

£3.00

HI-FI

YEAR BOOK

AND HOME ENTERTAINMENT 1981



HI-FI · RADIO · TV · ORGANS · GAMES · VIDEO · RECORDS

In the Hi-Fi jungle, there's a system that doesn't speak with forked tongue.



Choosing a Hi-Fi system should be fun. But for the unwary, it can be like stepping into a jungle. A jungle where everything is not always as it seems. Systems may have apparently impressive technical specifications. But if such specifications are regarded as an end in themselves the sound you hear can still be coloured, harsh and, ultimately tiresome. You hear music the way the system dictates, rather than the way the musicians intended.

We at Pye believe that there is only one way to build sound reproduction equipment, and that is to get as close as it is humanly and

electronically possible to ensuring that you hear the music the way it was originally played.

The Pye Hi-Fi Sound Project system HF3035 stands out in the Hi-Fi jungle as one that speaks to you with straight tongue. It has a 35 watts per channel amplifier with less than 0.08% THD. An advanced cassette deck with Dolby B[®] System. An electronically controlled semi-automatic turntable with wow and flutter better than 0.09% WRMS, complete with cartridge. And a pair of high performance bass reflex 2-way speakers.

The elegant housing furniture is designed to

ensure domestic harmony with its smooth teak finish, cassette drawer, recessed turntable shelf, and smoked glass door shutting off the record compartment.

Pye speaks to you with straight tongue in more ways than one. The price of the complete HF3035 system is only around £475. Famous Pye reliability is built-in and you will be backed by our nationwide service network, in the unlikely event of your ever needing it.

Pye's promise to you is - 'The finest audio equipment of its class you can buy.'

PYE HI-FI SOUND PROJECT

You can rely on Pye 

Pye Ltd., 137 Ditton Walk, Cambridge CB5 8QD.

PRICE
£3.00

HIFE

YEAR BOOK

AND HOME ENTERTAINMENT 1981

*Edited by Kenneth Ellmore
Manager IPC Ancillary Publications and Year Books*

ISBN 0 617 00249 5 IPC Electrical-Electronic Press Limited 1981
Published by IPC Electrical-Electronic Press Limited, Quadrant House,
The Quadrant, Sutton, Surrey. Tel: 01-661 3500. Publishers of Wireless World,
Electrical & Radio Trading, Electrical and Electronic Trader.
Printed in Great Britain by Diemer and Reynolds.

CONTENTS

Articles

- 5 Metal Tapes *by Dennis Rookard*
- 9 Colour TV Developments *by Eric Dowdeswell*
- 11 Loudspeaker Technology *by Vivian Capel*
- 15 Play for Today
- 18 Digital Audio *by Adrian Hope*
- 21 Styli: Yesterday and Today *by Donald Aldous*
- 25 Today's Radio Receivers *by Mike Lewis*
- 27 Demonstration Discs *by Ken Ellmore*

Hi-Fi Sections

- 33 Aerials VHF/FM
- 37 Amplifiers and Control Units
- 56 Casseivers
- 57 Cassette Decks and Recorders
- 66 Construction Kits
- 71 Headphones and Accessories
- 77 Microphones and Accessories
- 87 Music Centres
- 93 Pickup and Record Accessories
- 105 Pickups, Cartridges and Arms

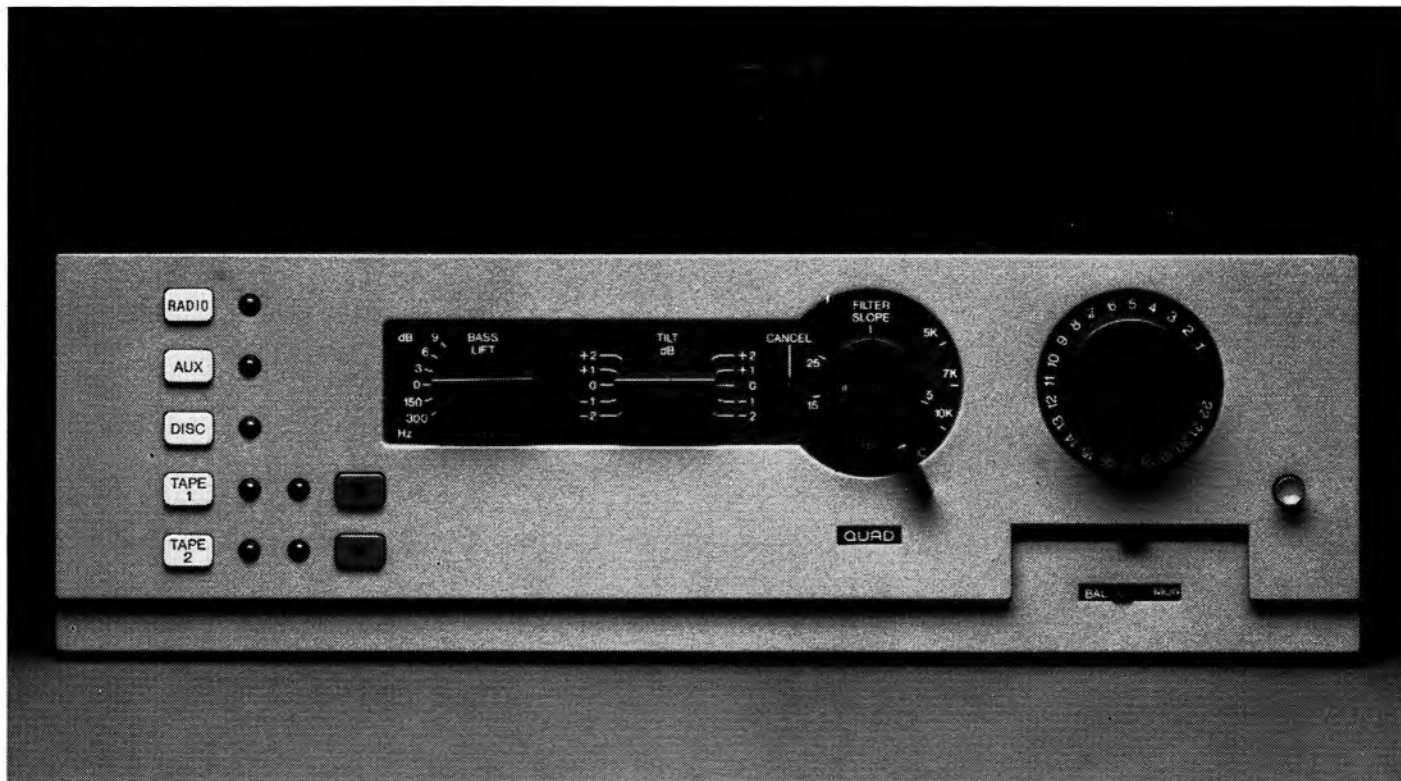
- 121 Racking Systems
- 127 Radio Tuners
- 133 Receivers
- 139 Record Decks
- 151 Recording Tape and Cassettes
- 155 Speaker Accessories
- 159 Speaker Drive Units
- 165 Speaker Enclosures
- 191 Tape Accessories and Components
- 197 Tape Decks and Recorders
- 201 Test Tapes and Discs

Home Entertainment Sections

- 203 Electronic Organs
- 213 Colour Television Sets
- 217 Radio and Cassette Recorders
- 221 Electronic and TV Games
- 225 Video Cassette Recorders
- 228 Stop Press

Directory Sections

- 229 Brand Names
- 230 Makers and Suppliers
- 236 Notes
- 237 Hi-Fi Dealers
- 251 Electronic Organ Dealers



If everything were perfect...

...a control unit would consist of an on/off switch, a volume control and a programme selector switch.

Unfortunately this is not the case as any prospective high fidelity buyer, be he neophyte or hardened campaigner, quickly discovers.

He is faced with a choice.

He can attempt to sift the vast quantities of conflicting information gathered from high fidelity magazines, retailers and "my friend who is an electronics engineer and knows quite a bit about high fidelity,"

-or he can buy a Quad 44.

In the latter case he can be confident that whatever the programme sources, he will be able to

match them correctly and apply tonal correction when necessary to obtain optimum results.

Moreover he can be confident that he need not change his pre-amplifier to meet future developments.

To learn all about the Quad 44 he only has to write or telephone for a leaflet.

The Acoustical Manufacturing Co. Ltd., Huntingdon, PE18 7DB.
Tel: (0480) 52561.

QUAD

for the closest approach
to the original sound

QUAD is a registered trade mark.



ABBREVIATIONS

A	ampere	ind	indicator	Replay	
A-B	comparison test	i/s	inches per second	char	replay characteristic
AC	alternating current.			RIAA	Record Industry Association of America
AFC	automatic frequency control	K	kilohm (thousands of ohms)	RMS	root mean square (0.707 peak value of AC)
AGC	automatic gain control	kg	kilogram	rpm	revolutions per minute
AM	amplitude modulation	kHz	kilohertz (see Hz)		
ASA	Acoustical Society of America	lb	pound (weight)	sec	second (time)
aux	auxiliary	L/C	inductance/capacitance	sel	selector switch
BAF	bonded acetate fibre	LED	light emitting diode	S/N	signal-to-noise ratio
		LP	long play (records or tapes)	SW	short waves (approx 10-100m)
CCIR	International Radio Consultative Committee	LW	long waves (approx 1100-2000m)		
char	characteristic	m	metre	THD	total harmonic distortion
cm	centimetre	M	megohm	thou	thousandths of an inch (0.001 in)
c/o	cut-off frequency	mA	milliamp (0.001A)	tpi	turns per inch (screw threads)
coax	coaxial	mag	magnetic		
		ME	magic eye	UHF	ultra high frequency (approx 470-900MHz)
dB	decibel	MC	moving coil		
dBm	decibel/milliwatt	mg	milligram	VAT	Value added tax
DC	direct current	MHz	megahertz (see Hz)	VHF	very high frequency (VHF radio approx 88-108MHz, VHF TV approx 174-216MHz)
deg	degrees	mic	microphone	V	volt or ampere
det	detector	MOS	metal oxide semiconductor	VA	volt/ampere
DIN	Deutscher Industrie Normen (German audio standards)	mpx	multiplex	vci	voice coil impedance
disc	discriminator	mV	millivolt (0.001 V)	VU	volume units
		MW	medium waves (approx 185-570m)	W	watt
FET	field effect transistor	N	newton (SI unit of force)	W and F	wow and flutter
FG	frequency generator	NAB	National Association of Broadcasters (see also NARTB)	xtl	crystal (pickup or microphone)
fl oz	fluid oz			Z	impedance
FL	fluorescent	NARTB	National Association of Radio and Television Broadcasters (USA)		
FM	frequency modulation	NL	noise level		
FR	frequency response	PA	public address		
		Pat	power available for tuner		
g	gram	pF	picofarad (10 ⁻¹² farad)	Miscellaneous	
HC	handling capacity	PPM	peak programme meter	%	per cent
HD	harmonic distortion	Psn	power supply needed	>	greater than
HF	high frequency	PU	pickup cartridge	<	less than
H & N	hum and noise	Pw	playing weight	±	plus or minus
Hz	hertz (cycles per second)	Q	Q-factor (quality of tuned circuit)	≥	equal to or greater than
IC	integrated circuit			≤	equal to or less than
IEC	International Electrotechnical Commission	ref	recommended crossover frequency	μ	mu (micro or millionth)
IF	intermediate frequency	rec load	recommended load	μA	microamp
IHFM	Institute of High Fidelity (USA)			μV	microvolt
imp	impedance			μbar	microbar (air pressure equal to 1 dyne/cm ²)
in	inch				

METAL TAPES

Dennis Rookard

To many observers of the Hi-Fi scene the coming of metal tape has been seen as not only a revolutionary type of tape coating but as the starting point for a new generation of cassette machines.

Others however take a more cynical view, suggesting that metal tape is yet another gimmick from an industry that is wondering if the world economic situation is moving into a downswing, resulting in a loss of product sales.

Yet another view taken is that metal tape coatings represent the limit of cassette technology in both coating and machines for a system that Philips invented back in 1963 as a low cost office dictation system. They base this assumption on two facts. First, that very few cassette machine owners ever make use of the recording section of their machines, and second, that within two years we can expect to see the introduction of the ALP system.

This is the long-awaited Philips audio digital disc that will feature on a four inch diameter disc up to an hour's playback time along with an extended frequency range, no wow and flutter and a very large signal-to-noise ratio. With its smaller size, equipment could be built for in-car entertainment putting the system in direct competition with the cassette, which can already be used both in cars and in home hi-fi systems.

But aside from all this industry infighting, metal tape has a great deal to offer the audiophile, so what is it, and why is it being regarded as an exciting development in cassette technology? In order to answer this question we have to look at both the tape coating and the new generation of machines that will make use of the coating.

History

The story starts some thirteen years ago when the 3M company started looking at the possible use of a new magnetic coating for cassettes that would offer higher quality with an extended frequency range. Research suggested that little more could be done with normal oxide formulations that use materials such as ferric oxide (a compound of iron and oxygen) so attention turned to materials such as cobalt, nickel and other alloys.

The answer they came up with was a coating that made use of fine needle-shaped particles of pure metallic iron, rather than the usual oxides, or chromium.

Known as Metafine, it delivered a maximum output of between 5 and 10dB

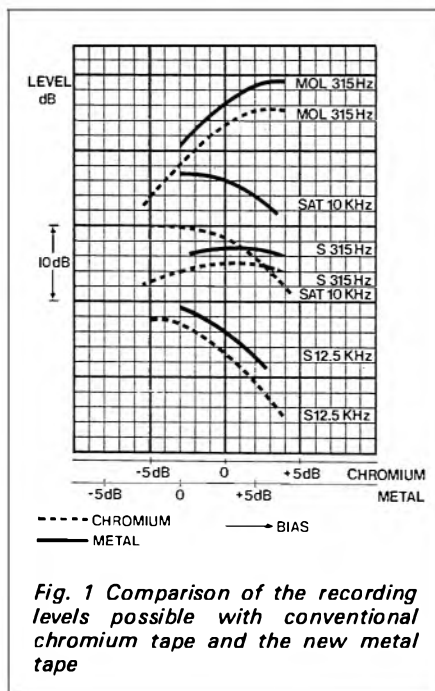


Fig. 1 Comparison of the recording levels possible with conventional chromium tape and the new metal tape

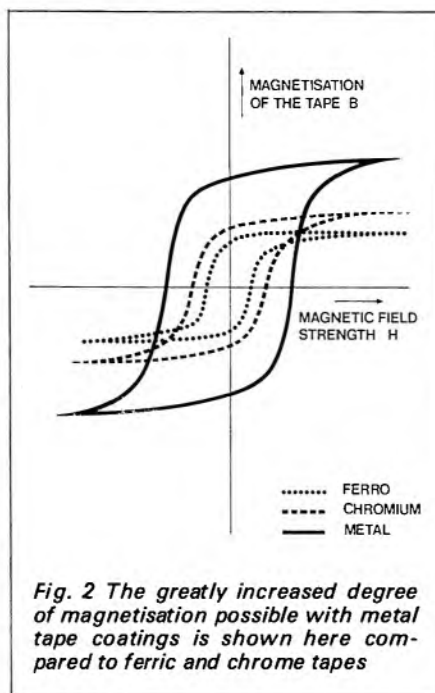


Fig. 2 The greatly increased degree of magnetisation possible with metal tape coatings is shown here compared to ferric and chrome tapes

greater than a standard chrome type formulation, as well as an extended frequency range. This is a major selling point for metal coating, for the problem with the more conventional types of coating is that it has a tendency to show a fall-off in frequency response at high levels. Distortion and signal-to-noise ratio are also claimed to be better, with the

added plus of extremely low signal drop-out levels, with much better stability of recorded signals under adverse environmental conditions.

Yet another factor towards better quality in the performance of metal tape is in the construction of the basic cassette housing, and most of the major companies have taken the opportunity to redesign cassette housings that offer a system with a greater freedom for tape movement and freedom from tape sticking, jamming, and breakages.

TDK, for example, have introduced what it calls its RS (reference standard) mechanism. This is a high-precision three-layer construction, consisting of a die-cast zinc core sandwiched between a two-part transparent outer shell. The idea is to ensure an even spooling of the tape coating and, because the housing makes use of a redesigned spring pressure pad, TDK claim that a more accurate left/right channel orientation is obtained.

Compatibility

But faced with a line-up of new cassette machines, all featuring metal switching, the question is often asked, "can a metal coated tape be recorded on a normal type of machine, in other words, one without a 'metal' switch?" The short answer is "yes". 3M, for example, say that Metafine can be used on any cassette deck featuring a 70 microsecond tape equalisation switch, the chrome switching position on a normal type of cassette deck.

The snag is that whilst one can record, with some success, a metal tape on a machine with such a chrome equalisation switch, erasing the recorded signal might present a problem because a metal tape coating requires twice as much erase bias as that of a normal type of tape coating. On the other hand, playback presents no problems and can give a performance improvement, provided one uses the chrome switching position on the machine for playback.

Another benefit from metal tape coatings is that of head wear, and this aspect of performance is particularly important since the performance of a tape head tends to fall off somewhat rapidly with wear from a more conventional coating.

Researchers felt that it was vital that the new formulations of metal tape coatings should cause as little wear as possible in order to maintain the original condition of the heads being used. Interestingly, it was found that using metal tape such head wear was found to be hardly detectable,

even after lab tests lasting some hundreds of hours.

3M Scotch, the company who had been doing most of the development work in metal tape, say that they are proud of the fact that the work put into the development of Metafine metal tape represented one of the few instances where a significant tape improvement preceded equipment design advancement.

However they took the view that it was no use having a new type of tape formulation if there were no machines available to make use of it, so from the outset they conducted a policy of bringing tape equipment manufacturers into a special working relationship. In order to do this they provided some 100 audio and video equipment manufacturers with samples of the experimental coating, the idea being to enable them to develop systems capable of taking advantage of the tape's performance.

This, say 3M, involved a number of significant developments in record and playback head design that were necessary because the fine metal tape has coercivity, remanence and output capabilities more than twice those of normal oxide tapes; in fact the signal packing density is about four hundred times that of the first magnetic tapes.

The problem that the manufacturing companies had to overcome was in finding a new design for recording/playback heads, for whilst when the heads are separate for recording or playback there is no problem in biasing since the magnetic gaps can be set optimally for each type of head, it seems that a combination recording/playback head requires a somewhat wider magnetic gap than normal, and this can lead to a marked deterioration in the frequency playback response.

Companies such as Sony have, because of this problem, taken the view that the trend should be towards making the gap narrower, but the snag is that when the gap is narrowed down, the magnetic flux density near the magnetic gap rises to a high value, which is why some designs have called for a head to be first saturated before the metal tape is saturated again by use of normal permalloy or ferrite heads.

Sony felt that part of the answer lie in the use of Sendust, which has a remanence of more than twice that of ferrite. Interestingly this material is in no way inferior to ferrite, and would seem, according to the Sony researchers, to be an ideal material for heads for metal tape coatings.

Yet another problem brought about by metal tape machines was that of erasure, for because metal tapes have a coercivity that is twice that of chrome tape coatings, they do not lend themselves to easy erasure; at one time it was thought a good idea to improve the erase current, but it was found that in extreme cases the tape was damaged by the rise in temperature brought about by the generation of heat from the head.

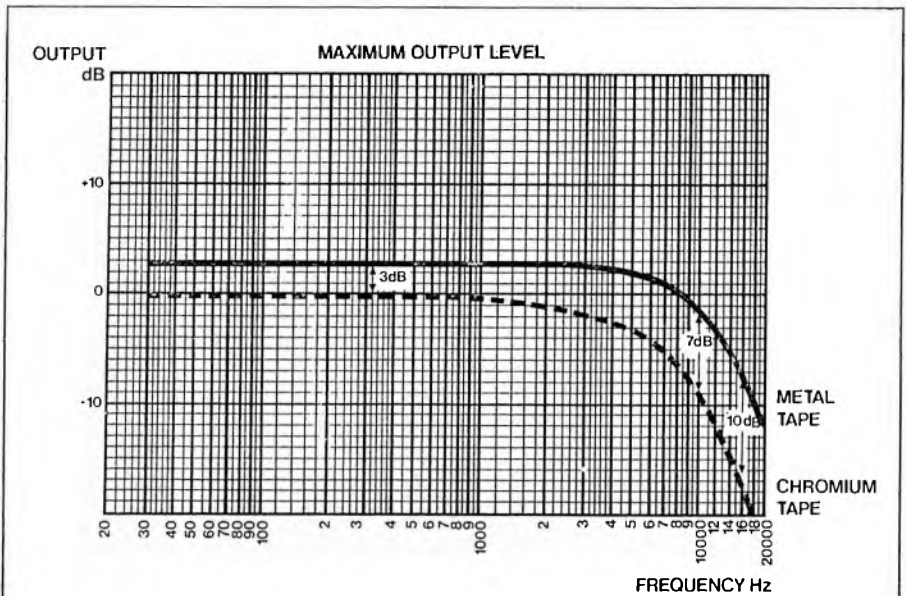


Fig. 3 The graph shows the extended frequency response and increased output of a metal tape over an average chromium tape



Fig. 4 Scotch tape



Fig. 5 Sony metallic tape

The result has been that many of the new designs feature record/playback heads based around Sendust.

It seems then, that 1981 might well become the year of the metal cassette; so what can we expect to see come on the market, and which companies are leading the field in the development of this form of coating that is taking the art of recorded sound into the 1980s?

First off, *Scotch*, the company that made the original breakthrough in the development of this form of coating. Their product is known as Metafine, and is now commercially available in C46 and C60 types as well as C90 lengths. They say that Metafine tape will yield output levels of nearly twice that of the best chrome coatings and quote performance figures of MOL (12.5kHz plus 11dB using 1.5 micron gap heads) and claim that it is possible to increase signal response from present levels (30 to 16000Hz) to 20 to 20000Hz.

Philips have had a number of problems with their first batch but look like making the uprated type commercially available. They say that they have a newly designed cassette housing which makes the cassette more rigid and ensures that the accuracy built in is permanent; all tape guides are now housed in a single component, giving a precise definition of the tape path, and elimination of any high frequency losses caused by azimuth errors.

Another feature of their cassette housing is a floating foil security system, whereby the free space inside the cassette is filled by two corrugated foil inserts. The slight pressure exerted on the tape by the corrugated foils makes tape jamming impossible. The Philips coating is available in C60 and C90 cassettes.

At the time of writing *Sony* has only one length available, that of C46, but there should be other lengths available by the time this is published. The company has undertaken a large research programme into the machines capable of making use of the coating and this may well have a spin-off effect on their coating production.

Ampex has plans for the introduction of a metal tape by early 1981, available in both C60 and C90 lengths. They will be known as the MPT range (MPT-60 & MPT-90) and will feature a special leader tape to provide an effective cleaning action on the machine's heads and guides before the cassette is used.

TDK MA-R is available in C60 lengths at the time of writing, in two types of cassette housing. The first is the more conventional kind known as MA-C60 whilst the other makes use of *TDK's* new range of die-cast zinc cores that are sandwiched between a transparent shell; this is the MA-R series and both have the same tape coating inside.

Unlike other companies *TDK* have gone for a type of coating that is made up of a particle structure composed of small balls using a particle diameter of approximately 300Å strung together in the form of a necklace chain. These are formed using a

reduction method, while in a liquid state, employing sodium borohydride.

The Future

As we go to press *Fuji* metal tapes are not yet available, but should be around by early 1981. They say however that their tape needs some 4dB more than chrome as optimum bias and the MOL at 10kHz is rated at 10dB to 15dB at MOL (15kHz). As with *TDK* the coating is unlike other metal tapes and the company handout states that it is made up of ultra-fine powder of a special alloy of iron and other metals — just what these other metals are, the company is not saying. It should become available in C46 and C60 lengths.

Maxell known as the MX range is available in C60 and C90 cassettes. The company claim a new design of cassette housing and the use of a built-in head cleaner in the form of a special leader tape.

As yet no metal tape has appeared from *BASF* but it is known to be working on a coating and takes the view that until an international standard for metal tape coatings is known they do not expect to produce a product. However by the time this book is published this could all change with C60 and C90 metal cassettes being available.

Nakamichi is available in C60 and C90 lengths. *Nakamichi* tends to buy coating stock from other firms, and then undertakes the packaging itself. This could mean the coating used might be from *TDK*, *Maxell* or *Fuji*.

On the other hand, *Nakamichi* claim that any coating stock used is better than that used by the company providing the stock, which is why the cost per cassette is somewhat higher than average.

These then are the types of metal tape coatings available at the time of writing, but with companies still undertaking development work, the future looks bright. With the new equipment line-up, it will mean an extended frequency range, greater signal output and a better signal-to-noise ratio and a longer head life.

Indeed *3M* take the view that whilst developed as a consumer audio cassette, the technology used will help create a new generation of magnetic media for audio, video, instrumentation, computer and other specialised recording applications as well as facilitating improvements in recording equipment.

Looking towards the future, it is possible that the use of metal tape will come into its own with the advent of digital recording techniques and, whilst these techniques are at the present time only being used in the professional field, we can expect them to become available to the home recordist some time in the next five or six years, if not sooner. Yet another advantage of metal tape coatings is that it could well find a use in the new generation of micro-cassettes that can run at 1½ips or 15/16ips.

The development of metal tape has pushed the field of recording technology wide open and as we move into 1981 we are only at the start of some exciting and interesting developments in this field.

THE CASTLE RANGE OF SPEAKER SYSTEMS

RICHMOND II



KENDAL II



CONWAY IIA



HOWARD II



The Castle Range of Speakers gives fatigue free listening over the full audio range whilst covering the entire variety of musical and speech selection.

Built completely in our own factory, Castle speakers blend modern technology with the traditional values of beauty and craft, and are available in a variety of genuine wood veneers.

RICHMOND II	KENDAL II	CONWAY IIA	HOWARD II
2 SPEAKER SYSTEM	2 SPEAKER SYSTEM	3 SPEAKER SYSTEM	4 SPEAKER SYSTEM
2 WAY	2 WAY	3 WAY	3 WAY
4-8 OHMS	4-8 OHMS	4-8 OHMS	4-8 OHMS
8-30 WATTS	8-40 WATTS	15-100 WATTS	15-150 WATTS

For detailed specifications write to:



**Castle Acoustics
Limited**

SHORTBANK ROAD, SKIPTON
NORTH YORKSHIRE, ENGLAND
TELE: (0756) 5333
TELEX 517618 CASTLE G.

COLOUR TV DEVELOPMENTS

Eric Dowdeswell

The revolution in the design of colour TV receivers continues apace with two main, parallel lines of development, the production by largely automated means of a single circuit board containing almost all the necessary circuitry, and improved picture tubes with a minimum, if any, external adjustments being required before a satisfactory picture is obtained.

The first generation of single board PCBs was exemplified by the Philips KT3, Thorn TX9 and Decca 70 chassis all fabricated on high speed automatic insertion machines to the extent of about 70% of the components, working on the theory that any elimination of human error must reduce time-consuming fault-finding procedures.

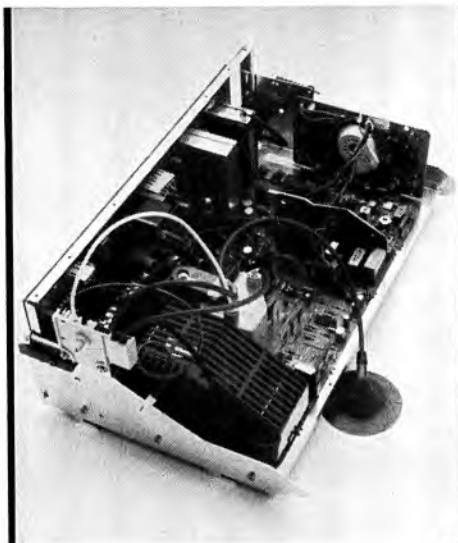
One operative is enough to handle the computerised automatic assembly of the components on to bandoliers, in the right order and with due regard to component polarity where applicable. One fault on a bandolier and the line stops, the computer indicating immediately the faulty item. A second operative can manage the automatic component insertion machine which is fed with the component bandoliers, handling two boards at a time. Sub-panels are made part of the main PCB being separated only after test and inspection.

Needless to say finished boards are then checked out on a computerised machine which indicates any faults, on a printed readout as well as on a visual display unit.

These new designs use a maximum of integrated circuits and a minimum of discrete components inferring a reduction in soldered joints, inter-stage wiring and troublesome connectors. A further spin-off of the new technology is a dramatic reduction in power consumption of these chassis with 60W or so being the order of the day for sets up to 20in screen size. Because of the lower current requirements such sets can now be made to operate from a 12V source, such as a car battery, thus greatly increasing their versatility.

While these new technology TV sets used mainly 90° picture tubes the second generation boards from the automatic component insertion machines, such as the Thorn TX10 chassis, can drive 110° tubes from 22 to 26in screen size, but more about these tubes anon. In the event it has been found possible to drive 22in sets with the first TX9 chassis so now this size receiver is available from Thorn with either chassis.

The TX10's power consumption is quoted as 70W at black level, much less than previous designs, all of which will have been phased out of production by the end of 1980. An even larger proportion of



The separate boards of the TX10 television chassis are constructed as a single board before being assembled into the finished chassis shown here. The EHT protective cover at the bottom is in bright red plastic



A 16in colour TV set atop the ITT Prestel adaptor, both forming the ITT TXV16 terminal. The TV can be used for the reception of the normal TV programmes. The adaptor can be used with an editing keyboard, external tape recorder and has automatic dialling facility

components is now being automatically inserted on the latest boards including large electrolytic capacitors and the like, compared to the earlier boards which were restricted to items like resistors, small capacitors and diodes.

