reduced 153W/111W into 2/1 Ohms respectively. For a given voltage output, distortion is also around 26dB (20x) higher for momentary transients feeding 1 Ohm as opposed to an easier 8 Ohms. Without doubt, the CSA8 is not a frail amplifier (unlike the AMC, Rose or Alchemist) but I'd still recommend you steer clear of insensitive, 4 Ohm-rated loudspeakers.

Copland's attention to board layout has endowed the CSA8 with an excellent high-frequency channel separation (better than 66dB) while the high quality volume control holds true (within 2dB) over a full 80dB dynamic range. A figure of just 60dB is more common these days. The pattern of distortion, meanwhile, is not unlike the Rose Scion with some 0.02 per cent midband increasing to 0.18 per cent at higher frequencies, almost regardless of power output. So, distortion is consistent with Watts, if not Hertz. *PM*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	20%
2	SPEAKER LOAD TOLERANCE	25%
3	AUDIBLE DISTORTION	-25%
4	NOISE	-43%
5	SUSCEPTIBILITY TO RFI	40%



JoLida 202

No, I didn't know about JoLida either. It turns out that the company, based in Maryland USA, has been making valve-based studio and guitar equipment for some time, and has a background in manufacturing and sourcing components of various kinds, including transformers and vacuum tubes. Its move into valve amplification was more recent, and this offering has been pitched at the affordable end of the market. The 202 is the second model up in a five-strong range.

The JoLida 202 is a well-specified and compact integrated amplifier, with four line level inputs and a volume control. A tape loop is available as an optional extra, and so incidentally is a tube cage, which might be a good idea if the amp is within reach of children. There is no phono input: the maker recommends the distinctly non-valve-like Audio Alchemy step up.

Rated at 40 Watts per channel (but probably down to single figures at the frequency extremes), the amplifier is dominated by a massive power transformer and the two flanking output transformers, which feed the outside world through four Ohm and eight Ohm taps. Few corners appear to have been cut to achieve the low selling price, which seems to result from offshore component



sourcing, though final assembly and testing takes place in the USA. In use the amp is simple to operate. The only routine maintenance is biasing of the 6CA7/EL34 output tubes, for which a simple DC millivoltmeter will be required, though this should only be needed after the unit has been transported or when the tubes are replaced (tube life is given at 3,000 hours). The importer is 'investigating' the possibility of including a suitable meter with each amp sold.

Sound quality

It was intriguing to compare this amplifier to the only other valve model on test, the AMC3030a. The JoLida offered much silkier and more refined instrumental and vocal textures, and a still more dynamic musical envelope, a trick it managed to combine with a more natural, less forced quality when dealing with individual sounds. The whole effect was more coherent and natural, and this is an amplifier that most would recognise as being valve-like, though on the minus side the JoLida sometimes sounded a little bland, or at least understated.

The panel liked this amplifier, marking it above average, with little variation from listener to listener, and one did indeed describe it as "kinda tubey", commenting on its "big"

sound, and its "somewhat diffuse, defocused" imaging. Following the Walton presentation, he wrote of a "good scale and tonality, but detail and substance could be greater", and that it was "one of the more enduring renditions, but not one of the most gripping". Other comments were broadly in the same direction. "Not especially detailed, but clean" said one, while another pointed to the bass which he felt "could have better control" and on its "clarity and smoothness", when dealing with the Allison Krauss and the Walton respectively.

Technically the JoLida is quite proficient, with a quick warm-up, well controlled background hiss (but of course no phono input) and no necessity for cooling fans with an amplifier that literally lets it all hang out.

Conclusion

Here is a capable valve amplifier with classic valve-type virtues and few vices, either practical or sonic, though the level of detail is limited. Whether you like this kind of amplifier is a matter of taste: of its type and price, it's an undeniably strong contender. *AG*

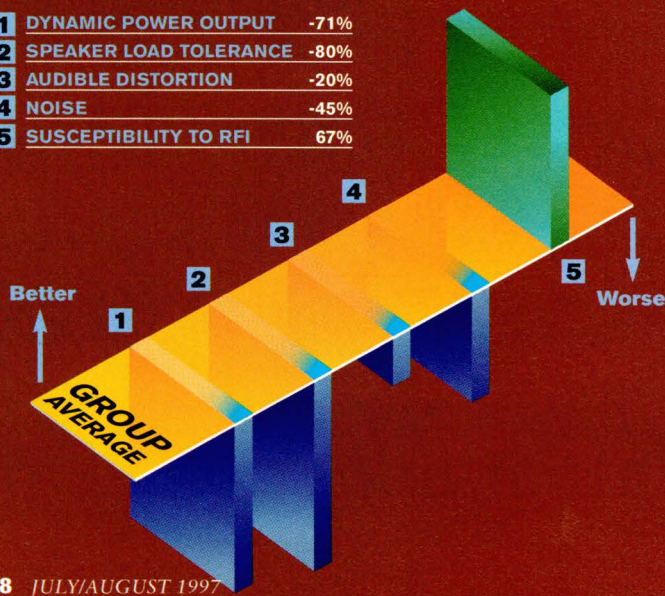
VERDICT

SOUND ★★☆☆☆
VALUE ★★★★★
PRICE £695.00

- ▲ Silky smooth, well separated and articulate sound: easy listening at its best.
 - ▼ A little lacking in grip, thanks in part to a somewhat woolly bass.
- ✉ Wollaton Audio, 134 Parkside, Wollaton, Nottingham NG8 2NP
 ☎ (0115) 928 4147

HOW IT COMPARES

- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | -71% |
| 2 | SPEAKER LOAD TOLERANCE | -80% |
| 3 | AUDIBLE DISTORTION | -20% |
| 4 | NOISE | -45% |
| 5 | SUSCEPTIBILITY TO RFI | 67% |



THE LAB REPORT

Like our other valve candidate, the AMC 3030a, the JoLida suffers through transformer core saturation at LF, so its bass power output is limited to 9W (re. 2 per cent THD, 8 Ohms) even though some 40W is possible through the midband. JoLida quotes a maximum output of 60W though, even if it were possible, the levels of distortion at this output would probably render it unlistenable.

Otherwise, the patterns of distortion are unusual even for an 'Ultra Linear' EL34-pentode-based amplifier. THD increases at the frequency extremes but, even through the optimised midband, varies from 0.02 per cent up to 0.1W, to 0.4 per cent at 0.1-2W before peaking at 0.9 per cent between 4-5W and then falling back to 0.6 per cent before reaching the true 'clip' point at 40W.

Unlike our other tube amp, however, the JoLida has a response that's perfectly flat from 20Hz-20kHz and even extends beyond 100kHz (+0.2dB) where, in certain circumstances, it could get into all sorts of trouble (see *Oasis*, issue 167). Otherwise, the A-wtd S/N of 81.7dB (re. 1W/8 Ohms) is not bad for a tube amp, though the unweighted -58.9dBV hum contribution does take the wind out of its sails. *PMI*

Musical Fidelity A220

The A220 slots somewhere in the space between the A2 and the A1000, delivering a claimed 50 Watts into an eight Ohm load (though subjectively it seems more), or 100 Watts into four Ohms. The amp is described as Class A, and although it is probably more correctly described as an enriched Class AB or some such euphemism, the A220 is certainly biased strongly towards Class A, and even with no signal applied the amplifier runs hot. Despite this, aural warm-up is quite rapid.

In design, the A220 represents continuity rather than revolution. The design is based around paralleled pairs of MOSFETs, a substantial power supply (the A220 was one of the heaviest amps on test, which is a fair reflection of the massive power supply) and very little else. There are no gimmicks here, and facilities are strictly minimalist, with a volume control, a source selector and a tape-monitor switch (for off-tape monitoring) under user control. A record deck equipped with a moving-magnet cartridge can be used, along with three line-level sources and two tape decks.

Build quality is one of the highlights of



this design. You may or may not like the massive rounded controls, but there is no doubt about the visual unity or flair of the design, or the exemplary standard of fit and finish. There is minute attention to detail, such as in the complete elimination of fixing screws when viewed from normal angles, and the use of self-indicating LED markers in the rotary controls.

Sound quality

Musical Fidelity amplifiers have a tradition for sounding warm and mellifluous, but this seems to have been reined back here. Comments from the panel pointed to a "dry quality to the plucked instruments" (Allison Krauss) and "verging on the bright" (same music, another listener). One thought the amplifier was a little uncomfortable to listen to, but the general view was summarised fairly by the following remark: "a big sound, very sweet and tuneful" (Poulenc) and "very easy to enjoy the music rather than pick holes in the sound". Another pointed to "very well defined" and "clear" voices in the Walton choral piece.

My own hands-on listening conclusions tended towards the more positive of these views, though experience with a range of speakers, including the remarkable Sonus

Faber Concerto with its laser-like precision, has shown that the A220 tends to sound laid-back, though this is more likely to be related to a marginal loss of extreme treble than an excess of bass. In any case the amplifier performed consistently well from system to system, with a greater sense of solidity and physical presence than some of its rivals. The phono input was felt to err more on the side of warmth than the line stages, but again the amplifier injected a tremendous sense of clarity and transparency into proceedings, and the word 'compelling' made more than one appearance in the listening notes. The amplifier scored consistently highly from listener to listener.

Conclusion

Strong recommendations in upmarket integrated amplifier territory have traditionally been rare, but this is an excellent product, with bags of civilised power and authority, and an almost clinical output on music that stops short of being excessively sharp or aggressive. Highly Recommended. **AG**

VERDICT

SOUND ★★★★★☆
VALUE ★★★★★☆
PRICE £699.99

▲ Powerful, authoritative and gimmick-free amplifier that allows the music to talk for itself.

▼ Some listeners commented on bass thinness or brightness.

✉ Musical Fidelity Ltd, 15/16 Olympic Trading Estate, Fulton Rd, Wembley HA9 0TF
 ☎ (0181) 900 2866

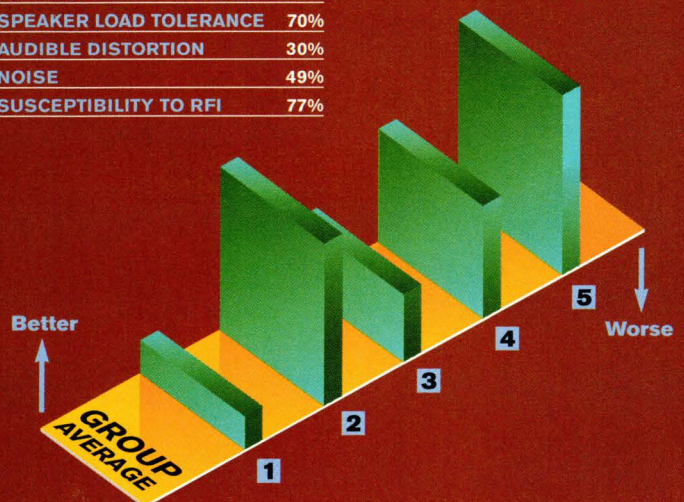
THE LAB REPORT

Now firmly settled into production, MF's hot, black and generally rather glossy A220 has witnessed a variety of running improvements. For example, over the last few months its S/N has edged up by 3dB to 90.7dB (re. 1W/8 Ohms) while its midband distortion is now better than 0.001 per cent at 1W. This is held to just 0.0016 per cent at 20kHz, though just when MF was challenging the linearity of Marantz's PM-66K1 Sig, the A220's distortion suddenly jumps to 0.035 per cent at two-thirds power.

The fact that the A220 enjoys very low high-frequency distortion is linked to the idealised Class A biasing at low power. Flat-out, the A220 drifts into Class AB territory while delivering some 85/133W into 8/4 Ohms respectively. The low 0.022 Ohm output impedance and healthy, though not exceptional, 14.4A current delivery all contribute to the A220's good grip of a wide variety of loudspeakers. However, it's worth noting that while the A220 is marginally more capable than the Quad or Roksan in this group, cheaper models like the Marantz, the Arcam and NAD offer even greater power outputs. A very well balanced design nonetheless. *PMI*

HOW IT COMPARES

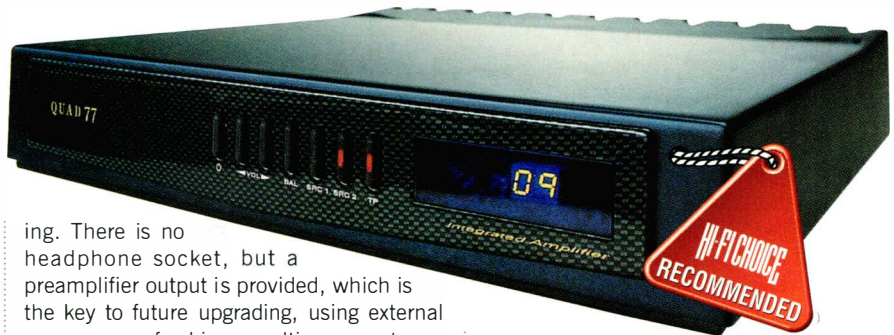
1	DYNAMIC POWER OUTPUT	16%
2	SPEAKER LOAD TOLERANCE	70%
3	AUDIBLE DISTORTION	30%
4	NOISE	49%
5	SUSCEPTIBILITY TO RFI	77%



Quad 77 Integrated

The Quad 77 integrated can be used freestanding with a limited range of inputs (two, plus tape, with off-tape monitor); or as part of the Quad 77 system, with a fully-integrated interactive remote control. In system form, any 77 source components (up to a theoretical maximum of 31) appear on the QuadLink system bus, which also carries power and control signals as well as balanced-mode audio, leaving the three hard-wired external inputs available for any additional non-77 series components. The review of the 77 pre/power amp in a previous issue (*HFC* April 1997) describes the remote console more fully, but the test amplifier was supplied without, and priced accordingly (below).

Technical highlights include multiple independent regulated power supplies, and an unusual 'highly optimised' class B output stage, which is claimed to yield less distortion than typical Class AB output stages, and to be capable of 84 Watts into eight Ohms (11 Amps peak with the usual stipulations), rising a little to 115 Watts/four Ohms. The digitally-controlled analogue volume control maintains an accurate channel balance at low volume levels, but the volume control steps are too coarse for my lik-



ing. There is no headphone socket, but a preamplifier output is provided, which is the key to future upgrading, using external power amps for bi- or multi-amp systems. Balance is adjustable: tone is not. Typically for a modern Quad amplifier, the 77 is well protected against short circuits and overheating. Packaging, however, is a mixed bag. The compact diecast casework is first class, but the front panel controls, display and backing plate are simply not in keeping with the product's quality pretensions.

Sound quality

The Quad 77 scored well on test, a figure that was held back by a poor score from one listener who regarded the sound as "a little cold", though he went on to temper this by suggesting that "it could in fact be deadily accurate and the recording is at fault". The other panel members took a more sympathetic view. "The choral work comes across with authority and good definition" wrote one of the Walton, another commenting that the Quad "untangles the voices and makes for a more intelligible presentation". Ry Cooder was described as "purposeful and articulate" by one; another wrote of the Poulenc "lends piano a bit of authority" noting "a nice interplay" between the piano and clarinet. The Allison Krauss was described as "live, vibrant and energised, not exactly relaxed but not ingratiating either".

In many ways the Quad 77 integrated amplifier auditions very similarly to the Quad 77 pre and power amplifiers. The sound is characteristically bold, vivid and colourful, and almost as well suited to energetic rock music as to the more classical forms traditionally associated with the brand. The Quad 77 performed more consistently than many otherwise fine amplifiers at different volume levels; indeed unless the amp was driven hard into clip, there was no identifiable change in tonal or dynamic performance at any setting. At the same time there is a trace of coldness with this amplifier which can be identified in some combinations (the Sonus Faber notably), though some panellists (the author included) rather like the Quad's crisp, rather matter-of-fact style.

Conclusion

The Quad 77 is powerful beyond its dimensions, and musically capable with it, sacrificing remarkably little to its sophisticated peripheral functionality (the system bus and related circuitry). The amp makes a bold and very clear musical statement, yet superimposes little electronic character of its own. Another good Quad — Recommended. *AC*

VERDICT

SOUND ★★★★★
VALUE ★★★★★☆
PRICE £699.95/WITH CONSOLE £849.95

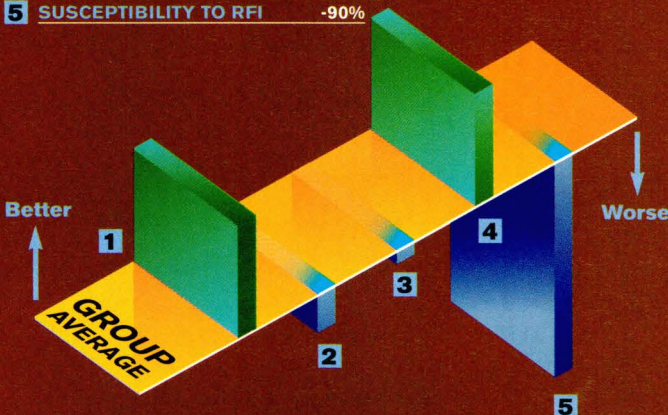
▲ Crisp, tidy and boldly coloured; integrates closely with Quad source components and (extra) remote control.

▼ A little cold and metallic, poor fascia design, limited non-bus inputs.

✉ Quad Electroacoustics Ltd, 30 St Peters Road, Huntingdon, Cambs PE18 7DB
 ☎ (01480) 433777

HOW IT COMPARES

- | | | |
|---|------------------------|------|
| 1 | DYNAMIC POWER OUTPUT | 49% |
| 2 | SPEAKER LOAD TOLERANCE | -15% |
| 3 | AUDIBLE DISTORTION | -5% |
| 4 | NOISE | 49% |
| 5 | SUSCEPTIBILITY TO RFI | -90% |



THE LAB REPORT

Quad's digital volume control operates in 1 and 2dB steps over the top 23dB of its range, increasing to 3, 4 and then 5dB steps before reaching -85dB (equal to 01 on Quad's 32-step front panel display) with a channel balance accuracy of 0.1dB! Volume position 00 takes the 7701 into mute (or -114dB re. full output, to be precise). Having overtaken the performance of conventional analogue controls, these digital attenuators have finally come of age.

The amplifier's 90.7dB S/N ratio (re. 1W/8 Ohm, A-wtd) is equally impressive and quite the best in this 14-way survey, though this does further expose an extreme sensitivity to RF interference. First detected with the 77 pre/power combination in issue 165, this is one foible Quad must address to enhance the compatibility of all its amplifiers.

Meanwhile, although the 7701 is a robust amplifier, nonetheless it gives of its best between 8 and 4 Ohm loads where the dynamic output increases from 125W to 211W. Below 4 Ohms, although this is very well controlled, there is some obvious VI-limiting taking place, reducing its headroom to 176W and 115W into 2 and 1 Ohm loads, respectively (contrast with Arcam Alpha 9, page 71). *PM*

Roksan Caspian

This is the first amp from Roksan since its absorption into the Verity empire, which embraces such famously powerful brands as Mission and Quad; so the Caspian is clearly important in more ways than one. Indeed Roksan has made its task even harder by pitching its new mainstream amp, which simply has to sell well, directly against the Quad 77 (which is built in the same factory) and the Cyrus III.

The Caspian amplifier is essentially a purist, straight-line design, using excellent materials, with an elegant and practical remote-control user interface. The simple, stylish handset (visually similar to one used by Mission) performs all functions, or you can use the rotary front-panel source selector, mode (power on/standby) switch and ALPS volume potentiometer. The grippy rotary control surfaces, and the carefully designed central function display, with colour coding of operating status, are a joy. The Caspian has a feeling of quality that is missing from most of the other amplifiers, with the obvious exception of the significantly more costly Copland.

The only surprise, given that Roksan is one of the few heavyweight names still associated with high-grade record playing hardware, is that the amp is only a line-level



device. This omission can be redressed with the Artaxerxes 10 universal stepup/equaliser which will allow turntables to connect to any line input, though the starting price is £395.

Sound quality

The amp scored impressively, despite being marked down by one of the panel on the grounds of sounding "smallish, with shrill voices as the level swells, and dynamically restricted" (Walton, with similar comments made about the other music extracts). This, however, was very much a minority view, the following being more typical: "natural with good plucked leading edges and nice vocal quality" (Allison Krauss); "very well defined spatially — it does all the things it is supposed to" (Walton again); and "the first instance of leading edges today, and without a forward balance to (falsely) enhance it" (Ry Cooder). These comments were submitted by three different listeners.

This amplifier was tested hands-on with a wide range of partnering equipment, and acquitted itself very well indeed. It offers the system-to-system consistency of an Audiolab, but with an audio character all its own, consisting of a slightly warm bass, a gentle, refined mid/top and very explicit and natural stereo imagery. The midrange has a special purity and invests complex recordings with a sense of separation and space that few other

tested amplifiers could hope to achieve. Picking examples from the test music seems pointless as the amp's qualities were almost always apparent, but if pushed, the Caspian could be described as an amplifier that doesn't make excuses for inadequate source material, but which goes more than half way to making the most of good recordings

Conclusion

In its independent past, Roksan trod a slightly uneasy dividing line between excellence in fundamental concepts and in the materials employed, and slightly flaky execution. The change to Verity ownership has given this new design a thorough professionalism, though the new visuals, and to an extent the character of the sound, both emphasise continuity with yesterday. The Caspian sounds like a more civilised and slightly relaxed version of previous designs.

At its best with like-priced ancillaries strong on control and resolving power, the Caspian amplifier is in danger of setting new standards at the sub-£700 price level, and clearly ranks as Best Buy material thanks to its combination of musical excellence and fine build quality. *AG*

VERDICT

SOUND ★★★★★
VALUE ★★★★★
PRICE £695.00

▲ Not just another newly minted clone, this is a well thought-through, competently executed design.

▼ Not quite as sharp as some previous Roksan amps, though in most systems this is an advantage.

✉ Roksan Audio Ltd, 30 St Peter's Road, Huntingdon Cambs PE18 7DB.

☎ (01480) 433777

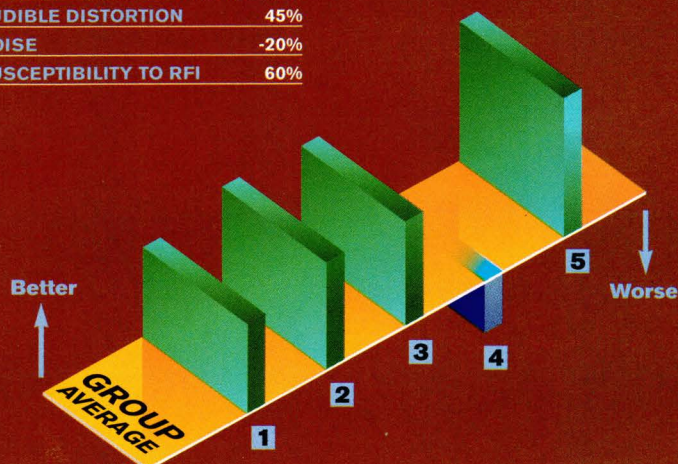
THE LAB REPORT

Alvin has already alluded to the common heritage of this Roksan amplifier with the Mission SL and Quad 77 models featured elsewhere in this test. Sure enough, each is the result of efforts from distinct design teams and yet, when it comes to speaker protection (or is that 'over-protection?'), all three adopt a corporate approach that errs on the side of caution. For example, the stiffly regulated power supply maintains a +2dB boost from 91W into 8 Ohms to 141W into 4 Ohms (though this necessarily squeezes the dynamic headroom to +0.9dB or 111W) while similar gains into lower impedances are thwarted by a protected 13.1A limit (170W into 1 Ohm).

There's a slight -0.2dB/-0.5dB tailoring at the frequency extremes and, in this instance, a high +80mV DC offset that will undoubtedly bias the bass cones of some loudspeakers. Distortion is low at between 0.006-0.02 per cent across the audioband, though performance actually becomes more consistent as the power output increases, settling out at an even 0.007 per cent distortion. A fine result. Meanwhile, the S/N ratio is well-judged at 84dB, channel balance and separation are first-rate and the input loading a thoroughly friendly 32 kOhms. *PMI*

HOW IT COMPARES

1	DYNAMIC POWER OUTPUT	39%
2	SPEAKER LOAD TOLERANCE	47%
3	AUDIBLE DISTORTION	45%
4	NOISE	-20%
5	SUSCEPTIBILITY TO RFI	60%



Conclusions

This month's test sample included both genuinely distinguished performers, and those that are interesting for other reasons. Prime Design's offering represents a brave investment in the future of high fidelity. Its amp is a worthy and honourable first offering that will almost certainly be refined in the near future. Pioneer has introduced new component technology in its A-605R, while other more-than-capable newcomers hail from Cyrus, Musical Fidelity and others. There's a prize-winning racehorse of an amplifier from Marantz, and the first Roksan made in Verity Group captivity. And we haven't mentioned

two valve-powered integrated models, NAD's bridgeable powerhouse, and the bi-ampable model from Arcam.

Unusually, three models broke down on test — Pioneer, Prime Design and Marantz. AN Other amp failed so abysmally it was banished from the test group altogether. The Prime Design suffered a protection fault, it would seem: when returned to the company the amp was fully functional, but its replacement briefly suffered the same problem. This problem should be easily resolved in the fullness of time.