In general all these new chassis employ tuner/IF units that can be plugged straight into the board and thus sets can be produced very easily for the various standards required in the export market without modification. The use of 625-line TV transmissions on VHF is not uncommon abroad although confined to UHF in the UK.

The new 30AX picture tube being manufactured by RCA and Philips is really a tremendous step forward even when compared to the earlier 20AX series which eliminated many of the service engineer's realignment problems when replacing a tube in a customer's set. Now, thanks to the very high and exacting standards of precision to which the 30AX tubes are constructed the whole yoke assembly simply snaps on the tube neck, held with a single screw, with no adjustments at all required.

Several of the magnetic corrections previously made by using external magnets are all taken care of by a single magnetic ring on the final gun assembly inside the tube. Other significant improvements include some to the tube's shadow mask and to the tube face phosphors employed resulting in increased picture brightness, or Hi-Bri feature.

In spite of all the development that has been built into picture tubes over the years to avoid damaging effects inside the tube in the event of a high voltage flashover this possibility still exists with the likelihood of currents reaching a staggering 600A for an extremely short period. In the 30AX tube a 'soft flash' characteristic has reduced the peak value of the current to a mere 40A in the unlikely event of a flashover occurring.

To sum up, the 110° 30AX tube needs no dynamic convergence or colour purity adjustments and the orientation of the raster remains unchanged. One wonders if this will be the last of the conventional TV picture tubes before the wall-hanging flat TV screen arrives!

TV receivers that employ the TX10 chassis and have a teletext or Prestel facility will have the benefit of a new development in video stage design whereby the data display is seen through the broadcast picture by literally punching holes in that picture instead of being merely superimposed upon it. The resultant effect is cleaner, sharper and clearer data displays. This advantage will also apply to other video signal inputs such as those from home computers and TV games.

The remote control of a TV set, whether by means of a cable, ultrasonic or infrared, is a feature that has very rapidly found favour, changing from a luxury into a necessity in a very short time. As usual, one wonders how it has been possible to do without remote control for so many years as there has been a strange gap between the wired remote control and the arrival of, first, ultrasonic and then IR methods.

The crux of the matter, as with so many other recent electronic improvements, has been the extraordinary advances made in the design and production of integrated

circuits and the microprocessor chip. Now a small hand-held keypad can offer a seemingly endless choice of facilities on the TV screen especially when teletext and Prestel are added. The TV set manufacturer can buy a set of three or so IC's which, with a small printed circuit board, can turn the ordinary domestic TV receiver into a veritable information centre.

Many such facilities are built into the more expensive sets made on the Continent and have yet to appear over here, such as the ability to check the programme on another channel by screening a black and white picture in one corner of the screen. Home security surveillance cameras can be interrogated at one or more positions and their pictures shown on the screen. Sets with a VHF/FM radio set as well as a large screen TV are not uncommon abroad but virtually unheard of in the UK, yet when they appear here, as they undoubtedly will, everyone will exclaim 'Oh! what a good idea' and go out and buy one.

Remote control, even though it be a wired system, has even percolated down to monochrome models, although the new Pye 194 12in set has ultrasonic control with just two buttons, a sequential one for channel selection and another for on/stand-by. With all the advertising for the latest small screen colour TV's as being great 'second' sets in the home, their use in the bedroom has predicated the use of remote control, as well as earpieces for personal listening having reasonably long leads, for a change!

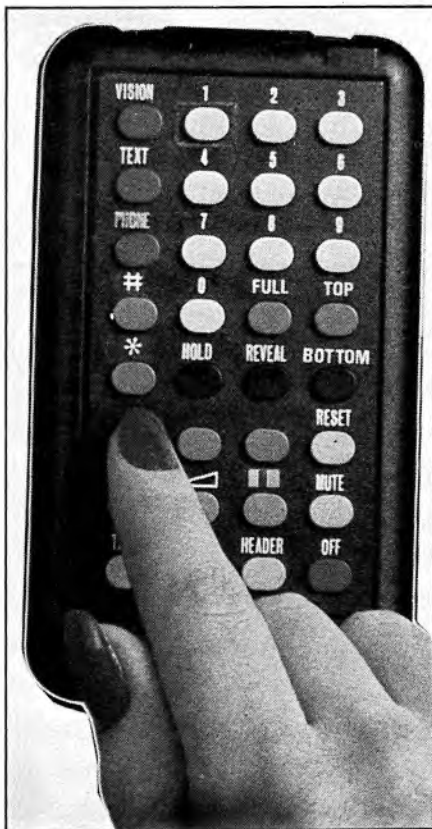
At long last the fact that TV receiver manufacturers are loath to fit a decent loudspeaker into their sets, principally on the petty grounds of economy, is gradually being recognised. The sound being transmitted is of excellent hi fi quality yet it usually reaches our ears via a cheap and nasty 5 x 3in speaker stuck in some odd corner of the cabinet. Pye's model 1826 Studiocolour TV incorporates a special speaker enclosure with two drive units driven from a respectable 10W of audio, with the equivalent 797 in the Philips catalogue. This feature, too, is widespread in European models usually conforming to the DIN 45:500 specification for hi-fi audio equipment.

The progress made in developing existing TV receivers to take advantage of our two data systems, teletext and Prestel, got off to a very slow start indeed with a great deal of the blame for the absence of any suitable sets on the market being laid at the door of the TV set manufacturers. This was a little unreasonable as the companies concerned had a programme for the development and production of teletext sets initially to be followed by teletext/Prestel sets and they have more or less kept to their schedule.

On the Prestel side companies continually ran into problems in satisfying the Post Office's very stringent safety requirements since the equipment had to be connected to their telephone lines.



Looking like almost any other CTV the Pye CT494 has both teletext and Prestel facilities using the keypad on top of the set and an infra-red remote control link



Close-up of a typical remote control keypad used with a TV receiver having Prestel, teletext and normal viewing

Other problems related to the supply of the necessary integrated circuits required for the teletext/Prestel decoder boards.

Since teletext-equipped TV sets do not need any special installation or the payment of any extra charges for the teletext service it is difficult to get any clear idea of the number of such sets that have been sold to date but it certainly runs into tens of thousands and the demand is increasing. On the other hand, connecting Prestel sets to the telephone line and the various charges made for the service by the Post Office mean that an accurate check can be kept on the number of such sets installed and, in fact, the Prestel service itself gives the daily position in some

detail. At the time of writing the figure is less than 5000 so Prestel has a very long way to go before it gets off the ground in spite of the large sums of money and the many demonstrations already lavished on the system.

Of the figure of around 5000 Prestel sets installed a big majority is with business organisations rather than with the domestic consumer who, so far, has shown little interest in Prestel. This is in some part due to the relatively high cost of a Prestel TV receiver which, normally, will also include teletext facilities since much of the additional circuitry is common to both systems.

The holdup in the supply of IC's for Prestel/teletext sets has now been largely overcome with firms like Mullard investing £250 000 in new plant and equipment and testing facilities at its semiconductor installation at Southampton. The 'kit' of IC's is usually just three MOS-LSI chips plus a handful of interface components. A small printed circuit board about 6 x 4in is all that is required for the decoder which can obviously find a home inside almost any CTV cabinet.

Although, initially, teletext was fitted to the top-of-the-market 26in colour sets it has now been realised that the modern small-screen colour receiver down to 14in screen size can resolve the data transmission perfectly well especially where 'double height' characters can be selected on the keypad. Thus the cost of a teletext-equipped TV set has fallen markedly in recent times. The modern, improved in-line picture tubes now fitted to these small sets contributes in no small way to the increased picture quality.

An additional attraction for the potential domestic customer for teletext, compared to Prestel, is that he has the choice of three teletext programmes, or magazines, the BBC's Ceefax on BBC1 and 2 plus IBA's Oracle on ITV channels with, presumably, a fourth option on the forthcoming ITV2 channel.

Adaptors for receiving teletext TV receiver are becoming more readily available in a rapidly expanding field. The PO-approved Labgear model has the added advantage of providing remote control facilities for a receiver not already so equipped. In all cases the adaptor is connected between the aerial lead and the aerial socket of the TV set, as with the many TV games on the market. Makers of teletext adaptors can also usually supply a model for receiving Prestel information.

For the retail TV dealer an adaptor is a very cheap way of demonstrating teletext to customers by feeding the output of the adaptor to almost any TV receiver in the showroom without requiring to hold a large stock of teletext-equipped sets. The adaptor can be arranged to show certain teletext pages on sets in a showroom when normally closed for business, another attraction for the potential customer.

After a test period, Prestel has now spread to a number of cities in the UK.

LOUDSPEAKER TECHNOLOGY

Vivian Capel

The loudspeaker has always been considered the weakest link in the audio chain, and with the possible exception of the listening room which is not usually regarded as part of the hi-fi system, this is still probably true. We say 'probably' because it can no longer be said with certainty. When reproduction is possible as it now is, that allows comparison of the subtle differences between divers turntables and speaker cables, the ability to reproduce detail accurately must indeed be high.

Yet development continues, as it must do, to keep up with the advances in tape, cartridge and amplifier technology, and to try to find ways of getting round the limitations imposed by the basic laws of physics. To the uninitiated a loudspeaker is just a wooden box into which have been fixed a number of drive units along with a crossover circuit. Nothing to it really, anyone could build one in a few evenings if he is handy at carpentry. Maybe he could, providing he followed closely the details of a carefully worked-out design using only the specified components.

It is the producing of the design, the meticulous attention to all the interrelated parameters, the weighing up of conflicting requirements, the prototype building, testing and modifying and further testing that is the major task. Some manufacturers indeed just put speakers in a box and hope for the best; they rarely, if ever, get it! Others take great pains to get all the factors right, even using computers to make sure of the results. We will take a look at some of the problems that beset the designer and the current trends for overcoming them.

Resonance

A basic requirement of any speaker system is that it should respond equally to all the frequencies within its range, and that the range should embrace the full audio spectrum. Resonance, that natural property possessed by all physical objects whereby they vibrate more vigorously at one frequency than any other, is the big bugbear of all audio systems designers. If uncontrolled, the resonance of driver cones, enclosed air and enclosure panels would make nonsense of the flat-response requirement.

The principal resonance is that of the bass driver cone. At one time this was largely ignored as the bass emphasis it produced was considered desirable by many. It was soon realised that boomy one-note bass was unnatural and something had to be done about it. However, it still could be turned to ad-

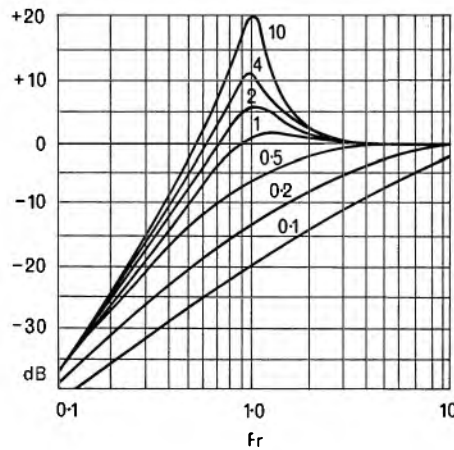


Fig. 1 The effect of various values of Q on the response at the resonant frequency of the speaker, f_r

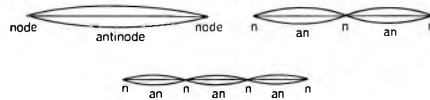


Fig. 2 Motion of a vibrating body showing the nodes and antinodes at fundamental, second and third harmonics

vantage in extending the bass response, providing it was well damped.

Below the bass resonant point the output falls rapidly, so it marks the practical limit of the bass response. If low bass is required, the bass resonance must be lowered. This can be done by increasing the mass of the cone and coil, or decreasing the stiffness against which it operates. Increasing the mass is easy enough, but this also impedes the ability to respond to transients and higher frequencies which means the cross-over frequency must be lowered. The cone spider and surround can be made more compliant, but there is a limit the designer can go otherwise the coil would fail to remain in the centre of the magnetic gap and start scraping the pole-pieces.

A further factor is the volume of air contained in the enclosure. This has its own resonant frequency and also, in the

case of a totally enclosed box, adds to the stiffness against which the cone must work, raising the resonant frequency of the cone from what it would be in free air. The smaller the air volume, the more it must be compressed by a given cone size and displacement, so the stiffer it will be and the higher the resonant frequency. It follows from this that cone size also influences stiffness as the larger the cone, the more air it will compress.

Bass drivers that are used in totally enclosed boxes rely on the air's springiness to exercise cone control and therefore have much softer suspensions than others. So, the total stiffness is reduced thus lowering the resonant frequency. This is known as "acoustic suspension" and is partly responsible for the success of the enclosed-box speaker, or infinite baffle as it is known. However, these drivers could be damaged if used in other than sealed enclosures.

There is of course a mathematical relationship between these various factors, the stiffness of the air is calculated by the formula

$$\frac{A^2}{V}$$

where A is the area of the cone and V the volume of the box. Resonant frequency is given by

$$\sqrt{\frac{\text{Stiffness}}{\text{Mass}}}$$

and therefore by

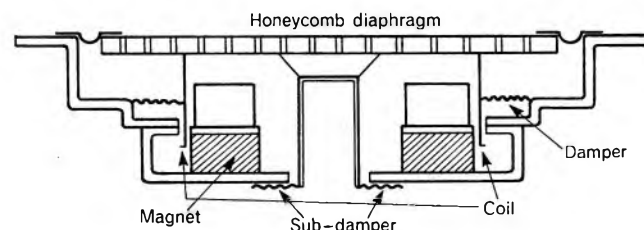
$$\sqrt{\frac{A^2}{VM}}$$

This ignores the stiffness of the speaker surround and centering device which in the case of an acoustic suspension speaker will be small in comparison with that of the air.

Damping

When the driver cone is in motion it generates a current in the coil windings that opposes the original signal current. This sets up an opposing field which tries to impede the coil motion. When the motion is greater than normal for the same input current as it is at resonance, the opposing current (hence braking action), is

Fig. 3 The cross-section of the new Technics honeycomb speaker, a 12-inch bass driver unit as incorporated in the SB-10 model



also greater. Thus the resonant peak is reduced.

It is clear that a major factor governing this damping is the effectiveness of the magnetic motor system, which is the product of the flux density and length of the coil. The more effective it is, the greater the damping. There are factors that affect it adversely too, one is the mass as the greater it is, the more the braking effort needed. Another is the resistance of the coil which limits the reverse current. The frequency of resonance also plays a part, as the lower it is, the easier it is to brake.

Putting all these parameters together we can calculate a coefficient of damping

$$Q = \frac{2\pi FMR}{(Bl)^2}$$

where F = resonant frequency,

M = mass,

R = coil resistance,

B = flux density, and

l = length of coil.

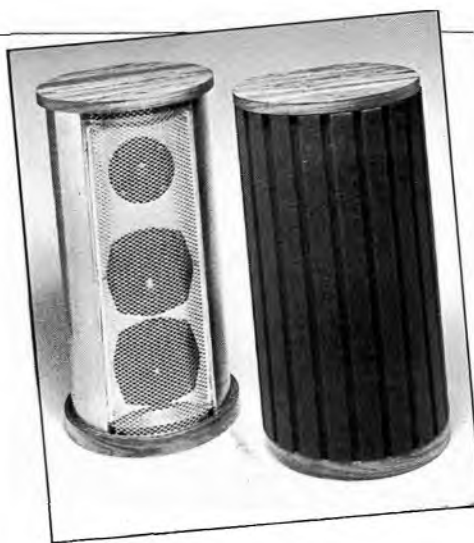
Ideally this should equal unity or just below, in which case the response at the resonant frequency will be the same as above it. The system is then said to be critically damped. If the Q is higher, damping is insufficient and there will be a peak at resonance, the amplitude depending on the Q. For a Q of 2, the peak will be 6dB and for a Q of 4 it will be 12dB.

Supposing now the motor system is extra efficient, then Q's of much less than unity will result in overdamping and the bass response will begin to roll off above the resonant frequency. Some makers choose to do this to avoid the slight hump that appears immediately above the resonant frequency when the Q is 1, and also to give a smoother and gentler slope, albeit at the expense of a little bass.

Air Resonances

As previously mentioned the air inside the enclosure has its own resonances, three in fact, corresponding to the three internal dimensions. Each of these can produce peaks in the response, although the front-to-back one will be excited most because of the speaker's position. Should any of the dimensions be similar or divisible by another, those resonances will reinforce each other and give a marked coloration at that frequency.

Vibrating objects do so according to a pattern, with some sections moving vigorously and others at a standstill, such points being termed the antinodes and nodes respectively. At the fundamental frequency, the antinodes occur at the middle and the nodes at the end of the object, as can be observed by twanging an elastic band. It is at the antinodal point of maximum motion that damping is most effective. Hence a curtain of thick wadding across the centre of the enclosure in all three planes will go a long way toward suppressing the internal resonances. However for the second harmonic, the antinodes are at the third and two-thirds position, and for higher harmonics they



The Rogers JR150 speaker of cylindrical design, with and without its foam covering

are more numerous still. The simplest solution is to fill most of the internal volume with wadding, and this is the practice followed by many manufacturers, especially for their smaller models.

There is another effect of filling the enclosure with dampening material. When sound travels through air, the half-cycles of high pressure generate heat which are almost immediately cooled by the following low pressure regions. Heat given off to the surroundings is therefore zero. However, a ripple of heat accompanies each high pressure region as it travels and has the effect of augmenting it and its velocity. This mode of propagation in air is called adiabatic.

Now the BAF wadding usually used in enclosures is not a particularly good heat conductor, but it conducts better than air. So when a sound wave travels through it, the heat differences tend to merge and even out by conduction. The propagation now becomes isothermic and the velocity decreases. Reduced sound velocity in an enclosure has the same effect as an increase in size, so the air volume is effectively increased. A fully isothermal state would produce a sound velocity reduction of $\sqrt{2}$ which would lower the resonant frequency to about 0.833 of its former value. However, owing to the thermal nature of the wadding which is mainly intended to dampen sound waves, a perfectly isothermal condition is not achieved. The effect does give a useful bonus of performance equivalent to a slightly larger enclosure, but the designer must include it in his calculations otherwise they will come out wrong. He must also allow for the space occupied by the drivers themselves, the crossover unit, and struts and bracing, when working out the effective volume.

Other problems arise in connection with the enclosure and the behaviour of the internal air volume. One is that a pressure wave is reflected from the rear of the cabinet to arrive back at the cone slightly

later than the cone movement that caused it. This can influence the subsequent cone excursion, and as many cone materials such as paper are transparent to sound waves, it can pass right through and be radiated out into the listening room. If the frequency is such that the delay is half a wavelength or multiples, there will be a partial cancellation, but if the delay is a complete wavelength there will be reinforcement. Thus is produced a series of troughs and peaks throughout the response range.

Another problem is that of the enclosure panels themselves resonating at their own natural frequency. Even at other frequencies, if they radiate sound, the effect is to blur and confuse that radiated from the driver cones.

Both these conditions are treated by lining the enclosure panels with sound-deadening material which is much denser than that used for filling. Any reflections have to pass through it twice and so are greatly attenuated. It also inhibits panel vibration. Some authorities say it is best to use panels of medium thickness but heavy damped with material, while others prefer thick, braced panelling.

A completely different solution is to be found in the Rogers loudspeakers which are cylindrical in shape. The front section is flattened to facilitate mounting the drivers thus giving a D cross-section. Material is heavy-gauge aluminium and the wooden end-pieces which form the top and bottom are held under tension by means of a screwed rod running through their centres. Elimination of parallel surfaces except the top and bottom, reduces resonances and reflected waves. The casing is also internally damped to minimise direct radiation from it.

Cone Behaviour

As the frequency ascends from resonance, cone excursions, hence also velocity, diminish at the rate of 12dB per octave, because of cone inertia resisting the increasingly rapid changes of direction. It might be expected that the output would consequently drop, but fortuitously another effect balances it out. At low frequencies the air in front of the cone has time to be pushed out of the way to one side and so does not properly load it, but as the frequency rises the loading increases and more power is radiated. Thus the output remains substantially constant until a point is reached where the loading is optimum. Above this there is no compensating effect and the output falls.

The frequency at which output begins to fall off is when the wavelength equals half the cone circumference and can be calculated from the formula: $f = \frac{2240}{\pi d}$

where d is the diameter of the cone in ft. So for a 6-inch cone the roll-off frequency is 1426Hz, and for an 8-inch cone, 1070Hz. It is clear something must be done to continue the output beyond these points!

If the cone profile is made curved instead of straight, the middle portions tend to vibrate at higher frequencies independently of the outer regions. Thus the cone diameter is effectively reduced at these frequencies as is also the mass. So the response is extended higher than it would otherwise be and the crossover frequency can be selected to fall within the linear part of its range as well as that of the chosen tweeter.

Although cone flexure in this case serves a useful purpose, it is by no means an unmixed blessing, in fact it is generally regarded as an evil. Under stress of the applied force at its centre, the cone will flex, buckle and carry waves over its surface, resulting in all manner of distortions and frequency irregularities. Rigidity to eliminate such break-ups is highly desirable but difficult to achieve in practice owing to the need to keep the mass below a certain level. While a high mass lowers the resonant frequency, it also restricts the upper portion of the range and reduces efficiency so that a high-power electrical input is needed to produce a given sound output. This in turn generates excess heat in the coil windings with the risk of burning out at high power levels.

The result has been a quest extending over many years to find new cone materials that are both rigid and light. One of the early ventures was the GEC metal-coned speaker, then there was the Leak polystyrene sandwich, with aluminium foil on either side of a polystyrene core.

Bextrene is another material that has been widely used. Many of these, although appearing ideal at first, have later been found to produce resonances and need damping treatment which has been applied by painting on various deadening solutions such as plastiflex. However, these coatings increase the mass and so partially reduce the original advantage of the material. Ironically, paper has proved to be one of the best self-damping materials and is re-gaining favour in some circles, in spite of its poor resistance to flexure and break-up.

There are some promising ideas coming on to the market just now. One is a new material, polypropylene which is rigid, light and needs no damping; another is the honeycomb disc speaker developed by Technics. This uses a type of construction long used by the aircraft industry where lightness and rigidity is an obvious necessity. The honeycomb consists of hexagonal cells with aluminium walls, surfaced on both sides with aluminium foil. Rigidity of more than 1000 times that of paper for the same weight is claimed. Normal honeycomb construction possesses a directional rigidity characteristic by which it is easier to bend in one direction than the other. This is undesirable for a speaker element, so an axial-symmetry honeycomb has been developed which has a uniform strength in all directions. The appearance is somewhat like a circular doily. Being flat, the element is more



In the Technics SB-10 speaker the bass driver unit at the bottom has a flat diaphragm of honeycomb construction in place of the conventional cone

accurately described as a diaphragm rather than a cone which enables it to operate as a true piston.

A flat diaphragm has a number of advantages over a cone. One is the elimination of cavity effect. This is produced by the semi-enclosed body of air contained in the cone and which has a resonant frequency of its own. Another is that the driving elements of all the units, bass, mid-range, and treble, are in the same plane. This is not so with coned drivers, as the cone depth differs between them. The effect is to produce delays in sound arriving from the deeper cones, hence also phase differences which were not present in the electrical signal. Where frequencies overlap near the crossover point, there could be interference effects if the distance difference approaches a quarter wavelength or more. As a quarter wavelength of 5kHz, a popular crossover frequency, is under 0.7-inch this could easily be so.

One method of overcoming this is to stagger the mounting positions of the drivers so that their acoustic centres lie in the same plane. This has given rise in recent years to the rather cumbersome-looking stepped cabinets of what have been termed the **linear phase loudspeakers**. There is some difference of opinion as to whether there is any audible improvement, but this could be said for many claimed hi-fi improvements.

Node and antinode patterns enter into the picture when considering diaphragm behaviour. Their disposition varies with the frequency being reproduced but for the lower frequencies, the nodal position of minimum movement is a concentric ring about a third the way in from the edge. If drive can be applied at or near the nodal point, this mode of vibration with its coloration can be eliminated. Hence in the Technics honeycomb a large coil, 6¾-inches in diameter drives the diaphragm at

this point instead of the usual small coil at the centre.

Mid-range and Treble

It is obviously essential that another unit takes over before the bass driver reaches the non-linear part of its response curve, so its response largely governs the choice of crossover frequency. Large cones, necessary for high power handling, will as we have seen, start to fall off at a lower point than smaller ones, as will those with a large mass or low resonant frequency. A rigid cone, although desirable for its low coloration, will also have a limited upper range because of the absence of flexing, hence independent operation of the cone centre, at high frequencies. The rigid honeycomb speaker for example, has a crossover at 400Hz, which is much lower than normal.

As with the bass unit, the lowest practical limit of a tweeter is its resonant frequency which is generally around 1kHz. The crossover must therefore be well above this and is usually above 3kHz. So for the bass unit to cover up to and beyond this point it must have the characteristics noted above that will also limit its lower range. Speakers having an extended bass range must therefore employ a mid-range unit to fill in between the bass unit and the tweeter. Crossover frequencies vary considerably, but usually are around 3kHz for two-unit systems and 1kHz and 5kHz for three-unit ones.

The requirements for a tweeter are that the moving element should have low mass and be free from resonances other than its basic one which should be low enough to be excluded from the working part of its range. Many different principles have been tried to achieve these and in addition to give a spread of sound instead of a narrow beam which is the natural propagation mode of high frequencies. Of the moving-coil units, the cone is giving way to the dome which gives better dispersion. Electrostatics have a very light diaphragm controlled over its whole area by an electric charge which varies with the signal and so gives excellent HF and transient response, with freedom from coloration. Similar results are obtained from isodynamic units which also have a light totally-controlled diaphragm, but in this case by a magnetic field interacting with signal conductors etched on the diaphragm.

There are, in addition, ribbon tweeters which use a single ribbon of aluminium foil controlled by a powerful magnetic field. Also capable of excellent results, these have a rather low output and need horn loading to achieve maximum transfer of energy to the air. Another interesting type is the air-motion transformer developed by Heil which employs a concertina action that squeezes air from between the pleats of a flexible diaphragm and thus produces sound with a high degree of efficiency.

Mid-range units are usually conventional moving-coil transducers with

some using the same principles as described for tweeters but designed for the lower frequency range. Strangely, more interest is generally focussed on the bass unit and tweeter than the mid-range unit, perhaps, because so many speakers do not include one, it is considered dispensable and unimportant. Actually, it handles the largest portion of the musical range and covers the region around 2kHz to which

components in the network.

In some respects a sharp drop is desirable as this keeps mid-range and tweeter resonances well out of the pass-band, but it adds to the complexities of the circuit requiring more frequency-selective components. These can combine to produce electrical resonance which has a similar effect as the mechanical variety. Tone-burst testing over a range of frequencies often reveals oscillatory tendencies around the crossover frequencies due to the active components.

As the crossover circuit interposes components between the drivers and the amplifier, the damping of spurious cone movement by the amplifier output circuit is impaired. This is worse for the third and fourth order networks than the lower orders because there are more serious components. Another factor the designer must consider is the varying impedance of the drivers over their range, especially at and near resonance. This affects the electrical value of the filter components. The network then, is not just a "black box" that can be used with any collection of drivers although such are sold for the DIY speaker builder. It should be designed for a particular combination of drivers, and even after the theoretical design has been carried out listening and instrument testing may require modification of certain component values to achieve an optimum result.

The best course is to eliminate the speaker crossover network completely by using separate amplifiers to drive each unit such as employed in the Philips motional feedback speaker and the Boothroyd Meridian, but this, of course, is expensive. Frequency separation at the pre-amplifier stage is easier and less fraught with undesirable side-effects.

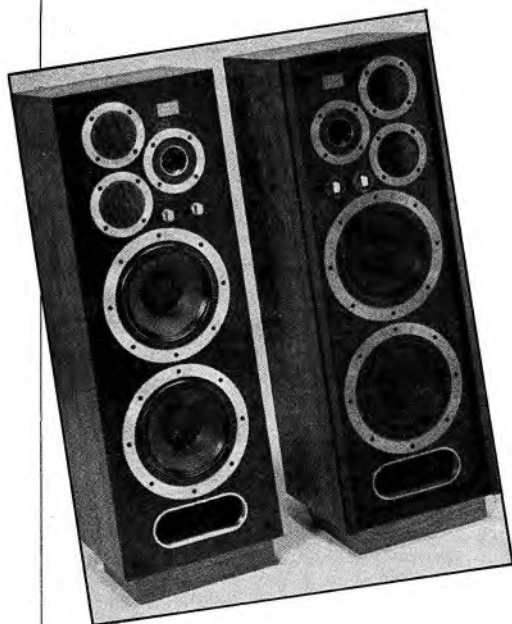
A cheaper alternative is to use a piezo-electric tweeter. These work on the principle that certain ceramics flex and bend when subjected to a voltage. One characteristic is that the impedance is high and increases rapidly at low frequencies. One model, the Motorola KSN6010, rises from 75 ohms at 20kHz to 1000 ohms at 1kHz. Response is therefore so low at the lower frequencies that a filter network is not required, so it can be connected directly across the bass unit. Early piezo-electric devices were fragile, unreliable, and with a response anything but flat. The units developed by Motorola although not perfect in the latter respect, are a big improvement and may well be worth consideration for hi-fi applications especially if further improvements are achieved.