When this test was first commissioned it looked unlikely that the hotly-awaited

Marantz K I Sig would be available. At the last minute, however, a review sample became available, and we included it here even though it was too late for the 48-hour, pre-listening soak test to which every candidate is customarily subjected. That breaking-in period would have revealed a dry joint on the Marantz's main circuit board — an extraordinary fault I'm sure.

No report had been received on the faulty Pioneer at the time of writing.

All in all, then, a notable group of products, particularly for indicating that an increasing number of amps combine good looks with sound quality to die for. Bravo!

GROUP A (BELOW £470)

AMC3030A	£399.95
Cyrus SL	£398.00
Marantz PM66-KI Signature	£399.90
NAD317	£469.95
Pioneer A-605R	£399.95

Below £470 our group was extremely diverse. The market has been waiting for the **Cyrus SL**, for example, since existing Cyrus amplifiers began to escalate in price. This unit marks a welcome return to simplicity for the brand. The **AMC CVT3030a**, by contrast, is truly ugly, but who's complaining when the subject is a valve output design costing just £400? It might seem a bit rough and ready, but it is the second generation of the design, fully debugged, and it did-

n't trip up on test — more than I can say of some solid-state models here.

Ostensibly the **Pioneer A-605R** is an old-fashioned throwback to the age of well-filled facias, but Pioneer has done a tasteful job of balancing features with form. A front-panel flap can be used to conceal the knobs and buttons. In sound quality it offers little to comment upon, but in technology it does, thanks to a new power HEX MOSFET semiconductor, and a rationalised circuit that has been erected around it. We'll wait for the Precision version to divine its true capabilities!

The **Marantz PM-66 KI Signature** is the hot-rod version of the PM-66SE tested in last month's issue. £100 transforms this amp into

a small fire-breathing monster. If the latter specialises in subtlety, the **NAD 317** deals in brutality — at least as far as power output is concerned. It appears to be a well-judged amp under its skin, and is almost as versatile as an egg. In its musical performance it's not one of the best latterday NADs, but it is capable of driving almost any loudspeakers, no matter how demanding a load they present.



AMC CVT3030A

GROUP B (£470-£650)

Alchemist Nemesis	£650.00
Arcam Alpha 9	£499.90
Prime Design A-100	£650.00
Rose Scion	£615.00

Arcam has remained at the forefront of specialist amp manufacturers simply by sounding better. Its products look more fully equipped in comparison with competitors that have donned purist audiophile clothing. Of course this success has been founded upon remembering that sound quality comes

first — having proved itself in conjunction with the 9P power amp (*HFC 165*), the **Alpha 9** now upholds its reputation as a solo product.

The **Alchemist Nemesis** looks like Darth Vader's hi-fi, but Alchemist's founders have their origins in serious hi-fi (Musical Fidelity, as it happens), and this unit actually sounds much

less extravagant than it looks.

Two final products might be described as works in progress. The two-box **Rose Scion** integrated sounds a little weak dynamically, and its packaging seems rather wobbly, but it offers fine midband coherence and refinement.

There's nothing wobbly about the **Prime Design A-100**. In fact, its sometimes relentless musical style will only suit a certain kind of aficionado. However, even though it is a first outing for a new British company, we were impressed by overall standards of fit and finish.



Alchemist Nemesis

GROUP B (£1,551-£1,850)

Copland CSA8	£945.00
JoLida 202	£695.00
Musical Fidelity A220	£699.99
Quad 77	from £699.95
Roksan Caspian	£695.00

This group proves how widely varying results can often occur when different companies try to achieve the same overall goal. All five candidates are purist, straight-line amplifiers, bereft of tone controls, multi-speaker switching or the like, and all are superbly packaged. The **JoLida 202** sticks out as a purist, relatively low-power valve amplifier, though it turns out not to sound

so valve-like as to rule itself out of the running. It is a distinguished new entrant, and in the overall scheme of tube amps, good value.

The **Copland CSA8** is Scandinavian cool personified, and it performs with the easy-going competence now associated with the marque. Copland's cheapest amplifier remains better

than many companies' most expensive.

The **Quad 77** is based on the QuadLink 'system bus' concept, and works best with Quad peripherals, at least from a control and flexibility point of view. However this design concedes nothing musically, and indeed serves only to remind how much this once greyer-than-grey brand has been revitalised of late.

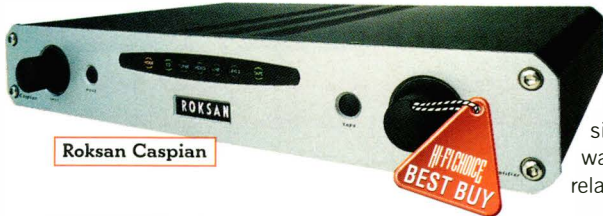
The other hot one in this group is the **Roksan Caspian**, which dispels any questions over Roksan's position within the Verity plc empire. This is a very accomplished amplifier indeed, which is sure to make the likes of Audiolab look to their laurels.



JoLida 202

BEST BUYS

Only two models were deemed sufficiently strong all-rounders to warrant full Best Buy status. The **Marantz PM-66 K I Signature** is an



Roksan Caspian



extensively improved version of the PM-66SE, personally endorsed by fabled hi-fi designer Ken Ishiwata. Some of the improvements might look gimmicky, but the design speaks for itself, and this refined, articulate design is a real scavenger of detail.

The **Roksan Caspian** sounds similar to the Marantz, but offers warmer, more solid bass and a more relaxed treble. It is also significantly



Marantz PM-66 KI Signature



more powerful. This is a distinguished design of exemplary musicianship, which is also superbly built, and will no doubt be a yardstick at this price for years to come.

RECOMMENDATIONS



Arcam Alpha 9



has the particular virtue of being readily improvable (it can be bi-amped to particularly good effect), and it can accept a phono input board. This is a great all-rounder which at the same time has just enough knobs and buttons to look



Musical Fidelity A220



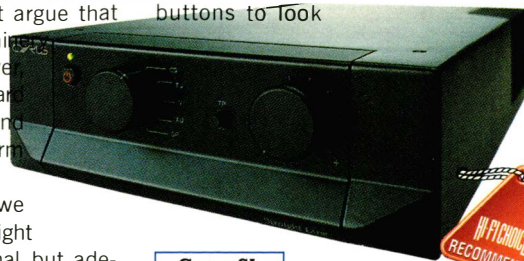
etary 'data bus' system for signal interchange, meaning there's a limited number of phono-socket signal inputs. The full joy of using the Quad really comes from the superb interactive remote control console that is an optional extra.

Our penultimate recommendation is bestowed upon the **Musical Fidelity A220**. This is simply a great all-round amplifier, doing all things well rather than being exceptional in particular areas. It's an amplifier to live with.

Similar comments apply to the **Copland CSA8**, which is an ultra-simple and finely-honed design whose high price tag is readily excusable when you see how painstakingly it has been bolted together.

To achieve *Hi-Fi Choice* Recommendation is no mean feat, and in this test only five contenders (other than the two Best Buys) garnered a gong. Some might argue that worthy and/or promising machines have been passed over; however, we have pondered long and hard over each candidate's merits and potential for providing long-term audiophile satisfaction.

In ascending price order, we start with the **Cyrus SL**, the Straight Line budget Cyrus with minimal but adequate features, drop-dead gorgeous looks and a sweet, crisply-defined sound. The **Arcam Alpha 9** also sounds excellent, but



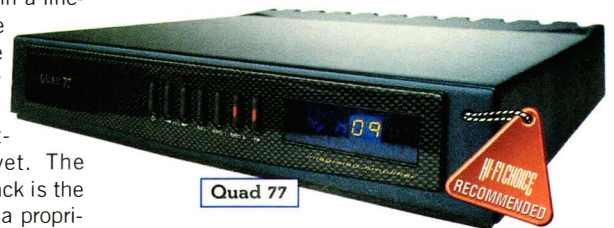
Cyrus SL



like a top-value package. Next we have the **Quad 77**, integrated amplifier in a line-up whose members have already proved themselves the best-sounding Quads yet. The only potential drawback is the family dependency on a propri-



Copland CSA8



Quad 77



BEST OF THE REST

There are some strong existing models in the price-band covered in this issue. The £400 **harman/kardon HK1400** is one of the better models in a range that's improved lately, and the distinguished **Pioneer A-300R Precision** comes in at the same price. There are no less than two important models from **Audiolab**: the venerable **8000A** at £550, and the excellent **8000S** at £650. The **Densen Beat B-100** is

a striking rock'n'roller at £600, and at £500 **Musical Fidelity's A2** slots in below the A200 in this test, with compatible virtues.

Finally there's the £575 **Naim Nait 3**, which is idiosyncratic (and unmissable) as ever.



Audiolab 8000A

Five Stars

Does the best price always mean the best deal?

“I thought I had this buying hi-fi business sorted out. I bought all the hi-fi magazines and read them thoroughly, because I reckoned their experts knew exactly what they were talking about - at least a lot more than I did! It was reassuring to see the same product names cropping up regularly and I figured the writers’ experience and guidance would steer me straight to the system of my dreams. The trouble is I’ve ended up more confused than when I started.



One reviewer said a product I fancied was absolutely brilliant but another said it was nothing special at all. How can that be? Surely one CD player is pretty much the same as another? And how can a loudspeaker that’s one magazine’s top recommendation not get so much as a mention in any of the others? I don’t mind admitting it, I’m completely lost.”

Plan B — I’m going for a deal

“So, I’ve decided to adopt plan B. I’m sure there can’t be any really dramatic differences between all this gear and it’s all bound to work together properly, so I’m going to check the price lists and the adverts and shop around for the best deal. I know getting the right hi-fi is important — hey, I’m as mad about music as anyone — but if I can get close to the mark and save a few quid, I’m sure I’ll end up with a good system and be happy. I know there are specialist shops out there that do demonstrations and reckon they’ve got all the solutions but, to be honest, I’m a bit scared of going to one. I’d really welcome some advice and guidance but I don’t know all the technical jargon and I’d feel daft sitting there trying to “hear the differences” if I couldn’t. Anyway, a friend told me that these shops only sell the really expensive gear and that they’re not interested if you don’t have loads of money to spend.”

And so another hi-fi buyer starts his journey down the road to dissatisfaction, endless upgrades and a permanent overdraft.

There is only one way to buy a hi-fi system that will prove satisfying, reliable and deliver true value for money, and that’s through a specialist hi-fi dealer. Let’s face it, you wouldn’t think about buying a car if you couldn’t take it for a test drive. You wouldn’t buy a house solely on the strength of seeing the estate agent’s details and a photograph. Even if you’re spending far less, say buying a jacket or a pair of shoes, you want to try them on to make sure they fit you.

Buying a hi-fi system is no different. It doesn’t matter what the specifications say or what the “experts” think: if it doesn’t measure up to what you want from a system, then it’s not the right choice. Knowing that you’ve bought a room full of five-star favourites or best-buys is no consolation when you can’t bear to listen to them for more than five minutes. Even that ten per cent discount on the price won’t make them sound any better.

Buying or being sold to?

Mind you, most of us are easily suckered when it comes to buying hi-fi. Given the choice of venturing into the unknown territory of a specialist dealer’s shop and exerting some influence over what we buy, or taking what looks like the easy route — having adverts and magazine reviews push us along a path sweetened with discounts and special offers — we opt for the latter. We don’t buy a system, we allow ourselves to be sold one. We side-line our own ideas about quality and personal satisfaction and buy someone else’s opinion of what’s good for us and good value for our money.

Take control!

Now there’s a group of long-established, independent specialist dealers who are totally committed to putting the customer back in the driving seat. They’re encouraging the buyer to take control ... with a little help and guidance provided where required. They know how difficult it can be to establish the true quality and

For Value

Ask the UK's top twenty specialist hi-fi dealers.



worth of hi-fi and home cinema systems. They know that without experiencing the performance of the systems they offer, you can't possibly assess the value of them. That's why their idea of "selling" is to play the systems for you and allow you to be the judge.

Listening to your choice of music in a peaceful, well organised demonstration room, you may be surprised and, almost certainly, relieved to discover how easy it is to hear the differences between components and between systems. With the dealer's help and advice you will be able to make a clear and informed decision about what to buy. It comes down to trusting your own judgement rather than the opinion of a reviewer you've never met ... and who won't refund your money if you're not satisfied or be at the end of a phone to sort out any problems you might encounter.

The story doesn't end there. These shops won't abandon you once you've put your hand into your pocket. They won't

leave you to set up the system you've selected as best you can. They'll install it in your home, make sure it sounds great, and make sure that you're entirely happy with the way it works.

Why bother?

There is, of course, one question that hasn't been answered: why should you and these dealers go to all this trouble? Well, from your point of view maybe it's because a good deal is about a great deal more than just price. Unless you've got money to burn, you'll be living with your new system for years — years during which most of those five star products will

probably stop shining quite so brightly.

As far as the dealers are concerned, maybe they believe that taking care of their customers properly is a nicer way of doing business than just handing over boxes.



Listed on the right of this page are the best hi-fi shops in the country. They all have lots of stars. You'll find them on the shop floor: they're the people waiting to guide customers towards hi-fi that will give them years of musical enjoyment and total satisfaction.

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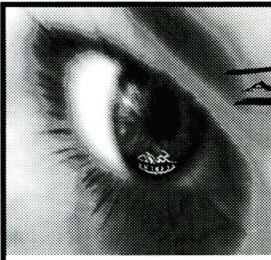
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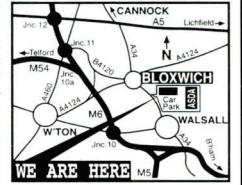
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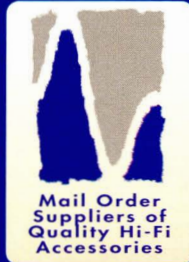
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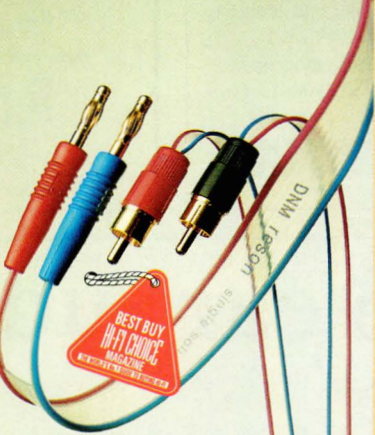
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- 960 DPL processor, all mint, unmarked, boxed, 18 months old. £695. Kent (01959) 522441.
- Royd Abbots £300. REL Stadium £350 Sony 176s £100. Brand new. Buyer collects. Cambs (01353) 720583 after June 21st.
- Ruark Templar speakers, Mk1 (rosewood) ex condition, boxed £300. S Essex (01702) 556116.
- Sansui cassette deck £60. JVC tuner £50. Audioquest-Quartz £70. Chord Flatline 2 1.5m £30. All mint. Silver cable speaker or interconnect £25 per m. (01952) 201497/(0958) 523695.
- Sony NT mini digital tape recorder. perfect for musicians. Full kit including manual plus 20 cassettes. £275. Mick, Dublin (+353) (87) 230 5958.
- Stax Electrostatic ear-speakers & energiser SR3/SRD5 £50. Coventry (01203) 679165.
- Sugden SDA-1 DAC. Exquisite smooth yet detailed sound. Boxed as new with manual. £395 ovo. (0161) 2372015 office/(01254) 812881 home/(0966) 192949 mobile.
- Technics Direct Drive turntable SL150 with SME 3009 arm and Shure V15 Type II cartridge. Offers. Southampton (01703) 732997.
- Technics SUA 9000 Mk II amp, boxed as new £300. Marantz CD63 KI Sig, boxed, little use, £300. Brighton (01273) 305176.
- Yamaha NS1000M. Excellent condition. £400. ProAc R2.5, 1 week old, never opened, factory sealed boxes, guaranteed. £2,100. (01793) 542572.

WANTED

- Audiolab amplifiers, 8000S integrated, plus 8000P or 2 np. 8000Ms. Gt Yarmouth (01493) 651287.
- Mana Soundstages and tables. Coventry (01203) 679165.
- Pioneer A400 (01782) 744875.
- ProAc Studio Tower loudspeakers. London (0171) 409 5789.

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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 page 94). This listing is updated 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 on page 106). 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 123) 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.

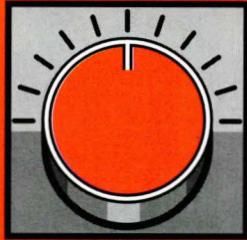
Using Best Buys and Recommendations to buy hi-fi.

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!



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AMPLIFIERS
Integrated Amps

KEY

Ⓔ - 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	Ⓔ	20W	100
AMC 3025A	Ⓔ	25W	130
AMC 3050A	Ⓔ	45W	170
Arcam Alpha 7	Ⓔ	40W	250
Cambridge A1	Ⓔ	35W	80
Cambridge A1 Mk III	Ⓔ	40W	120
Cambridge A3i	Ⓔ	60W	200
Denon PMA-350SE	Ⓔ	50W	200
Denon PMA-425R	Ⓔ	45W	230
Denon PMA-100M	Ⓔ	80W	240
Goodmans Delta 801			140
Grundig V11	Ⓔ	55W	160
H/K HK610	Ⓔ	30W	180
H/K HK620	Ⓔ	40W	250
JVC AX-V4BK	Ⓔ	30W	200
JVC AX-R5BK	Ⓔ	45W	200
Kenwood KA-3020SE	Ⓔ	50W	200
Marantz PM-47	Ⓔ	40W	150
Marantz PM-57	Ⓔ	55W	200
Marantz PM-66SE	Ⓔ	50W	230
Marantz SR-47	Ⓔ	40W	250
NAD 310	Ⓔ	100	
NAD 312	Ⓔ	25W	200
Pioneer A-105	Ⓔ	30W	130
Pioneer A-204R	Ⓔ	35W	160
Pioneer A-300R	Ⓔ	45W	200
Pioneer A-405R	Ⓔ	60W	250
Rega Brio	Ⓔ	30W	229
Rotel RA970BX	Ⓔ	60W	250
Sherwood AX-7030R	Ⓔ	95W	250
Sony TA-FE210	Ⓔ	45W	130
Sony TA-FE310	Ⓔ	45W	150
Sony TA-F246E	Ⓔ	40W	200
Sony TA-F448E	Ⓔ	55W	250
TEAC A-R300	Ⓔ	45W	200
TEAC A-R500	Ⓔ	90W	250
Technics SU-V300	Ⓔ	25W	170
Technics SU-A600 Mk3	Ⓔ	60W	200
Technics SU-V500	Ⓔ	30W	200
Technics SU-V620	Ⓔ	70W	230
Technics SU-A700 Mk3	Ⓔ	45W	250
Yamaha AX-390	Ⓔ	60W	170
Yamaha AX-492	Ⓔ	85W	220

£251 to £500

Alchemist Axiom	Ⓔ	30W	289
Alchemist Maxim	Ⓔ	30W	319
AMC CVT 3030A	Ⓔ	30W	400
Arcam Alpha 8	Ⓔ	50W	350
Arcam Alpha 9	Ⓔ	75W	500
AudiInnov Alto	Ⓔ	35W	300
Audiogram MB1	Ⓔ	35W	493
Audiolab 8000A	Ⓔ	60W	500
Aura VA-100 II	Ⓔ	70W	350
CR Dev CR324	Ⓔ	100W	499
Creek 4330	Ⓔ	35W	279
Creek 4330R	Ⓔ	35W	335
Creek 5250	Ⓔ	40W	450
Denon PMA-725R	Ⓔ	97W	350
EMF Audio Sequel	Ⓔ	50W	450
H/K HK640	Ⓔ	55W	400
JVC AX-V8BK	Ⓔ	70W	350
Kenwood KA-5050R	Ⓔ	95W	350
Kenwood KA-7090R	Ⓔ	85W	400
Magnum IA120	Ⓔ	60W	265
Magnum IA170	Ⓔ	90W	330
Monrio Asty	Ⓔ	40W	495
Moth 30 Integrated	Ⓔ	30W	320
Musical Fidelity E10	Ⓔ	40W	300
Musical Fidelity E101	Ⓔ	70W	500
Musical Fidelity A2	Ⓔ	25W	500
NAD 314	Ⓔ	35W	260
NAD 317	Ⓔ	80W	470
Onix OA32LE	Ⓔ	40W	479
Onix OA31	Ⓔ	60W	480
Onkyo A9210	Ⓔ	40W	260
Onkyo A921	Ⓔ	50W	350

£501 to £700

Onkyo A922	Ⓔ	70W	400
Orelle SA-100	Ⓔ	50W	499
Pioneer A-400X	Ⓔ	50W	300
Pioneer A-605	Ⓔ	75W	400
Pioneer A-300R Precision	Ⓔ	35W	400
Pro-Ject Model 7	Ⓔ	40W	300
Rega Elex	Ⓔ	50W	398
Shearne Phase 2.5	Ⓔ	35W	489
Sony TA-FA3ES	Ⓔ	70W	400
Sony TA-F3000ES	Ⓔ	60W	500
Talk Electronics Storm 1	Ⓔ	50W	500
TEAC A-H500	Ⓔ	50W	280
Technics SU-A800D	Ⓔ	55W	400
Technics SU-A900 Mk2	Ⓔ	90W	450
Technics SU-A900D	Ⓔ	70W	500
Yamaha AX-592	Ⓔ	100W	280

£701 to £1000

Alchemist Kraken Integrated	Ⓔ	55W	579
Alchemist Nemesis	Ⓔ	80W	650
Audio Note Kanji Line SE	Ⓔ	9W	699
Audio Note First integrated	Ⓔ	40W	699
Audiogram MB2	Ⓔ	60W	599
Audiolab 8000S	Ⓔ	60W	700
CR Dev Kalypso	Ⓔ	15W	599
CR Dev CR325	Ⓔ	175W	699
Creek 5250SE	Ⓔ	60W	540
Creek 5250R	Ⓔ	50W	575
Creek 5250SER	Ⓔ	60W	665
Denson Beat B-100	Ⓔ	60W	600
DPA Ren - issuance int.	Ⓔ	40W	595
Exposure XX Super	Ⓔ	55W	700
Fase Evoluzione Performance 2.0	Ⓔ	40W	570
Gamma Gemini	Ⓔ	12W	699
H/K HK660	Ⓔ	65W	700
LFD Integrated 0	Ⓔ	50W	549
Linn Majik (Line)	Ⓔ	33W	650
Lynwood Opal	Ⓔ	80W	685
Magnum IA200	Ⓔ	100W	599
Magnum Class A	Ⓔ	85W	690
Mission Cyrus IIIi	Ⓔ	50W	600
Musical Fidelity A220	Ⓔ	50W	700
Myryad MI 120	Ⓔ	60W	530
Naim Nait 3	Ⓔ	30W	575
Onix OA31LE	Ⓔ	60W	579
Orelle SA-100RX	Ⓔ	75W	649
Prime Design A-100	Ⓔ	100W	650
Quad 77 Integrated	Ⓔ	85W	700
Roks n Caspian	Ⓔ	70W	695
Rose Scion	Ⓔ	65W	615
Shearne Phase 2	Ⓔ	50W	649
Stemfort SF60	Ⓔ	60W	549
Talk Electronics Storm 1P	Ⓔ	50W	549
Talk Electronics Storm 2	Ⓔ	65W	650
TEAC A-BX7R	Ⓔ	50W	700

£1001 to £2000

Alchemist Forseti Integrated	Ⓔ	100W	949
Audio Note Oto Line PP	Ⓔ	12W	950
AVI S2000MI	Ⓔ	100W	899
Copland CSA8	Ⓔ	90W	945
Credo IMP702	Ⓔ	70W	938
Credo IMP703	Ⓔ	70W	1,000
Electrocompaniet ECI-2	Ⓔ	50W	995
Exposure XV Super	Ⓔ	55W	800
Fase Evoluzione Performance 1.1	Ⓔ	70W	790
Fase Evoluzione Performance 1.0	Ⓔ	60W	790
Golden Tube Audio SI-50	Ⓔ	50W	995
H/K HK680	Ⓔ	85W	1,000
LFD 0 LE Integrated	Ⓔ	60W	799
Linn Majik (Phono)	Ⓔ	33W	800
Meridian 551	Ⓔ	55W	795
Micromega Tempo 1	Ⓔ	50W	750
Micromega Tempo 2	Ⓔ	75W	950
Minstrel Ultra Linear	Ⓔ	26W	900
Monrio MC-200S	Ⓔ	60W	895
Naim Nait 3 R	Ⓔ	30W	760
Pioneer A-07	Ⓔ	80W	1,000
Rega Elicit	Ⓔ	70W	730
Shearne Phase 2 Reference	Ⓔ	50W	799
Stemfort SF100	Ⓔ	100W	849
Talk Electronics Storm 2 P	Ⓔ	65W	730
TEAC AB-X10	Ⓔ	100W	1,000
Thule IA100	Ⓔ	100W	949
Unison Simply Two	Ⓔ	12W	995

£2001 to £5000

Art Audio Integra	Ⓔ	30W	1,499
AudiInnov Classic 25	Ⓔ	25W	1,099
AudiInnov S500	Ⓔ	25W	1,199
Audio Note Soro Line PP	Ⓔ	20W	1,200
Audio Note Oto Line SE	Ⓔ	12W	1,200
Audio Note Oto Phono SE	Ⓔ	12W	1,500
Audio Note Soro Line SE	Ⓔ	18W	1,699
Bryston B-60	Ⓔ	75W	1,090
Bryston B-60R	Ⓔ	75W	1,249
Copland CSA14	Ⓔ	70W	1,199
Copland CSA28	Ⓔ	1,299	
Copland CTA401	Ⓔ	25W	1,699
CR Dev Romulus V3	Ⓔ	35W	1,198
CR Dev Remus V3	Ⓔ	60W	1,989
Credo LIM 702	Ⓔ	1,191	
Credo LIM 703	Ⓔ	1,249	
EAR 834	Ⓔ	1,999	
Graaf Venticinque	Ⓔ	40W	1,995

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Audio Research LS7 and VT60.