Conclusion

In this consideration we have only had space to deal with the most popular type of speaker enclosure, the sealed box or infinite baffle. The factors influencing performance have been seen to be complex and inter-related, which is probably why, among a plethora of fair and indifferent speakers, the really good ones are few. Yet

this is the simplest type to design; the bass-reflex with its auxiliary air-mass around the port and two resonances is much more difficult to get right as is the transmission-line and folded horn.

Full-range electrostatic speakers such as the famous Quad and the more recent Acoustat and Dayton Wright are untroubled by most of the problems outlined here, but have a few of their own. Full-range isodynamics would appear to hold much promise, but have not as yet been developed to this stage. The nearest so far is the PWB Dyna-X100 which goes down to 450Hz and uses a moving-coil bass driver to handle the lower frequencies.



These massive Wharfedale E90 speakers are rated at 140W each, comprising two each bass and mid-range drivers, horn loaded tweeter and contour controls. Note speakers are a mirror image pair

the human ears are most sensitive. Any defects will therefore certainly show up.

Not only must all units be matched as to their frequency range, but also their sensitivity, otherwise one part of the spectrum will be emphasised or depressed. Dissimilar sensitivities are sometimes compensated for by attenuation in the crossover network; often variable attenuators are provided so that the user can adjust to taste or room acoustics.

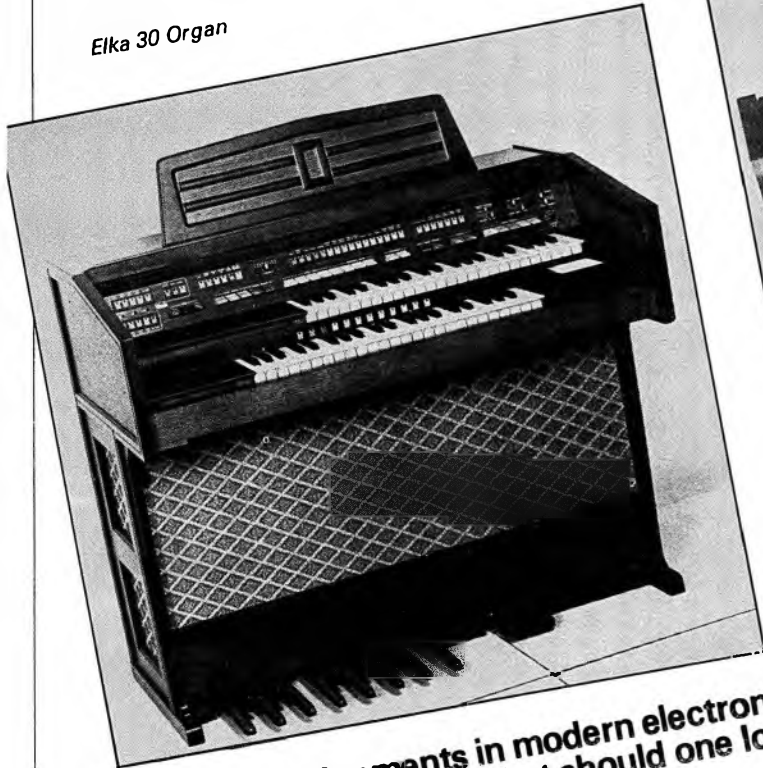
The Crossover Network

The circuit that divides the signal into frequency bands to feed the different drivers is a necessary evil as it introduces many problems of its own. It does not give an abrupt cut-off at the specified frequency but causes the response to slope away at either side. Thus both drivers are fed with a diminishing amplitude of signal as the frequency goes beyond the crossover point.

The simplest circuit, known as a first-order filter, gives a slope of 6dB per octave, the second-order filter provides attenuation of 12dB per octave, third-order gives 18dB, and fourth-order 24dB. In addition, any irregularities in the frequency response in any of the drivers is sometimes compensated by additional

PLAY FOR TODAY

Elka 30 Organ



Lowrey Debut L65



Recent developments in modern electronic organ technology have revolutionised home music making. What should one look for when buying one of these sophisticated instruments?

In the history of music making on keyboard instruments, it has never before been possible for the player, whether experienced musician or beginner, to produce such a rich variety of sounds, using so few fingers, as he can on the modern electronic organ.

This extremely versatile instrument, the origins and development of which were described in the 1980 edition of this handbook, has advanced rapidly, both technically and in popularity in the last two or three years. Today most towns in Britain boast a well established organ shop stocked with a comprehensive selection of new and second hand instruments ranging from small compact spinets costing on the right side of £500, to much larger and grander models costing anything up to £8,000. Irrespective of price they have one thing in common; once the intricacies of their various controls have been mastered they can make the player feel like an André Previn presiding over a full-blown orchestra.

Certainly the most potent factor contributing to the progress and greatly increased popularity of the organ has been the development, in recent years, of what

are loosely called 'automatics'. Designed primarily with the beginner in mind, 'automatics' have made it possible for almost anybody who can pick out a melody with the index finger of his right hand to produce a correctly chorded and rhythmically accurate bass accompaniment by simply depressing a note on the lower keyboard with one finger of his left hand. If he wishes, he can also depress a 'memory' tab which will ensure that the chord originally selected continues to be played automatically until a different chord is chosen. He can choose from a number of different bass patterns, including the popular 'walking' bass which, in conjunction with the automatic rhythm system, will give a very professional sounding accompaniment. So ingenious are these automatic systems, which include pedal accompaniments as well as the ability to transfer instantly into the minor key, that, provided he follows the simple instructions provided, even the complete beginner can produce results which, if they do not make him the envy of his more musically experienced friends, will certainly earn him the plaudits of his family. They will also give him a great deal of

satisfaction and encourage him to further effort.

'Automatics'

Not unnaturally 'automatics' were not received with any great enthusiasm by some purists, especially those for whom the charm of the organ was personified by the mighty Wurlitzers and Comptons rising majestically out of the cinema organ pits in the thirties, not to mention the grandeur of the many fine cathedral and church organs which are, of course, tradition at its best. They looked upon such radical departures as automatic accompaniments and one-finger chords with a jaundiced eye. It was felt that such 'gimmicks' were not only unnecessary but that any 'real' organist should be able to do without the aid of such toys.

Despite this opposition, the trend towards greater sophistication in terms of built-in playing aids has moved steadily ahead, and even some of the most confirmed traditionalists are beginning to accord them some degree of recognition if only on account of their obvious versatility. Perhaps the most significant aspect of this gradual acceptance is the fact that many

top-rank organists now employ electronic wizardries to such brilliant effect in public performances that it is often difficult to determine where human and automatic methods of playing begin and end.

Today, largely as a result of these technical advances and the consequent extent to which they have widened the appeal of the electronic organ as a 'personal' instrument, tastes in musical requirements have broadened. In addition to the traditional organ tones which characterised the earlier models, there is now a demand for a more orchestral sound.

The modern instrument is now designed to reproduce, as faithfully as possible, the instruments of an entire orchestra over which the player presides in the role of a conductor, harnessing the available sounds to create whatever musical picture he chooses.

The electronic organ perhaps more than any other instrument offers the player an immense amount of scope for personal expression and, unlike the piano, its sustained and more measured base chords allow more time for concentration on the right hand as well as for operation of the various stops and controls. It can be played by people of all age groups and is an excellent and enjoyable source of relaxation as well as an absorbing pastime.

Making a choice

Undoubtedly the most difficult obstacle facing the potential buyer — and very often those with more experience — is the problem of making a choice from the large number of instruments available — there were something in excess of 72 different models on the market at the last count — and familiarising oneself with the bewildering array of playing facilities with which they are equipped. Many manufacturers use different names and descriptions for features which, though they may look dissimilar and employ different controls, perform much the same functions. This coupled with the fact that they all include special features of their own exclusive and patented design, makes the problem of comparison between one instrument and another extremely difficult. A glance at any manufacturer's sales leaflets will quickly show how much detail there is to absorb and, more importantly, to understand.

Although they may look much the same outwardly, organs vary considerably in such aspects as comprehensiveness of voicing, positioning and effectiveness of controls and, not least, in the general quality of their overall finish. Although attention to these features is essential, by far the most important consideration is the quality of sound one can obtain from the instrument. Sound is very much a question of personal taste and of no instrument is this more true than the organ. To some people, the really satisfying sounds are those produced by the church or theatre organs in which the soft and lush tones of



Typical dealer showroom — Riverside Organ Studios, Kingston-upon-Thames.

tibias and flutes predominate, while to others, the sharper more incisive tones of orchestral instruments are more acceptable. Many prefer the more synthesised sounds associated with the space age. Most manufacturers do their best to cater for all these requirements in one instrument but only the buyer can decide whether their 'best' will suit his particular ear.

How then should you go about the complicated business of buying an organ? Firstly it pays, before you begin your search in earnest, to spend a short time familiarising yourself with the basic controls on an instrument and the way in which they function. If this can be done privately in advance so much the better since, when you visit the dealer, you will know what you are looking for and not get indigestion trying to assimilate too many facts at one time. Secondly, it is wise to visit more than one showroom, in fact, as many as possible and to have as many models in your price range demonstrated to you as you can.

All reputable dealers can be relied upon to look after your interests and to give you fair and honest advice — after all, they hope to see you back. To enter their premises can, for the uninitiated, prove something of a trial. Not only will you face the problem of trying to assimilate a large volume of information in a very short space of time but your judgement may well be influenced by the delightful music which will be produced with considerable skill by the salesman demonstrating the instrument. You will also, if he is up to his job, be invited to try the organ yourself while he leans over and deftly operates the various stops from a position somewhere behind your shoulder. This point is where it is most essential to keep your feet, not so much on the pedals — which you won't find easy anyway —

but 'firmly on the ground'. It is all too easy to get carried away on the cascade of beautiful music you are apparently producing all on your very own and to fail to appreciate that to achieve the same standard on your own account, you will have to not only get used to the keyboard but also learn to manipulate the controls at the same time and with the same degree of dexterity.

At this stage you will have had little opportunity to judge whether the sound, although agreeable, is really of the quality you could live with. The golden rule is to remember that you will be living with and playing the instrument for a long time and it therefore will pay to look and hear it well before you leap.

What to look for

Do not, if you can possibly avoid it, allow your judgement to be influenced by the attractive outward trappings of many organs such as rows of coloured lights, clusters of shining knobs and switches etc. Although these may be extremely functional and add considerably to the instrument's general appearance of luxury, it does not follow that its musical performance will match its elegant appearance. Do the various voices, for example, produce a reasonably accurate rendering of the instrumental sounds they claim to represent? Are the various controls conveniently placed so that you can reach them easily while playing? Does the rhythm section sound authentic or like a tin box being beaten with a stick? If your tastes lean towards what one might call the lush type of music, you will appreciate the inclusion of a good multi-string section providing the smooth sound of massed violins and cellos as exemplified by the late Mantovani. If, on the other hand, you favour something more modern you will want to ensure that facilities for producing

such sounds as Wah Wah, Glide, Telstar, cosmic etc, are included.

Organ design has reached such an advanced stage of sophistication that it would be impossible to list all the many desirable features introduced by manufacturers to aid the player both in terms of technique and musical enjoyment. As mentioned earlier, there is another factor which, though it does not affect the issue musically, is none the less important, and that is, the overall appearance of the instrument and the quality of its finish. It will become a part of your furniture which is just one more reason why you should exercise the greatest care in its selection.

Even allowing for the ravages of inflation, the average organ, whatever its size, is still a relatively expensive piece of equipment chiefly on account of the sophisticated circuitry upon which it relies for its high standards of performance. When investing in such a costly item therefore, it is, perhaps, wiser to start with something modest in size which you will be able to exchange for something more ambitious at a later date. There is always a large number of 'used' models available and, if you can buy for cash instead of having to part exchange, there are many bargains to be had especially in the private sector.

It is certainly wise when buying to ensure (whatever price you are prepared to pay) that the organ is equipped with automatic accompaniment facilities. Their presence in the specification can materially affect the instrument's re-sale value and, consequently, the terms you are likely to get when offering it in part exchange for something larger and more comprehensive at a later date. The truth of this is all too well illustrated by the number of fine 'used' organs currently to be found literally 'on the shelf' in dealers' showrooms. Despite the fact that they originally cost a great deal of money and were luxury models in their class, they cannot command a quarter of their

original price simply because they are not fitted with 'automatics'.

It is as well to remember that the arrival of the silicon chip has revolutionised organ design and the last word in design today may well prove to be 'old hat' tomorrow and, therefore, difficult to exchange.

At one time, smaller organs were very much the poor relations. Their specifications were somewhat limited, their tone left much to be desired and their finish was, to say the least, of questionable quality. Today, this situation has completely changed. A visit to any promotional demonstration will show that the less expensive models prove to be not only very well equipped technically but to have a sound quality which, when cost is taken into account, in no way suffers when compared with their more expensive brethren. Even in these days of inflated prices, it is surprising how much you get for your money.

Synthesisers

If finances preclude the possibility of trading up to something more ambitious, or if space limitations are a problem, you can always consider the possibilities of a synthesiser which will give all that you need in terms of those extra sounds which, for obvious reasons, you cannot expect in the lower priced organs. Synthesisers come in all shapes and sizes, can be plugged directly in to the organ, and are usually of a size which enables them to sit conveniently on top of the instrument within easy reach of the right hand. Costing between £250 and £800 plus, they can add considerably to an organ's versatility and, if coupled either through the organ's speaker system or through a suitable tone cabinet, produce sounds worthy of a much more expensive instrument.

Finally, how much initial musical knowledge do you need to launch yourself into this fascinating and very satisfying way of making music? The short answer is that if you've had any instruction on musical notation at all you already have a

firm base upon which to build. If you can find time to take advantage of the newest teaching methods, it will not be long before you can begin to take full advantage of the self expression which this versatile instrument offers. Nearly every dealer provides teaching facilities and there are a number of self-teaching publications on the market which, as far as simplicity and maintenance of interest are concerned, are streets ahead of the more traditional instructional literature. One of the great advantages of learning the organ is that by simply using a pair of headphones you can hear everything you play without interrupting other people in the room since the sound is automatically cut off from the main speakers.

For those coming into contact with the organ scene for the first time there are plenty of magazines which carry news and views on all aspects of organ playing, test current and new models, and contain current retail prices and reviews of the latest developments. For those contemplating purchasing an instrument, these publications help considerably in assessing the merits of the different models available. One particularly useful publication in this context, from which the buyer can glean many useful hints, is a book entitled *The Magic of the Organ* by Roy Neal, believed to be the first of its kind designed specifically to aid the potential buyer in making the right choice.

With the wide choice of new and secondhand instruments available in all price brackets, and the generous terms offered by most dealers, the task of finding something that suits the pocket as well as the ear is by no means as difficult as might be thought. To echo the words of the author of the previous article on organs in this year book, 'yer gets wot yer pays fer'. Provided, however, that you are prepared to be cautious and to take the trouble to look and listen until you find exactly the right instrument for your personal needs, its purchase will prove to be most satisfying and rewarding.

DIGITAL AUDIO

Adrian Hope

It is now just over a hundred years since Thomas Alva Edison first recorded sound on a hard cylinder covered with soft tin foil or wax and tracked by a stylus. Over the last century the technology of recording has advanced consistently. The cylinder gave way to the shellac 78rpm disc, which in turn gave way to the 33 $\frac{1}{3}$ rpm microgroove LP, first in mono, then in stereo and surround sound.

In parallel with these advances, an invention by the Dane Valdemar Poulsen at the turn of the last century has become a part of our everyday life. Poulsen was the first to achieve real success with a system for recording sound magnetically. He used metal strip but this later gave way to metal wire and finally to the magnetically coated plastic tape we use today for business, education and entertainment. Although every new advance in these fields has brought us further from those original pioneering systems of the last century, every reproduction system used has had one basic feature in common. Everything, so far, has been **analogue**. Now, as we move into the 80's we are to see a whole new generation of systems which operate on a quite different principle. These will be **digital**.

Sounds digital

So what is digital sound? For that matter what is analogue sound?

Sound travels in the air as waves. When these waves fall on the human ear-drum they produce corresponding nerve impulses which create the sensation of hearing in our brain. When sound waves fall on a microphone they are converted into correspondingly fluctuating electrical signals. These can be captured on a disc as wavy grooves or on magnetic tape as fluctuations in the magnetic field close to the tape's surface. When the disc is replayed, the wavy groove moves the tracking stylus to create an electrical waveform in the cartridge. When a tape is replayed the varying magnetic field induces varying electrical waveforms in the recorder playback head. The signals fed out from the gramophone pickup or tape recorder replay head are amplified and reproduced by loudspeakers which generate soundwaves in the air. If the system chain is accurate from beginning to end then the reproduced soundwaves should be indistinguishable from those "heard" by the microphone in the recording studio. In such a notionally perfect system all the waveforms, in the air, on the disc or tape and in the system circuits, are an exact "analogue" of each other. But of course no system is perfect. If the waveform at any stage of the chain is

polluted with random noise (e.g. high frequency hiss or low frequency hum) or distorted (e.g. by unwanted harmonics or clipping of the peaks through overload) then the output signal will no longer be an exact analogue of the input. It is in fact so difficult to preserve the accuracy of an analogue waveform, while recording, replaying and amplifying it, that there is no such thing as a truly accurate analogue system.

It has been known for more than a century that signals need not be transmitted in their analogue form. Morse code telegraphy relies on the principle of converting analogue words and messages into a coded series of short and long pulses. But with morse code transmission the data rate is very slow. A human operator can code only a few sentences every minute by tapping out a few hundred dots and dashes. This is clearly no way to transmit a sound wave which may be undergoing audible changes at a rate of 15 or even 20,000 times a second. (Remember that human hearing extends up to 15 or 20kHz.) Obviously sound signals must be coded into numbers by very rapid action circuitry, wholly automatically.

In the late 1930's a British engineer named Alec Reeves was working for STC in France. He was looking for a means of reducing the noise and distortion on long distance telephone lines and he devised and patented a system for electronically digitizing analogue signals. The Reeves system relied on large numbers of valves and wasn't a feasible working proposition at that time. A large house would have been needed to contain all the equipment required. But in the late 1960's the BBC used transistor solid state circuitry to make Reeves' dream come true.

For well over a decade now the BBC has been digitizing analogue sound signals before sending them across the country, for instance between radio transmitters or as a means of carrying the sound of a TV channel piggy-back on the vision waveform. The technique has become known as pulse code modulation (PCM) because the coded message is conveyed by modulating the pattern of a series of regular pulses in a recognisable code. PCM can be compared with a message transmitted by flashing an electric torch lamp on and off in a coded pattern of flashes, but with each on or off of equal length.

One of several alternative methods of transmitting digital information is called pulse width modulation (PWM). In this case the pulses vary in width or duration according to the message being carried, rather like the dots and the dashes of a

morse code transmission. Both techniques, PCM and PWM, along with other derivatives of the basic technique, have one very important characteristic in common.

Advantages

The shape and size and quality of the pulses is not important, provided that they are recognizable for what they are at the reception end. Either a pulse is there or it is not there. It's a go/no-go state. The kind of distortion and noise which would degrade an analogue signal beyond redemption can pass quite unnoticed in a digital system. It is only when the pulses become so distorted that they are unrecognizable as pulses and the noise so heavy that it envelopes the code, that the system breaks down. So, in theory at least, a digital recording or transmission system should be able to produce true high fidelity, with the output exactly equalling the input. It should also be possible to copy a recording over and over again without degradation, or transmit it over very long distances without interference. But, of course, nothing is ever quite as easy in practice as it appears on paper.

The main stumbling block with digital recording and transmission is the coding and decoding process, that is the stage where the analogue wave is converted into digital code prior to recording or transmission and the stage where the digital code is reconverted back into analogue waves for domestic reproduction.

Although Sony has test-marketed an amplifier which boosts audio signals while still in coded digital form, there is as yet no loudspeaker which accepts digital signals. In fact digital loudspeakers are by no means a technical impossibility. Sony filed patents on a system at around the same time that a British hi fi magazine published an April Fool article on a digital loudspeaker, proving yet again that science fiction is now only slightly ahead of science fact! But human beings can only hear analogue sound waves so there is relatively little incentive to extend the digital chain right through to the loudspeaker as it must always produce soundwaves which reach the ear in analogue form. So both coding and decoding will remain a necessity for the foreseeable future.

In practice

To understand the difficulties involved in coding sound digitally and decoding it at the reproduction stage, it is necessary to look briefly at the manner in which such coding and decoding takes place. Coding takes place in two stages. The con-

tinuously varying audio signal, as, for instance, produced by a microphone, is first *sampled*. The waveform is chopped into tiny segments and each segment measured in size. The easiest way to think of this sampling technique is to imagine a smooth, sloped (and thus analogue) hill. If steps are now cut up and down the hill slope and the height of each step above sea level is accurately measured, then the result is a digital sampling of the analogue hill. Replace the hill now with an audio signal waveform. This is chopped up into a large number of segments and the height of each wave segment or sample above zero is measured.

As a second state, the digital samples must be described or *quantized*. It would of course be possible to describe each sample in ordinary decimal numbers, but unmanageably long numbers (1.0001; 1.0002 and so on) would have to be used to preserve real accuracy. The technique adopted is to use a quite different type of numbering, usually a binary code because this is ideal for PCM. A binary code is built up from digits which can have only one of two states, one or zero.

Now is neither the time nor place to detail the theory of binary counting so suffice it to say that a code of 13 binary digits allows 2^{13} or 8192 different samples to be described accurately. The use of 13 digits grouped in a "word" to describe each sample is termed a 13-bit code. This is the code which the BBC uses to describe each sample of the waveform sent by PCM links between its FM transmitters.

But other codes can be used. A 10-bit code is for instance workable but less accurate because it enables fewer different samples to be accurately, individually described. On the other hand a 14- or 16-bit code is more accurate because it provides a greater number of different and accurate descriptions. Think again of the hill. The more steps that are cut in the hill slope the more accurate the sampling. So why not simply use the code with the greatest number of bits? Quite simply, because the more bits in each code word the more pulses that must be transmitted or recorded and the greater the risk of one pulse merging into the next. This kind of error will cause the chain to produce an output which does not equal the input. This is an opportune moment to look at the rate at which samples are taken.

Sampling

To sample a waveform with 100% accuracy it would need to be chopped up into an infinite number of samples. This is of course impossible; in fact it's back to analogue! Clearly, the higher the frequency of the chopping i.e. the closer the spacing between samples, the more accurate the sampling will be. But the more rapid the sampling, the greater the number of samples there are to describe every second. And remember that each sample has to be described in a code word of 10, 13, 14 or 16 bits. So an increase in

HAYDN
STRING QUARTET IN D MAJOR, "LARK" Op. 64-5
SCHUMANN
PIANO QUINTET IN E-FLAT MAJOR Op. 44
BERLIN STRING QUARTET
KAZUKO NAGATOMI piano

STEREO CD 7013 AD
DENON



An example of the range of digital discs on the Denon label marketed by Eumig

sampling rate increases the number of pulses to be transmitted or recorded every second. This also contributes to the risk of system breakdown due to individual pulses merging with each other to create errors.

To cut what is a long and technically complicated story short, there is a well proven rule, called the Nyquist theory, which says that any analogue signal must be sampled at at least twice its highest frequency if there is to be no noticeable loss of fidelity. So a hi fi recording system designed to handle audio frequencies of up to 20kHz will have to be sampled at over 40kHz if there is to be no loss of high frequency information. As a general rule of thumb, the higher the sampling frequency, the wider the bandwidth and the more bits in each code word, the less the random noise which the system introduces. Thus every digital recording transmission represents a carefully chosen compromise between sampling rate, the number of bits in each word and the number of bits per second which the system can handle without breaking down into a confusion of errors.

The BBC use a 32kHz sampling rate for carrying FM radio signals between transmitters in digital code giving a 15kHz bandwidth which, in two channel stereo with 13-bit code words, means that nearly one million bits or pulses must be transmitted every second. Most digital recording systems use a higher sampling rate and more bits per word than the BBC transmitter link. In recording studios which use digital recording equipment each channel of sound is normally sampled at 50kHz and each sample described in 16-bit words. For two channel stereo this means a bit rate of nearly two million bits or pulses per second. In practice the number of pulses is even higher than

simple mathematical calculations might suggest, because "error correction" is needed.

When an analogue wave is distorted the end result is simply a distorted analogue wave. When a digital signal is distorted or confused there will be no audible result until the level of distortion or confusion gets so bad that the coded words are misread on decoding for reproduction. Any such mis-reading can produce disastrous results. When there is a momentary silence or "drop-out" caused by a brief defect in the magnetic coating of an ordinary analogue recording the audible result will simply be a brief drop in recorded level or transitory silence. But in a digital system such a drop out can lose a whole string of bits producing rifle shot cracks or "glitches" as the decoder reads the nonsensical code. To guard against this extra bits are coded in with the audio signal to tell the decoder when something very wrong is happening. The decoder can then either repair the recording, for instance by using the last set of words twice over or it can mute playback briefly to cover the decidedly unpleasant sound of a digital glitch. The main strength of any digital system, namely its go/no-go capability, is also its main weakness. When a digital system works it works very well, but when it fails it fails miserably.

There is no conventional audio or disc recorder which is capable of accurately handling the million or so bits per second which are necessary for digital stereo. Special tape and disc equipment must be used for recording sound in digital form. (Even more sophisticated equipment must be used to record video signals in digital code because video occupies a much wider bandwidth than audio.) There are currently two main avenues of approach to

recording sound in digital code. An industrial data or instrumentation recorder, as used, for instance, to capture digital information on the performance of machinery, aircraft or chemical plant, can be modified to record digital sound. As far as the recorder is concerned it is of no significance if the recorded bits represent coding of industrial data or a musical waveform.

The other approach is to use a modified video recorder. The current generation of domestic video recorders is designed to capture analogue video waveforms of up to 3MHz and this is more than sufficient for the bit rates necessary to store super hi fi audio in digital code. Already in the USA and Japan owners of domestic video recorders can purchase add-on PCM adaptors. High quality sound of ordinary analogue form is fed into the adaptor which converts it to digital code. This digital code is then recorded and replayed by the video recorder just as if it were a colour TV signal. The reproduced pulse stream is then reconverted by the PCM adaptor back into analogue form.

Progress

On a professional and semi-professional level an increasing number of recording studios and engineers now use digital equipment. Some of this equipment is of the instrumentation type and some is of modified video type. The US company 3M is, for instance, now providing studios with a 32-track machine which samples each of 32 channels of sound at 50kHz and records them in 16-bit code. EMI use a modified instrumentation recorder with each of two stereo audio channels spread over five separate digital tracks. Decca has been using a modified professional video recorder and several smaller record companies have been using adaptors made by Sony for semi-professional video equipment.

Already some record companies are distributing master tapes around the world in digital code on video tape cassettes recorded with a Sony PCM 1600 adaptor. This unit samples at around 44kHz (the exact figure depends on the TV line standard for which the recorder is designed) and describes each sample with a 16-bit code. The advantage of distributing master tape recordings in this way is that a virtually unlimited number of copies can be made without any degradation.

Normally there is a progressive degradation of audio quality as each new generation copy is made in analogue form, but with digital recordings the copy is as good as the original. The BBC has now purchased a PCM 1600 system from Sony and has broadcast several concerts recorded in this format. It is a foregone conclusion that within the next year or so PCM adaptors from Sony and other Japanese companies will appear on the European market, tailored for use with European format video machines and

operating on the less demanding 14-bit code. So far engineers wishing to use PCM adaptors in Europe have been forced to link them with a Japanese/American format video recorder bought specially for the purpose.

There is a serious practical disadvantage in recording sound as digital code on magnetic tape. It is quite impossible to edit digital tape of any kind simply by cutting it and joining it with scissors and tape like ordinary audio tape. The pulse stream must be kept absolutely regular and the only way to edit so far is to cross-dub between two or three recorders with special synchronization circuitry interposed to keep the pulse stream intact.

Although equipment costs will inevitably fall over the next decade, the price of at least two video recorders, a PCM adaptor and an editing console (to allow cross-dub editing with pulse synchronisation) can never be as cheap as a pair of scissors and a roll of sticky tape! Incidentally even a digital recording can only be as good as the source material. Very few recording enthusiasts in the UK use their equipment to tape live music. For the most part recording equipment is used to copy existing recordings or tape off-air.

There is little point in using expensive digital equipment to tape sound from an analogue recording. The real advantages of digital sound only emerge from material originally recorded or transmitted in digital format.

Future plans

Although radio stations around the world have plans one day to transmit digitally coded broadcasts, this must be many years away. The immediate future of all-digital audio in the home therefore centres on the availability of pre-recorded software in digital format. There is an obvious market slot here for pre-recorded video tapes which contain music in digital code instead of colour tv programmes. As soon as the cost of PCM adaptors comes down to a more reasonable level (the cheapest so far is more expensive than a video recorder) this idea may gain ground. But it is likely that we shall much sooner be seeing digitally encoded discs for replay on a whole new generation of gramophones.

As already explained many of the record companies are now recording master tapes in the studios, and on location, using digital tape recorders. These recordings are so far only being issued in conventional analogue disc form. They are thus replayable on conventional domestic gramophones, but with the advantage of higher fidelity through omission of any analogue tape stage. The technology already exists for the record companies to issue their digital master tapes on digitally coded discs. It represents an extension of the idea which enables digital sound recordings to be made using a domestic video cassette recorder.

All round the world competing com-

panies have proposed a wide range of video disc systems, which enable colour TV signals to be recorded on a disc superficially similar to an ordinary gramophone record and replayed using matching reproduction equipment. These discs, like video cassette tapes, have a bandwidth capability which is more than adequate for digital stereo sound. The problem now is not so much one of technology but of commercial application. Standardization is the key issue.

There are now three major contenders for the video disc market; an optical system based on lasers has been developed by Philips, a capacitance system with grooved disc has been developed by RCA and a capacitance system with a grooveless disc has been developed by JVC.

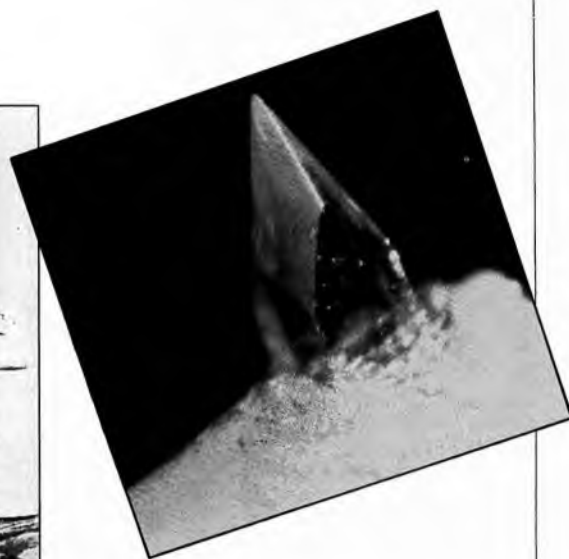
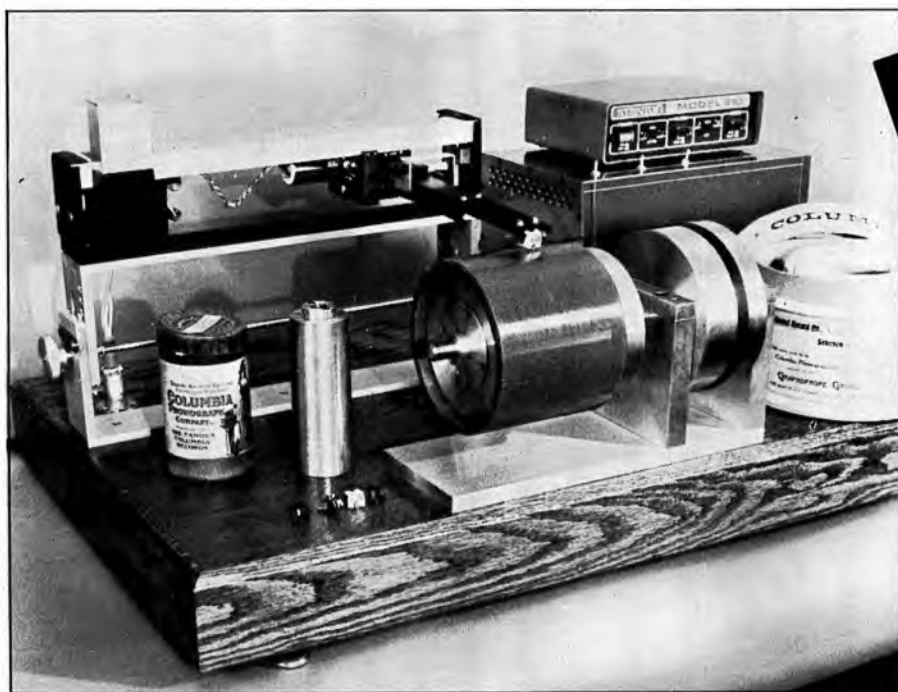
It is unlikely that RCA will push the grooved capacitance disc as a carrier for digital sound, at least in Europe. This leaves the Philips optical system and the JVC capacitance system. To confuse the issue somewhat, Philips proposes that digital sound should be recorded on a tiny 4in Compact Disc of optical form rather than a full sized (12in) optical disc as used for video. So one optical player will be needed for videodiscs and another, much smaller, will be needed for compact audio discs. The company has not yet given any reasoned explanation as to why there cannot be a "de luxe" player capable of handling both full sized video discs and compact audio discs.

Meanwhile JVC is adopting the opposite approach, and offering a player for video discs which, with the addition of an add-on adaptor, can be made to replay digital audio discs of similar size. Until recently it seemed that the Philips optical system, both for video and digital audio, would lead in Europe after a launch in 1981 or 1982. The Dutch company has an impressive array of support from both hardware manufacturers and software producers. This support includes the software programme vaults of MCA in the USA, Polygram in Europe and, most recently, Decca in the UK, along with hardware backing from manufacturers such as Pioneer of Japan and Grundig of Germany. But in the Spring of 1980 Thorn-EMI announced its intention to back the Japanese JVC capacitance system both for video and digital audio. This presents the depressing prospect of a UK marketplace in the mid-80's which is split down the middle on both video and digital audio standards.

All the signs are now that homes of the future will need at least three disc players (a Philips video disc player, a Philips Compact Digital Disc audio player and a JVC video/digital audio player with adaptors). It follows that shops will be forced into stocking multiple inventory selections of discs and players. This, more than anything else, could delay the commercial advance of digital audio and prolong the life of conventional analogue LPs.

STYLI: YESTERDAY AND TODAY

Donald Aldous



Profile of Van Den Hul stylus as used on Goldring G900/1GC cartridge (courtesy of Goldring Products Ltd)

New cylinder phonograph shown playing a wax Concert Columbia

A Brief Survey of the Development of the Pickup Stylus

"Oppressed of years the Human Organ grows less pleasing—as the Prima Donna shows. The gramophone escapes our common curse. Bad to begin with, it becomes no worse". So wrote Hilaire Belloc (1870-1953) in one of his 'Epigramophones', published in *The Gramophone*, September 1923. Hopefully since that was written 'the gramophone' (or its modern equivalent) has got much better, although one of the latest record accessories from Japan, called a 'crystal stabilizer' with level and stroboscope, adjures the enthusiast not to 'make the disc sound turbid' without it.

A reasonable injunction, but one wonders whether a 'record centre weight'—for that's what the device is—will solve the 'turbidity' problem! More importance must be attached to the stylus, as being the first link in the hi-fi chain.

In the Beginning

Let's start by a backward glance at what were more familiarly known as 'needles' which fell into three categories: 'steel', 'non-metallic' and 'semi-permanent'. It would seem that steel needles was a term applied only to needles of silver steel and not to chrome or other alloys, and were expendable in that after one playing of a 78rpm disc, it was intended to be replaced, as a wear facet usually developed with a heavy soundbox! Not that the needle was

always changed, let me add, so the tip often became a chisel.

In the 'non-metallic' class were found the 'fibre', 'cactus thorn', and the BCN (Burmese Colour Needle). The 'fibre' type has had a long and notable life in playing old records and is by no means dead now. Conductor Norman Del Mar, one of the recipients of the 1980 *Hi-Fi News & Record Review* Awards for his services to British music, still prefers today to listen to his vast collection of 78s on his 1936 'Expert'/EMG acoustic gramophone with its large horn. E. M. Ginn, whose brother-in-law D. Phillips is still beavering away in the world of hi-fi in the West country, used to say that fibre needles, by cutting down surface noise and volume, produced an unequalled 'purity of tone'. Special cutters were produced to sharpen these needles, although a penknife and a triangular bamboo shoot would often serve the purpose.

The BCN type came from Africa and was made from 'keratin'. Its adherents claimed that it 'eliminated surface noise and created a sweet rich tone of moderate volume'. The so-called 'semi-permanent' needle was marketed in many guises and names, from the Edison Bell Sympathetic Chromic, the Petmecky (gilt spear-pointed made of chrome steel) to the Columbia Duragold, sold for one shilling per 100, to the HMV-patented Tungstyle, using the

metal tungsten. Diamonds were employed in such reproducers as the Edison 'Recreation' model, sapphires in the Pathe machines, and many other types such as the 'Euphonic' 'fine' needles were available for the enthusiasts.

Tip Shapes

Obviously, in this early era, groove shapes varied and the steel or non-metallic needles were ground by the groove itself to conform to its shape and dimensions. Coming to the modern pickup cartridge, the stylus tip shape (whether sapphire or diamond) was originally spherical or conical. With the coming of the micro-groove LP disc, and the ability of some manufacturers to fabricate stylus tips of smaller size and accurately controlled shapes, the elliptical configuration was developed, primarily to reduce tracing distortion.

To get an idea of the dimensions involved, for 'coarse groove' 78s, the stylus tip radius can cover a range from 2.2 mil (thousandths of an inch) to 2.7 mil, although it must be mentioned that specialist archivists, such as the Library of Congress, have some 75 different styli in its laboratory, ranging in diameter from 0.25 mil to 30 mil, with most versions centred around 3.0, 2.7, 2.5, 2.2 and 1.5 mil.

For playing 33 $\frac{1}{3}$ rpm and 45rpm mono

records, a 1 mil tip will suffice, and a 0.5 mil for playing these speeds of stereo LPs and mono discs in good condition. The elliptical dimensions, for both speeds of mono and stereo discs, are usually around 0.0007 inch and 0.0003 inch, with the larger dimensions aligned *across* the groove. (For reference purposes, it might be useful to indicate that 0.0007in. is 18 microns, 0.0004in. is 10 microns, and 0.0002in. is 5 microns.) Another format for tip design is the 'bi-radial', which has an oval cross section.

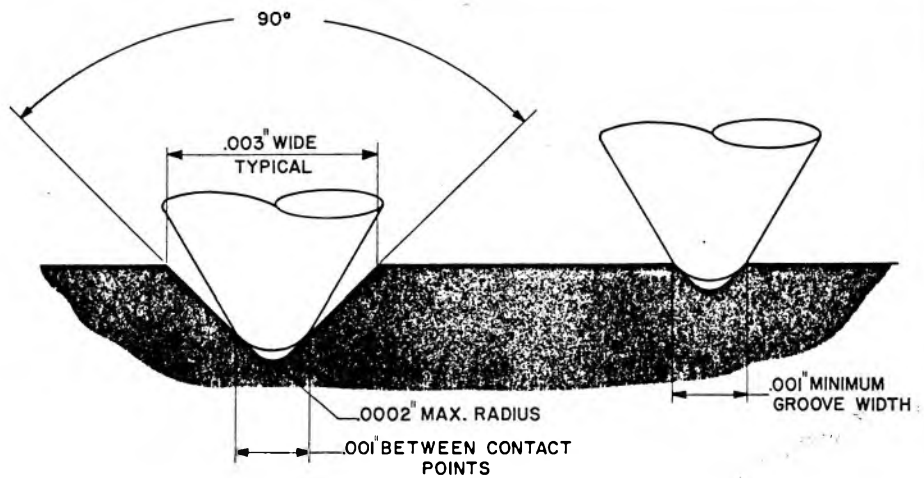
A third type of stylus with special contours, extending the elliptical to a 'line contact' type of profile, is known as the Shibata, originally designed to play, with optimum definition, the rear channel FM information on such discreet four-channel LPs as the CD4 quadraphonic discs. Another contour for CD4 replay is due to Pramanik and was used by Bang & Olufsen in the MMC4 6000 four-channel cartridge.

Commercial names for these various 'line contact' styli include Hyper-Elliptical, Aliptic, Fine Line, Garrot, Stereohedron, Hyperbolic and Super-Elliptical. All these appear to have cone angles of around 50 to 60 degrees, with different degrees of contact extension to the major radius. Obviously the tip relationship with the record groove depends initially on the grinding symmetry and the accuracy of mounting the stone. The geometry of the cartridge alignment in the pickup arm is very important for overall performance.

The contours of the original Shibata tip have now been revised and Shibata III is now fitted to some stereo cartridges, rather than the CD4 Shibata I orientated dimensions and shape. This latter version has a swept minor radius that truncates the deep tip of the first model.

The mounts for these various tips range from aluminium, steel, sapphire and titanium shanks to nude stones of lower mass. A variety of stones in size and mass is also available from naked splints around 250 micrometres in diameter driven through the cantilever to tiny residual diamond cones of some 90 micrometres in diameter, or less, and having about one-fifth of the mass.

By now it will be appreciated that much of the cost of a first-class stylus lies in the accuracy with which it is made and the degree of polish. In the USA, the archive and broadcasting organisations seem to concentrate on the Shure, Stanton and Pickering range of cartridges, available with various tip dimensions. In the UK, Expert Pickups (PO Box No. 3, Ashted, Surrey, KT21 2QD) is the leading specialist company manufacturing a larger range of styli than any other company we know in the world. Wyndham Hodgson, proprietor, a micro-engineer of exceptional talent rather than a lapidarist, tells me that he caters especially for the 78 devotee and produces not only conical diamonds, but shapes that would make many recording engineers today wonder



Record groove geometry

what possible improvements or modifications were possible. These many shapes and sizes were arrived at after extensive tests, not only by his own company, but by record producers and such establishments as the BBC and record libraries of American universities.

Another specialist service for the historic record collector of both discs and cylinders is Expert's 2 and 4 minute sapphires and diamond tips for Edison Blue Amberol cylinders. Here the Edison Foundation was most helpful and by employing projection optics it was possible to take accurate measurements. For Pathe record reproducers, 0.008in and 0.016in ball sapphires in shanks are produced, and for electrical reproduction of vertical-cut cylinders, series wired cartridges with styli have been designed.

In this last connection, two names must be mentioned. Joe Pengelly (BBC Plymouth) has produced a system for reproducing cylinders electronically, which proves that there is far more useful sound in the grooves than any normal acoustic reproducer ever got out of them. In the USA, Art Shifrin of Little Neck, New York, has devised his Electronic Cylinder System. It has various sized mandrels, numerous cartridge/styli combinations, accurate speed regulation, and electronic signal processing. Even severely warped cylinders (including the oversize Concert Columbia) can be transferred at half speed so that the lightly tracking pickup arm will not bounce excessively. (see accompanying picture.) The only catch with this system is its very high price acceptable only to the affluent collector.

Measuring Tips

In collaboration with Martin Colloms, Wyndham Hodgson (Expert Pickups) acted as consultant for an in-depth survey of cartridges, pickup arms, etc. These measurements of styli tips, the type of diamond fitted, dimensional accuracy and how well they were mounted appeared in the *Hi-Fi Choice* series of publications. The results were embarrassing to some manufacturers as it was found that a large

percentage of diamonds used by some companies were not to the published specifications; in fact, some of the diamonds were so badly finished that it seemed doubtful that quality control existed at all. In the light of these findings Expert Pickups had to substantiate their criticisms and in some instances were invited to prepare a specification which would be correct for the particular products.

Before looking at the fabrication of styli for the mass market, which is moving away from the ceramic type cartridge to the magnetic models, again it is useful to know that Expert Pickups can offer a stylus replacement service for all stereo cartridges, including moving coil models. This latter facility demands that the diamond replacements in these expensive cartridges match the diamond dimensionally and its tip mass, an important factor. This service reduces the now high costs involved when diamonds eventually become worn out.

Replacement Styli

To give just one example of the problems of replacement styli, Shure Electronics list 50 stylus specifications for their wide collection of cartridges, which must be matched in any replacements if optimum performance of Shure pickups is to be maintained. When one thinks of the many other pickup cartridges available, the magnitude and difficulties of producing suitable styli for the bottom and top ends of the replacement market become apparent.

The high grade models have already been discussed; turning to the mass market one name looms large, The Diamond Stylus Company of Colwyn Bay. Since this company began some 30 years ago, it has been my good fortune to know the founders, the Coathup family, the father who started it all now lives in Portugal and son Barry is today a working director. Many of the techniques employed by this manufacturer have been developed at this Colwyn Bay plant, resulting in astronomic quantities of styli being produced each year. Space will allow only a very brief glance at the production process created by DSC.

Firstly, the primary material is a length of mild steel wire, of about 1/16in diameter. According to the specification, aluminium or a light alloy may be used to make the final slug lighter and reduce tip mass. The nude diamond can, of course, be attached to the cantilever, but this means a different price bracket from the mild steel wire versions.

After feeding the wire through a machine that removes a thin layer of the outer surface to prepare it for further machining, the wire is cut into lengths of about 0.75in. These are then cleaned and washed. The tip of the wire sliver is then excavated to accept the tiny diamond chip. This operation is carried out by hand with tweezers under a microscope. A globule of brazing solder is placed on top of the diamond chip in the cavity and, after a tray of slugs is completed by the operator, it passes through a hot oven. This melts the alloy and welds the diamond firmly to the slug. This is a key process in mass-produced styli to sell at modest prices and so the exact details of composition of the solder and the precise brazing temperature are not published.

Yet more machining is carried out to the conical tip on the shaft of the slug to produce the required cone angle stated by the manufacturer. As each diamond tip is as yet unshaped the tips are examined on a shadowgraph magnifying screen to check that the unmachined tip region falls between two lines drawn on the screen. If outside these tolerances, the slug is discarded. The final machining is then performed to fashion the diamond tip for setting in the cantilever/armature system. DSC has gold-plated the slugs, before final grinding, to resist rust, especially in humid climates, and to improve appearance. To get the cone angle of the simple diamond styli correct, within reasonable tolerances, a rotating drum is filled with slugs, and a mixture of an abrasive agent and a special oil. The inside surface of the drum is coated with microscopic particles of industrial diamond and, after agitation in the drum, the styli slugs emerge correctly shaped with the gold plating polished.

Another company intimately concerned with evolution of mass production methods for sapphire styli was Sapphire Bearings. This company became associated with ElectroVoice and their well known 'throw-away stylus/cartridge' combination. This company is now known as Electronic Reproducers, of St Albans.

Not so widely known in the UK as DSC which, incidentally, has huge overseas sales of styli, is Fidelitone International (whose HQ is in Palatine, Illinois) with an OEM replacement styli manufacturing plant in Peebles, Scotland, producing styli for world-wide markets.

Tip Research

No updated survey of styli types and development can omit a reference to the research of A. J. Van Den Hul, of Delft, Holland. Anyone who has seen his colour

slides and photomicrographs of styli tips is full of admiration for this original work showing dozens of tips, the effects of wear, inaccurate dimensioning and poor polish. Some of the tips are unfamiliar to some users in the UK, for example, the German Paroc (similar to the Philips type GP422 Mk1), the Vital Tip (made by Ogura in Japan), the Diasa Tip, etc. The Vital-Tip is close to Van Den Hul's own design of stylus tip, working in collaboration with Goldring Products, of Bury St Edmunds.

The durability of the disc recording/replay system, despite its apparent crudity, is shown by the fact that the enthusiast is still buying considerable quantities, maybe a reducing number, of those familiar vinyl flat records. Of course, the tape cassette is an expanding medium, but video disc players have wear-free optical technology and miniature laser elements to read the disc signals. The Philips Compact Disc, in its original 11cm format, can accommodate 30 minutes of four discrete channels on one side of a disc, and on a bigger disc an

hour or so could be enshrined. Capacitive pickup systems (such as those employed by RCA and other companies for video software) have great potential for the audio world, but ominously no standardisation is at hand. Perhaps we shall continue playing the familiar analogue discs, with diamond styli, for many years yet!

My thanks to Roy Poulton (Shure Electronics) for research comments and help with versions of early styli and accessories, and to Gerry and Sue Sharp (Goldring) for advice.

REFERENCES

- The High Fidelity Phonograph Transducer*, by Ben Bauer. Pp. 729-748. Centennial Issue, Oct/Nov 1977, Journal of the Audio Engineering Society, USA.
- Cartridges & Headphones*, by Martin Colloms, No. 13. *Turntables & Tonearms*, by Martin Colloms, No. 18. *Hi-Fi Choice*, 14 Rathbone Place, London, W1P 1DE.
- Record Pressing Faults* by Jonathan Lane, p. 77 and 79, June 1980. *Hi-Fi News and Record Review*.

James is listening to a brand new album
on the best stereo equipment money can buy...



...Frank is hearing it better.

When you listen to a modern album through stereo headphones you hear it the way musicians and engineers heard it when the album was made.

You hear perfect stereo separation—free from all interference and distortion.

That's what you hear through Ross RE 267 Samarium Cobalt Supermagnet* headphones.

These revolutionary magnets deliver 3 times the energy of conventional magnets of a similar size.

That means more stereo power.

Greater stereo accuracy.

And an altogether better listening experience.

You'll hear better with Ross RE 267's.

*Introduced in the UK by Ross Electronics

© ROSS 1980

Tell me more about Ross stereo headphones!

Name.....

Address.....

Ross Electronics, 32 Rathbone Place, London W1P 1AD
Tel: 01-580 7112/3 Telex: 22747 Preros Ldn.

HFY



Ross RE 267
Type: Closed back
Matching Imp: 8 to 1000 ohms
Frequency response: 8 to 28,000 Hz
Sensitivity: 125 SPL at 1000 Hz
Weight: 165 gm
Price: Around £31.00

ROSS
makes sound sense

TODAYS RADIO RECEIVERS

Mike Lewis

'Radio' embraces an enormous range of equipment for various uses by various types of user for communication—either one way or both ways. The term includes remote control devices, whether it be for models or missiles, and the monitoring of space vehicles.

Audio enthusiasts are primarily concerned with one-way radio-receivers. These fall into four main groups, all of which are constantly benefitting from off-spins of modern technology.

In general terms, these are

(a) Portable radios and radio cassette recorders, of varying degrees of sophistication, and many of which these days incorporate stereo decoders and amplifiers

(b) Communications-type multiband portables, for use by SW listening enthusiasts, business men, off-shore yachtsmen, and overseas visitors desirous of listening to broadcasts from their homeland

(c) Hi-fi tuners and tuner/amplifiers (which the audiophile now calls 'stereo receivers')

(d) In-car radio

Enter Microelectronics

Microelectronics, improved production techniques, current trends, and of course, economics have all contributed to the greatly-improved facilities offered by today's radios in all four groups. Mercifully in the past are those miniature distorted-sound-with-mushy-background horrors of the 60's, with their whistling, poor-selectivity front ends and primitive output circuits.

Even the cheapest of portables now usually have reasonable quality loudspeakers of realistic size; in fact the cabinets of some, particularly radio recorders, are as large as many portables or table sets of the immediate post-transistor era.

Such improvements in output quality are further enhanced by today's trend of providing bass and tweeter speakers in the larger portables, and these are becoming almost standard in the better class of stereo radio recorders.

Presumably manufacturers have realised that the radio recorder needs a good tape playback quality especially if the cassette deck has a chrome or even a metal tape facility. This, combined with the high quality of FM broadcasts (Europe concedes that UK FM broadcasting is superior to those on the Continent) renders a good output stage and quality speakers vital for the radio recorder of the 80's.

Most good portables now cover at least

four wavebands—the essential medium and long on AM, to which is added a 6 to 18MHz short wave band, the fourth band being of course the FM. In the not too distant future the FM band may well be extended when the police and fire services move out of the top end.

Unfortunately for the BBC a large number of people—especially those in the teenage groups—still keep to the MW and LW bands for reception of their favourite programmes. This is partly due to the present policy of swapping programmes around from FM to AM at various times during the day to provide airspace for schools and Open University broadcasts. Local radio too still makes great use of AM. This means that whether we like it or not, AM will be with us for a long time yet.

The problem becomes worse when it comes to car radios, for VHF propagation has restricted limits. Unless the motorist on a long journey is prepared to frequently re-tune to a local FM station, he sticks to the long range MW or LW broadcasts.

FM car radio is comparatively recent; its increase in popularity coincided with improved output quality and power in equipment, micro-circuitry, and better-class cassette players. There were also problems with mobile VHF users, especially police, ambulance and fire services, who quite naturally object to drivers 'listening in' to their messages while on the road. (It is of course illegal to make use of such transmissions, even if inadvertently received.)

In due course CB radio will be properly legalised, and, in spite of the political hoo-haa for and against CB, radio-telephonic communication between motorists and their home bases will be commonplace, and not just limited to licensed mobile telephone and business radio subscribers.

Coming now to the second group, the multiband communications-type receiver, here we have a quite different breed of radio and user.

Communication Receivers

The serious shortwave listener expects, apart from continuous coverage in a series of bands, the complete HF spectrum from 2MHz to 30MHz (plus of course, LW, MW and FM), such additional features as double IF conversion for frequencies above 10MHz, a beat-frequency oscillator for reception of CW (morse), and, in the cheaper multiband radios, for reception of single-sideband (SSB) transmissions. He expects a crystal filter, 'squelch', a sophisticated agc system, separate radio and audio frequency gain controls, band-spread tuning with variable IF bandwidths

to improve selectivity, a sensitive front-end with an accurate slow-motion tuning scale system, and, when possible, a digital frequency readout display.

Clearly such receivers cost a lot more to design, produce and sell. These considerations, plus a restricted demand, means that comparatively few makers venture into the multiband market, and those that have done have good reputations gained from previous expertise to maintain.

They have to compromise between the true professional communications receiver, which is often a costly custom-built item intended for serious use by the armed services, shipping or aircraft, and the portable for the enthusiastic amateur shortwave fan.

And so we have well-known makers such as Grundig in Germany with their range of 'Satellites', Sony, Sanyo, Hitachi and Panasonic in Japan, and several makes of US-design produced in the far east. There are also some good reasonably-priced general-purpose multibands that come from the USSR—the Vegas, and some imported from the east by such firms as Binatone with their 'Worldstar'.

Both the Grundig Satellites and the Russian Vegas use a coil-turret system of band switching. Such a system has advantages and drawbacks, but the advantages outweigh the snags.

The main advantage is that, because each coil 'biscuit' on the turret is independent and has its own tuning scale strip, it can be individually calibrated and aligned. This means that the receiver's tuning cursor does not have to align precisely with each band simultaneously as it does on the conventional multiband with a single dial having all bands printed on it, which makes alignment far easier without compromise between bands.

The second advantage is that any single coil biscuit can be easily changed without disturbing the rest or their alignment. Thus one basic receiver can be manufactured and a range of coil biscuits be inserted according to the needs of the area in which the receiver is to be used.

And the snags—the contact system which can develop mechanical trouble, dirty and distorted contacts causing noisy and intermittent reception, and the physical effort of changing bands, which is considerably more than just flicking round a switch or pressing a button.

A good multiband receiver should also have separate 'front-ends' for the MF (long and medium), HF (short wave) and VHF (FM) sections. The more sophisticated ones, such as the Satellit

professional type, also have built-in SSB adaptors. The Satellites, incidentally, also have two-way loudspeakers for quality reception on FM.

Stereo Sets

But the hi-fi enthusiast is more interested in the third group—the stereo receiver. Because these are mostly mains operated models for fixed home use (there are some portable stereo receivers, such as one by Marantz) in order to produce the high output powers normally expected, cabinet size is not restricted and elaborate and complex circuitry, together with a multiplicity of controls and a full-length dial scale can be included, for most stereo receivers are built for rack-mounting size, even if they are enclosed in wood table-mounting cabinets.

During the last two years several well-known makers not previously associated with true hi-fi have entered the field with ranges of compatible separates, including stereo receivers, for inclusion in conventional hi-fi systems or for installation in 'hi-fi towers' or rack systems.

Among these are ITT with their Hi-Fi 80 series, Ferguson's Hi-Fi system 25, Philips with their 'Black Tulip' range, Grundig with their new ranges, Schneider and Metz in Germany, and Teleton in Japan.

The recent newcomers are in addition to those well-known makes who already hold enviable reputations for quality receivers, such as Aiwa, Akai, Hitachi, JVC, Technics, Sony, Sansui and Sanyo in Japan, and European makers such as Telefunken, Tandberg, B & O, Saba and Audio-Pro, and of course the doyen of them all, the US-based Marantz. There are also several UK makers in the field, among which are Amstrad, Cambridge Audio and a host of small manufacturers

of rather specialised receivers, including some producing those for use with valve output amplifiers.

The public tend to be bemused as to what constitutes a true hi-fi stereo receiver. To many the music centre or the mid-fi audio 'tower' is the ultimate, and in fairness it is true to say that some of the higher quality music centres do approach true hi-fi (and cost almost as much as well).

Nearly all such receivers include AM long and medium wavebands as well as VHF. This always seems to be a contradiction in terms, for stereo broadcasting is not possible on the AM bands and certainly not hi-fi, with the limitation of the 9kHz AM audio bandwidth. However, to render the receiver a viable proposition the AM bandwidths are almost mandatory. FM-only receivers are usually limited to tuners and a few highly specialised types, such as Audio Pro's microprocessor-controlled TA 150.

For it means that most of the receiver's sophisticated circuitry, from the MOSFET VHF front-end, the phase-locked loop and/or frequency synthesised tuner, the stereo decoder and the carefully balanced and audio separated stereo pre-amplifier are doing virtually nothing when the receiver is tuned to an AM station.

The reason is the old problem of producing and marketing a receiver which will sell anywhere in the world, of which only a small part has regular hi-fi stereo broadcasts. Outside these areas the receiver spends most of its time purely as a stereo amplifier with tuner attached—hence the need for the AM bands.