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Alan Sircom, Hi-Fi Choice, November 1994

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audio research
HIGH DEFINITION

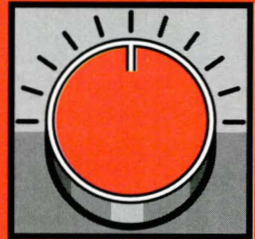
LFD Integrated 1	Ⓔ	65W	1,099
Marantz PM-16	Ⓔ	90W	1,700
Meracur Intrare	Ⓔ	60W	1,095
Minstrel Partridge	Ⓔ	26W	1,499
Monrio MC-205	Ⓔ	80W	1,545
Musical Fidelity A1000	Ⓔ	50W	1,500
Rogers E-20a	Ⓔ	17W	1,090
Rogers E-40a	Ⓔ	42W	1,900
Sonic Frontiers Anthem Integrated	Ⓔ	25W	1,295
Unison Simply Four P	Ⓔ	24W	1,555
Unison Simply Four T	Ⓔ	11W	1,595
Woodside ISA230 Line	Ⓔ	30W	1,099
Woodside ISA230 Disc	Ⓔ	30W	1,249

Over £2000

Aidyton Opera	Ⓔ	50W	2,595
Audio Note Meishu Line	Ⓔ	9W	2,750
Audio Research CA50	Ⓔ		3,990
Cary CAD-300SE1	Ⓔ	11W	3,495
EAR 859	Ⓔ	13W	2,499
Electrocompaniet ECI-1	Ⓔ	100W	2,195
Gamma Rhythm	Ⓔ	18W	2,499
Jadis DA30	Ⓔ	30W	3,490
Jadis DA60	Ⓔ	60W	5,750
Krell KAV300i	Ⓔ	150W	2,550
Meracur Onesta	Ⓔ	75W	2,595
Pioneer A-09	Ⓔ	45W	4,000
Tube Tech Unisig Sis. Int.	Ⓔ	30W	2,300
Tube Tech Synergy PPS	Ⓔ	150W	6,900
Unison Performance One	Ⓔ	25W	4,500

£501 to £2000

Aidyton Chorus	Ⓔ		1,995
Alchemist Kraken Pre	Ⓔ		519
Alchemist Forseti Pre	Ⓔ		919
Art Audio Headline	Ⓔ		700
Art Audio VPL	Ⓔ		741
Art Audio Conductor Phono	Ⓔ		750
Art Audio VP1	Ⓔ		952
Art Audio Conductor	Ⓔ		1,250
Art Audio Conductor Export	Ⓔ		2,000
Audio Note M1 Line	Ⓔ		550
Audio Note M1 RIAA	Ⓔ		550
Audio Note M2 Line	Ⓔ		999
Audio Note Discovery	Ⓔ		999
Audio Note M2RIAA	Ⓔ		1,099
Audio Research LS7	Ⓔ		1,750
Audio Research LS3	Ⓔ		1,997
Audio Synthesis Pro Passion	Ⓔ		595
Audio Synthesis Passion	Ⓔ		695
Audio Synthesis Passion 6	Ⓔ		1,195
Audio Synthesis Passion 8S	Ⓔ		1,295
Audio Synthesis Passion 8M	Ⓔ		1,695
Audiolab 8000C	Ⓔ		550
Audiolab 8000PPA	Ⓔ		900
Audiolab 8000Q	Ⓔ		1,100
Aura CA-200	Ⓔ		700
AVI S2000MP	Ⓔ		849
Beam-Echo SP-21	Ⓔ		1,116
Bryston .4	Ⓔ		546
Bryston BP1	Ⓔ		673
Bryston BP5	Ⓔ		757
Bryston BP4	Ⓔ		802
Bryston BP20	Ⓔ		958
Bryston BP-25	Ⓔ		1,129
Bryston 4B-ST PRO	Ⓔ		1,495
Cary SLP-74	Ⓔ		1,495
Cary PH-301	Ⓔ		1,595
Chord CPA 1800	Ⓔ		1,730
Chord CPA 4000 phono	Ⓔ		1,790
Concordant Exhilarant	Ⓔ		900
Concordant Exquisite	Ⓔ		1,950
Conrad-Johnson PV-10A	Ⓔ		1,295
Conrad-Johnson EF-1	Ⓔ		1,990
Conrad-Johnson PF-2	Ⓔ		1,990
Copland CSA303	Ⓔ		1,199



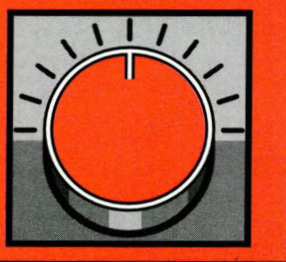
PREAMPS

KEY
Ⓔ - (etc) number of line-level inputs.
Ph - phono input fitted as standard
(may be an option on some other models).

Up to £500

AMC CVT 1030A	Ⓔ	Ph	400
Art Audio Minuet	Ⓔ		499
Audio Alchemy Vac-in-the-box	Ⓔ	Ph	250
AudiInnov P1	Ⓔ	Ph	369
AudiInnov L1	Ⓔ		369
Audio Note The M	Ⓔ		350
Beam-Echo PP-21	Ⓔ	Ph	499
CR Dev Themis	Ⓔ	Ph	349
Creek P43	Ⓔ		399
Creek P52	Ⓔ		499
Crimson CS610C	Ⓔ		450
DPA DSP200S	Ⓔ		495
EAR 834P	Ⓔ	Ph	349
EAR 834L	Ⓔ		449
Electrocompaniet ECP-1	Ⓔ	Ph	495
Fase Evoluzione Phonodrive 1.0	Ⓔ	Ph	445
Henley HMC50	Ⓔ		200
Henley HMC100	Ⓔ		450

Model	Price	Power	Model	Price	Power	Model	Price	Power
Copland CTA301 MkII	1,399	Ph	Tube Tech Seer Line	935	Ph	LFD Mistral Power	60W	449
CR Dev Carmenta	659	Ph	Tube Tech Mac	1,150	Ph	LFD PA0 Powerstage	50W	499
CR Dev Argento	699	Ph	Tube Tech Prophet	1,970	Ph	Magnum MF120	85W	365
Credo CMP004	1,246	Ph	Unison Mystery One	1,950	Ph	Marantz MA-500	125W	250
Credo CMP005	1,876	Ph	Unison Phono One	1,995	Ph	Moth 30 Series Power	30W	249
Dawn Audio Prelude +50	951	Ph	Wilson Benesch Stage One	995	Ph	Moth 30 Mono/40	40W	469
Densen DM-20	1,200	Ph	Woodside SC27 Line	949	Ph	Musical Fidelity E30	100W	500
DNM 3 Start	950	Ph	Woodside SC26 Line	1,557	Ph	Myrrad MA 120	60W	450
DNM 3A Start	1,500	Ph	XTC PRE-1	1,250	Ph	NAD 912	30W	200
DPA Enlightenment pre	695	Ph	Yamaha CX-2	650	Ph	NAD 214	80W	370
DPA DSP500S	2,000	Ph	Over £2000			NAD 216THX	125W	470
Dynavector L200	1,195	Ph	Adyton Temper	2,495	Ph	Naim NAP90/3	30W	450
Dynavector P100	1,495	Ph	Adyton Modus	2,695	Ph	Rotel RB970BX MkII	60W	225
Dynavector L100	1,995	Ph	Alchemist The Alchemist pre	4,995	Ph	Rotel RB980BX	120W	450
Earmax Earmax Pre	1,895	Ph	ATC SCA2	2,499	Ph	Talk Electronics Tornado 1	450	400
ECA Vista S	760	Ph	Audio Note M3Line	2,650	Ph	Technics SE-A1000	70W	400
ECA Vista HD	880	Ph	Audio Research LS15	3,399	Ph	£501 to £2000		
ECA Prisma	880	Ph	Audio Research LS22	4,391	Ph	Alchemist Kraken pwr	55W	529
Electrocompaniet EC-4.5	1,200	Ph	Audio Research LS5 MkIII	6,435	Ph	Alchemist Forseti Pwr	150W	1,309
Electrocompaniet EC-4R	1,495	Ph	Audio Research REF 1	9,900	Ph	AMC CVT 2100A	80W	600
Exposure XVII	800	Ph	Boulder L3AE	2,100	Ph	Art Audio Quintet	15W	1,393
Exposure XXV	850	Ph	Boulder L5AE	3,400	Ph	Art Audio Quintet SE MB	-W	3,500
Fase Evoluzione Controlsouce 2.0	625	Ph	Boulder L5M	3,800	Ph	Art Audio Concerto	50W	1,669
Fase Evoluzione Controlsouce 1.0	1,395	Ph	Cary SLP-94L	2,095	Ph	AudiInnov Series 800	25W	999
Golden Tube Audio SEP-1	890	Ph	Chord CPA 2200	2,298	Ph	AudiInnov First Audio	7.5W	1,749
Graaf WFB Two	1,195	Ph	Chord CPA 2800	3,090	Ph	AudiInnov Series 1000	50W	1,799
Graaf WFB One	1,895	Ph	Chord CPA 3200	3,352	Ph	Audio Note The P	40W	550
Henley HMC200	750	Ph	Chord CPA 4000	6,025	Ph	Audio Note P0	9W	599
Heybrook Signature II	1,600	Ph	Conrad-Johnson PF-R	2,490	Ph	Audio Note P1	12W	750
Jadis DPL2	1,790	Ph	Conrad-Johnson PV-12A	2,590	Ph	Audio Note P1SE	12W	999
LFD MC1 Phonostage	949	Ph	Conrad-Johnson Premier 15	3,995	Ph	Audio Note P2	20W	1,000
LFD LS1 Linestage	999	Ph	Conrad-Johnson Premier 14	3,995	Ph	Audio Note P2SE	18W	1,499
LFD MC2 Phonostage	1,499	Ph	CAT SL1 Sig	6,500	Ph	Audio Note Conqueror	8W	1,599
LFD LS2 Linestage	1,599	Ph	CR Dev Kastor	2,995	Ph	Audio Synthesis Desire	1,695	750
LFD LSB Linestage	1,999	Ph	Credo LPR 001	2,815	Ph	Audiolab 8000P	100W	800
Linn Wakonda	750	Ph	DNM 3B Twin E	3,050	Ph	Audiolab 8000M	125W	800
Linn Kairn	1,400	Ph	DNM 3B Primus E	3,630	Ph	Aura PA-100	100W	700
Lumley PS1	795	Ph	DNM 3B Six E	4,780	Ph	Aura PA-200	110W	1,200
Lumley WAP1.5	895	Ph	EAR 802MC	2,599	Ph	Aura PA-200 C	150W	1,249
Lumley LV1.5	895	Ph	EAR G88	9,999	Ph	AVI S2000MM	75W	639
Lumley LV1	1,000	Ph	Gamma Era Phono	2,499	Ph	Bryston 2B-LP	150W	987
Lumley WAP1	1,150	Ph	Gamma Era Ref	2,499	Ph	Bryston 3B-ST PRO	150W	1,074
Lumley PV1.5	1,500	Ph	Graaf GM13.5B	3,950	Ph	Bryston 3B-ST	150W	1,159
Lumley PV1	1,700	Ph	Jadis DP60L	2,800	Ph	Bryston 7B-ST PRO	500W	1,545
Marantz AC-500	700	Ph	Jadis DPL	3,190	Ph	Bryston THX7B	500W	1,605
Marantz EC-500	900	Ph	Jadis DPMC	3,190	Ph	Bryston 4B-ST	300W	1,756
Marantz SC-23	1,000	Ph	Jadis JPL	4,720	Ph	Bryston 7B-ST	500W	1,815
Matisse Atom	1,000	Ph	Jadis JPP200	4,998	Ph	Bryston THX4B	300W	1,858
Meracur Ingredi	925	Ph	Jadis JPS30MC	5,978	Ph	Cary SLA-70 II	30W	1,495
Meridian 501	695	Ph	Jadis JPS200	7,900	Ph	Chord SPM 400	100W	1,325
Meridian 562	765	Ph	Krell KRC3	3,250	Ph	Chord SPM 600	100W	1,720
Meridian 562V	995	Ph	Krell KRC-HR	6,949	Ph	Conrad-Johnson MF-2100	100W	1,690
Meridian 502	1,295	Ph	LFD Disc Preamp	4,499	Ph	Conrad-Johnson MV-55	50W	1,995
Michell Argo	730	Ph	Lumley M100	2,250	Ph	Copland CTA501	30W	1,750
Michell Iso HR	895	Ph	Lumley LS2	3,250	Ph	CR Dev Amphion	12W	1,949
Michell Argo HR	1,339	Ph	Lumley PS2	3,550	Ph	Credo PMP 804	1876	599
Michi RHC-10	795	Ph	Lumley M140	4,250	Ph	Creek A52SE	80W	890
Michi RHQ-10	1,150	Ph	Lumley ST150	4,350	Ph	Crimson CS630C	90W	800
Michi RHA-10	1,150	Ph	Marantz Model 7	3,500	Ph	Dawn Audio CMD 2 by 200	200W	890
Micromega Tempo P	1,250	Ph	Mark Levinson 25S	2,950	Ph	Densen DM-30	100W	1,200
Monrio ADN	625	Ph	Mark Levinson 38	3,995	Ph	DNM PA1	45W	995
Monrio PLUR1-L	960	Ph	Matisse Fantasy	2,500	Ph	DPA Enlightenment pwr	25W	1,895
Muse Model 3	1,990	Ph	Matisse Reference	3,500	Ph	Earmax Earmax Power	50W	880
Musical Fidelity F25	1,500	Ph	Meracur Pretare	2,195	Ph	ECA Lectern S	50W	1,480
NAD 118	1,000	Ph	Naim NACB2	2,160	Ph	ECA Lectern HD	50W	1,095
Naim NAC32R	630	Ph	Naim NAC52	3,350	Ph	Electrocompaniet AW60FTT	60W	850
Naim NAC72	725	Ph	Rokan ROK-L1.5	2,250	Ph	Exposure XVIII Super	70W	860
Naim NAC102	1,050	Ph	Sonic Frontiers Line 2	2,995	Ph	Fase Evoluzione Powersource 2.0	65W	1,670
Onix OA36L	999	Ph	Tesseract TAP-A	5,300	Ph	Fase Evoluzione Powersource 1.0	100W	1,000
Onix OA36	1,100	Ph	Trilogy 918	2,775	Ph	Golden Tube Audio SE-40	8W	1,490
Quad 77 Pre	850	Ph	Woodside SC26 Line & Phono	2,233	Ph	Golden Tube Audio SE-300B MkII	40W	1,995
Rega Hal	998	Ph				Golden Tube Audio SE-100	100W	1,997
Rokan ROK-L2.5	1,250	Ph				Jadis DA5	40W	1,850
Rose RV-23S	525	Ph				Lexicon 212	120W	999
Shearman Phase 6 Pre	899	Ph				LFD PA1 Powerstage	60W	599
Shearman Phase 1 Pre Ref	1,399	Ph				LFD PA2 Powerstage	75W	1,599
Sonic Frontiers SFP-1	1,095	Ph				LFD PA2M Powerstage	90W	1,999
Sonic Frontiers SFP-1 Sig	1,495	Ph				Linn LK100	50W	650
Sonic Frontiers Anthem Pre 1	1,495	Ph				Linn LK240	120W	750
Sonic Frontiers Line 1	1,995	Ph				Linn AV5105	100W	1,200
Sonographe SC26	995	Ph				Lumley ST40	40W	1,250
Sumo Athena II Line	767	Ph				Lumley ST70	70W	1,950
Sumo Athena IIB/II LS	987	Ph				Lynwood Ruby	120W	985
Sumo Athena III	987	Ph				Magnum MF330	150W	685
Sumo Artemis uP	1,595	Ph				Magnum MF660	125W	825
Talk Electronics Hurricane 1P	550	Ph				Magnum AS050E	200W	1,485
Talk Electronics Hurricane 2L	650	Ph				Magnum AS050E	200W	1,595
Talk Electronics Hurricane 2P	730	Ph				Marantz MA-23	50W	1,800
Talk Electronics Hurricane 3	900	Ph				Meracur Ciere	60W	1,095
Talk Electronics Hurricane 3P	1,000	Ph				Meridian 555	60W	750
Technics SU-C2000	700	Ph				Meridian 557	200W	1,400
Tesseract TAAAD	1,500	Ph				Michell Alecto Stereo	50W	1,150
Tesseract TALA	1,500	Ph				Michell Alecto Mono	100W	1,989
Tesseract TAHA	1,800	Ph				Michi RHB-05	100W	1,100
Thorens TTP-2000F	699	Ph				Michi RHB-10	200W	2,000
Thule PR200	699	Ph				Micromega Amp	100W	1,250
Trilogy 901	750	Ph				Monrio Cento	135W	1,495
Trilogy 906	995	Ph				Monrio HP1	135W	1,995
Trilogy 902	1,595	Ph				Moth 60 Stereo	60W	599
Tron Retro	1,000	Ph				Moth 30 Mono/100	100W	879
Tron Nucleus Phono	2,000	Ph				Muse Model 100	100W	1,490
Tron Nucleus	2,000	Ph						

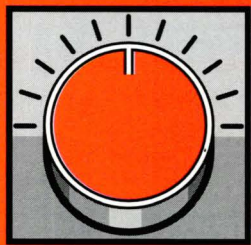


POWER AMPS
KEY
'20W' - output power per channel
into nominal load of 8 Ohms.
Up to £500

AMC CVT 2030A	30W	400
Arcam Alpha 8P	50W	250
Arcam Alpha 9P	70W	400
Arcam Delta 290P	75W	400
Creek A43	90W	399
Creek A52	70W	499
Crimson CS620C	40W	450
Denon PMA-250SE	30W	160
Earmax Earmax Headphone	0.1W	375

Gamma Space Ref	18W	7,999
Graaf 5050	50W	2,150
Graaf GM100	100W	4,490
Graaf GM200	200W	8,000
Jadis DA8	80W	3,333
Jadis DA7	100W	5,290
Jadis JA30	30W	5,980
Jadis JA300B	10W	9,000
Jadis JA80	60W	9,912
Krell KAV500/2	100W	3,485
Krell FPB200	200W	6,490
Krell FPB300	300W	9,500
Lexicon 225	250W	2,500
Lexicon 501	500W	5,000
Linn Klout	80W	2,400
Lumley M120	120W	3,200
Magnum A200SE	275W	2,995
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
Matisse Ref Monoblocks	180W	8,000
Meracus Tentare	75W	2,245
Meracus 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 F18	220W	4,000
Papworth M100	100W	2,645
Papworth M200	200W	3,825
Roksan ROK-M1.5	160W	2,250
Shearne 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	240W	4,200
Sunfire Sunfire	300W	2,500
Tesseract TAMP-60	60W	7,350
Trilogy 958	100W	3,395
Tube Tech Genesis Sig.	100W	4,700
Unison Smart 845	24W	3,250

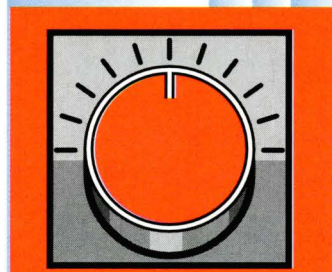
Sony TA-VE700	90W	350
Sony TA VE 800G	100W	400
Sony TA VA 8ES	120W	700
Sunfire Cinema Grand	200W	2,600
TEAC AV-H500	80W	380
Yamaha DSP-A492	65W	250
Yamaha DSP-A592	70W	330
Yamaha DSP-A920	60W	799
Yamaha DSP-A1092	60W	850
Yamaha DSP-A990	100W	900
Yamaha DSP-A2070	80W	1,100
Yamaha DSP-A3090	80W	1,500



SURROUND SOUND PROCESSORS

KEY
 Ⓢ - number of inputs.
 ⒶC-3 - includes AC-3 decoding for compatibility with Dolby's digital home cinema format.

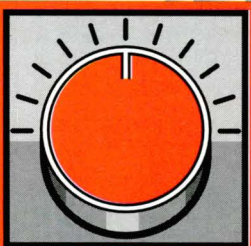
AMC Pro7	Ⓢ	200
Arcam Xeta 2	Ⓢ	650
Audio Research SDPI	Ⓢ	3,293
H/K Citation 7.0	Ⓢ	3,500
Lexicon DC-1 Pro-Logic	Ⓢ	2,000
Lexicon DC-1 THX	Ⓢ	3,000
Lexicon DC-1 AC-3	ⒶC-3	4,000
Marantz AV-1030	Ⓢ	330
Marantz AV-1040	ⒶC-3	400
Marantz DP-870	ⒶC-3	600
Meridian 565 AC-3	ⒶC-3	2,700
NAD 117	Ⓢ	470
Naim AV1	Ⓢ	1,680
Onkyo SR 211PRO	Ⓢ	340
Onkyo ED 901	Ⓢ	700
Parasound 1000	ⒶC-3	995
Pioneer SP-D07	ⒶC-3	800
Sanyo HT D47	Ⓢ	200
Sony SDP E300	Ⓢ	230
Sony SDP-EP9ES	ⒶC-3	600
Technics SH-AV500	Ⓢ	280
Yamaha DSP-E492	Ⓢ	250
Yamaha DSP-E580	Ⓢ	450
Yamaha DSP-E1000	Ⓢ	700



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 5B-ST PRO	150W	1,610
Bryston 8B-ST PRO	150W	1,868
Bryston 8B-ST	150W	2,195
Chord SPM 2000	200W	4,890
Denon AVC-1800	70W	550
Denon AVC-2800	85W	800
Denon AVC-3800	90W	1,700
Grundig V1000DPL	18W	360
H/K AV1100	30W	250
H/K AV1150	55W	350
H/K AV1200 II	65W	400
H/K AV1250	100W	1,250
H/K Citation 7.1	130W	2,500
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		1,445
Marantz MM-500	55W	400
Marantz PM-711AV	65W	450
Mission AV-Master		650
NAD 316	45W	450
NAD 916	50W	500
Onkyo ASV 620	30W	700
Parasound 806		1,495
Pioneer VSA 805S	80W	450
Rotel RB956AX	30W	350
Rotel RSP960AX	30W	400
Sansui AV-7100	75W	250



SURROUND SOUND RECEIVERS

KEY
 '20W' - output power per front channel into nominal load of 8 Ohms.

Denon AVR-600RD	50W	300
Denon AVR-900	60W	350
Goodmans Delta 801	30W	200
Grundig R14DPL	40W	280
Grundig R1000DPL	40W	400
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-616RBK	60W	350
Kenwood KR-V5080	40W	280
Kenwood KR-V6080	70W	330
Kenwood KR-V7080	100W	380
Kenwood KR-V9080	110W	1,300
Marantz SR-66	50W	300
Marantz SR-770	80W	700
Marantz SR-96	110W	1,300

NAD 713	60W	400
NAD 917		550
NAD 716	80W	600
Onkyo TXSV 434	55W	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

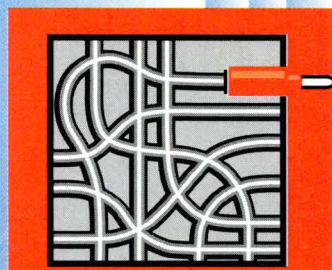
Henley HSP200	Ⓢ	95.00
Heybrook Inter/BS Blue STRK	Ⓢ	49.95
Ixos 104	Ⓢ	20.00
Ixos 103	Ⓢ	45.00
Ixos 102	Ⓢ	60.00
Ixos 101	Ⓢ	100.00
Ixos 100X03	Ⓢ	150.00
Kimber PBJ	Ⓢ	68.00
Kimber KC1	Ⓢ	96.00
Kimber Silver Streak	Ⓢ	180.00
Kimber KCAG	Ⓢ	390.00
Kimber KCTG	Ⓢ	720.00
Kronos Konnekt 3	Ⓢ	49.00
Kronos Konnekt 2	Ⓢ	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
Moth Layline Black	Ⓢ	100.00
Moth Layline 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
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
SME S2LB-4	Ⓢ	44.00
SME S3LB-4	Ⓢ	50.00
SME 4900A	Ⓢ	73.00
SME 5900A	Ⓢ	98.00
Sonic Link Bonus	Ⓢ	15.00
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
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
XLO Type 150	Ⓢ	50.00
XLO Type 0.1	Ⓢ	180.00



CABLES ANALOGUE INTERCONNECTS

KEY
 Ⓢ - stranded construction.
 Ⓢ - solid-core construction.
 Prices for interconnects are for a one-metre terminated pair.