Features of a good stereo receiver to be regarded as essential include preset FM

station tuning, either as an alternative or in addition to manual, a long, clear illuminated tuning scale, complete AM rejection by the FM front-end (this however won't eliminate some of the emergency service broadcasts, because more and more of these are being PM—phase-modulated—which will get through a discriminator), a phase-locked tuner, centre-zero tuning and signal strength indication meters for accurate tuning to stereo broadcasts, rotary, preferably incremental switched gain controls and tone controls (*not* sliders) and a comprehensive choice of input and output facilities to enable a full range of peripherals to be connected. Today's receivers usually also incorporate digital frequency readout, and some front-ends are frequency-synthesised.

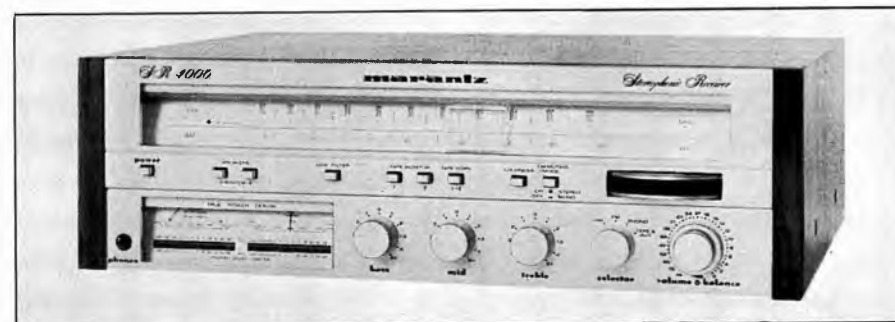
Micro Audio

Although the majority of receivers are for rack-mounting or table mounting, we must not forget the mini systems, for which the integrated circuit must be thanked for rendering possible a performance comparable with their big brothers, including the receivers. If space is limited, then the performance of these smaller pint-sized versions is more than adequate, the only slight drawback being the necessary reduction in the size of the tuning scales, controls and legends.

A good aerial is important for worthwhile stereo reception. For some reason the aerial is always the last part of an audio installation to be considered seriously. There is no point in acquiring a first-class stereo receiver if the signal input level is insufficient to ensure a good stereo image. Stereo reception needs a signal level almost ten times that for a mono signal to avoid noisy and fading reception.



Philips AH794 stereo receiver



Grundig Satellit 3400 professional multiband portable

Marantz SR4000 stereo receiver

DEMONSTRATION DISCS

Ken Ellmore

Digital

EMI lagged behind in the digital race but its first classical album is a credit to the company technicians. **Images** and **L'Après-midi d'un faune** (Debussy) are played by the London Symphony Orchestra and André Previn on ASD 3804 (cassette TC-ASD 3804). The clarity of solo entries is absolutely staggering but particularly noticeable in the filler while the overall performance is up to the high standards expected from Mr. Previn and his orchestra. I doubt if *Gigues* or *Les parfums de la nuit* could be bettered. Elsewhere he seems slightly overawed by the occasion and long passages tend to sound clinical.

Unicorn Records has gone into digital in a big way and now handles the Delos and Telarc catalogues. From the former I sampled the young American pianist Carol Rosenberger (D/DMS 3006) on a record entitled **Water Music of the Impressionists**. Miss Rosenberger sets herself up against some tough opposition as all but one of the items on her programme are available in attractive alternatives. The exception is a piece by Charles Tomlinson Griffes, a New Yorker virtually unknown in Europe. His *Fountain on the Acqua Paolo* is very much in the Liszt mould, resourceful but hardly original. The Master himself is represented by *Les Jeux d'Eaux à la Villa d'Este*, and Side One also includes pieces by Ravel.

Side Two is devoted to Debussy and prospective buyers are bound to cavil when

they can buy the complete piano works superbly played by Livia Rev on a bargain Saga label for the same price as this one record, or enjoy super pianist Michelangeli in DG. One pleasing factor is the use of the Bosendorfer piano with its extra bass resonance, such a boon in *La Cathedral Engloutie*. Unfortunately Miss Rosenberger is too inexperienced to capitalise on this asset although she has a formidable technique and clearly is destined for future international acclaim.

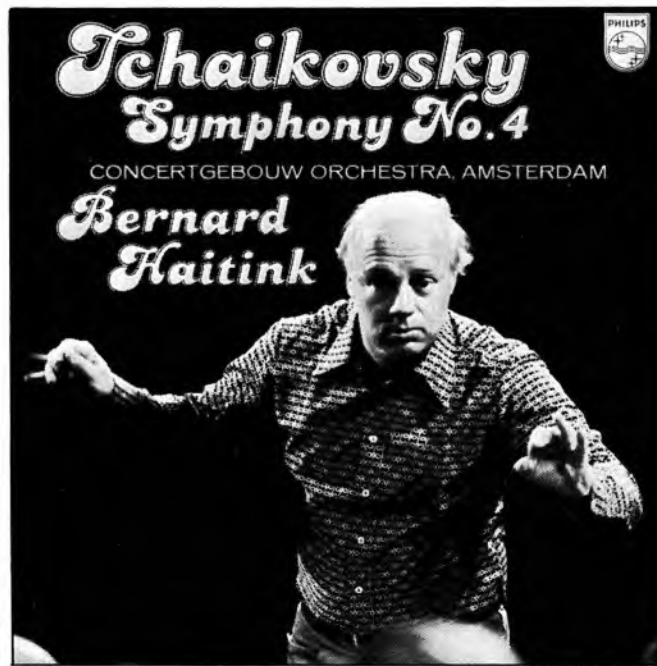
Denon is another range of digital discs from Japan, marketed in this country by Eumig (UK). **Latin Percussion** (Denon Sx-7003) is one of the popular issues and the artists are styled as Y. Segami and Exciting Company. This makes a superb demonstration disc but the content is anything but exciting. A small group (pianist, flute, trumpets and a battery of percussion) go through the motions and present a text-book correct Latin beat without any feeling or sense of style. The whole thing, unfortunately, adds up to a big bore.

On the serious side Denon OX 7175-ND is an interesting selection of **Three Concerti for Harpsichord and Strings** by J. S. Bach. The Tokyo Soloisten are joined by the experienced Huguette Dreyfus, who plays a copy of a Hemsch 1761 instrument. She gives an assured, idiomatic performance supplying her own Cadenzas. The concerti themselves are in typical Galante style and of academic interest only. I suspect that the London Bach had

piano in mind when he wrote them as really only the opening of the F minor lends itself to the Harpsichord. The recording is extremely good.

Since its first digital disc (**New Year's Concert in Vienna D147D2**) Decca hasn't been exactly lucky with subsequent issues, so it makes a pleasant change to welcome the latest pair. Kyung-Wha Chung gives a melting performance of the **Beethoven Violin Concerto** on SXDL 7508 (cassette KSXDC 7508) with sympathetic backing from the Vienna Philharmonic under Kiril Kondrashin. While listening I completely forgot about digital recordings or critical appraisal and was lost in the spell of the music. For an old favourite this says much for the advocacy of Miss Chung and the natural comfortable recording.

The same conductor and orchestra perform Dvorak's **New World Symphony** on SXDL 7510 (cassette KSXDG 7510) on a recording so crisp and clear that almost every single note in the final chords of the first movement can be easily identified by the ear. The quality of sound tends to deteriorate very slightly at the end of both sides and the final soft woodwind chords flutter in a way reminiscent of early LP issues. Kondrashin pushes the music hard and is too obvious in his changes of tempi. The famous Largo almost trips along and any sign of pathos is quickly eliminated. A nice Cor Anglais solo is followed by equally elegant phrasing from flute and oboe in the C sharp minor episode. The village band effect on Oboe, Flute and



Clarinet is absolutely delightful and the full weight of the Vienna strings is in evidence at the opening of the Allegro Con Fuoco.

Demonstration discs

My firm choice as the best analogue demonstration disc of the year goes to the **Symphony No. 4 in F minor** by Tchaikovsky as played by the Concertgebouw Orchestra conducted by Bernard Haitink on Philips 9500 622 (cassette 7300 738). When I say that Tchaikovsky is at the bottom of my list of composers you will understand that this must be exceptional for me to go overboard for it. Philips seem to be putting most of its classical eggs into the Haitink basket, and why not when he is in such superlative form. There is nothing sentimental or mawkish about his approach and his straightforward reading is complemented by some great orchestral playing. The woodwind are a joy and I cite the beautiful phrasing of the solo Bassoon and Clarinet in the first movement, and Oboe and the Bassoon again the second. Only in the Scherzo did I feel that the pizzicato first fiddles needed more punch as the tune tended to get swamped.

The secret of this recording lies in the spacing. Normally record companies devote a complete side to the long first movement, but Philips also add the slow movement which, being lightly scored, is accommodated without loss of quality. This leaves more groove space available for the Finale and the result is a tremendous experience. This is demonstration stuff of the first order.

I recently came across a musical textbook about twenty years old in which it was stated that Mahler's Fourth Symphony was the least played and least known in this country. How times change! With over a dozen versions to choose from and three new releases in the past year it would seem that the Fourth is fast becoming an old warhorse! So much for those critics who condemned the first performance as childish. Thus my second choice goes to the **Symphony No. 4 in G** by Mahler as played by the Berlin Philharmonic Orchestra conducted by Herbert von Karajan on DG 2531 (cassette 3301 205).

The Maestro is scrupulous in his observance of Mahler's intentions and this is evident on the very first page of the score in the first subject when he manages to coax the Violins into a sudden drop to *pp* from *p* with almost uncanny precision. Personally, however, I find the temp too deliberate and prefer a more relaxed approach. The same applies to the second movement where Michael Schwalbe is solo Violin with an approach all too inflexible and with very little magic. However the magic comes in abundance in the slow movement where the superb Berlin strings turn in a performance of sheer beauty. Edith Mathis is soloist in Das Knaben Wunderhorn Finale.

Third choice goes to yet another DG recording — that of the **Bartok Piano Concerti 1 and 2** with Maurizio Pollini and the Chicago Symphony Orchestra conducted by Claudio Abbado on DG 2530 901 (cassette 3301 901). Bartok's first concerto is a study in rhythm and the importance of the kitchen department is stressed by the detailed numbering system in the score explaining to the three players the exact sounds required. The poor pianist is merely an extension of the percussion but has to cope with complex changes of timing and tempo in the opening movement and a feverish moto-perpetuo finale. The second work is more lyrical including what Bartok claims as some "pleasant themes". Certainly it is more accessible if only because the borrowings from Stravinsky give it a familiar ring. Maurizio Pollini makes light work of these complexities and is backed by the crack Chicago orchestra on a first rate recording.

Isao Tomita brings his battery of Synthesisers and accompanying gadgetry to bear on the music of Prokofiev in **The Bermuda Triangle** (RCA RL 12885 or cassette RK 12885) and the result is a technical tour de force and a triumph of gimmickry over music. Opening tracks make excellent demonstrations with UFO's literally flying round the room. Sound was recorded onto five tracks designed to be replayed through the same number of speakers, four in a rectangle and a fifth suspended from the ceiling. This is impossible to reproduce through normal stereo which, however, copes well enough. A pity, therefore, that the music has been lost on the way.

Also in the demonstration class is the **Symphonie Fantastique** by Berlioz (Decca SXL 6938 or cassette KSCX 6938). Bernard Haitink is again at the helm this time with the Vienna Philharmonic, his first recording with this orchestra. Again he takes a severely classical view of the work and only gradually works up the excitement by stages. Decca has taken a fair bit of "stick" this last year but this recording is magnificent with a full Bass response and brilliantly recorded bell effects.

Don Giovanni—twice!

Two **Don Giovanni** boxed sets released within the space of one month poses problems for both reviewer and prospective buyer. Cheaper CBS version (79321) is the soundtrack of a continental film and squeezed on to three records. Ruggero Raimondi in the title role is a suave ladies man and well supported by his Leporello, José Van Dam. Unfortunately their voices sound so much alike that it is difficult to separate them, although this does make for plausibility in Act 2 where they change places to deceive Donna Elvira. They make a compelling pair, and I was also impressed by Malcolm King's sturdy Masetto and John McCurdy's Commendatore. The ladies are weaker

with only Kiri Te Kanawa in really good voice, and even she sounds unconvincing at times. Teresa Berganza's mezzo range is really too low for Zerlina and she surely seems too worldly wise to be deceived in *La ci darem la mano*. Edda Moser is a plummy Donna Anna with too much vibrato. Maazel presses his band hard, often overlooking the beauties of the score, and there are places where the sound is cramped probably due to the effort of squeezing the opera on to three discs. On the other hand Maazel takes care with inner parts and coaxes some fine playing from the Woodwind. He generates great excitement in the Supper Scene.

Decca D162D4 on four sides is naturally more spacious and Solti seems more at home with Mozart's score. Gabriel Bacquier and Bernd Weigl are the villainous pair with Weigl's Giovanni sounding really evil at times and his Leporello an oily accomplice. Stuart Burrows is an engaging Don Ottavio and Kurt Moll dominates the Statue scene in the part of the Commendatore. The ladies, too, are better cast with Lucia Popp a charming Zerlina, Margaret Price a magnificent Donna Anna, and Sylvia Sass as Donna Elvira. These soloists are really quite superb and it is a joy to hear them together in the Finale particularly the *Or che tutti* line which brings out some ravishing phrasing from Stuart Burrows.

This is a true studio performance with complete absence of sound effects — not even the clash of crossed swords in the duel! It costs about another £7 but in my opinion is well worth the extra outlay. Both sets provide many admirable moments suitable for demonstration.

Outstanding releases

More Beethoven from Alfred Brendel who plays the **Piano Concerto No. 1 in C** with the LPO under Haitink on Philips 9500 252 (cassette 7300 563). The main objection to this disc is the poor value for money. Most companies manage to accommodate this Concerto on one side, but here it is spread over two without any fillers. Secondly there seems to be some confusion over the authorship of the first movement Cadenza. The sleeve credits it to Brendel himself but the actual record label correctly assigns it to the composer. These objections over, the performance itself is sheer magic. The opening bars are so soft as to be almost inaudible, but thereafter Haitink conducts a reading of great strength and character. He and Brendel take the first movement at a very fast pace but the pianist leaves the listener gasping at his accuracy and phrasing. He is so complete in every way that a small fluff at the start of the Rondo, which would have gone un-noticed in the hands of a lesser mortal, here makes one sit up with a jerk. This is a compulsory purchase for every lover of Beethoven's piano music.

The **Six Organ Concerti Op. 10** by John Stanley played by Gerald Giffard and the



Northern Sinfonia on CRD 1065 (cassette CRDC 4065) reveal the variety of styles in use during this period of musical history. No. 4 in particular has been called the finest of English organ concerti. Starting with a bold unison ritornello it proceeds with a lyrical Andante worthy of Handel and finishes with a brilliant Presto. The others show a mixture of Baroque, Galante and even early-Classical styles. The new organ in Hexham Abbey was built by Lawrence Phelps in 1974 with two manuals and pedal board (not used here). Gerald Giffard uses the Swell for solo passages as its parallel flute and principal choruses afford ample scope in this context. He provides some fine, snappy playing and also supplies the sleeve notes. The accompaniment, mainly confined to two Violins and one Bass line, is provided by the Northern Sinfonia.

Young pianist Emmanuel Ax with the Cleveland Quartet give a exuberant performance of the **Dvorak Quintet in A** on RCA RL 12240. This is a reading full of youthful ardour, forceful and urgent with great panache. Ax gives a beautiful account of the keyboard part and displays some very musical phrasing. Perhaps a slower version would be ideal but only in the Furiant did I feel that the music was driven too hard. The recording is resonant and bright.

Orchestral Works of Sir Hamilton Harty sees the entry of a new label — Chandos. The firm has been in business as a production company for many years but now markets under its own name and one of the first releases is a winner. Ralph Holmes is soloist in the Violin Concerto in D minor written in 1908 for Szigetti and also in the lighter *Variations on a Dublin Air*. Both are conventional in layout but well-scored and brimming over with good tunes with just a hint of Irish flavour. The

second record comprises specimens of Harty's expertise in arranging other people's music. His version of Handel's *Water Music* rescued that composer from oblivion in the inter-war years but is now so well-known that yet another recording seems superfluous. More welcome is the *John Field Suite* based on piano pieces by Harty's fellow Irishman. There is also a sugary arrangement of the *Londonderry Air* which quite rightly has been completely overshadowed by Percy Grainger's more imaginative treatment. Chandos DBR 2001 also marks the recording debut of the Ulster Orchestra under its permanent conductor Byrden Thomson. They are a smallish ensemble of some 37 players who, however, play with precision, especially the Woodwind and Brass.

Other interesting releases

Margot Fonteyn's television series entitled **The Magic of the Dance** was one of the successes of 1979 and it was inevitable that the BBC would cash in on its popularity by issuing a gramophone record of some of the featured music. This album contains seven tracks and comes in an attractive sleeve with copious notes, a foreword by Miss Fonteyn and pictures of the artistes. Royal Opera House Orchestra is conducted by Ashley Lawrence on BBC REP 363, cassette ZCH 363.

The Rose Adagio from *Sleeping Beauty* was the title music for the series and it appropriately opens the recording followed by Weber's *Invitation to the Dance* which, in the Berlioz orchestration, was used for Fokine's *Spectre de la Rose*. Off the beaten track is part of Act II of *La Sylphide*, the Danish classic with music by Herman Lovenskold dating from 1836. To finish Side 1 is *La Cachucha*, Taglioni's famous solo also dating from 1836, orchestrated and arranged by John Lanchbery, a Royal Ballet conductor.

Lanchbery has also edited the Fanny Elssler Pas de Deux from *La Fille Mal Gardée* from the 1789 score by Herold which was itself based on music by Donizetti. Robert Irving was another conductor associated with the Royal Ballet and the record includes his performing edition of the *Don Quixote* Pas de Deux by Minkus. The recording is harsh and over-bright, with orchestral sound lacking in body but it makes an apt souvenir of a popular programme. Interpretations are typically balletic, ideal for dancing but lacking in inner depth.

O Praise Ye the Lord on Abbey MVP 080 is a collection of favourite hymns by famous composers sung by the Worcester Cathedral Choir and Festival Chorus directed by Donald Hunt with Paul Trappe at the organ. They range from Purcell (*Blessed City, heavenly Salem*) through the Victorians John Goss, S. S. Wesley, Hubert Parry, to the great composers of this century. I am glad to see Vaughan Williams well represented by the Pilgrim's Hymn, *For All the Saints* and *Come Down O Love Divine*. This record will give a lot of pleasure and comfort.

Operetta and Musicals

The Offenbach centenary year was given a great start with a welcome recording of his most popular operetta **Orpheus in the Underworld**. Michel Sénéchal, Mady Mesplé, Jane Rhodes and Charles Burles have the leading roles and the Chorus and Orchestra of the Capitole de Toulouse is conducted by Michel Plasson on HMV SLS 5175. *Orphée aux Enfers* has been strangely neglected on disc and recently only highlights in English from the Sadler's Wells London production has been available. Here at last is the real thing in a spanking performance which can be highly recommended.

The usual concert Overture is missing. It was in fact prepared by Carl Binder for the 1860 Vienna production, and Plasson gives us instead an abridged version of Offenbach's own Prelude. It is difficult to get hold of original operetta scores these days and the fact that Offenbach composed two versions of Orpheus makes for added complications. The original at the Bouffes Parisiens in 1858 was a two-act affair, but when it was revised at the Theatre de la Gaite in 1874 and again in 1878 Offenbach's fame and prestige enabled him to mount an extended four-acter with ballets. It is the 1874 version which is presented here with a minimum of dialogue to link the numbers and only a few minor cuts in the Ballets.

Michel Sénéchal as Orpheus heads a superb cast well supported by an imperious Jane Rhodes as Public Opinion. Only flaw is the Euridice of Mady Mesplé, who seems unable to portray the cute sexy type without loss of voice quality. There are also moments of poor ensemble but on the whole everything goes well and there is an added bonus of Yan-Pascal Tortellier to play in the Concerto Duet of Act 1 and Orpheus's entrance in Act 4. Recording is close and over-brilliant, but that is not a bad fault for this type of show.

White Horse Inn (HMV SQ SLS5184, cassette TC-SLS5184) brought back childhood memories of being taken to the revival at the London Coliseum just before the war. Alpine scenery spilled over from stage to auditorium, corridors and foyers. That, coupled with spectacular costumes, happy tunes, and a plausible plot is the reason why this is one of the few multi-composer musicals to retain popularity. Chief composer Ralph Benatzky had no less than four collaborators including the experienced Robert Stoltz. Even so there are only about ten basic numbers which are subjected to endless repeats and permutations thinly spread over four sides. Peter Minich and Annaliese Rothenberger are in top form and the modern orchestration by conductor Willy Mattes bubbles along with Chorus and Orchestra augmented by Children's Choir and Alpine Band. Prospective buyers should, however, be warned that the great show-stopper *Goodbye* is not included. It was written specially for the London production by Robert Stoltz and on this recording the original Waltz number by the now forgotten Bruno Granichstaedten is substituted. Pity!

Another recommended operetta is Kalman's **Countess Maritza** on RCA Gold Seal GL30315, cassette GK30315. This is a re-issue from a 1962 German radio performance and the sound does not compare with the two shows already mentioned. There are some bad tape joins and Gretel Hartung in the title role cannot really be commended. But the whole thing is redeemed by the golden voice of Fritz Wunderlich in the leading tenor role. His artistry comes across in every bar and, with a voice reminiscent of Tauber's silky

tones, serves to remind us how much pleasure we have missed by his untimely death. A bull-headed Germanic performance lacks Viennese Schmaltz, but is heartily recommended for the singing of Wunderlich.

Light

Proceeding in an orderly fashion through the Philips catalogue I was apprehended by **The Detectives** (Philips 6308 255) under the baton of Johnny Gregory and his Orchestra. On examination at the nearest turntable they turned out to be a grim bunch (musically). There was Kojak, McMillan, McCloud, Banacek, Columbo, Harry-O and Griff, but only John Carl Parker's Cannon and The Sweeney from Harry South catch the ear. The rest is dull stuff when divorced from the visual action. However, as a stereo demonstration this is a fair cop and I particularly recommend the Six Million Dollar Man to corroborate my statement.

Barry Tuckwell is the latest serious musician to jump upon the popular bandwagon and in **A Sure Thing** (HMV ASD 3844, cassette TC-ASD 3844) he presents music by Jerome Kern in arrangements by Richard Rodney Bennett for Horn, Piano and small orchestra. Mr Tuckwell is one of our finest Hornists and it goes without saying that his playing is of the highest order. The arranger accompanies at the piano with eloquence and the backing group is composed of some top-class session men. The result is a thoroughly professional job, relaxed and suave with a fine recording to match and yet I cannot give it unqualified approval. The French Horn can be monotonous as a solo instrument and there is not enough contrast to make a really well-balanced programme. I lost interest about half way through the first side and longed for just one number with a bit of zip to wake me up.

One of the more enduring (and endearing) pop artists is Johnny Mathis and **Tears and Laughter** (CBS 10019) features a selection of favourite songs from the CBS catalogue. Twenty songs in all makes for good value, all well recorded and presented with the style and confidence associated with this artist.

Thank You for the Music (BBC REB370, cassette ZCF 370) is volume five of BBC Radio 2 Top Tunes and has turned out to be a tribute to the late Norrie Paramor, conductor of the BBC Midland Radio Orchestra. The programme has been designed for easy listening and features several soloists from the band as well as Norrie himself in some piano solos.

Top BBC TV Themes Vol. 2 (BBC REH 365, cassette ZCR 365) contains fourteen tracks of signature tunes of popular TV programmes. As might be expected some are meaningless away from the screen. I cannot, for example, imagine anyone deriving much pleasure from even two minutes of *Approaching Menace*. Neil Richardson's theme for *Mastermind*. On

the other hand it is always a joy to hear John Dankworth and *Telford's Change* features the Maestro himself as soloist. Also recommended is Rick Wakeman who brings his imaginative keyboard technique to *Birdman of Alcatraz* which introduces *My Son, My Son*.

Reader's Digest continues to put out some good quality bargains particularly in the light/pop field. **Country Superstars** is an eight-record collection of the combined talents of Johnny Cash, Lynn Anderson, Johnny Horton, Tammy Wynette, Marty Robbins, Charlie Rich, Lester Flatt and Earl Scruggs, and George Jone. A complete disc is devoted to each star. **Superstars of the 60's and 70's** is a ten-record collection featuring twenty artists who are given one side per disc each. Cilla Black, Tom Jones, Jimi Hendrix, Slade, Rod Stewart, and Gary Glitter are among the entertainers featured. **Startime** is an eight-record presentation of good middle-of-the-road stuff. Groups include The Dubliners and The New Seekers, bands featured are Syd Lawrence, Frank Chacksfield, Werner Muller, Bert Kaempfert and many others, while individual acts include Peters and Lee, Frankie Vaughan, Vera Lynn, Cleo Lane and Ray Charles. Surprise is the inclusion of the incomparable Lotte Lenya singing *Mack the Knife*. All three albums contain mainly well-known tracks which have mostly all reached the number one spot in the charts. There is no rubbish at all, and even older mono tracks have been refurbished with bright new sound. All highly recommended.

Decca has re-issued many light orchestral and popular selections on the Gold Crown label and one very interesting potpourri is entitled **Under Latin Skies** (DGS 18 or cassette KDGL 18) featuring the Roland Shaw Orchestra. It presents splendid arrangements of well-known Mexican tunes in a great variety of styles ranging from Flamenco, 18th Century ¾-time Ballads to the Pasa Doble of *El Relicario*. Sound is forward with some pertinent brass and percussion effects plus an un-named singer.

On the same label **The Romantic Pianos of Ronnie Aldrich** (DGS 17, cassette KDGC 17) is given a spacious and resonant recording but all tracks are slow and sentimental, the sort of thing ideal for background music but calculated to send you to sleep at home. **For The One You Love** (Decca SKL 5319, cassette KSKC 5319) is a typical arrangement of popular themes arranged by Ronnie Aldrich and played in his rather heavy-handed style with orchestral backing. To me it was like being constantly hit with a sledgehammer and I longed for just one little beautifully caressed phrase or a bit of tonal contrast — anything in fact to break the monotony.

Light music at its best is contained in **Splendour of Strings**, a two-record set on Decca DPA-R 3069/70, a collation of goodies dating from the years 1963-1970. Johnny Douglas contributes a tasteful

version of *La Vie En Rose* and *All in the Golden Afternoon*. Frank Chacksfield revives the once popular Intermezzo by Provost (remember the 1939 film "Love Story"?) while Werner Muller treats us to *Granada, Lady of Spain, The Breeze and I* and many others. Also in the line-up is the Cambridge Strings who are unknown to me but who play in a nice restful, relaxed style, well up to the standard of their distinguished colleagues.

Bargain Labels

Many music lovers turn up their superior noses at orchestral chunks of *Rosenkavalier*, but not all of us have the time or opportunity to listen to this very long opera complete. It contains some gorgeous tunes and I cannot see the harm in a little self-indulgence now and again. CFP 40327 contains two lengthy suites concocted by Norman Del Mar, who conducts the LPO, together with the Love Scene from *Fuersnot*, *Schlagobers Ballet Waltz* and *Munich Memorial Waltz*, the two latter dreary, insipid imitations of *Rosenkavalier*. This is a Lambert and Butler special recording for CFP, good value and well recorded. Del Mar is not intense enough for my personal liking and there are times when the LPO strings seem undernourished for Richard Strauss but, nevertheless, this record will give much pleasure.

In contrast Yehudi Menuhin conducts his Festival Orchestra in the Handel *Coronation Anthems* on CFP 40321. These four little masterpieces specially written for the Coronation of George III in 1727 are conceived in the grand manner and one of them, *Zadok the Priest*, has become a standard in the choral repertory. Menuhin gives them all a loving performance, letting the music speak for itself, but at the same time keeping a firm control over his forces. The recording has a warm glow about it which makes for comfortable listening.

Pickwick has concentrated on Country and Western recently and under the general title of *Country Stamped* has issued Double Albums at £3.49 of Don Williams, Dolly Parton, Tammy Wynette, Charley Pride, Slim Whitman, Johnny Cash and many more. Single albums and tapes cost £1.99. At the same time the company cashes in on the *Elvis Presley* revival with some fifteen albums, all including a give-away giant poster.

RCA has put out some of its finest issues of the past on the Gold Seal label selling at £3.25. One which should not be missed is a collection of music of *Vaughan Williams* played by Previn and the LSO on GL 42953. John Fletcher gives a first class account of the Tuba Concerto, James Buswell is agile and mellifluous in the Concerto Accademico for Violin, and Previn and the orchestra are in top form in the *Wasps Overture* and *Three Portraits* from the *England of Elizabeth*. The recording is absolutely splendid.

The Saga label has improved out of all

recognition. *More Piano Music of Erik Satie* (5472) features John McCabe on a Bosendorfer piano recorded at St. Michael's Highgate. This is the sequel to an earlier Saga disc (5387) and contains such rareities as the *Valse-Ballet*, an early work written at the age of nineteen, *Cinq Grimaces* arranged by Milhaud, and two *Gnossienne* in which he dispensed with bar lines and time signatures. Many old Saga's have now been repressed by Teldec and re-arranged. *A Recital of English Songs* (5473) features John Shirley Quirk and is a compendium of three previous albums. Tracks are taken from *Songs of Travel* (Vaughan Williams), *A Shropshire Lad*

(Butterworth), and popular songs by Ireland, Stanford, Keel and Warlock. The singing is superb and both sides are filled to over-flowing. Viola Tunnard, Martin Isepp and Eric Parkin are the splendid piano partners, and this record is highly recommended. Another re-issue (5350) presents works for *Mandoline and Piano* played by Hugo D'Alton and John Beckett. The programme comprises a Hummel Sonata in C and four short pieces by Beethoven. Hugo D'Alton plays on both types of Mandoline, Roman and Lombardian, and the recording is a model of clarity.