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 Improved 2/T	Ⓢ	50.00
Cable Talk Studio 2	Ⓢ	65.00
Cable Talk Professional 2	Ⓢ	85.00
Cable Talk Broadcast 2	Ⓢ	130.00
Cable Talk Reference 2	Ⓢ	180.00
Cable Talk Signature Gold	Ⓢ	300.00
Cambridge Atlantic	Ⓢ	10.00
Cambridge Arctic	Ⓢ	20.00
Cambridge Pacific	Ⓢ	30.00
Cambridge Studio Reference	Ⓢ	40.00
ChordCo Chrysalis	Ⓢ	30.00
ChordCo Cobra	Ⓢ	49.00
ChordCo Siren	Ⓢ	65.00
ChordCo Chameleon	Ⓢ	68.00
ChordCo Solid	Ⓢ	99.00
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
DNM TCC75	Ⓢ	34.00
DPA Slink	Ⓢ	41.00
DPA White Slink	Ⓢ	75.00
DPA Black Slink	Ⓢ	220.00
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

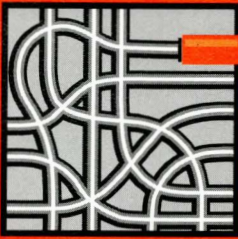


DIGITAL INTERCONNECTS

KEY
 Prices for interconnects are for a one-metre terminated pair.

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 2	Ⓢ	179.00
Cable Talk Digital 2	Ⓢ	75.00
Cardas Audio Lightning	Ⓢ	190.00
ChordCo Codac	Ⓢ	33.00
ChordCo Prodac	Ⓢ	50.00
DPA Opti-link	Ⓢ	20.00
DPA Digi-link	Ⓢ	28.00
Ixos 105	Ⓢ	25.00
Kimber Opti-link	Ⓢ	40.00
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
Nordost Moonglo-XLR	190.00
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
Transparent Cable PDL	199.00
Trichord Pulsewire 750	75.00
Trichord Pulsewire 1100	145.00
Vampire Wire DI/1	150.00

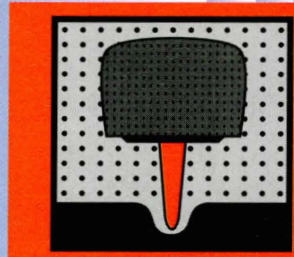


SPEAKER CABLES

KEY
Price per mono metre untermated.

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	150.00
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 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	4.00
Cable Talk Talk 4.1	5.00
Cable Talk Concert 2.1	7.00
Cable Talk Talk 4.1 Biwire	9.00
Cable Talk Concert 2.1 Biwire	14.00
Cardas Audio 300B-Microtwin SC	35.00
Cardas Audio Quadlink-Five SC	59.00
Cardas Audio Hexlink-Five SC	99.00
Cardas Audio Hexlink-Golden5 SC	109.00
Cardas Audio Golden Cross SC	175.00
Cardas Audio Golden Cross SC	239.00
DNM LSC350	6.95
DPA Black Sixteen	100.00
Electrocompaniet 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
Linn K20	4.00
Linn K400	10.00
Linn K600	15.00
Lumley Silver	35.00

Naim NACA 5	5.50
Nordost Octava	2.95
Nordost 4-Flat	10.00
Ortofon SPK100	3.00
Ortofon SPK200	5.00
Ortofon SPK300	8.00
Puresonic 7845	2.00
Puresonic 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 Mkl	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
Sonic Link AST50	1.95
Sonic Link AST75	3.00
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	90.00
Sonic Link RE3.4	330.00
ChordCo Myth	5.95
ChordCo Legend	15.00
Transparent Cable Musichord Spkr	11.00
Transparent Cable The Wave	23.00
Transparent Cable Music Wave Spkr	25.00
Vampire Wire SC-384	11.00
Vampire Wire SC-554	15.00
Vampire Wire ST-I	30.00
Vampire Wire SC-1108	30.00
Vampire Wire ST-II	48.00
Vampire Wire ST-III	73.00
XLO Pro 625	4.00
XLO Pro 600	16.60



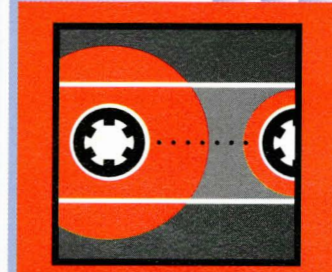
CARTRIDGES

KEY
MM - moving-magnet type.
MC - moving-coil type.
Up to £100

Audio Note IO1	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	29
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 Z3E+1	MM	48
Grado Prestige Black	MM	49
Grado Prestige Green	MM	59
Grado Prestige Blue	MM	69
Grado ZF1+	MM	83
Grado Prestige Red	MM	99
N'ham Tracer I	MM	98
Ortofon VMS2	MM	14
Ortofon OM 5E	MM	20
Ortofon OM 10	MM	30
Ortofon 510	MM	38
Ortofon OM DJ	MM	50
Ortofon 520	MM	65
Ortofon OM 20	MM	70
Ortofon MC1 Turbo	MM	70
Ortofon Concorde DJ	MM	80
Ortofon OM 30	MM	90
Ortofon MC10 Super	MC	100
Ortofon 530	MM	100
Pickering TE-15	MM	20
Pickering VE-15	MM	25
Pickering T-E	MM	25

Pickering V15-DJ	MM	28
Pickering TL-E	MM	35
Pickering TL-2E	MM	45
Pickering XV15-625E	MM	50
Pickering XV15-150-DJ	MM	50
Pickering TL-2-S	MM	55
Pickering XV15-757S	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	70
Sumiko Oyster	MM	30
Sumiko Black Pearl	MM	50
Sumiko Pearl	MM	70
Sumiko Blue Point	MM	100
Over £100	MC	
Audio Note IO2	MM	139
Audio Note Soara	MC	795
Audio Note IO1V	MC	1,095
Audio Note IO2V	MC	1,695
Audio Note IO1Ld	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 50X	MC	159
Dynavector 10X	MC	189
Dynavector 23RS	MC	375
Dynavector 1702	MC	450
Dynavector XX-1L	MC	998
Dynavector XX-1	MC	998
Dynavector Te-Kaitora	MC	1,698
Goldring Eroica LX	MM	110
Goldring Eroica	MM	110
Goldring 1042	MM	120
Goldring Elite	MM	220
Goldring Excel VX	MM	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	MM	399
London Decca S Gold Dp	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
Ortofon MC3 Turbo	MC	130
Ortofon MC15 Super II	MC	130
Ortofon 540	MM	130
Ortofon MC25E	MC	180
Ortofon MC25FL	MC	250
Ortofon MC10 Supreme	MC	300
Ortofon SPU mono	MC	350
Ortofon MC20 Supreme	MC	425
Ortofon SPU Classic	MC	450
Ortofon MC30 Supreme	MC	525
Ortofon MC2000II	MC	750
Ortofon MC Rohmann	MC	1,000

Ortofon MC3000 II	MC	1,100
Ortofon MC5000	MC	1,500
Ortofon MC7500	MC	2,000
Pickering TL-3003	MM	145
Pickering XLZ-4500	MM	150
Pickering TL-4004	MM	175
Pickering XSV-5000U	MM	200
Pickering XLZ-7500	MM	200
Pickering TLZ-7500-S	MM	200
Reson Mica	MM	150
Reson Aciore	MC	199
Reson Reca	MC	225
Reson Etile	MC	289
Reson Lexe	MC	899
Roksan Corus Black	MM	130
Roksan Shiraz	MM	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 IIISLA	MC	2,200
Van Den Hul Grasshopper IIIGLN	MC	2,999
Van Den Hul Grasshopper IIIGLA	MC	2,999
Van Den Hul Grasshopper IIICMN	MC	3,000
Van Den Hul Grasshopper IIICHN	MC	3,400
Van Den Hul Grasshopper IIVGLA	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

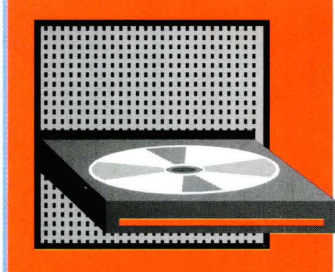
Aiwa AD-F450	120	
Aiwa AD-WX727	170	
Denon DRM-550	160	
Denon DRW-580	200	
Denon DRS-640	200	
Goodmans Delta 801	130	
Grundig CCF3	200	
JVC TD-W218BK	170	
JVC TD-X372BK	170	
JVC TD-R472BK	200	
JVC TD-W318BK	200	
Kenwood KX-W4080	160	
Kenwood KX-3080	160	
Kenwood KX-W6080	200	
Kenwood KX-5080S	200	
Marantz SD-53	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 W-610	100	
TEAC W-780R	170	
TEAC R-560	180	
TEAC R-H500	200	
Technics RS-TR373	200	
Technics RS-BX501	200	
Yamaha KX-390	150	
Yamaha KX-W392	180	
Yamaha KX-490	200	
Over £200		
Aiwa AD-F850	3-H	230

Aiwa AD-S950	3-H	300
Denon DRM-650S	3-H	230
Denon DRM-740	3-H	270
Denon DRS-810	3-H	310
H/K TD420	3-H	250
H/K TD450	3-H	350
JVC TD-V562BK	3-H	220
JVC TD-W178BK	3-H	270
JVC TD-V682BK	3-H	250
Kenwood KX-7060S	3-H	330
NAD 613	3-H	230
NAD 614	3-H	270
NAD 616	3-H	300
Onkyo TA 6210	3-H	230
Onkyo TARW 211	3-H	270
Onkyo TARW 311	3-H	320
Onkyo TA 6310	3-H	330
Onkyo KR 609	3-H	350
Onkyo K 606	3-H	370
Onkyo TARW 411	3-H	370
Onkyo K 611	3-H	460
Pioneer CT-5550S	3-H	250
Pioneer CT-W803RS	3-H	300
Pioneer CT-S830S	3-H	500
Pioneer CT-95	3-H	1,000
Sony TC-KE900S	3-H	230
Sony TC-WE805S	3-H	250
Sony TC-KE800S	3-H	300
Sony TC-KA6ES	3-H	550
TEAC W-850R	3-H	250
TEAC V-1030	3-H	250
TEAC W-6000R	3-H	450
TEAC V-6030S	3-H	550
TEAC V-8030S	3-H	650
Technics RS-TR474	3-H	220
Technics RS-AZ6	3-H	280
Technics RS-TR575	3-H	280
Technics RS-AZ7	3-H	307
Yamaha KX-580SE	3-H	250
Yamaha KX-W592	3-H	280
Yamaha KX-690	3-H	400

AMC CD9	3-H	200
AMC CD8	3-H	230
AMC CD6	3-H	270
AMC CDM7	3-H	310
Cambridge CD4	3-H	250
Cambridge CD-4SE	3-H	350
Cambridge CD6	3-H	220
Denon DCD-625	3-H	200
Denon DCD-715	3-H	250
Denon DCD-825	3-H	330
Eclipse CD30	3-H	230
Eclipse CD50	3-H	270
Eclipse CD101	3-H	300
Grundig CDI1	3-H	230
H/K HD710	3-H	270
JVC XL-V120BK	3-H	320
JVC XL-V184BK	3-H	330
JVC XL-V284BK	3-H	350
JVC XL-F116BK	3-H	370
JVC XL-F216BK	3-H	370
JVC XL-V574BK	3-H	460
Kenwood DP-3080	3-H	250
Kenwood DP-M5570	3-H	300
Kenwood DP-5060	3-H	500
Marantz CD-46	3-H	1,000
Marantz CD-57	3-H	230
Marantz CC-47	3-H	250
NAD 510	3-H	300
NAD 512	3-H	550
Philips CD711	3-H	250
Philips CD721	3-H	250
Philips CD751	3-H	450
Philips CDC751	3-H	550
Pioneer PD-104	3-H	650
Pioneer PD-204	3-H	220
Pioneer PD-M603	3-H	230
Pioneer PD-S505	3-H	280
Pioneer PD-F605	3-H	307
Pioneer PD-F25	3-H	250
Rotel RCD-930AX	3-H	280
Sony CDP-M205	3-H	280
Sony CDP-KE210	3-H	280
Sony CDP-M305	3-H	280
Sony CDP-XE310	3-H	280
Sony CDP-CE105	3-H	280
Sony CDP-CE315	3-H	280
Sony CDP-XE510	3-H	280
Sony CDP-C325M	3-H	280
TEAC CD-P1800	3-H	280
TEAC CD-P3450SE	3-H	280
TEAC PD-H500	3-H	280
TEAC PD-D2200	3-H	280
Technics SL-PG380A	3-H	280
Technics SL-PG480A	3-H	280
Technics SL-PG580A	3-H	280
Technics SL-PD687	3-H	280
Technics SL-PD887	3-H	280
Technics SL-PS670A	3-H	280
Technics SL-PS770A	3-H	280
Yamaha CDX-390	3-H	280
Yamaha CDC-565	3-H	280
Yamaha CDX-490	3-H	280
Yamaha CDC-665	3-H	280
Yamaha CDX-590	3-H	280

120	Sony CDP-CX200	380
150	Sony CDP-X3000ES	500
250	TEAC CD-5	350
250	Yamaha CDX-890	350
£501 to £1000		
150	Alchemist Nexus	579
200	Arcam Alpha 8	520
200	Audiolab 8000CD	1,000
235	Creek CD42	599
240	Denon DCD-3000	1,000
50	DPA Renaissance int CD	950
60	Fase Evoluzione Laserdrive 1.0	995
80	Heybrook Signature II	989
170	Linn Mimik	875
200	Marantz CD-17	800
110	Micromega Stage 4	600
120	Micromega Stage 5	750
140	Micromega Stage 6	950
180	Mission dAD3	598
200	Monrio Privilege	995
250	Myrrad MC100	700
170	Naim CDS	1,000
250	Orelle CD100eA	649
250	Orelle CD-100eSA	999
150	Pink Triangle Numeral	999
230	Quad 77 Bus	700
200	Quad 77 Mains	900
250	Roksan Caspian	895
250	TEAC VRDS-7	599
120	TEAC VRDS-9	700
130	TEAC VRDS-10SE	850
150	Technics SL-P2000	1,000
180	Thule CD100	849
130	Trichord Genesis	549
150	Trichord Digital Jukebox 25	599
200	Trichord Digital Jukebox 50	649
200	Trichord Digital J'box 100	699
230	Trichord Revelation	799
Over £1000		
1,950	Alchemist Forseti	1,950
1,395	Audio Alchemy ACD Pro	1,395
3,290	Audio Research CD1	3,290
3,290	Audio Research CD1	3,290
4,100	Audio Research CD2	4,100
2,150	Audiomeca Talisman	2,150
2,300	Audiomeca Talisman SE	2,300
2,250	Cary CD-300	2,250
1,800	Copland CD277	1,800
2,199	Copland CDA288	2,199
5,490	Krell KPS30i	5,490
9,990	Krell KPS-20i	9,990
1,300	Marantz CD-17KI	1,300
4,000	Marantz CD-23	4,000
5,995	Mark Levinson 39	5,995
160	Meracus Tanto	160
160	Meracus Imago Player	160
180	Meridian 506	180
1,685	Meridian 508	1,685
4,995	Meridian 800	4,995
2,750	Micromega Solo	2,750
1,500	Musical Fidelity FCD	1,500
2,000	Naim CD2	2,000
3,940	Naim CDS	3,940
1,149	Orelle CD100eV	1,149
2,099	Pink Triangle Litaural	2,099
2,995	Resolution CDS0	2,995
1,495	Roksan Attezza-DP3P	1,495
3,495	Sonic Frontiers SFCD-1	3,495
1,300	TEAC VRDS-25	1,300
1,250	XTC CDP-1	1,250

1,100	Audiomeca Damnation SE	1,100
1,400	Audiomeca Kreatura SE	1,400
2,350	Audiomeca Mephisto	2,350
300	Cambridge Discmagic One	300
1,795	Conrad-Johnson DR-1	1,795
725	DPA Enlightenment Drv	725
4,850	Jadis J3	4,850
4,990	Jadis J2	4,990
12,500	Jadis JDI	12,500
8,490	Krell KPS-20t	8,490
1,850	Linn Karik	1,850
3,995	Mark Levinson 37	3,995
9,295	Mark Levinson 31.5	9,295
3,995	Meracus Imago	3,995
1,245	Meridian 500	1,245
750	Micromega Drive 3	750
2,250	Micromega Data	2,250
875	Monrio Bitmatch	875
1,800	Muse Model 5	1,800
699	Orelle CD100eT1	699
799	Orelle CD100eT2	799
875	Pink Triangle Cardinal II	875
2,250	PS Audio Lambda TR	2,250
3,995	PS Audio Lambda AT&T	3,995
6,500	Resolution T30	6,500
1,295	Roksan Attezza-DP3	1,295
2,295	Sonic Frontiers SFT-1	2,295
550	TEAC VRDS-T1	550
2,500	TEAC P-30	2,500
2,997	Theta Digital Data Basic II	2,997
5,455	Theta Digital Data III NTS/CPAL	5,455
999	Thorens TCD-2000	999
699	Trichord Digital Turntable	699
3,195	Wadia 6	3,195
4,370	Wadia 20	4,370



CD PLAYERS

KEY
 ⇨ - multiplayer, can be loaded with more than one disc.
 [D] - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

Up to £250

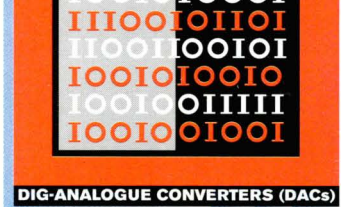
Aiwa XC-300 150

Atacama SE24: a pillar of the hi-fi furniture community...

500	Aiwa DX-C100M	500
320	Arcam Alpha 7	320
490	Audio Alchemy ACD II	490
399	Audiomov Alto	399
400	Aura CD100	400
300	Denon DCM-260	300
350	Denon DCD-1015	350
300	Grundig CDC14	300
300	H/K HD730	300
300	H/K FL8300	300
300	JVC XL-Z674BK	300
400	Kenwood DP-7090	400
270	Marantz CD-67	270
350	Marantz CD-63SE	350
350	Marantz CD67SE	350
500	Marantz CD-63HKI	500
400	Micromega Minium	400
300	Musical Fidelity E60	300
500	Musical Fidelity E601	500
290	NAD 513	290
350	NAD 515	350
370	NAD 514	370
400	NAD 517	400
260	Onkyo DX 7210	260
290	Onkyo C721	290
380	Onkyo DXC 320	380
400	Onkyo DX 7510	400
450	Onkyo CM 716	450
300	Pioneer PD-S705	300
330	Pioneer PD-F805	330
400	Pioneer PD-F905	400
400	Pioneer PD-S904	400
460	Pioneer PD-S505 Precision	460
300	Rotel RCD-965BX	300
375	Rotel RCD-970BX	375
300	Sony CDP-XE900E	300
350	Sony CDP-XA2ES	350

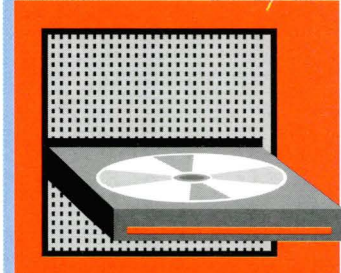
£251 to £500

1,950	Alchemist Forseti	1,950
1,395	Audio Alchemy ACD Pro	1,395
3,290	Audio Research CD1	3,290
3,290	Audio Research CD1	3,290
4,100	Audio Research CD2	4,100
2,150	Audiomeca Talisman	2,150
2,300	Audiomeca Talisman SE	2,300
2,250	Cary CD-300	2,250
1,800	Copland CD277	1,800
2,199	Copland CDA288	2,199
5,490	Krell KPS30i	5,490
9,990	Krell KPS-20i	9,990
1,300	Marantz CD-17KI	1,300
4,000	Marantz CD-23	4,000
5,995	Mark Levinson 39	5,995
160	Meracus Tanto	160
160	Meracus Imago Player	160
180	Meridian 506	180
1,685	Meridian 508	1,685
4,995	Meridian 800	4,995
2,750	Micromega Solo	2,750
1,500	Musical Fidelity FCD	1,500
2,000	Naim CD2	2,000
3,940	Naim CDS	3,940
1,149	Orelle CD100eV	1,149
2,099	Pink Triangle Litaural	2,099
2,995	Resolution CDS0	2,995
1,495	Roksan Attezza-DP3P	1,495
3,495	Sonic Frontiers SFCD-1	3,495
1,300	TEAC VRDS-25	1,300
1,250	XTC CDP-1	1,250



DIG-ANALOGUE CONVERTERS (DACs)

100	AMC CDM7DAC	100
130	AMC DAC8	130
200	AMC CDM7VAC	200
480	Arcam Black Box 50	480
750	Arcam Black Box 500	750
150	Audio Alchemy DAC Man	150
596	Audio Alchemy DDE v1.2	596
699	Audio Alchemy DDEv3.0	699
675	Audio Note DAC1	675
1,099	Audio Note DAC2	1,099
1,750	Audio Note DAC3	1,750
2,148	Audio Research DAC5	2,148
2,335	Audio Research DAC5	2,335
4,195	Audio Research DAC3	4,195
4,555	Audio Research DAC3	4,555
2,195	Audio Synthesis DAX-2	2,195
900	Audiolab 8000DAC	900
799	Audiomeca Elixir	799
1,850	Audiomeca Ambrosia	1,850
25,000	Boulder 2020	25,000
150	Cambridge Dacmagic 2 Mk II	150
3,850	Chord DSC1500	3,850
1,195	Conrad-Johnson D/A-3	1,195
1,990	Conrad-Johnson D/A-2b	1,990
150	Denon DCD-425	150
300	DPA Little Bit 3	300
570	DPA Renaissance DAC	570
825	DPA Enlightenment DAC	825
3,650	DPA PDM256	3,650
6,250	DPA PDM1024	6,250
2,129	Jadis JS3	2,129
8,068	Jadis JS1	8,068
1,950	LFD DAC2	1,950
3,000	LFD DAC3	3,000
1,500	Linn Numerik	1,500
3,995	Mark Levinson 36	3,995
7,995	Mark Levinson 35	7,995
15,950	Mark Levinson 30.5	15,950
1,295	Meracus Auriga	1,295
2,495	Meracus Flagrare	2,495
1,095	Meridian 566	1,095
750	Micromega DAC 2	750
2,000	Micromega Dialog	2,000
875	Monrio 18B2	875
2,190	Muse Model 2	2,190
299	Musical Fidelity X-DAC	299
330	Onkyo DX 7310	330
777	PS Audio DL3	777

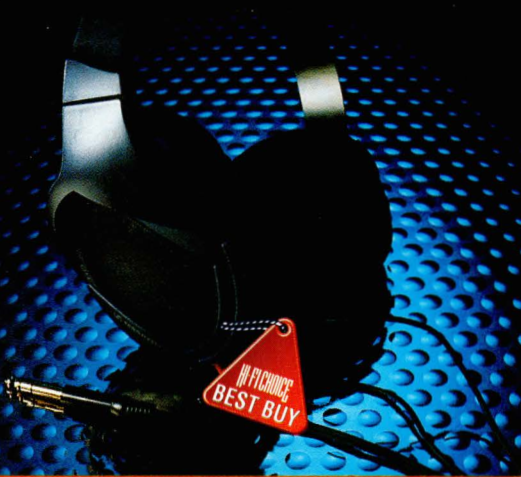


CD TRANSPORTS

KEY
 [D] - electrical (coaxial) digital output.
 Many players also include an optical (Toslink) output.

800	Arcam Delta 250	800
700	Audio Alchemy DDS III	700
1,550	Audio Alchemy DDS Pro	1,550
3,290	Audio Research CDTI	3,290
1,395	Audio Synthesis Transcend	1,395
1,400	Audiolab 8000CDM	1,400
999	Audiomeca Damnation	999

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.