Off the Beaten track

Those who enjoy sampling something different might well like to thumb through the catalogues of Harmonia Mundi, now marketed by Parnote Distribution. For example HM1043 features the *Suites for Two Cellos* by Offenbach played by Etienne Peclard and Roland Pidoux.

The accompanying booklet is full of comprehensive notes and copious musical illustrations but the un-named author seems constantly apologising for the musical content. "A study of these scores has shown that he was hardly an innovator—conventional coda disappointingly trite—one could have hoped for more brilliance, more verve . . ." etc.

It is a good job then that this record comes well packaged in a cellophane wrapper because you can't read the notes until you have purchased the record. By that time you will have played the fascinating Second Suite and, I guarantee, be absolutely enchanted.

Offenbach started his career as a virtuoso cellist and these duos were the result of the friendship with his desk partner at the Opera Comique. They incorporate double stopping, arpeggios, high tessitura and all the technical paraphernalia of the Drawing Room virtuoso amply revealing the reason for Offenbach being one of the few non-pianists accepted on the Drawing Room circuit. Indeed, so much double-stopping is employed that for the most part the sound resembles a String Quartet confined to the lower end of the scale.

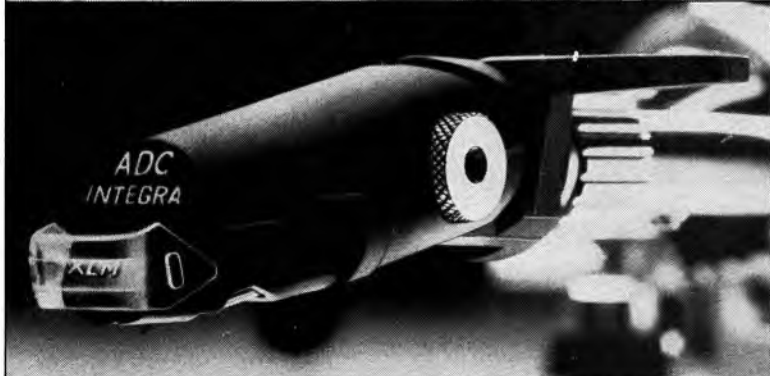
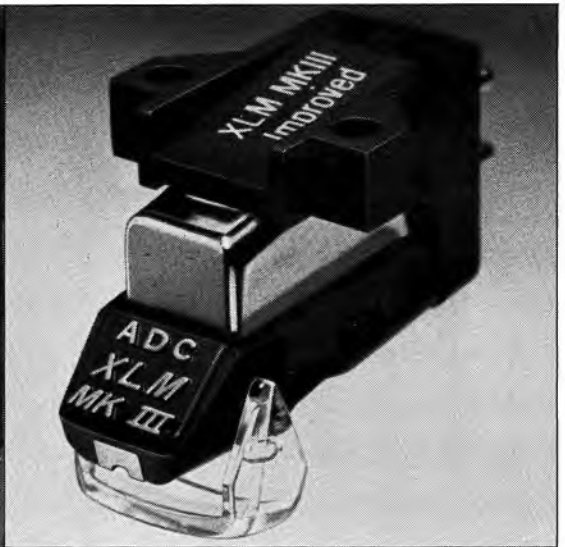
The First Suite has its dull moments notwithstanding a sensuous Waltz theme in the first movement. The Second Suite in E is a real find and displays a fertile imagination later to find complete fulfilment in the operettas. The long first movement ranges in mood from the Pastorale, the Schubertian, to comic opera tunes. The second movement is a restful Barcarolle and the piece ends with a light-hearted Rondo. The players are obviously enjoying themselves immensely, and the recording is warm and pleasant.

To couple the names of Schonberg, Berg, and Webern with the light offerings of *Johann Strauss* would seem an anachronism, but strange to say, these

disciples of the 12-tone philosophy all enjoyed a good Waltz. Schonberg had planned a concert for the Society for Private Musical Performances in Vienna but at the last minute the engaged singer cancelled. In a matter of days Schonberg arranged a Waltz Evening and together with his pupils Berg and Webern arranged four Strauss pieces for chamber ensemble consisting of String Quartet, Piano and Harmonium.

The arrangements are pure vintage Grand Hotel but with a transparency of scoring and an intimate knowledge of the capabilities of each instrument which puts all of them way above the usual small orchestra reductions. Three of those Waltzes are performed here plus Schonberg's later rescoring of the Emperor Waltz, this time using Flute and Clarinet in place of the Harmonium. Harmonia Mundi IC 065-99731 is heartily recommended not only as a novelty but for an hour of fascinating and tuneful listening.

The main attraction on CFP 40334 is a fine recording of the *Symphony No. 6 in E Minor* by *Vaughan Williams* by the LPO under Vernon Handley. The conductor stresses the turbulence and tension, tending to underplay the lyrical interludes. You will not find him lingering sentimentally over the Cantabile melody of the first movement. On the other hand he does not hammer out the three-note figure of the second movement as relentlessly as perhaps the composer intended. Taken all in all, this is a well-thought out, well drilled performance with clean lines in the Scherzo and chilling clarity in the sparse Epilogue. However it is the companion piece which might catch the eye of the casual buyer. Most of the second side is given over to the first recording of an orchestration of the Organ Prelude and Fugue in C Min. I don't know the original, but as orchestral music, this has little to offer. Still, it is scored for a large orchestra plus organ and makes some very impressive sounds, and the disc is well worth £1.99 of anyone's money for the Symphony alone.



Audio Dynamics Corporation. A division of BSR Limited.
You'll hear more from us.

Aerials VHF/FM

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd.
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2.
Tel: 01-452 6288.

P200

VHF/FM folded dipole ribbon indoor aerial.
Price: 66p (plus VAT).

P201

VHF/FM folded dipole ribbon indoor aerial
with FM plug fitted. Price: 84p (plus VAT).

■ AERIALITE

Aerialite Aerials Ltd,
Broadway, Chadderton, Oldham,
Greater Manchester OL9 9QE.
Tel: 061-652 1111.

FMS200 *

FM/stereo dipole and reflector array with 1-2in



Aerialite FMS 200



Aerialite FMS 300



Aerialite FMS 400

mast attachment bracket. Price: £9.30 (plus VAT).

FMS300 *

FM/stereo three-element array with 1-2in mast attachment bracket. Price: £12.35 (plus VAT).

FMS400 *

High gain stereo four-element array with 1-2in mast attachment bracket. Price: £14.00 (plus VAT).

FMS600 *

Six-element extra high gain (array only) stereo/FM, with 1-2in mast attachment bracket. Price: £21.20 (plus VAT).

FMS Kit

Comprising FMS300 aerial, WS/45 loft arm, 20 metres of low loss co-axial, co-axial plug, staples. Price: £22.50 (plus VAT).

■ ANTIFERRENCE

Antiferrence Ltd, Bicester Road, Aylesbury,
Bucks HP19 3BJ. Tel: Aylesbury (0296) 82511.

FM224 Mushkiller

Dipole and reflector 'H' type array. Complete with universal mast/boom clamp. For use in good reception areas. Price: £9.78 (inc VAT).

FM234T Mushkiller *

Three-element array with Trumatch dipole, complete with universal mast/boom clamp, for medium range FM stereo reception. Price: £14.38 (inc VAT).

FM244T Mushkiller

Four-element array with Trumatch dipole, complete with universal mast/boom clamp. Price: £15.64 (inc VAT).

FM264T Mushkiller *

Six-element array with Trumatch dipole, complete with universal mast/boom clamp. Suitable for medium and long-range FM stereo reception. Price: £23.58 (inc VAT).

FM284T Mushkiller *

Eight-element array with Trumatch dipole complete with universal mast/boom clamp. Price: £30.36 (inc VAT).

FM235T Mushkiller

Three-element array with Trumatch dipole

suitable for outdoor or loft fitting. Supplied with loft-mounting arm bracket and clamp plus a universal clamp for outdoor fixing. Price: £14.95 (inc VAT).

MA102 FM Mast Head Amplifier

Masthead amplifier in fully weatherproof housing complete with perforated strip and bracket for mast or surface mounting. Typical gain: 15dB. Price: £16.95 (inc VAT).

PU102 Power Unit

Power unit for MA102. Fully insulated housing. Price: £14.31 (inc. VAT).

TRR/V/SP Receiver Transformer

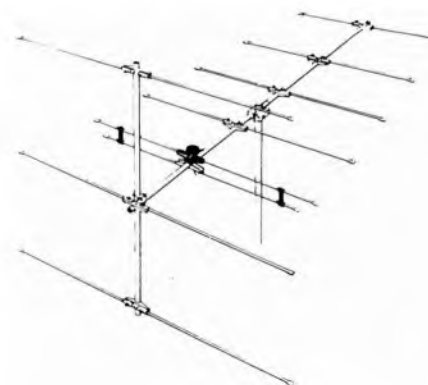
Matches 75 ohms coaxial input feeder into 300 ohms aerial sockets on imported tuners and tuner/amplifiers. Price: £3.80 (inc VAT).



Antiferrence FM234T Mushkiller



Antiferrence FM264T Mushkiller



Antiferrence FM284T Mushkiller



Aerialite FMS 600

UF2 TV/FM Aerial Combiner

In fully weatherproof housing complete with perforated strip and bracket for mast or surface mounting. Price: £3.79 (inc VAT).

Y12SP TV/FM Aerial Outlet

With built-in diplexer to separate TV and FM signals from a common download. Can also be used indoors to combine TV and FM aerials. Surface mounting. Price: £3.45 (inc VAT).

■ **B.I.C.**

Cambridge Audio Ltd,
105-109 Oyster Lane, Byfleet,
Surrey KT14 7JH.
Tel: Byfleet (09323) 51051.

The Beam Box FM-8 *

An electronically directable FM antenna which sits conveniently beside the receiver. By adjusting its knobs one can focus and fine-tune any FM signal coming from any direction. It maximises required signal and minimises unwanted signals. Switchable bandwidth four gang tuner. Dimensions: 12 $\frac{1}{8}$ x 14 x 3 $\frac{1}{2}$ in. Finish: Vinyl wood cabinet. Price: £29.00 (plus VAT).

The Beam Box FM-10 *

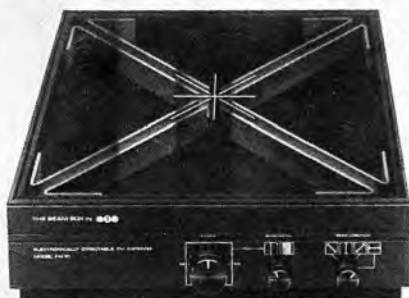
As above with extruded aluminium elements visible through clear acrylic top surface. Dimensions: 14 $\frac{1}{2}$ x 14 $\frac{3}{4}$ x 4 $\frac{1}{4}$ in. Price: £49.00 (plus VAT).

■ **EAGLE**

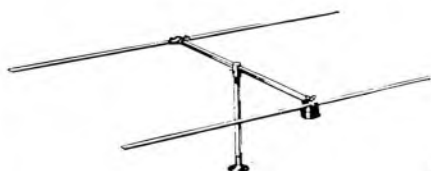
Eagle International,
Heather Park Drive, Wembley HA0 1SU.
Tel: 01-902 8832.



Beam Box FM8 by BIC



Beam Box FM10 by BIC



Eagle FMA 20

FMA 10

Band II dipole for loft mounting.

FMA 20 *

Band II FM aerial outdoor or loft mounting, 3dB gain. Front to back ratio of 6dB.

FMA 30

Band II FM aerial outdoor or loft mounting, 6dB gain, front to back ratio 8dB.

FMA 40

Band II aerial, 4-element, outdoor or loft mounting, 7.5dB, front to back ratio 25dB.

FMA 50

Band II aerial, 2-director, double reflector, 8dB gain, front to back ratio 32dB.

DA1

Complete 75 ohms indoor aerial with lead.

■ **EXATOR**

Audio Workshops Ltd,
Draper Street, Southborough,
Tunbridge Wells, Kent TN4 0PB.
Tel: Tunbridge Wells (0892) 39222.

Exa UKW 3

A 3-element FM aerial for local/medium range reception. Gain 5.0dB. Front-to-back ratio 15dB. Gold anodised finish. 75 ohms unbalanced output. Price: £11.90 (inc VAT).

Exa Stereo UKW 5

A 5-element aerial for medium/long range reception. Gain 7dB. Front-to-back ratio 22.5dB. Gold anodised finish. 75 ohms unbalanced output. Price: £17.02 (inc VAT).

■ **FUBA**

Audio Workshops Ltd,
Draper Street, Southborough,
Tunbridge Wells, Kent TN4 0PB.
Tel: Tunbridge Wells (0892) 39222.

Uka Stereo 8 *

A semi-professional 8-element FM aerial for very difficult positions and when only the very best is good enough. Gain 9.9dB. Front-to-back ratio 24dB. Output 75 ohms unbalanced. Gold anodised finish. Price: £40.83 (inc. VAT).

Uka Stereo 5 *

A semi-professional 5-element FM aerial for very difficult positions. Gain 7.9dB. Front-to-back ratio 23dB. Output 75 ohms unbalanced. Gold anodised finish. Price: £27.95 (inc VAT).

Uka Stereo 2

A high quality aerial for local/medium range reception. Gold anodised finish. Gain 3dB.



Fuba Uka Stereo 5

Front-to-back ratio 10dB. Price: £15.52 (inc VAT).

Uka 061

An omni-directional broadband FM aerial utilising the crossed dipole technique. Gain 3dB. Output 75 ohms unbalanced. Gold anodised finish. Price: £19.78 (inc VAT).

VMB 420

Masthead amplifier covering the FM band from 87.5MHz-104MHz. Gain 15dB. Price: £37.83 (inc VAT).

■ **JAYBEAM**

Jaybeam Ltd,
Sandfield Close, Moulton Park
Industrial Estate, Northampton NN3 1QQ.
Tel: Northampton (0604) 46611.

Stereobeam SBM2 *

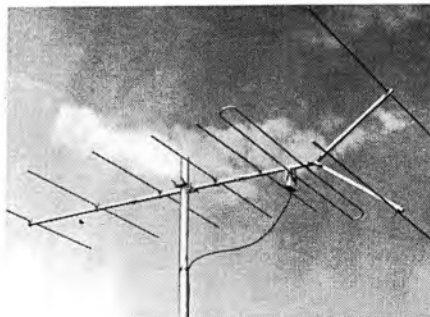
Band II folded dipole and reflector on boom. Supplied complete with fixing clamp for masts up to 2in diameter. Gain: 3dB. Reduces interference from rear. Price: £8.60 (plus VAT).

Stereobeam SBM3 *

Band II aerial comprising folded dipole, reflector and director on boom. Supplied complete with clamp to fit masts up to 2in diameter. Gain: 6dB. Gives protection against signals more than 40 degrees off bearing. Price: £12.40 (plus VAT).

Stereobeam SBM4

Band II aerial comprising folded dipole, reflector and two directors on boom. Supplied complete with clamp to fit masts up to 2in diameter. Suitable for medium fringe areas where large input signal is required for optimum performance. Gain: 7dB. Price: £14.30 (plus VAT).



Fuba Uka Stereo 8



Jaybeam Stereobeam SBM2



Jaybeam Stereobeam SBM3

Stereobeam SBM6

High-gain Band II aerial comprising folded dipole, reflector and four directors on boom. Supplied with clamp to fit masts up to 2in diameter. Suitable for use over the whole of the VHF/FM band, including the more powerful continental stations, in favourable locations. Gain: 8.5dB. Price: £20.50 (plus VAT).

FM9S Super Fringe Area FM Antenna *

Consists of folded dipole, five directors and triple reflector unit with universal mast clamp. Price: £36.70 (plus VAT).

Stacking Kit PM3

For extreme long range reception two SMB6 or FM9S arrays can be stacked together using phasing and matching harness PM3. Price: £7.50 (plus VAT).

■ LEGEND

Legend Electronics Ltd,
25 East Street, Bromley, Kent BR1 1QE.
Tel: 01-460 3313.

LA 903

FM Aerial and Spade Terminals. Suitable for frequencies 88-108MHz and consisting of twin flat 300 ohms ribbon cable formed into a traditional "T" pattern. At aerial centre and ends are simple fixing points to permit attachments to skirting board or wall.

LA 904

FM Aerial and Plug. Details as above.

■ MAXVIEW

Maxview Aerials Ltd,
Maxview Works, Setch, King's Lynn,
Norfolk.
Tel: King's Lynn (0553) 810591/810376.

D/DW

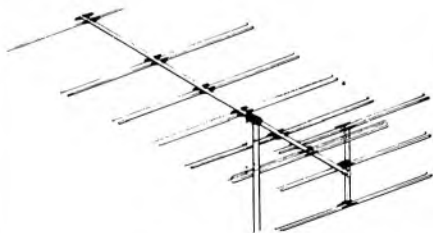
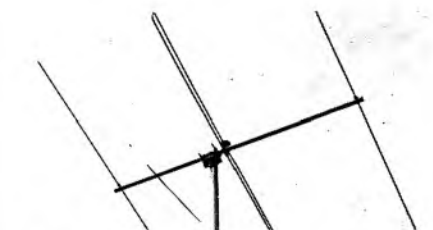
Band II wall-mounting dipole with stand-off arm and adjustable swivel fitting. Price: £2.20 (plus VAT).

D/DM

Band II dipole array with bracket for mast fitting. Price: £2.20 (plus VAT).

D/S3

Band II three-element array comprising director, dipole and reflector. Bracket for mast mounting. Price: £5.11 (plus VAT).

**Jaybeam FM9S****Maxview D/FD3****D/FD3***

Band II three-element array comprising director, folded dipole and reflector. Bracket for mast mounting. Price: £6.58 (plus VAT).

Stereomax 4

Tripole, two directors and reflector. Price: £12.31 (plus VAT).

Stereomax 6*

Tripole, four directors and reflector. Price: £16.02 (plus VAT).

Stereomax 9

Tripole, four directors and four reflectors. Price: £23.97 (plus VAT).

■ PREMIER

Premier Industries Ltd,
343-345 High Street, Cheltenham Spa,
Gloucestershire GL50 3HS.
Tel: Cheltenham (0242) 511511.

TS4

Four-element Band II array comprising two directors, folded dipole and reflector. Easy to assemble. Supplied with 2in universal clamp. Bright alloy and very robust. Price: £13.06 (plus VAT).

TS6

Six-element Band II array comprising four directors, folded dipole and reflector. Easy to assemble. Clamp supplied. Bright alloy and very robust. Price: £17.26 (plus VAT).

Clarity PH/ST

Phasing harness for coupling two TS4 or two TS6 arrays for extra long distance reception. Price: £4.52 (plus VAT).

TS1

Single dipole Band II array. Supplied with 2in universal mast clamp. Price: £4.20 (plus VAT).

TS2

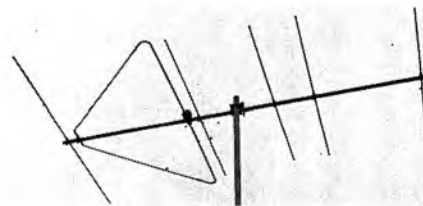
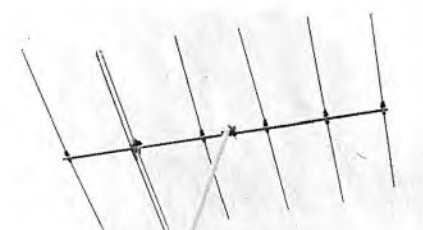
H Band II array. As above. Price: £6.46 (plus VAT).

TS3

Three-element array, folded dipole. Clamp included. Price: £10.42 (plus VAT).

Soundtrack*

Five-element on round boom construction for

**Maxview Stereomax 6****Premier TS6**

areas where trouble with interference is prevalent. Price: £21.26 (plus VAT).

TS3L

Loft version of TS3 and therefore lightweight construction but supplied with mounting arm. Price: £5.66.

■ ROSS

Ross Electronics,
32 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

RE-530K/RE-534K

RE-530K and RE-534K are folded dipole indoor aerials of 300 ohms ribbon twin feeder, each fitted with a 2-metre lead-in. Simple fixing points at aerial centre and ends permit simple attachment. RE-530K is fitted with spade terminals, RE-534K with a standard FM plug. Prices: RE-530K 60p (plus VAT). RE-534K 84p (plus VAT).

■ VORTA

Premier Industries (Cheltenham) Ltd,
343-345 High Street,
Cheltenham Spa, Glos GL50 3HS.
Tel: Cheltenham (0242) 31166.

Octophonic-OST8*

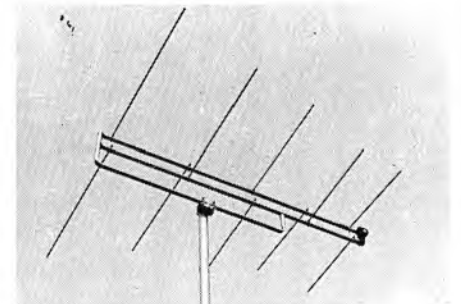
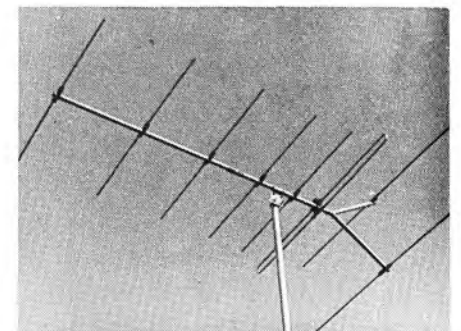
Continental style 8-element Band II aerial, comprising five directors, folded dipole (75/300 ohms matching transformer built-in), and a two-element fish tail type reflector. Robustly constructed on a 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £31.45 (plus VAT).

VS1

Single dipole. Deluxe Band II aerial. Dipole mounted on 25mm sq section stand-off arm 30mm in length. Complete with mast fixing clamp. Gold finish. Price: £6.18 (plus VAT).

VS2

Dipole and reflector ('H' type) deluxe Band II

**Premier Soundtrack****Vorta Octophonic OST8**

aerial. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £10.96 (plus VAT).

VS3 *

Three-element deluxe Band II aerial. Comprising one director, folded dipole, folded reflector. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £19.60 (plus VAT).

Axiomatic

18-foot AM Skyrod finished in radiant blue plastic sheath. Supplied with mountings and isolation arm, two transformers and special downlead. Price: £31.45 (plus VAT).

VS2F

As VS2 with folded director. Price: £14.00 (plus VAT).

■ **WOLSEY ELECTRONICS**

Cymmer Road, Porth,
Mid Glamorgan CF39 9BT.
Tel: Porth (044 361) 2711.

FMD (Single Dipole)

Rugged outdoor version of above with similar or improved performance. Price: £5.00 (plus VAT).

FM2 (Dipole and Reflector)

Economic design giving improved directional characteristics and higher gain in forward direction. Price: £8.28 (plus VAT).

FM4 (Four element)

Fringe area high gain array providing superior characteristics in both gain and directivity. Price: £14.77 (plus VAT).

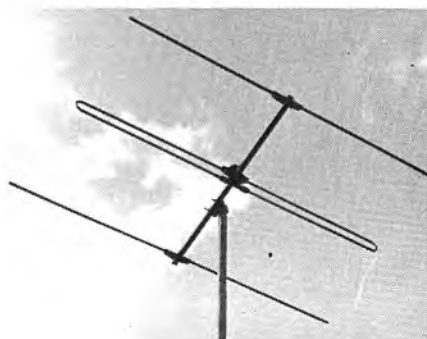
FM6 (Six element)

Super gain array designed to give best results under most difficult conditions, especially useful in areas where multipath distortion is predominant. Price: £20.00 (plus VAT).

Clearsound Amplifier

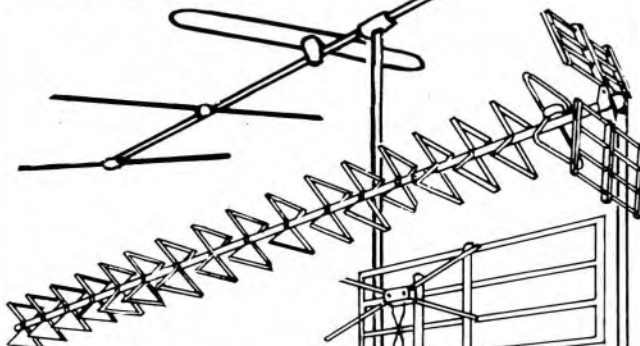
With a minimum gain of 20dB this aerial booster amplifier has been designed for areas of weak signal. Operates with any 75 ohm aerial, particularly effective with stereo reception on fringe or distant transmissions, even in areas of local high signal levels. Price: £29.40 (plus VAT). Supplied with separate mains power unit for installation near the tuner or receiver.

continued on page 56



Vorta Three Element VS3

Clearly a signal success!



**Wolsey
for all
your
aerials,
boosters,
outlets &
accessories**



Be it—Hi Fi; Quality
Colour TV; Teletext Reception;
VCR Distribution; Multiple
Outlets; and all accessories;
Consult:-

Wolsey
Electronics

The Experts



Cymmer Road, Porth,
Mid - Glamorgan, CF39 9BT.
Tel: Porth (044 361) 2711.
Telex 498405.

A division of AB Electronic Components Ltd

AMPLIFIERS AND CONTROL UNITS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AIWA

Aiwa Sales and Service (UK) Ltd,
30-32 Concord Road, Westwood Park
Trading Estate, London W3 0TH.
Tel: 01-993 1672.

AA 8700

Integrated amplifier. Output: 70W into 8 ohms. THD: 0.01%. FR: 5Hz-50kHz \pm 0.3dB. Inputs: phono 1, phono 1/2 tuner, auxiliary, tape 1/2, DIN (tape 3), main in. Damping factor: >40. Controls: tape monitor and copy for tapes 1/2/3, muting, loudness, turnover frequency selection and tone defeat, high and low filters, variable capacitive loading on phono 1. Dimensions: 44.8 x 37.5 x 15cm. Features: peak reading meters. Price: £260.00 (plus VAT).

AA 8100*

Integrated amplifier. Output: 25W per channel. THD: less than 0.2% at continuous rated power output. FR: 10Hz-40kHz. Inputs: phono 2.5mV 47K, tuner 150mV 33K, aux 150mV 33K, tape 150mV 33K. Damping factor: 25. Dimensions: 42 x 29.5 x 15cm. Price: approx. £80.00 (plus VAT).

AA 8300

Integrated amplifier. Output: 45W per channel. THD: less than 0.1% at continuous rated power output. FR: 10Hz-40kHz \pm 3dB. Inputs: phono 2.5mV 47K, tuner 150mV 47K, aux 150mV 47K, tape 150mV 47K. Damping factor: 45. Dimensions: 42 x 33 x 15cm. Price: approx. £125.00 (plus VAT).

■ AKAI

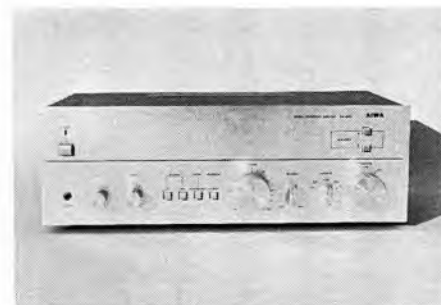
Akai (UK) Ltd,
The Production Village,
82-106 Cricklewood Lane, London NW22 2DP.
Tel: 01-450 2011.

AM2250

Stereo integrated amplifier with output of 25W per channel. THD: <0.2%. FR: 30Hz-15kHz. Damping factor: 50. Dimensions: 38 x 22 x 13cm. Price: £92.00 (inc. VAT).

AM2350

Stereo integrated amplifier with output of 35W per channel. THD: <0.2%. FR: 30Hz-15kHz.



Aiwa AA 8100

Damping factor: >30. Dimensions: 38 x 12.3 x 24.1cm. Features: twin power level meters, three-way speaker switching, twin tape monitor facility, tape 1 to tape 2 dubbing. Price: £135.50 (inc. VAT).

AM2450

Stereo integrated amplifier with output of 45W per channel. THD: <0.08%. FR: 30Hz-15kHz. Damping factor: >30. Dimensions: 44 x 14.4 x 34.5cm. Features: twin power level meters, three-way speaker select, two-way tape monitor, both-way tape 1 and 2 dubbing, speaker overload relay circuit. Price: £159.00 (inc. VAT).

AM2650

Stereo integrated amplifier with output of 65W per channel. THD: <0.08%. FR: 30Hz-15kHz. Damping factor: >30. Dimensions: 44 x 14.4 x 34.5cm. Features: High/low filter switching, audio mute control, tone defeat switch. Price: £215.00 (inc. VAT).

AM2850

Stereo integrated amplifier with output of 85W per channel. THD: <0.08%. FR: 30Hz-15kHz. Damping factor: >50. Dimensions: 44 x 17 x 43cm. Features: DC complementary circuitry, bass, mid and treble controls, high and low filter switching. Price: £335.00 (inc. VAT).