PS Audio SL3				
PS Audio UltraLink 2 HDCC	2,590			
PS Audio Ref Link	4,550			
Resolution D20	6,500			
Roksan Attessa-DA2	595			
Sonic Frontiers Transdac	699			
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			
TEAC VRDS-25	1,300			
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			

Sharp MD-MS100H	MD	350
Sony MZ-E40	MD	180
Sony MZ-E30	MD	280
Sony MDS-S38	MD	300
Sony MZ-R30	MD	300
Sony MDS-JE500	MD	300
Sony MDS-MX1	MD	500
Sony MDS-S1	MD	550
Sony MDS-S03	MD	550
Sony DTC-ZE700	DAT	699
Sony MDA-JA3ES	DAT	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-DS25	D	20
JVC HA-F65	D	20
JVC HA-D626	D	25
Kenwood KH-1000	D	25
Kenwood KH-2020	D	40
Maxell HP-1000	D	20
Maxell HP-2000	D	25



DIGITAL RECORDERS

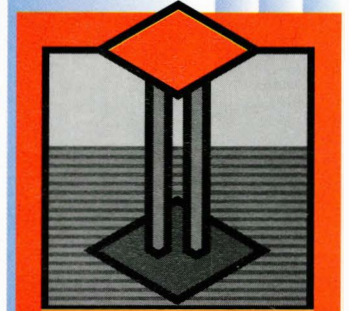
Meridian CDR		4,500
Onkyo MD 122	MD	700
Pioneer D-05	DAT	900
Pioneer PDR-05	DAT	1,300
Pioneer D-C88	DAT	2,000
Sharp MD-R1E	MD	330

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 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	35
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 K222IR	D	100
AKG K401	D	120
AKG K501	D	150
AKG K333IR	D	150
AKG K444IR	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 SR80	D	100
Grado SR225	D	200
Jacklin Float Model 1	D	79
Jacklin Float Model 2	D	99
Jacklin Float ELS	E	399
JVC HA-D727	D	43
JVC HA-D910	D	65
JVC HA-D1000	D	250
JVC HA-F25	D	699
Kenwood KH-5000	D	70
Pracide Ergo Model 1	D	120
Pracide Ergo Model 2	D	140
Sennheiser HD445	D	45
Sennheiser HD455	D	55
Sennheiser HD465	D	65
Sennheiser IS360/UK	D	70
Sennheiser HD475	D	80
Sennheiser HD25 SP	D	90
Sennheiser HD535	D	105
Sennheiser IS450	D	120
Sennheiser HD545 Ref	D	125
Sennheiser HD250H	D	150
Sennheiser HD565 Ovatt'n	D	150
Sennheiser HD265 Linear	D	150
Sennheiser HD25-13	D	160
Sennheiser HD25	D	160
Sennheiser HDC 451-1	D	166
Sennheiser HD 580 P'cision	D	200
Sennheiser HD600	D	250
Sennheiser IS850	D	859
Sennheiser HE60/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 SR10001FL	D	110
Vivanco IR7100	D	120
Vivanco IR7600	D	140
Vivanco SR200IFL	D	140



EQUIPMENT SUPPORTS SPEAKER STANDS

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
Chord CEL 01		387
Credo STD 001		284
Deadrock 903		60
Deadrock 902		60
Deadrock 901		60
Harbeth HL-Stands		249
Heybrook Stand-HY		45
Heybrook Stand-SX		55
Heybrook Stand-S6		59
Heybrook Stand-S4		59
JPW HS1		120
JPW HS2		120
Kudos Audio Arrow		50
Kudos Audio S-50		100
Kudos Audio S-100		270
Pioneer CP-7		50
Pioneer CP-8		70
QLN Signature		85
QLN Signature		75
Reveler RS1		70
Royd Royd		99
SD Acoustics SD Alexander		335
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 Z128		108
Soundstyle X6118		100
Soundstyle X6124		100
Soundstyle X020		105
Stands Unique Speaker support		159
Stands Unique Tuned Steel		220
Stands Unique Tuned Carbon Fibre		315
UKD-Opera S2		345
UKD-Opera S1		345

Equipment Supports

Audiophile Base 01	79
Audiophile S4T120	280
Audiophile Furniture Base	480
Audiophile S4T120P	560
Deadrock 701	60
Deadrock 802	90
Deadrock 703	130
Deadrock 704	190
Deadrock 705	230
DNM DOMOWS	125
DNM DOMOPS	125
Fi-Rax R4	399
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
Optimum G2	55
Optimum G2P	85
Optimum G4P	130
Optimum OPT 3406	149
Optimum G5P	150
Optimum OPT 4906	199
Optimum OPT 6606	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 660	399
Optimum OPT 1020	449
Optimum OPT 1190	499
QLN A3	125
QLN Modulul	125
QLN A4	165
QLN A5	205
QLN A6	245
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
Sound Org Z022	65
Sound Org Z021	78
Sound Org Z030	100
Sound Org Z060	120
Sound Org Z038	135
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 X120	250
Soundstyle X105	250
Soundstyle X6053	255
Soundstyle X6100	265
Soundstyle X6310	275
Soundstyle X6058	290
Soundstyle X6105	300
Stands Unique Sound Support	239
Stands Unique Midi Tower	249
Stands Unique 10mm Compact	299
Stands Unique 10mm Sound Support	299
Stands Unique High AV	349
Stands Unique Ultimate Tower	649
Stands Unique RMS Reference	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.
- 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
Bose XL1000	130
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 D-100	80
Jamo SAT-90	90
Jamo Cornet 25	100
Jamo Studio-110	100
Jamo D-110	100
Jamo SAT-170	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
JPW ML510	130
JVC SX-SC1VBK	60
JVC SP-V50	80
JVC SP-X220TBK	100
JVC SP-X550BK	130
KEF Coda 7	129
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 Baretta	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
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 Valdus 100	80
Wharfedale Diamond 7.1	100
Wharfedale Diamond 6R	110
Wharfedale Valdus 200	110
Wharfedale Modus Micro	110

£131 to £200

Acoustic Energy AE100	200
Allison Model 4A	170
B&W DM302	150
B&W CWMS	170
B&W DM601	199
Bose 101 M'ble Monitor	190
Bose XL2000	200
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
Heybrook Solo	199
Infinity SM65	150
Infinity Reference 1i	150
Infinity Reference 11i	200
Interaudio XL2000	140
Interaudio XL3000	160
Interaudio XL4000	200
Jamo Studio 140	140
Jamo 525	140
Jamo 560	150
Jamo 660	160
Jamo Studio 180	180
Jamo 38	180
Jamo D165	200
Jamo 892	200
Jamo Cornet 65	200
JBL TLX121	150
JPW ML610	170
JPW S5551	200
KEF Coda 8	189
KEF Q15	199
KEF Model 60S	199
Kenwood LS-200G	200
Mission 732	200
Mordaunt-Short MS10i	140
Mordaunt-Short VS-200	150
Mordaunt-Short VS-300	200
Mordaunt-Short MS20i	200
Pioneer CS-5030	170
Polk M2	180
Polk R T3	200
Polk AB610	200
QLN Projekt A3	135
QLN Projekt A4	180
QLN Qubic111	200
Rega Kyte	198
Revolver Colt	139
Revolver The 230	169
Revolver Purdey MkII	199
Richard Allen Minette 3	159
Richard Allen Dim'n 5/1 Compact	179
Richard Allen RA6	199
Rogers LS1	149

You must listen to...Mission's 731i.

"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.

Royd The Herald Sequence 200	198	Visonik SUB5	259
Solid Monitor Sony SS-176E	200	Wharfedale MFM1	250
Tangent Monitor 9	150	Wharfedale Modus Music Six	280
Tangent Monitor 11	180	Wharfedale Valdue 500	300
Tannoy Mercury M2	140	Yamaha NS10M	300
Tannoy Profile 631	149	ZYP A1T	219
Tannoy Profile 631SE	169	ZYP A2S	275
Tannoy Profile Plus 632	199	ZYP A2ST	295
TDL RTL 1	200	£301 to £500	
Technics SB-CS95	150	Acoustic Energy AE109	330
Technics SB-M20	200	Allison Model 2A	420
Visonik 6003	143	AudiInnov Alto	329
Visonik 5001	170	B&O Beovox CX50	325
Wharfedale Diamond 7.2	140	B&O Beovox CX100	425
Wharfedale Modus Mini	140	B&O Beovox RL6000	470
Wharfedale Valdue 300	150	B&W CWM8i	350
Wharfedale Modus Music Two	170	B&W DM305	350
Wharfedale Modus Music Four	200	B&W DS6	400
Wharfedale Valdue 400	200	B&W CDM2	400
Wharfedale Diamond 7.3	200	B&W DM603	500
ZYP A1	199	B&W Signature 7	500
£201 to £300			
Audio Gem Opal	230	Bandor Pictures	352
B&W CWM6i	280	Blue Room Mini Pod	400
B&W DM602	300	Bose 301 VM	380
Bose XL3000	230	Bose 305	430
Bose 151 Environmental	270	Bose A'mass AM3 II	500
Bose 161 Freestyle	275	Bose 401	500
Bose 201 Ser III	290	Boston Micro 90 Sat	369
Bose XL4000	295	Boston Micro 80 Sys	369
Boston 361	219	Boston VR20	380
Boston CR8	239	Castle Tay	329
Boston 381	259	Castle Eden	449
Boston CR9	279	Celestion 25i	399
Boston Voyager	299	Celestion 30i	449
Castle Isis	229	Celestion 35i	499
Celestion 23i	299	Cerwin-Vega VS-10	350
Cerwin-Vega VS-8	250	Clements 300si	395
Cerwin-Vega CT-330	300	Dali 104B	370
Dali 102B	260	Dali Royal	500
Dali 150	300	Dawn Audio Chorus BS	482
Faraday FS1	245	Def Tech Celsius	395
Gale 5B	220	Epos ES12	499
GLL I agio IC110	300	Faraday SG	345
Heybrook HB1	269	Faraday Siren	445
Infinity SM85	250	GLL Imagio IC120	420
Jamo 68	230	Grundig BX3 Mk II	350
Jamo A	270	Heybrook Heylios	339
Jamo Deco Art	300	Heybrook Trio	373
Jamo D265	300	Heybrook Haylo	389
Jamo Classic 4	300	Heybrook Heystak	499
Jamo 307A	300	Infinity SM105	350
JBL LX2	250	Infinity SM115	400
JBL TLX151	300	Infinity SM125	500
JPW ML710	230	Jamo Cornet 75	330
JPW ML810	260	Jamo 407A	350
JPW ML910	300	Jamo 98	360
JVC SX-SW10	300	Jamo Classic 6	360
KEF Coda 9	299	Jamo BX-100A	370
KEF Model 70S	299	Jamo D365	400
Kenwood LS-300G	300	Jamo Cornet 95	400
Keswick Aria II	299	Jamo Graphic	400
Lumley Promenade SP1	299	Jamo Classic 8	430
M-A Monitor 1	250	Jamo BX-150A	460
M-A Monitor 2	300	Jamo Atmosphere	480
Mordaunt-Short MS30i	275	Jamo 128	500
Mordaunt-Short MS10i Classic	280	Jamo 477A	500
Mordaunt-Short MS25i	300	Jamo Silhouette	500
Mus Tec Kastrel SE	299	JBL LX6	350
NAD 802	280	JBL TLX161	400
Pioneer CS-7030	230	JBL PS8	500
Pioneer CS-9030	280	JBL TLX171	500
Pioneer S-LC1	300	Jordan Watts JHFLG	380
Polk AB505	220	JPW ML1090	400
Polk M3 II	220	JPW Ruby 1	400
Polk RT5	250	JPW S5553	500
Polk RT7	300	JPW Ruby 2	500
Polk M5	300	KEF Q35	349
QLN Projekt A5	225	KEF Q55	499
QLN Projekt B3	240	KEF RDM ONE	500
QLN Qubic 122	270	Keswick Aria II	329
QLN 122	270	Keswick Centrale	359
QLN A6	270	Linn Sekrit	395
QLN/Projekt B3i	285	Lumley LM4	375
Rega EL8	298	Lumley Promenade SP2	399
Revolver The 250	250	Lumley LM5	499
Richard Allen Dimension Five 1	239	Lumley Promenade SP3	499
Richard Allen RA8	249	Mission 733	330
Richard Allen RA8M	249	Mission 751f	348
Richard Allen Dimension Five 2	269	Mission 734	499
Rogers LS33	249	M-A Monitor 3	400
Royd Minstrel	269	Mordaunt-Sho MS40i	450
Royd Merlin	298	Mus Tec Harrier	400
Sequence 300	249	NAD 804	400
Solid/HCM1	250	Neat Critique	385
Sony SS-176EB	250	Origin Live OL-1AS	399
Spendor 2010	249	Origin Live Monarch	399
Tannoy Profile Plus 633	299	Pentachord A	469
TDL RTL2	280	Pioneer S-LC2	450
Visonik 7003	203	Polk AB705	330
		Polk RT8	400
		Polk RT10	500
		Polk AB805	500



Prof Monitor Co TB1S	366	Dali 109	800
Prof Monitor Co TB1SM	403	Dawn Audio Chorus FS	698
Prof Monitor Co TB1	410	Def Tech BP6B	750
Prof Monitor Co TB1M	447	Epos ES14	675
Prof Monitor Co XB1	499	Faraday FS10	795
QLN Projekt B4	320	GLL Imagio IC130	530
QLN Projekt B3ii	329	Harbeth BBC LS3/5A	699
QLN Projekt C3	330	Harbeth HL-P3ES	799
QLN Projekt B MULTI	330	Heybrook Quartet	575
QLN Projekt D3	360	Infinity SM155	550
QLN Projekt C3i	370	Jamo BX-200A	550
QLN Qubic 222	400	Jamo Classic 10	700
QLN Projekt C3ii	400	Jamo 507A	800
QLN Projekt B5	400	JBL LX7	550
QLN Projekt C3iii	400	JBL TLX181	600
QLN Projekt D3i	440	JBL L20	700
QLN Projekt C4	440	JBL PS12	750
QLN Projekt C3iv	440	Jordan Watts JH200	510
QLN Projekt D3ii	470	Jordan Watts JH400	565
QLN Projekt D4	480	JPW Ruby 3	800
QLN Projekt CMULTI	500	KEF LS3/5a	649
Rega ELA	498	KEF RDM Two	699
Revolver The 260	350	KEF Q65	799
Richard Allen Dimension Five 3	349	Keswick Volante	629
Richard Allen Dimension Five 4	429	Linn Tukan Passive	550
Rogers dB101	399	Linn Kellidh Passive	750
Rogers LS55	429	Lumley LM6	650
Rogers Studio 3	499	Lumley Promenade SP4	650
Royd The Squire	350	Manticore Minaret	580
Royd Doublet	450	Meridian A500	750
Ruark Icon	359	M&K S-85	700
SD Acoustics SD3R	449	Mission 752f	578
Sequence 400	329	Mission 735i	650
Solid Verticale	400	Mission 753f	798
Spendor 2020	399	M-A Studio 2SE	600
Tannoy Profile Plus 635	449	M-A 700 PMC	600
TDL RTL 3	400	M-A 702PMC	700
Technics SB-M300	350	M-A 703PMC	800
Technics SB-M500	450	Mordaunt-Short MS50i	550
Totem Mite	495	Naim INTR0	660
Triangle Titus T2e	379	Neat Mystique	575
UKD-Opera Opera Duoetto	395	Neat Petite II	745
Visonik TB1S	366	Origin Live Resolution	732
Wharfedale MFM3	350	Origin Live Victory	750
Wharfedale Modus Music Eight	360	Pentachord B	519
Wharfedale MFM5	450	Pentachord Pentode	729
Wharfedale Modus Music 1/6	460	Polk RT12	600
£501 to £800			
Acoustic Energy AE1-II	795	Polk RT16	799
Allison Model 3A	525	Polk LS50	800
Audio Gem Emerald	540	ProAc Tablette 50	599
Audio Note AN-K/D	620	ProAc Studio 100	699
Audio Note AN-J/B	799	QLN 313	600
B&W CDM1	600	QLN 929	700
B&W P4	675	QLN Classic One	800
Bose SE-5 Ser II System	760	Quad 10L	600
Bose A'mass AM511	800	Rogers C6/20	533
Boston VR30	600	Rogers LS3/5A	699
Boston Micro 90 Sys	669	Rogers Studio 5	699
Castle Severn	539	Rogers C6/25	763
CastleAvon	699	Roksan ROKone 1	595
Celestion 45i	599	Roksan Ojan 3	795
Cerwin-Vega VS-12	550	Royd The Sorcerer	595
Cerwin-Vega VS-15	700	Royd Abbot	665
Clements 600si	595	Ruark Templar II	599
Dali 107	600	Ruark Sceptre	599
Dali 350	600	Ruark Talsman II	749
Dali 450	700	Ruark Prologue One	799
		SilveradoRaider	695

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 Model Four	⊕	3,299
Keswick Zero 2	⊕	6,000
Linn Keltik Aktiv	⊕	6,000
Lowther Delphic	⊕	3,099
Lowther Opus One	⊕	4,999
Lumley LM 2 Signature	⊕	4,500
Lumley LM1	⊕	8,500
Magneplanar MG-3.5SE	⊕	3,800
Martin-Logan SLS	⊕	3,499
Martin-Logan CL3 IIz	⊕	4,555
Martin-Logan Re-Quest	⊕	5,875
Martin-Logan Monolith S	⊕	7,440
Martin-Logan Monolith IHP	⊕	8,550
Meridian DSP5000	⊕	3,295
Meridian DSP5500	⊕	5,950
Meridian DSP6000	⊕	9,400
M&K BP2000	⊕	3,600
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
Paragon Regent	⊕	3,490
ProAc Response 3.5	⊕	4,250
Prof Monitor Co MB1P	⊕	4,370
Prof Monitor Co BB5/P	⊕	6,270
QLN Artec 1600	⊕	4,500
Quad ESL63	⊕	3,450
Rehdeko RK145	⊕	4,250
Rehdeko RK175	⊕	7,750
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
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
TDL Ref Standard-m	⊕	4,999
Thiel CS-2.2	⊕	3,449
Thiel CS-3.6	⊕	4,899
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



DEDICATED CENTRE SPEAKERS

KEY
 ⊕ – magnetically shielded; allows positioning close to TV sets.
 THX – THX approved by Lucasfilm for use in Home THX installations.

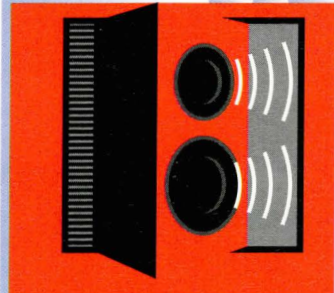
Acoustic Energy AE107C	⊕	150
Allison Black Gold Centre	⊕	99
B&W CC3	⊕	150
B&W CC6	⊕	230
B&W Matrix	⊕	500
Bandor Voice	⊕	317
Boston CR1	⊕	100
Boston Centre 6	⊕	130
Boston Micro 90 Cntr	⊕	180
Boston Centre 7	⊕	200
Boston CR2	⊕	200
Boston VR10	⊕	250
Boston VR12	⊕	300
Boston VR14	⊕	400

Castle Keep	⊕	249
Celestion CC1	⊕	89
Celestion CSC	⊕	129
Celestion Centre 2	⊕	149
Celestion CL1	⊕	150
Carwin-Vega CC-240	⊕	80
Carwin-Vega CC-250	⊕	100
Dali SC5	⊕	220
Def Tech Cljr	⊕	275
Def Tech CIB	⊕	395
Def Tech CLR1000B	⊕	595
Def Tech CLR2002	⊕	695
Def Tech CLR2000	⊕	845
Gale Centre 1	⊕	80
Gale Centre 2	⊕	120
GLL Arena AV Centre	⊕	100
Infinity SM Video	⊕	175
Infinity Centre	⊕	650
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	⊕	40
JPW Gold Monitor	⊕	50
JPW CC40	⊕	80
JPW CC50	⊕	90
JPW CC60	⊕	100
JPW CC70	⊕	130
KEF Model 80C	⊕	129
KEF 80C	⊕	129
KEF Q95C	⊕	199
KEF Model 90	⊕	259
KEF Model 90	⊕	259
KEF Model 100	⊕	359
KEF Model 100	⊕	359
KEF Model 200C	⊕	699
KEF 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-85	⊕	400
M&K S-150C (THX)	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
NAD 808CC	⊕	170
Poik M3 C	⊕	120
Poik CS101	⊕	120
Poik CS200	⊕	170
Poik AB705C	⊕	180
Poik RM2500C	⊕	249
Poik CS250	⊕	250
Poik 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
Solid C100	⊕	130
Sony SS-CN15	⊕	40
Sony SS-CN35	⊕	70
Sony SS-CN65ES	⊕	130
Tannoy Profile Plus 621	⊕	99
Tannoy Profile Plus 622	⊕	179
Tannoy Definition D750	THX	999
TDL Nucleus CCS	⊕	150
TEAC LS-CT8	⊕	80
Triangle Sat 1	⊕	399
Wharfedale Modus Centre Cube	⊕	50
Wharfedale Valdis Centre	⊕	100
Wharfedale Modus Centre	⊕	120



Heybrook Heylios

Wharfedale Modus Music Centre	⊕	150
Yamaha NS-C60	⊕	60
Yamaha NS-C105	⊕	80
Yamaha NS-C150	⊕	110
ZYP A1TAV	⊕	109



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	THX	1,190
Boston VRS Micro	⊕	170
Boston CRX	⊕	200
Boston VRS	⊕	299
Boston VRS Pro	THX	370
Celestion Little 1	⊕	99
Celestion MP1	⊕	199
Carwin-Vega SA-140	⊕	100
Carwin-Vega SA-150	⊕	140
Dali SS5	⊕	220
Def Tech BP1	⊕	395
Def Tech BP2	⊕	595
Def Tech BPX	⊕	1,095
H/K Citation 7.3	THX	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	⊕	180
Jamo Surround 300	⊕	280
Jamo Surround One	THX	550
JBL LX Surround	⊕	180
JPW Satellites	⊕	80
KEF Ci250SW	⊕	399
KEF Model AV2	⊕	539
KEF Model AV3	⊕	589
Kenwood RS-05	⊕	80
Kenwood CM-5ES	⊕	80
Kenwood CM7ES	⊕	100
Kenwood Omni 7	⊕	170
Martin-Logan Stylos	⊕	2,872
M&K SS-150 (THX)	THX	750
M&K S-150	THX	2,400
Mission 73DP	⊕	300
Mission 75DP	⊕	348
Mordaunt-Short VS-100R	⊕	90
Mus Tec Merlin	⊕	200
Mus Tec Hobby	⊕	250
Mus Tec Osprey	⊕	250
NAD 805RC	⊕	150
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



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	THX	1,500
Boston CR400	⊕	300
Boston VR500	⊕	450
Boston VR2000	THX	800
Celestion CS135	⊕	139
Celestion CSW MkII	⊕	329
Celestion SII	⊕	349
Carwin-Vega HT-10D	⊕	200
Carwin-Vega HT-12D	⊕	250
Credo SDC 001	⊕	3,054
GLL LE Bass	⊕	350
Hales Concept Zero	⊕	2,950
H/K Citation 7.4	THX	875
Infinity SSW-10	⊕	500
Jamo 860SW	⊕	110
Jamo 860	⊕	110
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	THX	2,499
Kenwood SW500	⊕	250
Keswick Alto	⊕	1,299
Linn AV5150	⊕	2,850
L Voice RW24	⊕	9,500
Meridian Sub 1	⊕	1,500
Meridian M2500	⊕	1,595
M&K VX-7B	⊕	450
M&K VX-7MKII	⊕	450
M&K V-75 MKII	⊕	650
M&K V-125 (THX)	THX	800
M&K MX-70	⊕	900
M&K MX-100	⊕	1,500
M&K MX-150	THX	1,500
M&K MX-200	⊕	1,800
M&K MX-300	⊕	2,500
M&K MX-5000	THX	2,900
Mission 73PI	⊕	100
Mission 73PS	⊕	180
Mission 73AS	⊕	450
Mission 75AS	⊕	548
M-A ASW 7	⊕	700
Mordaunt-Short T2000	⊕	500
Muse Model 22	⊕	1,890
Muse Model 18	⊕	3,790
Neat Gravitas	⊕	1,095
Polk PSW50	⊕	350
Polk PSW150	⊕	500
Polk PSW300	⊕	750
REL Q50	⊕	375
REL Q-100	⊕	475
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	⊕	699
Rogers AB33	⊕	379
Rogers AB1	⊕	549
Roksan Ojan 3S	⊕	795
Sequence FW120	⊕	249
Solid Powerbass	⊕	300
Solid PB100	⊕	350
Sony SA-W101	⊕	230
Sunfire True Sub	⊕	1,600
Tannoy 625ALFe	⊕	599
TDL Nucleus SBR	⊕	200
Triangle SATIII	⊕	650
Wharfedale Modus Sub Bass	⊕	180
Wharfedale Modus Powered Sub	⊕	350
Wilson Audio Puppy 5.1	⊕	8,450
Wilson Audio Whow III	⊕	12,500



Valves and vinyl fly the flag for the retro brigade in this system from Audio Note.

Yamaha YST-SW40	140
Yamaha YST-SW80	180
Yamaha YST-SW150	280
Yamaha YST-SW300	350

Wilson Benesch ACT1 Std	950
Wilson Benesch ACT2	1,350
Zeta AS	469
Zeta VDH	549

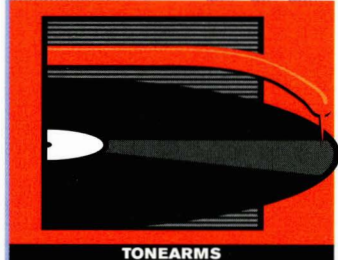
Onkyo T 421ORDS	P30	RDS	180
Onkyo T 409	P30	RDS	230
Onkyo T 411RDS	P30	RDS	260
Pioneer F-204RDS	P40	RDS	140
Pioneer F-304RDS	P40	RDS	190
Pioneer F-504RDS	P40	RDS	250
Quad 77FM	P25	RDS	700
Rega Radio	P24	RDS	229
Roksan Caspian	P50	RDS	495
Rotel RT-990BX	P16	RDS	500
Sony ST-SE200	P30	RDS	100
Sony ST-SE300	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

RDS	180
RDS	230
RDS	260
RDS	140
RDS	190
RDS	250
RDS	700
RDS	229
RDS	495
RDS	500
RDS	100
RDS	120
RDS	140
RDS	180
RDS	250
RDS	120
RDS	170
RDS	400
RDS	150
RDS	200
RDS	250
RDS	499
RDS	100
RDS	130
RDS	180

Rega Planar 2	214
Rega Planar 3	274
Roksan Radius	470
Sherwood PM8550	130
Sony PS-LX150H	90
Sony PS-LX300H	150
Systemdek I/920	136
Systemdek IX/900	230
Systemdek I/920/Moth	235
Systemdek IIXE/900Ap	388
Systemdek 960	500
Technics SL-BD20	160
Technics SL-BD22	180
Technics SL-1210MKII	500
Technics SL-1200MKII	500
Thorens TD-180 AT91	190
Thorens TD-280 IV/UK	210
Thorens TD-166 W/UK/RB	400
Thorens TD-318 III TP50	500

Over £500

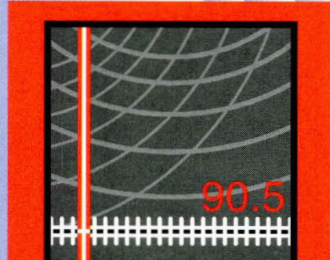
Audio Note AN-TT 2	995
Audio Note AN-TT 3	1,850
Audiomeca Romance	1,895
Audiomeca J1	3,500
Basis 2001	2,750
Basis Ovation II	4,800
Basis Debut Gold Std III	7,200
Basis Debut Gold Vacuum	9,250
Clearaudio The Analogue	2,490
Clearaudio Reference	4,500
DNM Rota 1	3,500
DNM Rota 2	4,800
Impulse Moskito	695
Kuzma Stabi	1,950
Kuzma Stabi Reference	3,750
Linn LP12 Basic	1,100
Linn LP12 Lingo	1,750
Lumley Strotosphere STI	6,250
Manticore Mantra 96	525
Manticore Mantra	790
Manticore Magister	3,990
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
Pink Triangle Tarantella	579
Pink Triangle Anniversary	2,500
Pro-Ject 6/Sumiko	850
Rega Planar 9	1,598
Roksan Xarxes 10	1,295
Roksan TMS	2,750
SME Model 20/2	3,240
SME Model 20/2A	4,361
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



TO NEARMS

KEY
 ⊙ - pivoted.
 # - parallel tracking.

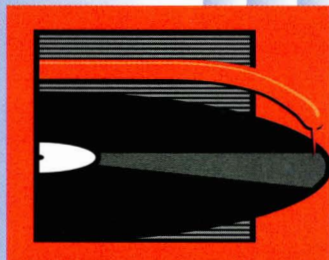
Air Tangent IC	#	3,333
Air Tangent 10B	#	7,777
Air Tangent Ref. Sig.	#	11,000
Audio Note AN-ARM 1	⊙	169
Audio Note AN-0s	⊙	795
Audio Note AN-1s	⊙	995
Audiomeca SL5	#	2,500
Decca LI Arm	⊙	49
Dynavector 507	⊙	1,995
Graham 1.5TC	⊙	2,650
Helius Orion 4 Copper	⊙	549
Helius Cyalene 2	⊙	1,495
Kuzma Stogi	⊙	750
Kuzma Stogi Reference	⊙	1,250
Linn Akito	⊙	500
Linn Ekos	⊙	1,500
Manticore Musician	⊙	425
Manticore Magician	⊙	750
Manticore Magician 12	⊙	850
Moth Arm	⊙	109
Moth MKIII Stainless	⊙	146
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 Artemiz	⊙	895
SME 3009 Ser II Imp	⊙	294
SME 3009 S2 Ser II Imp	⊙	321
SME Series II 3009-R	⊙	489
SME Series II 3010-R	⊙	501
SME Series II 3012-R	⊙	538
SME 3009	⊙	656
SME 310	⊙	671
SME 312	⊙	763
SME Series IV	⊙	935
SME Series V	⊙	1,391
Townshend Excalibur	⊙	1,499
Wheaton Music Tri-Planar 4i	⊙	3,000
Wheaton Music Tri-Planar 5i	⊙	3,250



TUNERS

KEY
 'P20' - (etc.) number of presets.
 RDS - Radio Data System; receives text information on station, programme type etc.

AMC T7	P30	130
Arcam Alpha 7	P24	230
Arcam Alpha 8	P24	280
Arcam Delta 280	P20	399
Audiolab 8000T	P39	800
Aura TU80	P30	350
AVI S2000MT Ref	P60	699
Creek T43	P68	399
Day Sequerra FM Ref		5,937
Day Sequerra S B'dcast Mon		14,640
Denon TU-260L	P20	120
Denon TU-215RD	P40	150
Denon TU-425RD	P40	200
Grundig T12	P59	170
H/K TU930	P30	150
H/K TU950	P30	200
Kenwood KT-2080	P20	130
Kenwood KT-3080	P30	180
Linn Kudos	P50	775
Linn Kremlin	P80	2,600
Magnum Dynalab FT11		550
Magnum Dynalab FT-101A		825
Magnum Dynalab Etude		1,250
Magnum Dynalab 108		4,500
Marantz ST-57	P59	150
Marantz ST-65	P59	200
Meridian 504	P30	695
Meridian 604	P30	1,350
Michi RHT-10	P16	895
Micromega Minium FM Mk2	P39	329
Micromega Tuner	P39	750
Mission Cyrus FM7	P29	400
Musical Fidelity E50	P20	300
Musical Fidelity E500	P20	499
NAD 412	P24	190
NAD 414RDS	P30	250
NAD 710	P24	270
NAD 712	P24	330
Naim NAT03	P24	595
Naim NAT02	P24	1,080
Naim NAT01		1,730
Onix TU39		800



TURNABLES

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
Dual CS Golden II	⊙	500
Eclipse TT430	⊙	70
Genexa Lab-710	⊙	60
Genexa Lab-810	⊙	70
Grundig TT1	⊙	180
Kenwood KD-492F	⊙	100
Michell Syncro	⊙	405
Michell Mycro	⊙	435
Moth Turntable	⊙	199
Moth Alamo	⊙	199
Moth Kanoot MkI Arm	⊙	279
Moth Kanoot	⊙	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 Project 2/520	⊙	300
Pro-Ject Project 6/MC15	⊙	450
Rega Planar 78	⊙	214

Remember that all entries printed in RED refer to hi-fi products that we have reviewed. Turn to page 106 for a full summary of test results!



Do you want to choose your hifi in a comfortable and relaxing environment . . . ?

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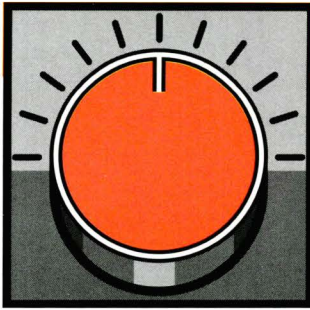
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Amplifiers Brought to you in association with **audio research** HIGH DEFINITION

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)	FACTSBACK NUMBER	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 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, 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 CS88	945	Sophisticated yet transparent, this is one of those amplifiers that sounds good even when the gloss has worn off	5					60	168		
Copland CSA-14	1,199	Great sound and looks, but watch out for high capacitance cables	4	●				60	1416	148	
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	
DeVa 125	249	Subjectively loud, this throws an unlikely quantity of music at the audience. Bouncy sense of rhythm	6					20	1464	149	
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	
Grundig Fine Arts V-11	160	Rhythmically dull. Never gets out of first gear	5	●			●	55	1803	157	
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 HK1400	400	Relaxed, confident sound is only troubled by the most dense of recordings	5	●	●			40	1011	129	
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	
Krell Digital KAV-300i	2,490	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 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-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		
Musical Fidelity E10	300	Smooth and high-endish sound that is marred by a lack of dynamics and a touch of grain	5	●			●	40	1746	154	
Musical 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		
Myriad 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 314	260	Lively if coloured presentation that is musically engaging and easy on the ear	6	●			●	53	1807	157	
NAD 317	470	Powerful, expandable and affordable, the 317 is short on refinement and resolving power	6				●	80	168		
Naim Nit 3	575	Distinctive and highly musical sounding integrated amp. Perhaps too distinctive for some tastes	5					30	1748	154	
Orelle SA-100	449	A musically rewarding amplifier that grows on you. Trace of coarseness in treble	5					50	1749	154	
Pioneer A-300R	200	Its bright and breezy sound is a natural tonic to those of use worn down by the ongoing stress of life	5	●			●	50	1469	149	

INTEGRATED AMPLIFIERS

Product	Price(£)	Comments	MM PHONO INPUT	MC PHONO INPUT	REMOTE CONTROL	HEADPHONE SOCKET	POWER OUTPUT(W)	FACTSBACK (W) RECEIVER	ISSUE NUMBER	
Pioneer A-400X	300	On second audition, this amp was tonally unchanged but less compelling	6	•	•	•	50	1545	138	
Pioneer A-300R Precision	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	
Pioneer A-605R	400	Intriguing technology, but execution is certainly impeded by excessive gadget count.	5	•	•	•	80			168
Prime Design A-100	650	Dynamic but somewhat aggressive powerhouse with limited stereo interest (either MM or MC phono).	4	•	•	•	100			168
Pro-ject Model 7	300	A minimalist amplifier brimming with good intent, but too quirky for its own good. Either MM or MC	5	•	•	•	40	1264	142	
Quad 77 Integrated	700	Compact and sophisticated Quad system amp, limited range of inputs when used with 'foreign' components (optional system remote)	3	•	•	•	84			168
Rega Elex	398	Minimalist amplifier derived from Elicit, is a little uninspiring, though at least it is not badly behaved.	4	•	•	•	50	1865	162	
Roksan Caspian	695	Well built, open and articulate amplifier, which is also consistent from system to system, and well built	6	•	•	•	70			168
Rose Scion	615	Unique two-box integrated gives real subtlety and low level resolution, but the sound lacks scale and weight	5	•	•	•	65			168
Rotel RA970BX	250	Lively, fresh and perky with plenty of power, but not so clever with complex recordings	6	•	•	•	60	1546	138	
Sherwood AX-7030R	400	Versatile, and with truck loads of power on tap, this model is disappointingly coarse and uninvolved on audition	5	•	•	•	95	1866	162	
Sony TA-F246E	200	Relaxed quality that seduces with its guile and subtlety, MM input is a tad laconic but CD is very tidy and composed	3	•	•	•	40	1471	149	
Sony TA-F448E	250	Confused and coloured sounding, it needs a large dose of delicacy adding to its presentation	5	•	•	•		1809	157	
Talk Electronics Storm 1	500	Good soundstaging and strong detail are provided by this unassuming and not especially powerful model	6	•	•	•	50	1868	162	
TEAC A-BX7R	700	Characterful balance mars an otherwise meticulously designed amplifier. Includes a balanced input, optional MM/MC stage	5	•	•	•	50	1869	162	
Technics SU-A700 Mk 3	250	Fully equipped, high-tech amplifier ultimately fails the 'is it Stork...' test, and can sound messy and inarticulate	5	•	•	•	45	1870	162	
Woodside ISA230 Disc	1,249	Smooth and inoffensive valve amplifier, though it lacks the sparkle and euphony required for a truly entertaining sound	3	•	•	•	30			116
Yamaha AX-490	250	Widgets aplenty, but unemotional sound evoked an uncertain response from panel	5	•	•	•	85	1473	149	
Preamplifiers										
Alchemist Kraken Pre	519	Quirky Class A design with an equally warm and colourful sound	4	•	•	•				124
Acurus RL11	899	Well featured US preamp with plenty of grunt and depth when used with the A150 power amp (Sessions)	6	•	•	•		1624	151	
AMC CVT2030A	400	Budget valve preamp, modest build and a tad noisy, with fair sound	6	•	•	•				165
Audio Innovations L1	369	Reviewed with S800 Anniversary – Explicitly detailed, conveys the message of the music as a whole	4	•	•	•		1300	145	
Audiolab 8000C	550	Distinctive, stark neutrality that will not appeal to all. Good value engineering	5	•	•	•				97
Audiolab 8000Q	1,100	Tested with 8000M monoblocks	6	•	•	•		1301	145	
Aura CA200	700	Flexible, well designed – can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	10	•	•	•				165
Conrad-Johnson PV-10A	1,250	Beautiful imaging, superb detail, plenty of gain on the phono input; classy build too. Tested in Sessions	4	•	•	•		1560	139	
Copland CTA-301MKII	1,399	Sweet sounding – but never gets bogged down in audio treacle	4	•	•	•		1630	151	
Cyrus Pre	650	Tested with Cyrus Power. High-tech design, punchy, light-footed character with a sense of substance and natural warmth	5	•	•	•				155
Densen DM-20	1,200	Stylish Danish preamp with a pair of huge knobs and effortless resolution and a slightly dark balance (Statements)	6	•	•	•				164
DPA DSP200S	495	Dramatic but detailed and transparent sound belies modest power rating (tested with DPA-200S)	6	•	•	•				124
EAR 802MC	2,599	Tested with 509 Mk II - see comments in power amp section	4	•	•	•				63
EGA Vista	760	Wind up the volume and blow a breath of fresh music into your system (tested with Lectern)	5	•	•	•		1302	145	
Exposure XVII	849	Superbly rhythmical; maybe a tad overpowering in the midband. Tested in Sessions with XVII Super	5	•	•	•				142
Jadis JP-30MC	5,978	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange. (tested with JA30)	5	•	•	•				60
LFD Mistral Linestage	499	Strong ergonomics, generally decent sound, but a little lacking in detail	6	•	•	•				165
Meridian 501	695	Tight, positive sound, but dispassionate; intense at high levels. Tested with 555	5	•	•	•		1303	145	
Meridian 562V	995	Transparent and capable preamp, also features 6 digital inputs	9	•	•	•				140
Meridian 502	1,295	Extremely sophisticated analogue controller with tremendous flexibility and a fast and tidy presentation (Statements)	7	•	•	•				162
Moth 30 Passive	149	Modular system gives cracking results. Passive preamp and power amp warrant Best Buy (tested with 30/Stereo 60)	4	•	•	•				109
Moth 30 Active Line Stage	349	Excellent sounding ultra-simple miniature preamp	4	•	•	•				165
Muse Model Three	1,990	Natural sounding tranny preamp with useful audiophile features. Works beautifully with 160 power amp (tested in Statements)	5	•	•	•				166
Musical Fidelity F2	500	Subtle, sweet-sounding preamp with strong presence	5	•	•	•				165
NAD 114	270	Beer budget preamp, sounds focussed, detailed and consistent	6	•	•	•				165
Naim NAC92R	599	Upgradeable preamp uses proprietary socketry, etc. See NAP90 power amp for comments	5	•	•	•				165
Quad 77 Pre	850	Sophisticated design with 2-way remote control console; open colourful sound and very flexible	4	•	•	•				165
Rega Hal	998	Dedicated to Exon power amps – passive line stages	6	•	•	•				165
Rose RV-23	450	You can pay more to get a more transparent sound, but it's hard to criticise at the price	3	•	•	•				77
Rotel RC970BX MkII	175	Confident, consistent sound. reviewed (in Sessions) with RB970BXMkII power amps	5	•	•	•				144
Rotel RC980BX	375	Tames enthusiastically recorded material with a laid back and occasionally smeared sound (tested with RB980BX)	5	•	•	•				155
Sumo Athena IIB	767	Tested with Polaris III. Big, natural and tidy sounding with very natural reproduction of acoustic and electric instruments	6	•	•	•		1305	145	
Talk Hurricane 2L	649	Design of integrity which gets to the heart, if not the soul, of the music	6	•	•	•				165
Thorens TTP2000F	699	Glamorous, shoebox-format, minimalist pre with fine detail and some granularity	3	•	•	•				165
Woodside SC26 Phono	2,233	Synergistic with STA35, with a cool, controlled sound, good focus and transparency (tested with STA35)	5	•	•	•				100
Power amplifiers										
Acurus A150	899	Tested with RL11 preamp. Powerful remote control US combo with a slightly forward inclination	1	•	•	•	150	1624	151	
Alchemist Kraken/Pwr	399	Hardly accurate, but entertaining nevertheless	1	•	•	•	60			124
AMC CVT2100A	600	Astonishing value valve/MOSFET hybrid with KT88 output, but lacks the magic of the best valves	1	•	•	•	80			165
Arcam Alpha 9P	400	Clear, colourful and well disciplined, the Arcam is a strong all-rounder that can compete with conviction	1	•	•	•				165
Art Audio Quintet	1,393	Switchable triode, ultralinear output stage. In triode mode, these are 15 of the sweetest Watts around. Surprisingly gutsy	1	•	•	•	15			109
Aura PA100	700	Can sound slightly aggressive, but it's fast, clean and dynamic, and makes compelling listening	1	•	•	•	100			165
Audio Innovations S800 Anni	1475	Reviewed with L1 — Explicitly detailed, conveys the message of the music as a whole remarkably well	1	•	•	•	25	1300	145	
Audiolab 8000M	800	Strong, controlled sound; confident bass, but colourless. Tested with 8000Q	1	•	•	•	125	1301	145	
Audio Research VT60	2,395	Ranks as 'must try' American cultural item (tested in Statements). Tube design	1	•	•	•	35	1179	136	
Copland CTA-505	2,099	Grown up amplifier with a refined, yet never over-civilised air	1	•	•	•	67	1630	151	
Cyrus Power	450	Tested with Cyrus Pre. Punchy, light footed character with a sense of substance and natural warmth (bridgeable)	1	•	•	•	50			155
Densen DM-30	1,200	Fluid, valve-like power amp with effortless resolution and a slightly dark balance (Statements)	2	•	•	•	100			164
DPA 200S	750	Dramatic but crisp, open sound belies power rating (tested with DSP-200S)	1	•	•	•	60			124
EAR 509 Mk II	3,699	Combining sonic strengths of transistors and valves, this amp warrants attention (tested with 802)	1	•	•	•	100			63
EGA Lectern	880	Tested with Vista. Wind up the volume and blow a breath of fresh music into your system	1	•	•	•	50	1302	145	
Exposure XVIII Super	849	Slight dullness and hardness, but great 'boogie factor'	1	•	•	•	70			142
Jadis JA-30	5,980	French tubes, JP-30MC has beautiful build, nostalgic styling and delightful midrange (tested with £5978 JP30)	1	•	•	•	30			60



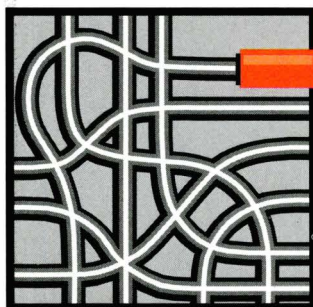
POWER AMPLIFIERS (CONTINUED)

Product	Price(£)	Comments	MM PHONO INPUT	MC PHONO INPUT	HEADPHONE CONTROL	POWER OUTPUT(W)	FACTSBACK NUMBER	ISSUE NUMBER
LFD Mistral Power	449	Infectious upper band vitality, but LF dynamics lacking, and lacks 'grip' and transparency	1			60		165
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	1150	Open, well focussed imagery with natural, refined textures	1			50		165
Moth 30 Stereo/60	549	Tested with 30 Passive. Modular system gives cracking results	1			60		109
Moth 60 Watt Stereo	599	Miniature power amp lacks control and finesse, not comfortable with difficult speaker loads	1			60		165
Moth 30 Series Monobloks	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
Musical Fidelity F18	3,999	Belongs to the rarified group of refined, high resolution amplifiers	1			220	1508	133
Myriad MA120	450	Based in M1120 integrated - see for comments, but sounds significantly better when bi-amped with M1120	1			60		165
NAD 214	370	A little lightweight, but detailed, consistent sound quality, and excellent value for money	1			80		165
NAD Monitor 208	1100	Truly a beefy amplifier, but no mad cow!	1			250		124
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	2194	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
Woodsie STA35	1,323	Synergistic with SC26, with a cool, controlled sound, good focus and transparency. More poise than grunt (tested with SC26)	1			35		100

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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 ten 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.



KEY

SYMMETRICAL: A twisted pair of conductors.
COAXIAL: A central 'hot' conductor and a shield that carries the negative signal.
STRANDED: Multiple strands with no intervening insulation.

SOLID CORE: Single or multiple, individually insulated strands.
COPPER: Material used for conductor.
SILVER: Material used for conductor.
DIG CABLE TYPE: O - optical digital, E - electrical digital.

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.

CABLES

Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK NUMBER	ISSUE NUMBER	
Analogue Interconnects											
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	40	Dynamic cable with strong soundstaging and only a slight lack of detail	●	●	●	●	●	●		160	
Chord Chameleon	68	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 TCC75	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 entire 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	

CABLES (CONTINUED)

Product	Price (£)	Comments						ISSUE NUMBER	FACTSBACK NUMBER		
			SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER				
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 tad 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		
LFD Spirolink II	70	Price for 0.7m length. Strong and confident sound enhancing bass depth and subtlety, concentrates on the meat of the music	●				●	1694	131		
LFD Trilink	150	Price for 0.7m length. Warm and luxurious sound but a little too fruity in balance, treble is a little subdued, bass detached	●				●	1695	131		
Linn Phono to Phono	47	Encourages a delicate performance underpinned by a strong and authoritative bass			●	●		1695	131		
Monster Interlink 200	20	Colourful in an appealing rather than contrived sense, bass is slightly over-blown, large and ingratiating sound stage	●				●	1696	131		
Monster Interlink 300	30	Richer, smoother more civilised sound than 200 with improved articulation and reduced sibilance	●				●	1696	131		
Monster Interlink 400	40	Compromised by a grainy top end, treble and vocal range sound particularly sharp and untidy	●				●	1697	131		
Monster Interlink 500	50	Sounds rather good, providing a livelier and more interesting account of music than most sub £100 cables	●				●		108		
Monster Interlink 800	80	Not as bright or aggressive as the 400 but treble is strangely lumpy, muted and manipulated - odd cable	●				●	1697	131		
Monster Interlink Reference 2	100	Easy on the ear but rather contrived, slightly clanky treble fails to integrate with the smoother but sploidy midband					●	1697	131		
Moth Ley Line Black	100	Offers a full and big sound, neutral yet very solid and confident in delivery. Expansive imaging retains music's energy	●				●		108		
Moth Ley Line Grey	200	Detailed enough but there's a sense of distance between the music and the listener, vox are course rather than liquid	●				●		108		
Nordost Black Knight	55	Flat black cable that is distinctive but slightly coloured - but not in a wholly negative manner	●				●		160		
Panasonic RP-CA910	50	Uncongested and even handed balance if slightly flat imagewise, retains impact but has a vaguely untransparent quality			●	●			108		
Silvertone Ex-Static	35	Pleasantly unfatiguing and competitively priced cable that lacks detail and insight	●				●		160		
SonicLink Silver Pink	35	Dynamically sensitive and muddle-free. Unsure about the flesh-coloured finish though...	●				●		160		
SonicLink Black	49	Encourages an upbeat and snappy sound that's driven by leading edges, full and rumbustious bass maintains an even tempo			●	●	●		1699	131	
Tara Labs Prism 11	45	Very compatible cable that wins through with a naturally balanced and realistically dynamic sound. 6N purity copper	●				●		1699	131	
Tara Labs Prism 22	56	Delivers a fresh and detailed sound with clear and bright treble giving it a free, quick and dynamic character			●	●			1700	131	
Tara Labs Quantum CD	75	Lacking in obvious vices, neutral and transparent, there's also a good solid bass. Vox are not always as intimate as possible	●				●		108		
Tara Labs Prism 33	90	A pedestrian cable that sounds lively but muddled. Quite dynamic, quite rich, quite smooth but also quite indistinct			●	●	●		1700	131	
Transparent Audio Music Link	119	No aggressive nasties to tax the ears, neither does it sparkle with inspirational detail. Only suited to low output impedances	●				●		1701	131	
van den Hul The Storm	25	Price for 0.8m length. Rich and warm but bass is rolled off, however there's plenty of drive and high frequencies are clean			●	●	●		1701	131	
van den Hul Source HB	50	(Priced for 0.8m) Hybrid carbon-fibre/copper cable that is a paragon of naturalness. Airy and well controlled			●	●	●		160		
van den Hul The First	210	Using 12,000 carbon fibres, a gentle and subtle sounding cable that conveys oodles of information but lacks dynamic punch			●	●			1702	131	
van den Hul The Second	225	Wonderfully open and relaxing but also intimately detailed, slightly softens percussive dynamics	●				●		1702	131	
XLO Type 150	50	A restrained but useful cable for taming lively CD players, dynamics lack freedom, treble lacks clarity			●	●	●		1703	131	
XLO Type 0.1	180	Unusual but highly expressive and detailed with a hint of graininess on powerful vocals					●		1703	131	
Digital Interconnects											
Audio Note AN-V	110	Ostensibly an analogue cable but gives a meaty and natural performance when used for digital duty	●				●	E	1704	131	
Audioquest Optilink Z	120	Good level of midband detail but frequency extremes lack depth and extension						O		108	
Audioquest Digital Pro	100	A silver cable with all the drive of Video Z but lacking its clear cut transparency			●	●		E		108	
Bandridge AL4900G	40	Lacks deep rounded bass and treble is coloured with a spittiness, a little rough and ready				●	●	E	1705	131	
Chord Codac	32	A connection with a stranded inner core and a sound that lacks integration			●	●		E		108	
Chord Prodac	50	Price for 0.6m length. Lively detailed treble, drives music along confidently with no hint of fizz			●	●	●	E	1706	131	
DPA Opti-link	20	Very similar to Bandridge AL560; sound is lacklustre						O		108	
DPA Digi-link	28	Can seem slightly impassive but there's no avoiding its exceptionally detailed sound			●	●	●	E		108	
ixos 105	25	Extended but soft edged treble that's mercifully free of fatiguing colourations, plenty of weight, smooth vox			●	●	●	E	1707	131	
Kimber Kable Opti-link	70	Hardly cheap for what appears to be a bog-standard PMNA fibre, yet it sounds a little brighter and livelier than most						O		108	
LFD DigiLink Copper	30	Slightly grainy highly compatible cable with coherent and forward dynamic quality			●	●	●	E	1708	131	
Moth Leyline Datalink	140	A thin, coaxial version of Leyline Black with a rather hard and unforgiving character. Too expensive			●	●	●	E		108	
QED DigiFlex	20	A top performance, low-loss 75ohm coax with a very open, almost liquid quality			●	●	●	E		108	
Siltech HF-6	150	Sounds detailed, very clean and very extended, but bass is less well resolved - a treat for high end systems			●	●	●	E	1709	131	
SonicLink Green	60	Spacious, positive and engaging if a tad over crisp at times, very compelling however			●	●	●	E	1709	131	
van den Hul MC Videolink 75	48	An AV-cum-digital cable that nearly beats QED's DigiFlex, but emphasises sibilants			●	●		E		108	
van den Hul The First	120	Exceptionally natural albeit slightly dark or cautious compared to some, plenty of subtle information and beautiful integration			●	●		E	1710	131	
Loudspeaker Cables											
Audio Note AN-D	4.50	Supplied in linear, non-polarised lengths that should be twisted into stereo pairs. Sounds rather grippy and forward					●	●		109	
Audio Note AN-B	16.50	Well suited to valve systems, elastic bass, methodical but unintrusive and musical					●	●		1711	133