AM 2950

Stereo integrated amplifier with output of 120W per channel. THD: <0.06%. FR: 30Hz-15kHz. Damping factor: >50. Dimensions: 44 x 17 x 43cm. Features: DC complementary circuitry, 5 stage tone controls, 2 stage audio mute. Price: £435.00 (inc. VAT).

■ ALBA

Alba (Electronics) Ltd,
Bull Lane, Edmonton,
London N18 1SD.
Tel: 01-803 4451.

2025

Integrated amplifier with output of 28W. THD: <0.1%. FR: 20Hz-20kHz. Inputs: phono, tuner, tape. Damping factor: at 20Hz >50. Controls: level, bass, balance, loudness, treble. Dimensions: 43.6 x 27.8 x 13cm. Features: speaker switching A-B.

2050*

Integrated amplifier with output of 50W. THD: <0.1%. FR: 20Hz-20kHz. Inputs: phono, tape, tuner. Damping factor: at 20Hz >50. Controls:



Alba 2050

volume, loudness, balance, treble, bass. Dimensions: 43.6 x 27.8 x 13cm. Features: speaker switching, variable input level controls.

3000

Integrated amplifier with output of 30W per channel. THD: 1%. FR: 50Hz-20kHz. Inputs: 25mV 4-8 ohms. Controls: volume, balance, dubbing, filter, treble, bass, loudness. Dimensions: 42 x 25 x 7cm. Features: LED level indicators.

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.

EX440*

Integrated amplifier/graphic equaliser with output of 40W per channel. THD: 0.1%. FR: 10Hz-30kHz \pm 3dB. Inputs: 1.5mV 47K phono, 270mV 100K aux, 200mV 100K tape. Controls: tone, rumble filter, scratch filter, loudness, volume, balance, mono/stereo, tape monitor. Dimensions: 42 x 27 x 10cm. Features: LED power indicators.

A202

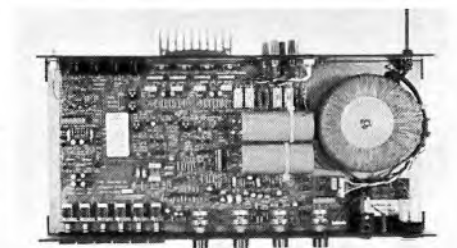
Power amplifier. Output: 54W into 4 ohms, 42W into 8 ohms. THD: better than 0.08%. FR: 8Hz-70kHz \pm 3dB. Inputs: 350mV 20K. Dimensions: 30 x 31.3 x 6.4cm. Features: LED power indicators.

■ A & R

Amplification and Recording (Cambridge) Ltd,
French's Mill, French's Road,
Cambridge CB4 3NP.
Tel: Cambridge (0223) 54507.



Amstrad EX 440



A and R A 60 internal shot

A60*
 Integrated amplifier with output of 35W per channel into 8 ohms. THD: <0.2% at any frequency between 20Hz-20kHz, <0.08% at 1kHz. FR: 40Hz-20kHz \pm 1dB mag PU, type -3dB. at 20Hz, others: 20Hz-20kHz +0.5dB -1dB. Inputs: mag PU 2mV at 1kHz, other inputs 100mV into 100K. Damping factor: 45. Controls: input selector, tuner, aux, tape monitor, HF filter, mono, volume, bass, treble, balance. Dimensions: 45 x 24 x 6cm. Features: Mag PU input resistance and capacitance user-changeable via plug-in modules. Phones socket, delayed electronic protection of power amplifier. Toroidal mains transformer, built-in rumble filter on RIAA, low turnover frequency bass control, single fibreglass p.c. board, loudspeaker sockets, heavy duty terminals capable of accepting both wires and 4mm plugs. Price: teak or walnut £165.00 (plus VAT); black £170.00 (plus VAT); rosewood £175.00 (plus VAT).

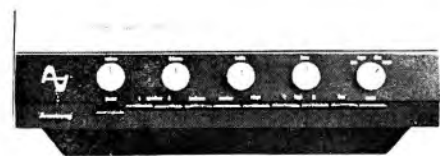
HA10
 Moving coil cartridge pre-amplifier, designed to be used with A60 or any audio amplifier. Power is derived from A60. Sensitivity: 65 μ V-130 μ V. THD: less than 0.01%. FR: 10Hz-20kHz. Power requirements: 15 Volts at 15mA supplied from A60. Dimensions: 14.3 x 9.7 x 3.7cm. Price: £42.00 (plus VAT). A phono-in-out version is available for use with other manufacturers' amplifiers. This may be powered from a simple, fully stabilised mains power pack type MPSU. Price: £15.00 (plus VAT).

■ **ARMSTRONG**
 Armstrong Audio Ltd,
 Warlters Road, London N7 0RZ.
 Tel: 01-607 3213.

621*
 Integrated stereo amplifier. 40W per channel into 8 ohms. THD: 0.08% at rated output. FR: 20Hz-20kHz \pm 1dB. Inputs: disc (1) 3.0mV 47K; disc (2) 6.0mV 47K; tape 250mV 68K; tuner 120mV 68K; auxiliary 120mV 68K. Damping factor better than 50. S/N ratio: -65dB unweighted. Controls: volume, bass, treble, balance, input selector, loudspeakers 1+2. Loudness, monitor, mono/stereo, filter 1 & 2, slope and low filter. Dimensions: 31.2 x 28.5 x 8.2cm. Features include electronic gate switching on inputs, teak or rosewood case. Price: £153.33 (inc. VAT).

■ **AUDIO PRO**
 Audio Pro (Hi-Fi) Ltd,
 Brook House, Crewe Road, Wheelock,
 Sandbach, Cheshire CW11 9HT.
 Tel: Sandbach (093 67) 7520.

B2-50 Sub-woofer
 Amplifier with designed output impedance characteristics in which inertial mass of any magnitude can be added to speaker cone without any extra weight, and thus without risk of sagging. Damping can be added or subtracted at will, so a long voice coil will not cause



Armstrong 621

under-damped resonance. Electrically synthesised parameters are more linear than the inherent mechanical parameters in the speaker system, so reduction in distortion can be gained. They are also more stable so the speaker is relatively unaffected by temperature, humidity and age. Distortion: less than 2% at 96dB. FR: 20Hz-200Hz +0; -3dB upper limit adjustable 40Hz-200Hz. Controls: volume, crossover, on/auto selector. Dimensions: 18 $\frac{3}{8}$ x 17 $\frac{7}{16}$ x 21 $\frac{1}{8}$ in. Price: £391.85 (plus VAT).

■ **CAMBRIDGE AUDIO**
 Cambridge Audio Ltd,
 105-109 Oyster Lane, Byfleet,
 Surrey KT14 7JH.
 Tel: Byfleet (093 23) 51051.

P80*
 Integrated stereo amplifier. 40W per channel into 8 ohms. THD: less than 0.1% at 1kHz. FR: 25Hz-25kHz \pm 0.5dB. Inputs for phono 1mV 47K, radio 250mV 180K, cassette 150mV 100K, aux 150mV 100K, tape 1 & 2 400mV. Tape 1 & 2 outputs 400mV. Damping factor: 80 into 8 ohms. S/N ratio: phono 60dB tuner <70dB unweighted. Controls: balance, input selector, pre-amp volume control, treble, bass, power amp level, tape 1, tape 2. Dimensions: 41.9 x 24.4 x 5.1cm. Features include variable gain front end. Visual monitoring of signal levels. Equalised tape output facility. Price: £219.00 (plus VAT).

■ **CRIMSON ELEKTRIK**
 Crimson Elektrik,
 1a Stamford Street, Leicester LE1 6NL.
 Tel: Leicester (0533) 553508.

CS 1200/M*
 Pre-amplifier with output of 100W per channel. THD: <0.001%. FR: 20Hz-20kHz. Damping factor: >40. Controls: volume, balance, tape monitoring. Features: S/N ratio better than 70dB unweighted, variable cartridge loading. All unnecessary functions and accessories have been omitted and emphasis placed on neat and convenient operation with high performance. Price: £160.00 (inc. VAT).

CS 2000*
 Mono power amplifier. THD: 0.01%. Bridge mode operation. Damping factor: 40. S/N ratio 100dB, fully protected. 150W RMS wide band, 200W dynamic power into 8 ohms. Price: £230.00 (inc. VAT).



Cambridge Audio P80 Amplifier Control Unit



Crimson Elektrik range

CS 1204/8*
 Power amplifier. THD: 0.007%. Twin power supply. Damping factor: 40. S/N ratio: 110dB. Fully protected against open and short circuit and over-temperature conditions. Price: £230.00 (plus VAT).

■ **DENON**
 Eumig (UK) Ltd,
 14 Priestley Way, London NW2.
 Tel: 01-450 8070.

PMA-530*
 Integrated amplifier with output: 70W + 70W. THD: 0.005% into 4 ohms, less than 0.008% (20Hz-20kHz). FR: 1Hz-400kHz +0 -3dB. Inputs: phono, tuner, aux. Controls: volume, bass, treble, balance, loudness. Dimensions: 45.4 x 39 x 11.2cm. Features: tape monitor, loudspeaker switch. Price: approx. £200.00 (plus VAT).

PMA-400
 Integrated amplifier with output of 50W per channel. THD: less than 0.05%. FR: 5Hz-100kHz. Inputs: tuner, aux, tape, phono. Dimensions: 43 x 14.6 x 32.1cm. Features: all silicon transistor. Price: approx. £230.00.

PMA-200
 Integrated amplifier with output of 55W per channel. THD: less than 0.08%. FR: 20Hz-20kHz. Inputs: tuner, aux, tape, phono. Dimensions: 43 x 14.3 x 31cm. Features: all silicon transistor. Price: approx. £190.00.

PMA-850
 Pre-main amplifier, all stage pure complementary push-pull system DC circuit. Output: 110W per channel at 1kHz, 85W per channel at 20Hz-20kHz. THD: less than 0.01%. FR: 5Hz-100kHz +0dB -1dB. Inputs: tuner, aux, tape, phono. Dimensions: 43.4 x 16.4 x 40cm. Price: approx. £397.00.

■ **DUAL**
 Hayden Laboratories Ltd,
 Hayden House, Churchfield Road,
 Chalfont St. Peter, Bucks. SL0 9EW.
 Tel: Gerrards Cross (028 13) 88447.

CV 1400
 Amplifier with music power output: 2 x 75W. Continuous power output: 2 x 50W. FR: 10Hz-40kHz \pm 1.5dB. THD: <0.2%. Electronic overload protection. Finish: metallic brown or silver. Dimensions: 44 x 15 x 35cm. Price: £274.00 (plus VAT).

CV 1200
 Amplifier with music power output: 2 x 60W. Continuous power output: 2 x 40W. FR: 15Hz-25kHz \pm 1.5dB. THD: <0.2%. Electronic overload protection. Finish: metallic brown or silver. Dimensions: 44 x 11.5 x 35cm. Price: £192.00 (plus VAT).



Denon amplifier and tuner set-up

CV 1700

Integrated amplifier with output of 100W per channel. THD: 0.1%. FR: 10Hz-40kHz \pm 1.5dB. Dimensions: 44 x 15 x 36cm. Features: microphone inputs, moving coil inputs.

CV 1500 RC

Integrated amplifier with output of 60W per channel. THD: 0.2%. FR: 10Hz-40kHz \pm 1.5dB. Infra-red remote controls besides manuals. Dimensions: 44 x 15 x 36cm. Features: all major functions controlled by remote infra-red system.

CV 1100

Integrated amplifier with output of 25W per channel. THD: 0.2%. FR: 15Hz-25kHz \pm 1.5dB. Dimensions: 44 x 15 x 35cm. Features: two tape inputs, microphone mixing.

■ **EAGLE**

Eagle International, Precision Centre, Heather Park Drive, Wembley HA0 1SU. Tel: 01-902 8832.

A 8500

Integrated amplifier with output of 50W per channel. THD: 0.05%. FR: 9Hz-50kHz $-$ 3dB. Inputs: phono 3mV at 47K, tuner 180mV at 100K, aux 180mV at 100K, tape 1/2 180mV at 100K. Controls: speakers A/B, stereo/mono, loudness, click-stop volume, input, bass, treble, balance, tape monitors, tape dubbing, tone defeat. Dimensions: 44 x 34.5 x 13cm. Features: LED power output level meters, independent tape dubbing, tone control bypass.

GHX 720

Graphic equaliser with left and right slider controls at 50Hz, 130Hz, 350Hz, 1kHz, 3kHz, 6kHz. Inputs for stereo line source and tape. Outputs for amplifier and tape. Tape monitor switch. Power supply: 240V AC. Suitable for console mounting or free-standing. Size: 32 x 9 x 24cm.

■ **ESOTEC**

Marantz Audio UK Ltd, 193 London Road, Staines, Middlesex. Tel: Staines 50132.

MA5

Mono power amp with selective operating classes A or AB. Low distortion, good transient response and play back. Full details on application.

SM 1000

Power amplifier with 400W high power capable of handling PCM. Full details on application.

SC 6

Stereo control console amplifier. THD: below 0.005%. S/N ratio: more than 86dB. Three-position cartridge load selector and EQ subsonic filter. Equipped for selectable load for 27K, 47K and 100K.

SM6

Stereo power amp with switchable class A and AB. A stereo version of MA5.

PM6

Stereo pre-main amp with selectable class A and AB. A combination of SC6 and SM6.

PM5*

Stereo pre-main amplifier with selectable class

A and AB. Power down unit of PM6 with some special features. Output: 80W per channel.

■ **EXPOSURE**

Exposure Electronics, Richardson Road, Hove, Sussex. Tel: Brighton (0273) 777912.

Exposure III

Pre-amplifier with output 15V peak. THD: 0.002%. Inputs: 200 μ V for moving coil. Controls: volume and balance. Features: hand built. Price: Exposure III and IV combination £500.00 (plus VAT).

Exposure IV

Output stage gives 40W. New circuit design and modular construction. Price: Exposure III and IV combination £500.00 (plus VAT).

Dual Supply

Giving greater separation at all audio frequencies. Transient capability: greater than 400VA, pre-amplifier as standard. Price: £650.00 (plus VAT).

Passive Pre-amplifier

As standard but wired in disc input stage in Neumann cable. Passive type RIAA disc stage improves performance. Neumann connecting lead. Price: £750.00 (plus VAT).

■ **FIDELITY**

Fidelity Radio Ltd, Victoria Road, London NW10 6ND. Tel: 01-965 8771.

350A

Stereo power amplifier. Output: 35W per channel. THD: less than 0.08%. FR: 15Hz-30kHz \pm 1dB. Inputs: phono, tuner, tape, aux. Controls: treble, bass, input selection, speaker selection, scratch and rumble switches, loudness control, mode, volume and balance; two VU meters and power. Dimensions: 45 x 28 x 15.5cm. Features: two output power meters, selection of $-$ 20dB volume level, mono or stereo; two frequency scratch and rumble filters; two selection loudness contour; three switched external mains output sockets.

■ **GRANT-LUMLEY**

Grant-Lumley Audio, Unit C, Paulsgrove Industrial Estate, Southampton Road, Cosham, Hants. Tel: Cosham (070 18) 389923.

GL50A

Power amplifier with output of 50W. THD: better than 0.25%. FR: $-$ 3dB at 10Hz and 35kHz. Inputs: 100K. Controls: on/off. Dimensions: 48.3 x 25.7 x 21.2cm.

GL 100A*

Power amplifier with output of 70W. THD:

better than 0.25%. FR: at SW $-$ 1.5dB down at 5Hz and 45kHz. Inputs: 500mV for 70W. Controls: on/off. Dimensions: 50.8 x 30.5 x 22.9cm.

■ **GRIFFIN**

H. K. Griffin & Co. (Electronics), Siddons Factory Estate, Howard Street, West Bromwich, West Midlands B70 0SU. Tel: 021-556 6823.

G82

Integrated amplifier. Output: 100W per channel. Inputs: Sensitivity 100mV RMS. Controls: on/off, volume, bass, treble, balance, source, aux. Features: LED indicators, headphone socket. Price: £337.50 black metal or £352.00 teak/walnut (both plus VAT).

■ **GRUNDIG**

Grundig International Ltd, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

V1000

Integrated amplifier. Output: 35W (4 ohms), 25W (8 ohms). THD: \leq 0.05% at 1kHz. FR: 10Hz-50kHz $-$ 3dB. Inputs sensitivity: PU 2mV into 47K, high level 200mV into 470K. Damping factor: 54 (8 ohms). Controls: bass, treble, contour. Dimensions: 45 x 38 x 11cm. Features include two speakers, tape-to-tape copying. Price: £84.00 (plus VAT).

V2000

Integrated amplifier. Output: 50W (4 ohms), 33W (8 ohms). THD: \leq 0.03% at 1kHz. FR: 10Hz-50kHz $-$ 3dB. Inputs sensitivity: PU 2mV into 47K, high level 200mV into 470K. Damping factor: 72 (8 ohms). Controls: bass, midrange, treble, contour. Dimensions: 45 x 38 x 11cm. Features include two speakers, two headphones, tape-to-tape copying, midrange control. Price: £104.00 (plus VAT).

V5000

Integrated amplifier. Output: 100W (4 ohms), 70W (8 ohms). THD: \leq 0.02% at 1kHz. FR: 5Hz-60kHz $-$ 3dB. Inputs sensitivity: M. Magnet 1.9mV 11 ohms, moving coil 0.17mV 11 ohms, mic 1.8mV 50K ohms, high level 200mV 500K ohms. Damping factor: 72 (8 ohms). Controls: bass, midrange, presence treble, variable contour/output. Dimensions: 45 x 38 x 11cm. Features include quasi equaliser, variable sensitivity on low level inputs, moving coil and microphone inputs. Price: £248.00 (plus VAT).

MXV100

Mini pre-amplifier. Output: 1V. THD: \leq 0.005% at 1kHz. FR: 5Hz-60kHz $-$ 3dB. Inputs sensitivity: M. Magnet high 2mV 47K ohms, low 4mV 47K ohms, high level 200mV 470K ohms. Controls: bass, treble, loudness. Dimensions: 27 x 22 x 6cm. Features include



Esotec PM5



Grant Lumley GL100A

twin outputs, class A circuitry, headphone socket. Price: £110.00 (plus VAT).

MA100

Mini power amplifier. Output: 50W (4 ohms), 35W (8 ohms). THD: $\leq 0.01\%$ at 1kHz. FR: 5Hz-70kHz -3dB . Inputs sensitivity: 1V. Damping factor: 60 (8 ohms). Controls: on/off/automatic, LS1/LS2, sensitivity, output. Dimensions: 27 x 22 x 12cm. Features include LED power meters with switchable sensitivity, output level, input sensitivity control. Price: £130.00 (plus VAT).

HARMAN/KARDON

Harman UK.
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (049 481) 5331.

hk725

Pre-amplifier. THD: 0.009% phono, 0.005% high level. FR: 1Hz-150kHz $+0 -1\text{dB}$. Inputs sensitivity/impedance: 2.3mV/47K phono, 145mV/23K ohms high level. Dimensions: 38.5 x 32 x 7.25cm. Price: £117.39 (plus VAT).

hk770

Power amplifier. THD: 0.006%. FR: 1Hz-250kHz -3dB . Input sensitivity/impedance: 1.2mV/35K. Damping factor: 50. Dimensions: 38.5 x 32 x 7.25cm. Price: £221.74 (plus VAT).

HARRISON

Harrison-Chapman Ltd,
95 Gray's Inn Road, London WC1.
Tel: 01-405 9665.

S200*

Stereo integrated amplifier. Incorporates touch sense function switching, an LED output level meter and full output protection which is self-restoring. Inputs: mic 110mV 68K, phono 2.5mV 47K, two aux and radio adjustable 100mV 50K. Noise level: mic and phono 60dB ref 100W, aux and radio 70dB ref 100W. Output: 100W into 4 ohms, 75W into 7.5 ohms. Disc input overload margin 40dB. Damping factor: THD: 0.05% at 100W, 1kHz. FR: 20Hz-20kHz $\pm 0.5\text{dB}$ at 50W. Size: 17 x 10 1/2 x 3 3/4in. Price: £277.64 (plus VAT).

HITACHI

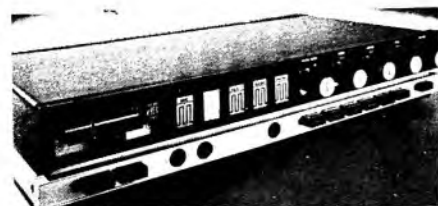
Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes, Middlesex.
Tel: 01-848 8787.

HA 5700*

Integrated amplifier. Output: 50W. THD: 0.02%. FR: 20Hz-20kHz $\pm 0.2\text{dB}$. Inputs: 2.5. Damping factor: 60. Controls: speaker A + B, power meter, low filter, tone defeat switch. Dimensions: 43.5 x 11 x 38.3cm. Features: MOSFET amplifier, LED peak power indicator. Price: £189.00 (plus VAT).

HMA 6500

Power amplifier. Output: 50W. THD: 0.02%.



Harrison S200

FR: 20Hz-20kHz. Damping factor: 50. Dimensions: 43.5 x 15.3 x 30.6cm. Features: MOSFET amplifier, wide range, power output meters. Price: £159.00 (plus VAT).

HCA 6500

Control amplifier. Inputs: 2.5. Controls: tone defeat switch, muting, speaker A + B. Dimensions: 43.5 x 7.8 x 27.5cm. Features: slimline styling, equaliser with low distortion, high S/N, ICL DC configured amplifier equaliser. Price: £89.00 (plus VAT).

HA 7700

Integrated amplifier. Output: 60W. THD: 0.02%. FR: 20Hz-20kHz. Inputs: 2.5. Damping factor: 60. Controls: speaker A + B, low filter. Dimensions: 43.5 x 16.4 x 38.3cm. Features: power MOSFET, DC circuit, built-in MC head. Price: £289.00 (plus VAT).

HA 2700

Integrated amplifier with output of 20W per channel. THD: 0.05%. FR: 20Hz-10kHz. Features: slimline styling. Price: £75.00 (plus VAT).

HA 3700

Integrated amplifier with output of 35W per channel. THD: 0.05%. FR: 20Hz-20kHz. Features: slimline styling. Price: £94.00 (plus VAT).

HA 4700

Integrated amplifier with output of 50W per channel. THD: 0.02%. FR: 20Hz-20kHz. Features: slimline styling, super linear moving coil cartridge input. Price: £119.00 (plus VAT).

HMV

Intersound Electronics Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

4000A Amplifier

Stereo amplifier with power output: 40W per channel into 8 ohms. FR: 15Hz-30kHz $\pm 1\text{dB}$. THD: less than 0.08%. Recommended load 4-8 ohms. Inputs: 3mV 50K, 150mV 100K, 1.15mV 100K, 2.15mV 100K. Outputs: 1.30mV 50K, 2.15mV 6K. Dimensions: 45 x 28 x 15.5cm. Finish: walnut effect with brushed black fascia. Price: £96.52 (plus VAT).

ITT

ITT Consumer Products Ltd,
Chester Hall Lane, Basildon, Essex.
Tel: Basildon 3040.

HIFI 8045

Integrated amplifier. Output: 60W. THD: 0.005%. Frequency response: 10Hz-30kHz (disc inputs), 10Hz-50kHz (other inputs). Input sensitivity: 0.1mV (disc NC), 2.3mV (disc MM), 200mV (tape), 150mV (aux). Impedance: 4 ohms. Damping factor: 70. Controls: bass,

middle, treble. Dimensions: 48 x 35 x 10.5cm. Finish: champagne.

JR

JR Loudspeakers Ltd,
114 Ashley Road, St. Albans, Herts.
Tel: St. Albans (0727) 64337.

JR LPA Woofer System

Low pass filter with amplifier. Unit receives the full signal from the output section of integrated amp or receiver by being connected to loudspeaker outputs. It passes signal without alteration to regular loudspeakers. Simultaneously it filters off signal below 70Hz, without abstracting from regular speakers, and passes it to its own amplifier to be processed into amplified signal for the Super Woofer. Handles sound down to below 30Hz. Input sensitivity: max 3 volts, RMS for 25W output. Power output RMS: 25W into 8 ohms. Low-pass Butterworth-type filter response: 18dB per octave. Total response of filter: -1dB at 20Hz, -3dB at 72Hz. Sub-audio response: -45dB at 2Hz. Distortion: typically 0.25% or better for 25W into 8 ohms. Mains supply: 110-120 volts or 220-240 volts, 50/60Hz. Consumption: 50W. Fuse: bass loudspeaker protected by internal fuse in LPA unit. Dimensions: 25.4 x 22.9 x 8.9cm. Price: £180.00 (plus VAT).

JR EX1 System*

Comprises two units—Electronic Crossover and separate 60W mono amp. EX1 crossover receives its signal from output section of a pre-amp, before it is amplified, and passes to the regular loudspeakers all signals above either 70Hz or 100Hz according to the level selected. Signals below these levels are sent directly to mono amplifier (PA60) before being sent out via the JR Super Woofer. When the 70Hz level is selected there is no detectable direction of bass sound. If using very small speakers however it may be desirable to switch to the 100Hz crossover position. Because the regular loudspeakers will receive no low signals when the EX1 system is in use, they automatically become capable of considerably more power handling, which when combined with a full clean bass output from the JR Super Woofer can produce good results. Input sensitivity: suitable for pre-amp (control unit) output of 200mV to 1 volt RMS. Input impedance: 150K ohms. High pass output: virtually 0dB gain, signal level according to input signal. Low pass output: from zero to 6dB above input level. Outputs duplicated for feeding extra equipment where desired. Bass lift control: $+3\text{dB}$ or $+6\text{dB}$ at 25Hz. Filter frequencies: 72Hz and 100Hz. Filter response: $+18\text{dB}$ per octave. Combined responses: $\pm 0.5\text{dB}$ 20Hz-20kHz. Hum and noise: -85dB . Power consumption: 7W. PA60 Power: 60W continuous into 8 ohms. Input sensitivity: 4V at 10K ohms. Noise level: -98dB . Damping factor: 20. Frequency response: 20Hz-30kHz. Price: £260.00 (plus VAT).



Hitachi HA 5700



JR EX1 System

■ JVC

JVC (UK) Ltd,
Eldonwall Trading Estate,
Staples Corner, 6-8 Priestley Way,
London NW2 7AF.
Tel: 01-450 2621.

P-3030*

Stereo control pre-amplifier with built-in MC head amplifier. Output Imp: tape rec. out 140mV/2K; output 1, 2 1V/600 ohms rated or 20V/600 ohms maximum. Power consumption: 10W. THD: phono 1, 2 less than 0.005%, phono 3 less than 0.05%, aux less than 0.005%. FR: Phono 1, 2 20Hz-20kHz ± 0.3 dB. Phono 3 30Hz-20,000Hz ± 0.5 dB; Aux 10Hz-40,000Hz ± 0.5 dB. Inputs: phono 1, 2, 3, tuner aux, tape play 1, 2. Dimensions: 6.1 x 4.2 x 34.8cm. Price: £320.00 (inc. VAT).

M-3030

Stereo power amplifier. Output: 100W per channel. THD: 0.007% or less rated output at 1kHz. FR: DC-100,000Hz ± 1 dB. Inputs: 1.0V/more than 50K. Damping factor: 75. Dimensions: 16.6 x 42 x 30cm. Price: £488.00 (inc. VAT).

A-S5

Stereo integrated amplifier. Output: 31W. THD: 0.06%. FR: 20Hz-40kHz. Damping factor: 50. Controls: balance, volume, tape dub, loudness, bass, treble, speakers, tape. Price: £99.50 (inc. VAT).

JA-S77*

DC stereo integrated stereo amplifier. Output: 70W per channel. Distortion: 0.01%. FR: 3Hz-100kHz +0 -1dB. Dimensions: 45 x 15.8 x 33.8cm. Price: £305.90 (inc. VAT).

JA-S55

DC stereo integrated stereo amplifier. Output: 65W per channel. Distortion: 0.06%. THD: 0.02%. FR: 100kHz +0 -2dB. Dimensions: 42 x 14.9 x 33.4cm. Price: £260.00 (inc. VAT).

A-X9

Super DC stereo integrated amplifier with output of 105W per channel into 8 ohms. THD: 0.005%. FR: DC-200kHz +0 -3dB. Damping factor: 200. S/N ratio: phono MM/tuner 85/110dB. Dimensions: 45 x 15.9 x 42.4cm. Price: £571.00 (inc. VAT).

A-S3

Stereo integrated amplifier with output of 22W into 8 ohms. THD: 0.08%. FR: 20Hz-40kHz +1



JVC P-3030



JVC JA-S77

-2dB. Dimensions: 42 x 8.9 x 28cm. Price: £85.00 (inc. VAT).

A-M1

Micro integrated amplifier with power output of 50W per channel. THD: 0.03%. FR: DC-70kHz +0 -1dB. Dimensions: 23 x 9.3 x 25.9cm. Price: £305.90 (inc. VAT).

JA-S44

DC stereo integrated amplifier with output of 48W per channel into 8 ohms. THD: 0.02%. FR: 5Hz-100kHz +0 -2dB. Dimensions: 42 x 14.9 x 31.7cm. Price: £216.00 (inc. VAT).

JA-S22

DC stereo integrated amplifier with output of 43W per channel. THD: 0.02%. FR: DC-100Hz +0 -2dB. Dimensions: 42 x 14.9 x 33.4cm. Price: £128.00 (inc. VAT).