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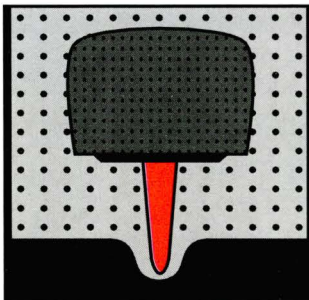
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CONNECTIONS

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CABLES (CONTINUED)

Product	Price(£)	Comments	SYMMETRICAL	COAXIAL	STRANDED	SOLID CORE	COPPER	SILVER	FACTSBACK NUMBER	ISSUE NUMBER
A Audio Note AN-L	29.50	Fruity bass and expressive vocal rendition was appreciated by the panel which was happy to accept its foibles	●				●	●	1712	133
A Audio Note AN-SP	125	A calm and civilised presentation, very quiet in the way it reveals subtle low level detail. Great poise and clarity	●				●	●		109
A Audioquest F-14	1.95	Ideal for laying under carpets, F-14 encourages a slightly warm and vibrant sound					●	●		109
A Audioquest Type 4	4.95	Four 18-gauge OFHC copper conductors wound in a Litz-type fashion increases capacitance but restrains the cable's 'bite'	●		●		●	●		109
A Audioquest Cobalt 2	45	A rather polite and anemic sound that bubbles gently with detail and is largely uncoloured and cautiously spacious	●		●		●	●		133
A Audioquest Crystal	18	Neutral balance is spoiled by some graininess and smearing.	●		●		●	●		168
A Bاندridge SF LC1070	42p	Basic figure 8 bellwire, lightweight balance and a softness that dilutes even the strongest bass	●		●		●	●	1713	133
A Bاندridge SF LC1259	1	Fresh and open, bubbly and naturally colourful soundstage that's neither forced or unduly edgy. Treble is slightly messy	●		●		●	●	1713	133
A Bاندridge Highflex LC2604	3.50	Substantial 6mm2 conductor produces weighty but ploddy music that lacks transparency	●		●		●	●	1714	133
A Bاندridge LC7409	3.85	Detailed and up-beat cable. A bit too steely for classical strings	●		●		●	●	1800	157
A Cable Talk Talk 3.1	2.25	Quite well balanced but tends to lose bass lines in complex music.	●		●		●	●		168
A Cable Talk 4.1	4.25	Smooth and cultured sound that lacks fine detail and is a bit too restrained	●		●		●	●	1800	157
A Chord Myth	5.95	Light and airy tonality may please, but bass is recessed and detail not outstanding.	●		●		●	●		168
A DNM LSC350	6.95	Majors on midband and lower treble lucidity at the expense of bass and extreme treble extension.	●		●		●	●		168
A DNM LSCB500	5.95	High impedance can influence the treble response, but this was a winner on sound per pound. Bi-wire	●		●		●	●	1716	133
A DPA Black Sixteen	90	Unflappable resolution of fine musical details, there's no dampening of dynamics simply oodles of taut information	●		●		●	●	1717	133
A Gale XL189	0.99	Slightly bright and not that subtle, but a perfectly acceptable cable for any starter system.	●		●		●	●		168
A Gale XL315	2	A little lacking in detail but plenty of life and excellent value	●		●		●	●	1800	157
A Gale XL160-2	2.50	Rhythmic and bouncy sounding bi-wire cable. Slightly manipulative sounding	●		●		●	●	1800	157
A Goertz M2	20	Remarkably detailed, smooth, neutral and with excellent bass; check amplifier compatibility.	●		●		●	●		168
A Heybrook Heywire	4	This well-meaning facsimile of earlier ribbon cables ends up sounding lumpy and uneven	●		●		●	●		109
A Ixos 603	2	Big and expansive sounding cable, full and engaging while retaining a high degree of neutrality	●		●		●	●	1718	133
A Ixos 604	5	Midrange is detailed and surprisingly smooth but treble is hard and synthetic and the bass no better	●		●		●	●	1719	133
A Kimber 4TC	19.68	A well-balanced cable with good performance in all areas.	●		●		●	●		168
A 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
A Mission Quartet	7.90	Mixed, inoffensive sound, adds guttural resonance to vocals and could be generally more coherent. Bi-wire	●		●		●	●	1722	133
A 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
A 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
A Nordost Octava	2.95	Fair bass but confused treble and some coloration.	●		●		●	●		168
A Ortofon SPK100	3	Grey sounding and strips instruments of their natural richness and resonance, a bit bass shy too	●		●		●	●		133
A Ortofon SPK300	8	Tremendously open and atmospheric with robust full blooded bass, and dynamic too if slightly bright at times	●		●		●	●		133
A Puresonic 7845	1.95	Big, weighty sound — but too messy and bloated for its own good	●		●		●	●	1800	157
A Puresonic 7891	2.85	Chunky cable design, shame about the sound quality	●		●		●	●	1800	157
A QED Qudos	2.50	Despite high tech design and excellent Air-Loc plugs, the music failed to gel	●		●		●	●	1800	157
A QED Profile	9	Good midrange and treble balance, but bass is rather slack and detail not outstanding.	●		●		●	●		168
A QED Profile 8	5	Sophisticated flat cable that lacks decent bass and get up and go	●		●		●	●	1800	157
A Silver Sounds 12 gauge	12	Basic 'homemade' construction gives fairly neutral sound, though not outstandingly competitive.	●		●		●	●		168
A Sonic Link S300	18	Happiest with simple music; apt to smudge detail in complex pieces.	●		●		●	●		168
A SonicLink AST50	1.95	It may look like bell-wire, but AST50 sounds detailed, ordered and balanced	●		●		●	●	1800	157
A Transparent Audio Musichord	11.42	Sweet, open and refined treble, a bit of breathy exuberance and can sound slightly lackadaisical	●		●		●	●	1728	133
A Transparent Audio Wave	22.84	Very close to the sound of 'no cable', one of the very best. Slightly softens treble detail	●		●		●	●	1728	133
A Tech + Link OFC79	1	Bargain basement cable that sounds cosy, but suffers from a wobbly bass	●		●		●	●	1800	157
A van den Hul The Clearwater	6	Despite its evocative title, the Clearwater turns out to be a disappointingly murky sounding cable	●		●		●	●		109
A van den Hul CS122	19	Smooth and articulate with superb focus and control, its sheer coherence makes it a winner (tested in Sessions)	●		●		●	●		153
A van den Hul The Magnum	31	Touted as vdH's most prestigious twinlead cable, Magnum sounds soft and old fashioned	●		●		●	●		109
A van den Hul The Wind	35	'The Wind' kicks up a storm with its lush midrange and bone-crunching bass!	●		●		●	●		109
A van den Hul Revolution	64	Silver plated OFC combined with carbon fibre prompts a sombre character with an easy and relaxed treble	●		●		●	●	1726	133
A XLO Pro Type 625	4	Lively but natural and relaxed sounding but a hint of congestion at frequency extremes	●		●		●	●	1726	133
A XLO Pro 600	16.60	Basically neutral tonality but can become aggressive and two-dimensional.	●		●		●	●		168



Cartridges

Cartridges fall into two groups: high output MM (moving magnet) models, capable of working directly into most phono inputs; and generally more expensive low and very low output MC (moving coil) models. MC cartridges usually have better mechanical integrity, tighter tolerances and give better performance. Many amplifiers are no longer equipped with the necessary phono input for a cartridge, and a separate phono stage is necessary. Phono input equipped valve 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

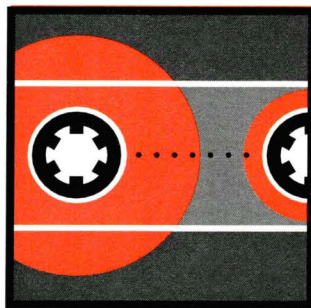
KEY	OUTPUT (MV)	ISSUE NUMBER
MM: Moving magnet cartridge with a normal output suitable for all vinyl disc amplifier inputs.	Cartridge output in millivolts.	The issue of Hi-Fi Choice in which the original review appeared.
MC: Moving coil cartridge with a low output only suitable for high-sensitivity vinyl disc amplifier inputs.	Cartridge mass can affect arm choice.	
REPLACEABLE STYLUS: Most MM cartridges have a stylus that can be removed and replaced.	FACTSBACK NUMBER: The Factsback reference for ordering a fax	

CARTRIDGES

Product	Price(£)	Comment	REPLACEABLE STYLUS	OUTPUT (MV)	ISSUE NUMBER
A Audio Note Io IIV	1,395	One of the best, giving an extraordinarily relaxing midrange clarity. Needs a transformer	MM	0.1	100
A Audio Technica AT-95E	19	Clear and dynamic, though richly balanced.	MC	2.8	48

CARTRIDGES (CONTINUED)

Product	Price(£)	Comment	REPLACEABLE STYLUS MM	OUTPUT MC	FACTSBACK NUMBER OUTPUT (mV) MASS (g)	ISSUE NUMBER
Audio Technica ART-1	944	This is a delicate and very fluid-sounding MC that tracks well	●	●	0.4 9	72
Denon DL110	70	A fine all-rounder, this high output MC model is likely to perform well	●	●	1.0 6	48
Denon DL160	90	Although listeners just preferred the 110, its brother here survived lab tests and is still 'thoroughly competent'	●	●	0.1 6	43
Denon DL103	100	Good performance in bass and good 'life'. Is seriously let down by its spherical stylus which kills subtle detail	●	●	0.1 6	103
Denon DL304	200	Uncoloured, detailed, tracks superbly. Top notch altogether and a bargain too	●	●		103
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	65	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	150	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 eve.	●	●	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	699	Superbly capable all-round musical performer that improves markedly when its body cover is removed	●	●	0.3 7	158
Lyra Clavis Da Capo	1,069	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	6
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 unobtrusive - 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 clonky	●	●	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 both more detailed, accurate and convincing	●	●	5.0 5	67
Roksan Corus Black	130	Recognisably related to the Corus Blue, but more civilised and smoother	●	●	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 III GLA	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.

B Best buy **R** 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.	

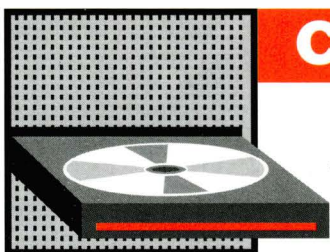
CASSETTE DECKS

Product	Price(£)	Comments	DOLBY C	DOLBY S	DOLBY HX-PRO	3-HEAD	TWIN DECK	AUTOREVERSE	AUTO CALIBRATION	ADJUSTABLE BIAS	FACTSBACK NUMBER	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 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
Denon DRS-810	310	Draw loading deck, carefully designed yet lacking in subtlety on audition	●	●	●	●	●	●	●	●		127
Grundig CCF3	200	Simple, sensible and well-built twin, but lack of pitch stability compromises performance	●	●	●	●	●	●	●	●	1379	146

DOLBY BX PRO
DOLBY S
DOLBY C
3-HEAD
TWIN HEAD
AUTO CALIBRATION
FACTSBACK NUMBER
ADJUSTABLE BIAS
ISSUE NUMBER

CASSETTE DECKS (CONTINUED)

Product	Price(£)	Comments	DOLBY BX PRO	DOLBY S	DOLBY C	3-HEAD	TWIN HEAD	AUTO CALIBRATION	FACTSBACK NUMBER	ADJUSTABLE BIAS	ISSUE NUMBER
Harman/Kardon TD420	280	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-V562BK	220	Ultra-sophisticated transport at a silly price; sound quality is stable but slightly opaque	●	●	●	●	●	●			123
JVC TD-V662BK	270	Assured, clean and agile sounding recorder, if not quite the most refined in its class	●	●	●	●	●	●	1380	146	
Kenwood KX-7060S	329	Although slightly dull sounding with prerecorded tapes, this is a well equipped and fine sounding deck	●	●	●	●	●	●	1381	146	
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	Double deck whose music sounded shut in and prosaic, as though its energy content had been ironed flat	●	●	●	●	●	●	1648	152	
Onkyo K-611	430	Cute drawer loading mini-size component with 3-heads and dual capstan transport	●	●	●	●	●	●	1384	146	
Pioneer CT-S500S	250	Great features, good with cheap low-bias tapes, but slightly synthetic quality	●	●	●	●	●	●			164
Pioneer CT-S830S	500	High class mechanism, if lacking in battleship externals, and superb sound	●	●	●	●	●	●	1385	146	
Sony TC-KE550S	230	Warm, enjoyable music making, but assisted tape setup routine gives inaccurate results	●	●	●	●	●	●			164
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



CD Players brought to you in association with

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.



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	OPTICAL DIGITAL OUTPUT	AES/EBU ELEC DIG OUTPUT	AT&T OPT DIG OUTPUT	BAL ANALOGUE OUTPUT	HEADPHONE SOCKET	VARIABLE OUTPUT	FACTSBACK NUMBER	MULTI-DISC	DAC TYPE	ISSUE NUMBER
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 163
Audio Research CD1	3,290	Suspends disbelief with a frighteningly real yet obviously coloured sound. A rare proposition among CD players	●	●	●	●					BS	1875 163
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	300	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, middle 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	Player of integrity, but can sound a tad 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
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-Z574	250	Strong resolving power and good midband and dynamics, but slightly raw and thin	●								1bit	159
JVC XL-Z674BK	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	9,900	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 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
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	350	Dynamically weak and some roughness offsets the pleasing tonal balance, articulate mid and strong bass	●								1 bit	159
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
Monrio Privilege	995	Costly and well engineered, but ultimately rather heavy-handed and dull, if refined player	●								MB	166
Musical Fidelity E60	299	This entry level player lacks proper stereo localisation and clarity	●			●					-	166

CD PLAYERS (CONTINUED)

AES/EBU ELEC DIG OUT
 OPTICAL DIG OUT
 AT&T OPT DIG OUT
 BAL ANALOGUE OUTPUT
 HEADPHONE OUTPUT
 VARIABLE OUTPUT
 MULTI-DISC
 FACTSBACK DAC TYPE
 ISSUE NUMBER

Product	Price(£)	Comments	AES/EBU ELEC DIG OUT	OPTICAL DIG OUT	AT&T OPT DIG OUT	BAL ANALOGUE OUTPUT	HEADPHONE OUTPUT	VARIABLE OUTPUT	MULTI-DISC	FACTSBACK DAC TYPE	ISSUE NUMBER
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	978	The idiosyncratically packaged CD3 is solid and highly articulate. Always has its feet on the ground though								MB	1765 155
▲ Naim Audio CD2	1,998	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
▲ Oralle 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 lossy and attractively presented sound. Captive signal lead								1 bit	159
Philips CD-740	170	One of several Philips players using hybrid DAC technologies. Still sounds insufferably boring, however	●			●		●		MB	1567 139
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	●			●				1bit	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	1,595	Dramatic and compelling, classical listeners should be ready to 'air conduct' when auditioning this player	●							BS	1896 163
▲ Rotel RCD-970BX	350	A combination of solid build, useful facilities and an attention grabbing sound make this a winner	●							BS	1897 163
Rotel RCD-975	849	Bright and superficially detailed, this deck can sound coarse and inarticulate	●							BS	1767 155
▲ Sherwood CD-4030R	180	Easy on the ear, smooth sounding player, with limits set by the slightly soft, compressed quality – and messy facia				●		●	●	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	400	Strong willed, heavyweight sound; not for the feint hearted	●					●		BS	1642 151
▲ 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	650	Although bold and outgoing, this player can sound both intrusive yet lacking fine detail	●			●				BS	1769 155
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 subtle, 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	599	Modified Pioneer PD-S504 that's a bit like a Williams Renault Clio – astonishing at the price (tested in Sessions)	●			●		●	●	BS	1753 155
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
TRANSPORTS											
▲ 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	Super-slick transport and basically very honest sound, but lacking the last degree of fine detail	●	●		●				-	162
Audiomeca Kreatura SE	1,450	Superb combo for those who like the sound of valves (tested with Elixir DAC in Sessions)	●			●				MB	141
▲ Audiomeca Mephisto	2,100	Tested with Trichord Pulsar, the duo provides a highly composed and tactile sound	●			●				-	1320 144
Linn Karik	1,750	Based on early Linn transport, the Karik is dry but very positive, detailed and engraving	●			●				-	1323 144
Meridian 500	1,245	Used with the 563 DAC, the combination is thin, brash and uncomfortable	●			●				-	1103 133
Mission Discmaster	1,500	Powerful performance – large and beefy without sounding fierce or aggressive (price includes Dacmaster)	●								1104 133
Pink Triangle Cardinal	875	Sound quality is warm but over-polished compared to PT Ordinal (tested with DaCapo and DC PSU)	●							-	1324 144
▲ PS Audio Lambda	2,250	With UltraLink Two, sound positively sparkles with colour and resonant detail	●	●		●				-	1106 133
Roksan Attessa 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
Teac P-2S	4,000	The latest version of Teac's luxury P-2 transport sounds as over-engineered as it looks	●			●				-	1493 130
Theta Data Basic II	2,298	Uses a Philips CDM-9 Pro mechanism a 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
DACS											
▲ 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	600	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	745	DAC was tested with Kreatura SE – see above								BS	141
Cambridge Audio DACMagic 2	200	Superb value DAC that makes the jump from good to outstanding if balanced outputs are used (tested in Sessions)						●		Hyb	1521 136
DPA PDM256	2,995	Highly advanced, with adjustable dither. but the different settings only lead to compromise								BS	133
Linn Numerik	1,400	A new 20 bit DAC and revised Karik transport have cleaned up; but sounds a tad 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	1,500	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 Attessa 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 TDA2000	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

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Digital Recorders



Digital 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 (Mini Disc), 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	ADC TYPE: Analogue to digital converter types as per DACs.	ELECTRICAL IN/OUTPUTS: Digital socketry for electrical cable.	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
FORMAT: Type of recorder, see above for descriptions.	PORTABLE: Can be run off batteries but not necessarily personal stereo size.	FACTSBACK NUMBER: The Factsback reference for ordering a fax copy of the review. Use the contents page to find the Factsback information page.	
DAC TYPE: Digital to analogue converter. BS - Philips Bitstream, MB - multibit, Hyb - hybrid of multibit and bitstream technologies, 1bit - single bit types such as MASH, bitstream, PWM etc.	OPTICAL IN/OUTPUTS: Digital socketry for optical cable.		

DIGITAL RECORDERS

Product	Price(£)	Comments	DAC TYPE	ADC TYPE	PORTABLE	ELECTRICAL IN/OUTPUTS	FACTSBACK NUMBER	ISSUE NUMBER
Pioneer D-05	800	Second generation 96kHz DAT recorder can offer startling realism with the right software - ie first generation	DAT	BS	BS	● ●	1652	152
Pioneer D-07	1,150	96kHz double sampling mode gives this deck a sense of naturalness missing from most DAT recorders	DAT	BS	BS	● ●	1089	133
Pioneer PDR-05	1,300	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
Sharp MD-M11	450	Slick MD personal with recording capabilities and rapid track access but less stunning sound quality	MD	BS	BS	● ● ●		139
Sony MDA-JA3ES	800	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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There 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 stereos. For best results a separate headphone amplifier is recommended.

B Best Buy **R Recommended**

KEY	CLOSED BACK: Keeps out external noise.	amplifier output.	ORDERING: ordering a fax copy of the review. Use the contents page to find the Factsback information page.
TYPE: Operating principle: D - dynamic, E - electrostatic. <td>WEIGHT (G): Mass in grams <td>3.5mm JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos. <td>ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.</td> </td></td>	WEIGHT (G): Mass in grams <td>3.5mm JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos. <td>ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.</td> </td>	3.5mm JACK ADAPTOR: Can be used with mini-jack-equipped components such as personal stereos. <td>ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.</td>	ISSUE NUMBER: The issue of Hi-Fi Choice in which the original review appeared.
SUPRA-AURAL: Style where a flat pad presses on the outer ear. <td>IMPEDANCE (Ω): Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given <td>FACTSBACK NUMBER: The Factsback reference for <td></td> </td></td>	IMPEDANCE (Ω): Load offered to the headphone amplifier. All else being equal, the lower the impedance the louder the sound for a given <td>FACTSBACK NUMBER: The Factsback reference for <td></td> </td>	FACTSBACK NUMBER: The Factsback reference for <td></td>	
CIRCUMAURAL: Style which encloses the ear. <td></td> <td></td> <td></td>			
OPEN BACK: Offers an open sound but lets in noise. <td></td> <td></td> <td></td>			

HEADPHONES

Product	Price(£)	Comments	CIRCUMAURAL TYPE	OPEN BACK	CLOSED BACK	3.5mm JACK ADAPTOR	WEIGHT(G)	IMPEDANCE(Ω)	FACTSBACK NUMBER	ISSUE NUMBER
▲ AKG K1000	646	One of the best dynamics on the market, hooks directly into speaker outputs	D	●	●		270	120		99
▲ Audio Technica ATH910PRO	80	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	49	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	129	A good buy for serious, heavy-duty music making	D	●	●		245	250		144
▲ Beyer DT911	219	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	110	Clear, open and dynamic with pedantically open mid-band. Crude physical design, rough frequency extremes	D	●	●		60	8	●	1801 157
▲ Grado SR225	200	Warm, dark tonal coloured and ultimately lacking in clarity, but it true to the spirit of the music if not the letter	D	●	●		200	32		1883 163
▲ Jecklin Float Model 1	75	While very unusual in appearance, the Floats give remarkable sound quality and openness at a reasonable price	D	●	●		400	200		55
▲ Jecklin Float Model 2	99	Helmet shaped, but open sounding and comfortable in 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
Precide 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 acheinly 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

HI-FI LOUDSPEAKERS (CONTINUED)

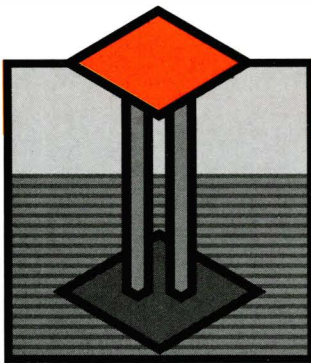
SIZE WxHxD(CM) SENSITIVITY(dB/W/m) IMPEDANCE(Ω) BASS FROM (Hz) FACTSBACK CLOSE TO WALL FREE SPACE ISSUE NUMBER

Product	Price(£)	Comments	Price	Sensitivity	Impedance	Bass from	Close to wall	Free space	Issue number
Epos ES25	1,655	Handsome floorstander with a rather uneven and bass heavy balance	24,90,35	● 88	6	22	●	●	1346 143
Faraday Siren	445	High mass concrete cabinet is let down by imbalance of ageing driver combination	25,27,46	● 90	4	48	●	●	94
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 Heylios	339	Great all round performance in a pretty package at a sharp price	24,36,27	● 87	6	25	●	●	164
Heybrook Solo	199	Untidy bass and treble, but handles complex rhythmic material well	23,36,23	● 89	6	28	●	●	90
Heybrook Trio	373	HBS1 drivers in real wood enclosure give a sweeter and more forgiving sound	24,47,25	● 89	8	45	●	●	118
Heybrook Heylo	389	Good vocal reproduction, but sounds thin and bass seems an afterthought	23,73,19	● 88	8	30	●	●	1658 152
Heybrook Heystak	499	Elegant, highly detailed and level-headed sound, but could use injection of life	22,98,28	● 89	8	38	●	●	141
Heybrook Quartet	575	Solidly large bookshelf model with good sensitivity and a lively, forward sound	24,41,22	● 90	8	48	●	●	122
Heybrook Sextet	1,159	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	370	A cracking output for their size these rock boxes can be a tad bright but have decent bass	31,5,54,28	● 91	8	40	●	●	1758 155
Jamo Classic 8	430	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 L20	700	Pricy, heavy and a bit laid back, but this is a fine rock'n'roll 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 L30	1,500	A classic monitor which communicates with gusto and enthusiasm, though it can sound a tad crude	24,94,35	● 91	6	23	●	●	1348 143
Jordan Watts JH400	820	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 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 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	14,750	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	27,200	Outstanding transparency and dynamics from remarkably solid and fast mega horn	64,160,90	● 108	8	40	●	●	138
Lumley Reference LM4	375	Metal diaphragm and wood veneer; balance uneven upper and has suspect timing	18,36,22	● 86	6	44	●	●	126
Lumley Reference LM3	895	Despite indifferent bass alignment, LM3 is fast, coherent, solid and informative	27,87,28	● 90	8	30	●	●	106
Meridian DSP6000	9,400	Sophisticated digital design, with a wide ranging, refined and detailed sound. Has onboard amplification	28,133,43	● -	-	35	●	●	1226 140
Mission 732	200	Attractive presentation but a rather dull and thick sounding speaker, and a tad pricey too	20,41,30	● 89	8	45	●	●	1613 141
Mission 733	330	Duller than before, though still an honest all-round package	20,5,87,30	● 87	8	45	●	●	1574 156
Mission 751	348	Gorgeous looking, very petite; boogies with a sting at the top	17,5,32,26	● 87	8	45	●	●	1788 156
Mission 734	499	Fine all rounder, and good value, but dynamically a bit lazy, and tweeter quality limited	21,84,33	● 90	8	43	●	●	1660 152
Mission 752	578	Brilliant style, engineering and sound	20,88,26	● 90	8	50	●	●	1553 138
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 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 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 allround 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
Origin Live Conqueror	1,600	Chunky floorstanding 3-way has lovely cabinetwork and lively sound, but limited deep bass	24,94,27	● 88	8	30	●	●	167
Prig Triangle Ventral	990	If you are after Quad Electrostatic type transparency but can't afford the price... (Sessions)	15,80,32	● 86	11	●	●	●	142
PMC TB1	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 fist port of call	22,107,25	● 86	8	30	●	●	1457 149
QLN Qubic 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	1,200	Attractive pyramidal stand-mount has heavy and 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

HI-FI LOUDSPEAKERS (CONTINUED)

Product	Price(£)	Comments	SIZE WxHxD(CM)	SENSITIVITY(dB/W)	IMPEDANCE(Ω)	BASS FROM (Hz)	FACTS CLOSE TO WALL FREE SPACE	ISSUE NUMBER
▲ 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	1,550	Single-driver system has limited bandwidth and obvious coloration, but wondrous dynamic and temporal coherence	34,42,27	● 95	8	55	●	167
▲ Revolver Beretta	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 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 RevelationSeries 1	1,400	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 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	1,195	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 Merlin	298	Invigorating and exciting design with plenty of upfront detail, but balance lacks warmth and a tad overpriced	20,31,18	● 86	8	33	●	1409 148
▲ 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 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	449	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	1,395	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
▲ Spendor S20	760	Maintains Spendor's tradition for peerless mid-to-treble coherence and perspectives	22,38,26	● 84	8	25	●	102
▲ System Audio 905	250	Fine coherence and remarkable dynamic freedom some something so small, though there's little real weight	15,27,21	● 89	8	60	●	1410 148
▲ 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 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	13-19,34,16	● 86	7	45	●	1791 156
▲ 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	● 89	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. Is 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	700	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 Valdus 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 Valdus 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 a truly 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
SUBWOOFERS								
▲ 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	2500	Works well, looks great, shakes the windows but costs a lot and is bulky	56,43,50	●		45	●	128
▲ Living Voice RW24	9,500	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, plentiful 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

Hi-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.



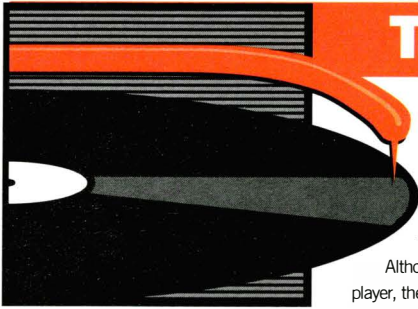
KEY	HEIGHT (CM):	TOP PLATE SIZE (CM):	FILLABLE:	lead to increase mass, which affects sound.	WELDED:	NUMBER OF SHELVES:	rack or support.	SHELF TYPE:	FACTSBACK NUMBER:	copy of the review. Use the contents page to find the Factsback information page.	ISSUE NUMBER:
	Height of stand or equipment shelf	Dimensions of top plate on speaker stand or equipment support.	Some speaker stands can be filled with sand and/or		The better stands and supports are welded rather than bolted together.	The amount of tiers on an equipment		Material that shelves are made of on an equipment rack. Wood generally means MDF.	The Factsback reference for ordering a fax		The issue of Hi-Fi Choice in which the original review appeared.

STANDS & SUPPORTS

Product	Price(£)	Comments	HEIGHT(CM)	TOP PLATE SIZE(CM)	FILLABLE	NUMBER OF SHELVES	WELDED	FACTSBACK NUMBER	SHELF TYPE	ISSUE NUMBER
Equipment Supports										
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	
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		
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		
Mana 3 Tier Sound Table	600	Infinitely upgradable. Persuasive and thrilling glass and angle iron design that adds speed and bandwidth to components upon it				5	Glass	1633	151	
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		
Quadraspire Q4	200	Easy to live with, and tonally neutral				4	MDF	1633	151	
Sound Organisation Z038	130	Too lively and lacking order — but cheap	50	84,40		5	Wood	1633	151	
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		
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	Adds colouration, and lacks weight. Optional Isolation Platform	81	72,42		5	Glass	1633	151	
Target B5	175	Free of colourations, fine grip and good value				5	Wood	1633	151	
Speaker Stands										
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 NCII	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	
Atacama BD21	55	Good looking and good value but doesn't match the SE24's sound quality	56	15,17	●				159	
Atacama SE24	70	Stand 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	
Gale Reference 600	60	Smooth sounding with impressive bass well suited to less civilised speakers				● ●		1373	146	
Kudos S50	100	Better sound than the budget stands, particularly at the bottom end	60	15,21	●				159	
Kudos S100	270	The best all round stand around... Probably...	63	15,21	●				159	
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 Merin	60	Although light in weight, the stands performance seemed remarkably muscular but musical rendering lacked a little precision				● ●		1373	146	
Partington Discovery	80	The depth and substance of the presentation truly added to the convincing nature of the system's portrayal				● ●		1373	146	
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	
RMS/Stands Unique Vivus	550	Pricey carbon fibres give ultra-clean sound with exceptional voices	50	N/A					159	
Soundstyle 124	100	Big, shiny and solid, with fine midband projection	65	17,16	●				159	
Stands Unique HP	220	Real wood disguises high performance tuned technology	59	22,23					159	
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	
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



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.

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.

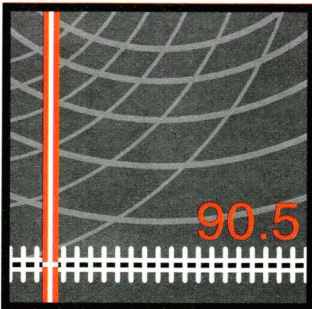
B Best buy **R Recommended**

KEY

EFFECTIVE MASS: This relates to cartridge compliance. Generally high mass arms are suitable for low compliance cartridges and vice versa.
PARALLEL TRACKING: An arm which allows the cartridge to track the disc in a linear fashion.
PIVOTED: Arms which allow the cartridge to describe an arc as they traverse the record.
UNI-PIVOT: Pivoted arms with a bearing that allows movement in two planes.
EFFECTIVE LENGTH (cm): Length of arm from bearing to cartridge mounting.
ADJUSTABLE HEIGHT: Important for accurate cartridge set-up.
FACTSBACK NUMBER: The reference for ordering a fax copy of the review. Use the contents page to find the Factsback.
ISSUE NUMBER: The issue of *Hi-Fi Choice* 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
Alphason HR100S	490	S-shaped arm sounds smooth, but nevertheless reproduces transients with fine attack	Medium	●	●	●	229	●	86	
Kuzma Stogi Ref	1,000	Large, solid and well made arm, gives exceptionally clear sound with just a hint of brightness.	High	●	●	●		●	79	
Linn Ekos	1,297	Superb, state of the art design which builds significantly on predecessor's strengths	Medium	●	●	●	229	●	6	
Moth Arm	95	The ultimate budget arm? Refined, sweet, detailed and natural	Low	●	●	●	237	●	60	
Rega RB300	139	Despite its modest price it sets exceptional standards and could be used on many high end turntables	Low	●	●	●	237	●	60	
Roksan Tabriz Basic	275	Targetted at the Xerxes, this is a good alternative to the Rega arm in many cases – a touch bright though	Low	●	●	●	240	●	91	
SME Series 300-309	657	Beautifully made and finished: fully adjustable and a highly neutral performer	Low	●	●	●	238	●	79	
SME Series IV	936	Superb engineering and finish with a finely balanced sound, impressive stereo focus and low coloration	Low	●	●	●	233	●	60	
SME Series V	1,391	Excellent in all respects, this arm arguably sets the standards for pivoted arms, regardless of price	Low	●	●	●	233	●	60	



Tuners

The 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**

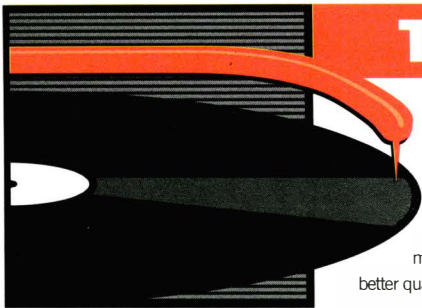
KEY

WAVEBANDS: Only the FM (VHF) bands give stereo hi-fi sound, though AM (MW & LW) are useful for receiving certain transmissions in the UK.
PRESETS: Number of station frequencies that can be stored.
RDS: (radio data system) was originally designed for in-car applications. 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.
REMOTE CONTROL: Couch-potato friendly.
SIGNAL STRENGTH METER: Indicates strength of signal from aerial, useful for aligning your 'twig' during installation.
ROTARY TUNING KNOB: The ergonomically attractive approach to dial-surfing.
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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Tuners

Product	Price (£)	Comments	WAVEBANDS	PRESETS	RDS	ROTARY TUNING KNOB	SIGNAL STRENGTH METER	REMOTE CONTROL	FACTSBACK NUMBER	ISSUE NUMBER
AMC T7	130	Performance adequate but price is sharp, especially with remote control. Some hum	FM, M	30	●	●	●	●	166	
Arcam Alpha 7	230	Indifferent RF performance but a touch of audiophile sound quality with clean, strong signals	FM, M, L	24	●	●	●	●	166	
Arcam Delta 280	399	Fine sound quality marred by mild synthesiser whine; RF performance only average. Remote £60 extra	FM	20	●	●	●	●	120	
Audiolab 8000T	750	Unusually combination of fine sound quality and RF performance (inc AM), and superb ergonomics	FM, M, L	39	●	●	●	●	1254	142
Denon TU-260L	120	Careful minimalist design promises a surprisingly open and vivacious sound	FM, M, L	20	●	●	●	●	93	
Denon TU-425RD	200	A fine all-rounder with advanced RDS, good RF performance and decent sound. Remote extra	FM, M	40	●	●	●	●	166	
Harman/Kardon TU950	200	Bulky but effective, delivering fine RF performance and good sound for the price	FM, M, L	30	●	●	●	●	166	
Linn Kremlin	2,600	Controversially good sound at a very high price. The reviewer's saving up but you should check it out for yourself	FM	80	●	●	●	●	1254	142
Magnum Dynalab FT101	825	Although fairly expensive given its minimum set of facilities, its excellent sound provided ample compensation	FM		●	●	●	●	72	
Micromega Tuner	700	Has digital output but even without the Micromega DAC, this provides exceptional sound quality. Looks good too	FM	39	●	●	●	●	1810	157
Mission Cyrus FM7	400	Open, generous soundstaging gives the music plenty of foundation, if a touch shut in at the top	FM	29	●	●	●	●	1254	142
Musical Fidelity E50	300	Sounds involving if coloured and with a subjectively larger than life presentation	FM	20	●	●	●	●	1810	157
Naim NAT01	1,645	There may be better sounding tuners in the world, but we have yet to hear one	FM		●	●	●	●	1254	142
Pioneer F-504RDS	250	Cable-friendly with advanced RDS and excellent RF performance, slightly disappointing sound	FM, M	40	●	●	●	●	166	
Rotel RT-935AX	160	Good ergonomics and sound quality at a realistic price, but limited features and RF selectivity	FM, M	20	●	●	●	●	166	
Sony ST-SA3ES	250	Clean, lean presentation but needs a quality aerial to its best	FM, M, L	30	●	●	●	●	1810	157
Technics ST-GT350L	150	Decent RF performance is offset by sound quality more typical of a mini/midi system	FM, M, L	30	●	●	●	●	1254	142
Thorens TRT2000	450	Not exactly neutral sounding, it nonetheless makes listening fun	FM, M	59	●	●	●	●	1810	157

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	SUPPLIED WITH ARM	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 Basik	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
Hotts Analogue Spacedeck/Arm.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
ro-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. Uptempo, 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 focussed 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
Voyd 0.5	3,940	Cross between standard and Reference Voyds. Superb finish, colourful and dynamic	●						33/45	●	●	1328 144
Voyd Reference	6,962	Voyd's flagship, equipped with three substantial motors, a strong contender for world's best	●						33/45	●	●	91
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 arm	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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 Croft • Eminent Audio • tel 0121 373 1442 • fax 0121 377 8309
 Custom Design • tel 0191 262 4646

D

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 Dawn Audio Ltd • tel 01932 355040 • fax 01932 355041
 Day Sequerra • Absolute Sounds • tel 0181 947 5047 • fax 0181 879 7962
 Deadrock • Path Distribution • tel 0121 749 2240 • fax 0121 748 3838 • Dealers 700
 Denon • Hayden Laboratories Ltd • tel 01753 888447 • fax 01753 880109 • Dealers 350
 Densen • Russell Kauffman Distribution • tel 01582 561227

DNM • Virtual Reality Audio Systems • tel 01277 227355 • fax 01277 224103
 DPA • tel 01222 795621 • fax 01222 794267 • Dealers 17
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 Dynavector • Pear Audio Ltd • tel 01665 830862

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EAD • Audio Illusion • 01753 542761 • fax 01753 542772
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 Electrocompaniet • Sound Image UK • tel 0181 255 6868 • tel 0181 255 6869
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 EMF Audio • tel 0181 361 6734 • fax 0181 361 4136
 Epos Acoustics • tel 01705 407722 • fax 01705 400099 • Dealers 68
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G

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 Gallo • Absolute Sounds • tel 0181 947 5047 • fax 0181 879 7962
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 Genexxa • Intertan Ltd • tel 01922 434000 • fax 01922 710789 • Dealers 346
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 Koss • HW International • tel 0181 808 2222 • fax 0181 808 5599
 Krell • Absolute Sounds • tel 0181 947 5047 • fax 0181 879 7962 • Dealers 17
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 Kudos • tel 01732 461648 • fax 01732 462949
 Kuzma • Audiofreaks • tel 0181 948 4153 • fax 0181 948 4250 • Dealers 12

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 LFD • tel 01255 422533 • fax 01255 221370 • Dealers 7
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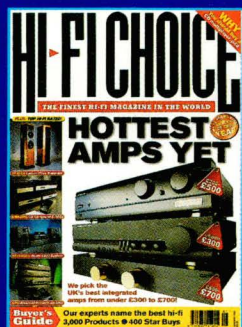
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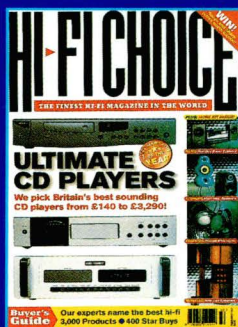
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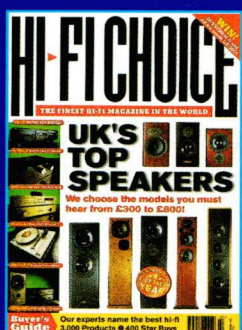
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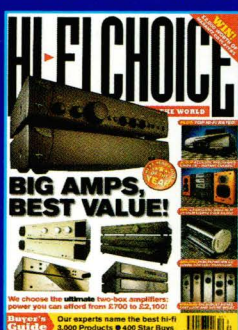
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- 5 Headphones, £140 to £1000
- 5 Designer speaker packages



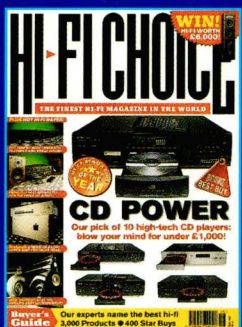
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- Conrad-johnson DR-1-D/A-2b



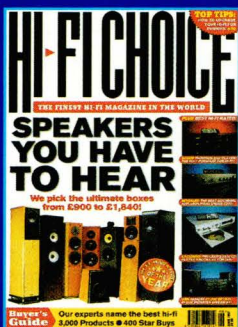
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- 10 CD Players up to £1,000
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JUNE 1997/ISSUE 167

- 14 Loudspeakers, £800-£2,000
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NEXT MONTH'S ISSUE

A SIZZLING SELECTION OF SUMPTUOUS STUFF IN SEPTEMBER'S HI-FI CHOICE



Will it steal the budget speaker crown? Find out next month!

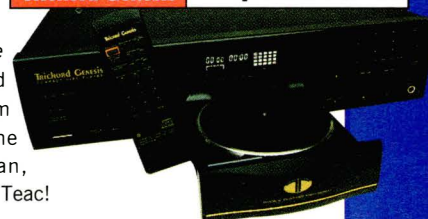
BUDGET SPEAKERS FIGHT TO THE DEATH

Next month we ask: is it worth spending £130 to £140 on the JPW ML510, Mission 731 Pro, Tannoy Mercury M2 or Wharfedale Diamond 7.2, or is the £80 Tangent Monitor 5 the budget box to watch?

CD HEAVEN

14 CD players get the *Choice* treatment from Alvin Gold and Paul Miller, at price-points from £400-£1,400. Check out the latest models from Meridian, Micromega, Roksan, Sony and Teac!

Trichord Genesis In September's CD test

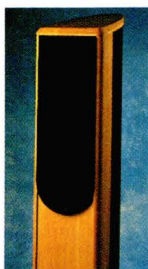


ACTING PROUD

Paul Messenger enjoys an audience with the Wilson-benesch Actor speakers, little brother of the A.C.T. 1 reviewed in *HFC* 162. They're a technological tour de force in carbon-fibre!

DOUBLE FUN

If you still enjoy your cassette collection, don't miss our test of five twin-deck tape recorders. Just a gimmick — or dubbing workhorses in their own right? We'll test the latest models from Sony, JVC, Kenwood and Pioneer.



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THE SEPTEMBER 1997 EDITION OF HI-FI CHOICE WILL BE ON SALE THURSDAY JULY 17, 1997. DON'T MISS IT!

Ultra Vivian Scene

David Vivian visits the Townshend manor to experience the Seismic Sink Stand, and takes part in an extraordinary sonic comparison.

I finally went round to Max Townshend's place to catch up with the Seismic Sink Stand I first wrote about in May (*HFC* 166). Max lives in a spacious flat near the Thames with a stunning view of Hampton Court Palace and a distracting choice of wine bars, pubs and curry houses. Essential for an Australian.

Count me distracted as I walked down Bridge Road. I nearly didn't make it to Max's door. But enter the inner sanctum of Townshend Towers and you soon forget about what's going on outside. I'm reminded of that scene from the movie *Blade Runner* where replicant Roy Batty (played by Rutger Hauer) first enters genetic engineer JF Sebastian's cavernous abode and clocks his walking, talking, pint-sized creations. "Nice toys," says the man from Guinness, feeling an eerie empathy with his surroundings.

No hi-fi enthusiast could fail to feel similarly at home at Max's place; there's just too much groovy stuff lying around. The great thing about Townshend-brand hi-fi, past and present, is its mythic status. I was going to say "resonance" but that wouldn't be appropriate since the elimination of harmful air and ground-borne vibration is the cornerstone of the Townshend philosophy.

There, planted in the corners of the room like the pillars of Olympus, are the legendary Sir Galahad speakers with their six-high vertical arrays of wide-range aluminium drivers and nine Isodynamic supertweeters, as tall as Pinsent and Redgrave and twice as heavy. Some swear these £20k steel and plaster leviathans (a design inspired 30 years ago when Max read an article about the White City stadium's line-source PA system) aren't just the best speakers on the planet, but the only ones worth listening to because they alone sound truly believable. It's because of the way they image, handle dynamics and go really, really low — more or less flat to 15Hz and then some in the right room.

And fed with a signal from the right front-end. Max's family name first hit the headlines back in the early '80s with the Rock turntable. As in "solid as a..." Not only was it hernia-inducingly heavy but introduced the world to "the trough", a curved oil bath that rested just above the record and damped a little paddle attached to the

end of the headshell. The result was a stability of sound some thought only achievable with CD, and bass to die for. The later Rock Reference honed these qualities to stunning levels and allowed the SG's to fulfil their enormous potential. Just ask any regular at erstwhile *HFC* editor John Bamford's Townshend-equipped "music evenings".

Thing was, the mighty boxes could be driven heartily by any half-decent budget amplifier and made to positively boogie by something like a Pioneer A-400. Cheapo CD players sounded better through the SGs than other speakers, too. Because of their remarkable bandwidth, the Townshend designs let the CD medium's inherent strengths shine through without accentuating the nasties.

The best just got better

Nothing cheap or nasty is hooked up to the big muthas tonight, though. This demo is all about the difference a support can make to good-sounding gear — to wit, a Rock, a Marantz CD-63 mk II KI Signature CD player and a Swiss-made Credo integrated amp. They're all sitting on the smallest of the three Seismic Sink Stands Max intends to market — prices from £700 to just over £1,000. The baby of the range (code name Zero) is

intended for light-to-medium weight gear, the beefier models for heavier duty hardware.

I'm not going to give you a full technical run-down of how these things work — it would take more space than I have here to do them justice and, even then, I'm not sure I fully understand the science. Besides, there's no substitute for sampling Max's passion when he gets rolling on the subject.

Here are the things you need to know according to the Townshend theory. All the models are constructed similarly with a fixed tripod base unit on which the structures supporting the shelves float, supported on air cells derived from the sophisticated 3D Seismic Sink isolation platform. You can pump them up and let them down, depending on the weight of your kit. Ideally inflated, the shelves have free movement fore and aft, up and down and from side to side at low resonant frequencies. But they don't yaw — that would be disastrous for vinyl replay.

Barely perceived environmental vibrations are the enemy here, causing undesirable relative movements in both mechanical and electrical systems. The SSS effectively acts as a low-pass filter, it's as simple as that.

Does it work? Hearing it at Bristol was impressive but inconclusive. Here, Max led me in more gently. The Rock, supported by an inflated SSS, had been playing jazz quietly all evening. By now, I was used to the effortless, unforced nature of the sound. We lent on the volume knob, played some Bob James, Robben Ford and Stevie Wonder CDs. Awesome. But I expected nothing else. As usual, the SG's bass extension was almost flabbergasting but my attention wasn't drawn to it as much as it had been at previous sessions. Perhaps even more remarkable was the realistic scale and natural dynamics, the sheer body, colour and coherence of the music.

But then Max crouched on one knee, let the air out and cued up the Bob James track again. All it took was a couple of seconds, two notes of James's suddenly leaden Yamaha piano. The sound had collapsed, and retreated into the speakers, murky and muddled. That's all I needed to know or hear. Max calls it the one-note demo. It will save an awful lot of messing about. ▲

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