Hi-Fi Add on units

SEA 7070 graphic equaliser £488.50; SEA 80 graphic equaliser £368.00; SEA 50 graphic equaliser £177.00; SEA 20GL £111.50 (inc. VAT).

■ KLARK-TEKNIK

Klark-Teknik Research Ltd,
Walter Nash Road West,
Kidderminster, Worcs.
Tel: Kidderminster (0562) 741515.

DN27

Mono graphic equaliser with 27 variable filters giving 12dB of boost or cut at the following frequency centres: 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800Hz, 1, 1.25, 1.6, 2, 2.5, 3.15, 4, 5, 6.3, 8, 10, 12.5 and 16kHz. Each filter has a band width of two-thirds of an octave. Specification: Distortion: <0.01% 1kHz at +4dBm into a 600 ohm load; <0.5% 20Hz at +18dB into a 600 ohm load. Hum and noise: <-90dBm. Input imp: unbalanced 10K nominal. Output imp: unbalanced <10 ohms, short circuit protected. Balanced floating inputs and outputs available. Input: 10K. Output: 600 ohms. Output clipping point: +22dBm into 600 ohm load. 6dB of gain is available adjusted by the front panel control. This can be increased to 20dB by an internal preset. Panel controls include a mains on/off switch with LED indicator, level control and equalisation bypass switch. Size: 19 x 5 1/4 x 8 1/2 in. Price: on application.

DN22

Two channel graphic equaliser. Each channel has 11 variable filters and is particularly suitable for room acoustic correction. A separate high pass and low pass filter, bypass control and a main level control are included on each channel. A maximum of 12dB of boost or cut is available on each of the 11 individual controls which have frequency centres at: 50, 90, 160, 300, 500, 900Hz, 1.6, 3, 5, 9 and 16kHz. Specifications as in DN27.



Klark-Teknik DN27

DN15*

Stereo 11 band graphic equaliser which includes a stereo pre-amplifier. Graphic equaliser section is similar to the DN22. Pre-amplifier includes the following switchable inputs: phono, auxiliary, tuner, tape 1, tape 2. Input imp: phono 47K, other 47K. S/N: phono 80dB, others 90dB. Outputs: +21dBm into a 600 ohm load. Distortion: <0.1% at all levels and frequencies. Size: 19 x 5 1/4 x 8 1/2 in. Price: on application.

■ LENTEK AUDIO

Lentek Audio Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon,
Cambs. PE17 4LF.
Tel: St. Ives (0480) 62225.

Moving Coil Cartridge Pre-amplifier

Designed to amplify the signal from low output moving coil cartridges. Battery powered with life of approx. 500 hours. Gold plated connectors, magnetic shielding, and excellent rejection of RF noise and interference. Gain: 28dB. FR: 20Hz-20kHz ± 0 dB. Distortion: less than 0.05% (100mV output 1kHz). Max. output: 300mV. Imp: 100 ohms. Dimensions: 15.4 x 6.4 x 2.8cm. Price including battery: £50.39 (plus VAT).

Stereo Integrated Amplifier *

Integrated amplifier with output of 60W per channel into 8 ohms. THD: less than 0.1%. FR: 20Hz-20kHz ± 0.5 dB. Inputs: mic, aux, tuner. Controls: volume, balance, input selector, pickup cartridge matching, Hi-pass filter, mono/stereo switch. Dimensions: 44.5 x 34.6 x 13cm. Features: full facilities for two tape decks, gold plated phono inputs, error indicator, toroidal transformer, modular type construction. Price: £604.35 (plus VAT).

■ LUX

Howland West Ltd,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293-4-5.

M12

Power amplifier DC. Output: 80W per channel. THD: 0.006%. FR: DC-100kHz -1dB. Inputs: 600mV 20K. Damping factor: 150 (8 ohms 1kHz). Power control. Dimensions: 43.6 x 32.8 x 9.5cm. Features: attenuator both channels,



Klark-Teknik DN15



Lentek Stereo Integrated Amplifier

input capacitor in/out selector, speaker protection circuit, overcurrent protection circuit. Price: £480.00 (plus VAT).

B12

Power amplifier mono DC. Output: 150W mono. THD: 0.006%. FR: DC-100kHz -1dB. Inputs: 900mV 20K. Damping factor: 120 (8 ohms 1kHz). Power control. Dimensions: 43.6 x 32.8 x 9.5cm. Features: speaker protection circuit, overcurrent protection circuit. Price: £460.00 (plus VAT).

L5*

Integrated amplifier. Output: 60W. THD: 0.02%. FR: phono 20Hz-20kHz ±0.5dB, tuner 10Hz-100kHz +0 -1dB, aux and mono 10Hz-100kHz +0 -1dB, main-in 5Hz-100kHz +0 -1dB. Inputs: phono 1-2 1.5mV 50K, aux 150mV 50K, tuner 150mV 50K, mono 1-2 150mV 50K, main-in 1.3mV 50K. Damping factor: 80 (8 ohms 1kHz). Controls: power, volume, balance, treble, bass, input selector. Dimensions: 43.8 x 28.9 x 10.5cm. Features: high, low, subsonic filters, speaker protection circuit, tape dubbing circuit, bass/treble turnover. Price: £290.00 (plus VAT).

L11

Integrated amplifier, DC configuration. Output: 100W. THD: 0.02%. FR: phono 20Hz-20kHz, tuner 10Hz-90kHz -1dB, aux 10Hz-90kHz -1dB, mono 10Hz-90kHz -1dB, main-in 3Hz-100kHz -1dB. Inputs: phono 1 and phono 2 2.5mV 250µV, tuner 150mV 15mV, aux 150mV, 15mV, mono 1-2 150mV, 15mV, main-in 1.6V, 160mV. Controls: power, volume, balance, phono impedance selector, speaker selector. Dimensions: 43.8 x 28.9 x 10.5cm. Features: linear free equaliser, phono m/c position, electrostatic speaker filter, headphone, speaker protection circuit, pilot lamp, overcurrent protection circuit. Price: £520.00 (plus VAT).

L2*

Integrated amplifier. Output: 33W minimum. THD: 0.03%. FR: 15Hz-60kHz ±1dB. Inputs: phono 2.5mV 50K, tuner 145mV 50K, aux 145mV 50K, mono 1 145mV 50K, mono 2 145mV 50K. Controls: power switch, volume, balance, treble, bass, input selector, monitors, dubbing, subsonic hi-cut, filters, loudness. Dimensions: 43.8 x 28.9 x 10.5cm. Features:

tape monitor (dual) and tape dubbing (dual), separate tone control for each channel. Speaker terminals A, B, DIN connector, headphone. Price: £135.00 (plus VAT).

L3

Integrated amplifier. Output: 42W. THD: 0.04%. FR: 15Hz-60kHz ±1dB. Inputs: as for L2. Controls: power switch, volume, filters, treble, bass, balance, loudness, mode selectors, two-tape inputs, dubbing. Dimensions: 43.8 x 28.9 x 10.5cm. Features: as for L2. Price: £170.00 (plus VAT).

C12

Pre-amplifier (DC). THD: 0.005%. FR: phono 1, 2 20Hz-20kHz ±0.2dB, tuner/aux 1, 2 mono 1, 2 1Hz-200kHz -0.5dB. Controls: power, tape monitor, volume, tape dubbing, filter, balance, mode selector, input selector. Dimensions: 43.8 x 36.3 x 7.8cm. Features: linear equaliser, subsonic filter, input adjustment (impedance), audio attenuator. Price: £390.00 (plus VAT).

L4

Integrated amplifier with output of 55W per channel. THD: 0.02%. FR: 10Hz-100kHz -1dB. Inputs: phono 2.5mV 50K, tuner 150mV 50K, aux 150mV 50K, monitor 150mV 50K, main-in 800mV 50K. Controls: power switch, volume, balance, treble, bass, tape, input receiver. Dimensions: 43.8 x 28.9 x 10.5cm. Features: high subsonic filters, tape monitor (dual), tape dubbing, speaker switch. Price: £235.00 (plus VAT).

■ McLAREN

GR International Electronics Ltd, Inveralmond Industrial Estate, Perthshire. Tel: Perth 34771.

L111A*

Integrated amplifier with output 2 x 2W into 8 ohms. THD: 0.15% full rated output. FR: 30Hz-20kHz ±1.5dB filter out. Inputs: pick-up 0.4mV/47K/1kHz magnetic or 150mV/1M/1K ceramic. Tape, tuner, aux 150mV/1M/1kHz. Damping factor: greater than 40. Controls: tone, bass, treble. Dimensions: 44 x 26 x 9.5cm. Features: tape monitor, headphone socket, two AC outlets. Price: £48.88 (inc. VAT).

■ MARANTZ

Audio UK Ltd, Debmarc House, 203 London Road, Staines, Middlesex. Tel: Staines (0784) 50132.

300 DC

Stereo power amplifier. Output: 200W. THD: 0.015%. FR: DC-70kHz. Inputs: 1.5V 30K. Damping factor: 60. Controls: L and R levels. Dimensions: 41.6 x 30 x 14.6cm. Features:

power output, meters of switchable sensitivity. Peak LED's. Price: £346.00 (plus VAT).

3650

Pre-amplifier. FR: 0.1Hz-200kHz. Inputs: 1.8 47K, 180mV 50K, 1.8mV 47K. Dimensions: 41.6 x 30.2 x 14.6cm. Features: moving coil pick-up input. Price: £260.00 (plus VAT).

170 DC

Stereo power amplifier. Output: 122W. THD: 0.03%. FR: DC-70kHz. Inputs: 1.5V 34K. Damping factor: 50. Controls: L and R level controls. Dimensions: 41.6 x 30 x 14.6cm. Features: power output meters of switchable sensitivity. Peak LED's. Price: £217.00 (plus VAT).

1300 DC

Integrated amplifier. Output: 190W per channel. THD: 0.1%. FR: DC-200kHz. Inputs: 1.8mV 47K, 180mV 25K. Damping factor: 60. Controls: bass, mid and treble for channel high and low filters, contour and mode controls. Dimensions: 41.6 x 31.6 x 14.6cm. Features: variable cartridge load switching, two record selector, LED peak indicators. Price: £433.00 (plus VAT).

3250B

Stereo pre-amplifier. FR: 5Hz-60Hz. Inputs: 1.8mV 47K, 180mV 20K, 1.8mV 47K. Dimensions: 41.6 x 30.2 x 14.6cm. Features: moving coil pickup input. Price: £173.00 (plus VAT).

PM200

Integrated amplifier with output: 25W. THD: 0.3%. FR: 20Hz-50kHz. Inputs: pickup, mic, aux, tape. Damping factor: 70. Controls: bass, treble, volume, balance. Dimensions: 41.6 x 24.3 x 14.6cm. Features: mic mixing, low filter, loudness. Price: £70.00 (plus VAT).

PM250*

Integrated amplifier with output: 35W. THD: 0.5%. FR: 20Hz-50kHz. Inputs: pickup, mic, aux, tape. Damping factor: 100. Controls: bass, mid, treble, volume, balance. Dimensions: 41.6 x 24.3 x 14.6cm. Features: mic mixing, low filter, loudness. Price: £86.00 (plus VAT).

PM400

Integrated amplifier with output: 50W. THD: 0.05%. FR: 20Hz-50kHz. Inputs: pickup, mic, aux, tape. Damping factor: 110. Controls: bass,



Lux L5



Lux L2



McLaren range



Marantz PM250



Marantz PM500

mid, treble, volume, balance. Features: mic mixing, low filter, loudness. Price: £112.00 (plus VAT).

PM500*

Integrated amplifier with output: 58W per channel. THD: 0.03%. FR: 10Hz-60kHz. Inputs: pickup, aux, tape. Damping factor: 110. Controls: volume, balance, tape copy facility. Features: 5-way graphic equaliser, low filter, loudness. Price: £138.00 (plus VAT).

PM700

Integrated amplifier with output: 80W. THD: 0.03%. FR: DC-70kHz. Inputs: pickup, mic, aux, tape. Damping factor: 110. Controls: tape copy facility. Features: 2 x 5-way graphic equaliser, moving coil input, low and high filters, loudness. Price: £173.00 (plus VAT).

EQ10

New equaliser incorporates ten slider controls centred on the following frequencies: 30Hz, 60Hz, 120Hz, 240Hz, 500Hz, 1kHz, 2kHz, 4kHz, 8kHz, 16kHz. Each of which allows ±10dB adjustment. EQ10 also features a defeat switch, together with a tape monitor switch and selector, allowing choice of the equalised source. Price: £99.90 (inc. VAT).

MERIDIAN

Boothroyd Stuart Ltd,
13 Clifton Road, Huntingdon, Cambs.
Tel: 0480 57339.

101/101MC

Pre-amplifier provides for pick-up, radio, tape monitor, mono switch. Combines balance, volume and on/off control. Output: 0dB (775mV) for rated input behind 600 ohms. Maximum output: +20dB. Tape output: -20dB at 5K. THD: less than 0.01%. FR: 20Hz-20kHz ±5dB, radio/tape 5Hz-50kHz ±5dB. Inputs: Phono 1.4mV at 1kHz over 47K. Radio 90mV over 100K. Tape monitor 450mV over 47K. Price: £192.00 (inc. VAT).

103S

Power amplifier. Output: 35W per channel. THD: less than 0.1%. FR: 20Hz-20kHz. Input: 0dB (775mV) over 10K. Dimensions: 14 x 5.2 x 30cm. Features: Circuit makes use of complementary and cascade techniques resulting in low levels of static, dynamic and transient distortion. Price: £198.00 (inc. VAT).

103D

Extension to the 103 system giving improved performance. Separate power supply gives left and right channels a separate supply. Output: 45W per channel with 8 ohms. Input: 115/230V 50/60Hz 20-150VA. Otherwise as 103S. Price: £301.00 (inc. VAT).

105S

Presented in a mono format, each channel being a separate self-powered section delivering 100W. Inputs: 0dB (775mV) 11K. Distortion: less than 0.01%. S/N ratio: better than -90dB.



Mission 771 Pre-amp and 772 power amp

Full electronic and thermal protection. Dimensions: 28.3 x 5.2 x 30cm, Price: £210.00 (inc. VAT).

MISSION

Mission Electronics Ltd,
P.O. Box 65, London SW7 1PP.
Tel: 01-589 0048.

771 Pre-amplifier*

Pre-amp with FR: 5Hz-50kHz -1dB. Inputs: moving coil pickup 70µV, moving-magnet pickup 2mV, auxiliary/tape 110mV (all for 1.6V output, balance control 0). Maximum input signal: moving-coil 10mV, moving-magnet (1kHz) 450mV. Output voltage and impedance: nominal output level 1.6V RMS. Maximum output level 25V RMS. Output impedance DC-coupled 100 ohms (1kHz), output imp. AC-coupled 100 ohms (1kHz), 2µF. Overall gain: moving-coil pickup 88dB, moving magnet pickup 55dB, line input 23dB (measured balance control 0). Tape output: gain, tape-in to tape 1 0dB, gain, tape-in to tape 2 20dB. Maximum output level 7.5V RMS. Hum and noise: moving magnet pickup -80dB (below rated output). Line input -90dB (below rated output) (measured 20Hz-20kHz CCIR weighted). THD: <0.02% (20Hz-20kHz). Intermodulation distortion <0.05% (60Hz-7kHz, 4:1 ratio both measured at rated output into 50K ohms). Dimensions: 11 x 49.5 x 30.7cm. Finish: black with solid aluminium casing. Price: approx. £650.00 (inc. VAT).

772 Power Amplifier*

Non-current limiting wide open-loop bandwidth V-Amplifier. Output: 10ms 250W, 1sec 200W, Continuous 35V RMS 150W, all into 8 ohms. FR: 20Hz-20kHz. Input: for 35V RMS output, 8 ohms 1.6V RMS (across 10K ohms). Power bandwidth: Ref 8 ohms load 5Hz-65kHz, THD: 0.06% (20Hz-20kHz), 0.005 (1kHz) (measured at all power levels excl. noise). Slewing rate: faster than 40V per millisecond. Minimum output load 2 ohms. Dimensions: 12.5 x 49.5 x 31.7cm. Finish: Black with solid aluminium casing. Price: approx. £500.00 (inc. VAT).

MITSUBISHI

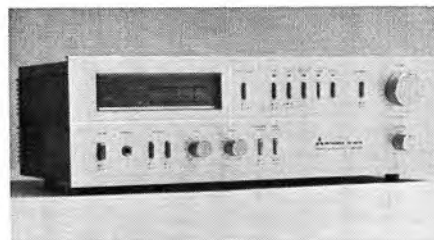
Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts. WD2 8LD.
Tel: Watford 40566.

DA-U530

Integrated stereo amplifier. Output: 2 x 30W into 8 ohms. THD: (1kHz), rated power into 8 ohms 0.1%. FR: 20Hz-20kHz ±0.5dB. LED displays. High and low frequency filters, speaker protection circuitry, soft-touch controls, loudness control, tape dubbing. Dimensions: 42.4 x 25.4 x 14cm (W x D x H). Retail price: £105.00 (inc. VAT).

DA-U630*

Integrated stereo amplifier. Output: 2 x 50W into 8 ohms. THD: (1kHz) rated power into 8 ohms 0.05%. FR: 20Hz-20kHz ±0.5dB. LED



Mitsubishi DA-U630

displays. High and low frequency filters, speaker protection circuitry, soft-touch controls, loudness control, tape dubbing. Dimensions: 42.4 x 25.4 x 14cm (W x D x H). Retail price: £136.00 (inc. VAT).

MONOGRAM

Monogram Professional Audio,
281 Balmoral Drive, Hayes, Middlesex.
Tel: 01-573 1566.

3100

Power amplifier as 3200 Series. Output 100W into 8 ohms. Price: £365.00 (plus VAT).

3200

Power amplifier class A auto AB + B. Output: 150W into 8 ohms. THD: 0.01%. FR: DC-32kHz, 100kHz optional. Inputs: 0dB-0.775V. Damping factor: 500. Controls: 2 gain speakers A + AB. Dimensions: 19 x 12 x 5/8in. Features: 12 LED power indicators. 2 separate power supplies. Price: £385.00 (plus VAT).

3300

Class A Switching power amplifier. Output: 200W into 8 ohms. THD: 0.01%. FR: DC-32kHz, 100kHz optional. Inputs sensitivity: 0dB-0.775V. Damping factor: 600. Controls: 2 gain speakers A + AB. Dimensions: 19 x 12 x 7/8in. Features: subsonic filter, 2 separate power supplies. Price: £550.00 (plus VAT).

3000

Class A pre-amp with output of 2-10V. THD: 0.006%. FR: 2Hz-100kHz -3dB. 15Hz-32kHz +0 -0.2dB. Inputs: phono, tuner, aux, tape. Controls: selector, bass, mid, treble, volume, three filter, two tape three turnover freq. Dimensions: 19 x 12 x 3in. Features: high and low filter, two tape, aux monitor, amp out, three turnover freq, two phono. Precision thick film attenuators. Bi-amp variable output. Stabilised power supply. Delayed relay turn on. Price: £250.00 (plus VAT).

2000*

Pre-amplifier. Output: 0.775V to 5V. THD: 0.04%. FR: 20Hz-50kHz. Inputs: 3mV 47K variable. Controls: selector, balance, two tape. Dimensions: 19 x 12 1/2 x 3in. Features: moving coil (optional), magnetic 2 x tape. Price: £195.00 (plus VAT).

2000MC

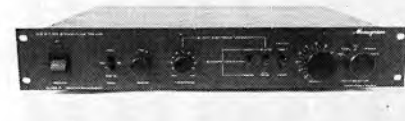
As above but with moving coil fitted as standard. Price: £205.00 (plus VAT).

MUSTANG COMMUNICATIONS

Mustang Communications,
Nelson Street, Scarborough,
North Yorks, YO12 7SZ.
Tel: Scarborough(0723)63298.

SS.50

Power amplifier. Output: 100W. THD: less than 0.5% (typically 0.1%). FR: (Ref. 1kHz) -0.2dB at 10Hz and -0.2dB at 20kHz. Inputs: standard jack (others to order) 0.775V into 10K. Damping factor: 200. S/N ratio: 90dB. Con-



Monogram 2000

trols: gain control, VU meter and mains illuminated on and off switch. Output fully protected. Unit is rack mounted in chassis form. A range of steel cabinets is available. Dimensions: 48.3 x 33.7 x 8.9cm. Price: £151.31 (plus VAT).

SS.100*

Power amplifier. Output: 175W. Details as per SS.50. Price: £198.24 (plus VAT).

■ **NAIM AUDIO LTD**

Southampton Road, Salisbury, Wilts. SP1 2LN. Tel: Salisbury (0722) 3746.

NAP 160

High power amplifier delivering continuously 50W into 8 ohms from each channel. Inputs: 1.4V/22V. Dimensions: 76 x 43 x 30cm. Price: on application.

NAC 12S

Pre-amplifier designed to meet basic requirements. Volume and balance controls. Magnetic input with RIAA equalisation, tuner and tape. Tape socket has input/output connections, main pre-amp output is separate socket. Power is supplied by a regulated supply in NAP 160 amplifier or separate supply is available. Overload capability allows maximum of 2V input at 20kHz. Alternative RIAA pre-amplifiers available to suit a variety of cartridges. Dimensions: 76 x 14.4 x 30cm. Prices: on application.

NAP 250

Power amplifier with output of 70W into 8 ohms. Inputs: 1.6V/22K. Controls: on/off. Dimensions: 7.6 x 43 x 30cm. Price: on application.

NAC 32

Pre-amplifier. Inputs: 100µV/47K, 2mV/47K, 75mV/100K. Controls: volume, balance, selector, mono/stereo, tape monitor. Dimensions: 7.6 x 21.4 x 30cm. Price: on application.

NAC 42*

Pre-amplifier. THD: 7.1%. FR: 20Hz-20kHz ±0.5dB. Inputs: 100mV 47K, 2mV 47K, 75mV 100K. Controls: volume, balance, select. Dimensions: 20.5 x 28.5 x 7.5cm. Features: moving coil IF or moving magnet. Price: on application.

NAP 110*

Power amplifier. Output: 40W into 8 ohms. THD: 7.1%. FR: 20Hz-20kHz ±0.5dB.



Mustang SS100



Naim NAP 110 and NAC 42

Inputs: 700mV 22K. Controls: on/off. Dimensions: 20.5 x 28.5 x 7.5cm. Features: will drive any speaker load. Price: on application.

■ **OPTONICA**

Sharp Electronics (UK) Ltd, 107 Hulme Hall Lane, Manchester. Tel: 061-205 7321.

SM3636C

Integrated amplifier with output of 40W per channel into 8 ohms. THD: 0.05%. FR: 10Hz-100kHz power, 10Hz-70K pre. Inputs: phono 2.5mV 47K. Damping factor: >40. Controls: bass, treble, balance, filter, loudness. Dimensions: 44 x 14 x 36cm. Typical Market Price: £149.90.

SM4646C

Integrated amplifier with output of 60W per channel into 8 ohms. THD: 0.05%. FR: 10Hz-100K power, 10Hz-70K pre. Inputs: phono 2.5mV 22/47/100K. Damping factor: >50. Controls: bass, treble, balance, filters, loudness. Dimensions: 44 x 14 x 36cm. Typical Market Price: £169.00.

SM5100N

Integrated amplifier with output of 40W per channel. THD: 0.05%. FR: 10Hz-100kHz. Inputs: phono 2.8mV 47K. Damping factor: >50. Dimensions: 43 x 38 x 7.5cm. Features: LED function and toroidal transformer.

SM7100N

As above except Output: 65W. FET input (phono).

SO9100N

Pre-amplifier. Inputs: phono 3mV 47K, tuner 160mV 47K, tape 160mV 47K. Dimensions: 43 x 38 x 7.5cm. Features: MC head amp uses FET's.

SX9100N

Power amplifier. Output: 100W. THD: 0.01%. Dimensions: 43 x 45 x 7.5cm. Features: LED spectrum readout.

SM 1515

Pre-amplifier with direct coupled equaliser circuit; power amplifier all stage direct coupled ITL/CTL/OCL circuitry. Output: 33W into 8 ohms. THD: 0.2%. FR: 15Hz-60Hz +1B -3dB. Inputs: 150mV/40K. Damping factor: 40. Controls: Left right output power meters, tape dubbing, audio muting, low cut filter, loudness control. Dimensions: 40.8 x 25.3 x 14.4cm. Features: 41 click stop positions on volume control, independent bass and treble. Speaker balance.

■ **PANASONIC**

National Panasonic (UK) Ltd, 300-318 Bath Road, Slough, Berks. SL1 6JB. Tel: Slough 34522.

SU 2700

Integrated amplifier. Output: 25W (8 ohms). THD: 0.08%. FR: 10Hz-25kHz (-3dB). Inputs sensitivity/imp: phono 2.5mV/47K ohms, tuner/aux 150mV/27K ohms, tape (1) 180mV/33K ohms. Damping factor: 50 (8 ohms). Controls: volume, bass, treble (with centre defeat), balance, loudness, tape 1, tape 2. Dimensions: 41 x 21.9 x 14.2cm. Features/facilities: tape monitor/dubbing 1-2, 2-1, power meters, headphone socket. Not sold separately, part of package system.

■ **PHILIPS**

Philips Electrical Ltd, City House, 420 London Road, Croydon, Surrey. Tel: 01-689 2166.

AH270

Slimline pre-amplifier with output of 1V per channel. THD: 0.1%. FR: 15Hz-25kHz ±1.5dB. Inputs: phono 2.5mV into 47K, tuner 250mV into 100K, tape A 250mV into 180K, tape B 250mV into 100K, monitor 200mV into 100K. Controls: volume, balance, bass treble, high filter, low filter, loudness, mute, input selection, mono/stereo. Dimensions: 48.2 x 28 x 7.8cm. Features: suitable for Philips MFB speakers or for external power amp, eg matching AH370. Price: £105.13 (plus VAT).

AH 302

Integrated amplifier with output of 20W per channel. THD: 0.6%. FR: 25Hz-20kHz ±1.5dB. Inputs: phono 2mV at 47K, tape (1) 200mV at 47K, tape (2) 200mV at 47K, tuner 150mV at 47K. Damping factor: 50. Controls: volume, treble, mono, balance, loudness, source/selector, bass, high filter. Dimensions: 45 x 37 x 10cm. Features: Connections for two tape decks. Tape (2) is monitor input for three head deck. Price: on application.

AH 304

As above with output of 40W per channel.

AH 305

Integrated amplifier with output of 45W per channel. THD: 0.025%. FR: 20Hz-20kHz ±1.5dB. Inputs: phono 2.5mV at 47K, tape (1/monitor) 150mV at 10K, tape (2) 150mV at 100K, tuner 150mV at 100K, aux 150mV at 100K. Damping factor: 27. Controls: volume, loudness, speaker/selector, balance, high filter, source/selector, treble. Dimensions: 45 x 37 x 10cm. Features: outputs for two pairs of speakers and MFB active speakers. Thick film Mag P.U. pre-amp. Price: £154.13 (plus VAT).

AH 306

As AH 305 with output of 60W per channel. Price: £181.28 (plus VAT).

AH 370

Power amplifier with output of 60W per channel. THD: 0.01%. FR: 0-200kHz -3dB. Inputs: normal AC 0.8V, DC input 0.8V. Controls: left/right input sensitivity, speaker selection. Dimensions: 48 x 37 x 7cm. Features: DC coupled, DC cover heat protection, power meters, rack mounting. Price: £162.29 (plus VAT).

AH 280

Pre-amplifier with output of 8V. THD: 0.005%. FR: 10Hz-200kHz +0.5dB -3dB. Inputs: phono (1 & 2) 2mV at 47K, tuner 240mV at 100K, aux 240mV at 100K, tape (1 & 2) 210mV at 150K, mic 1.7mV at 47K. Controls: volume, tone defeat, low filter, source/selector, balance, treble roll-over, loudness, dubbing, bass, bass roll-over, mono, treble high filter, audio mute. Dimensions: 48 x 39 x 7.4cm. Features: DC coupled, low noise, wide band. Price: £225.76 (plus VAT).

AH 380

Power amplifier with output of 100W per channel. THD: 0.03%. FR: 0-200kHz -3dB. Inputs: normal AC 1V, DC 1V. Damping factor: 85. Controls: left/right, input sensitivity, speaker selection. Dimensions: 48 x 39 x 11cm. Features: DC coupled, power meters, outputs for two pairs of speakers, DC and overheat protection. Price: £260.21 (plus VAT).

■ PIONEER

Pioneer High Fidelity GB Ltd,
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: Iver (0753) 652222.

SA 9800

Integrated amplifier. Output: 100W at 8 ohms. THD: 0.005%. FR: 5Hz-200kHz +0dB -2dB. Inputs: phono (1) 2.5mV 50K, phono (2) 2.5mV 50K, tuner 150mV 50K, tape x 2 150mV 50K, aux 150mV 50K. Damping factor: 55 at 8 ohms. Controls: bass, treble, turnover filter, balance, loudness, tape duplicate, muting, cartridge load. Moving coil input. Dimensions: 42 x 42.5 x 15cm. Features: non-switching circuit, fluorescent power meters, A-B, A+B speakers switching, all DC pre-amp. Typical Market Price: £366.90.

SA 8800

Integrated amplifier. Output: 80W at 8 ohms. THD: 0.005% +0dB -2dB. Inputs: phono (1/2) 2.5mV 50K, tuner 150mV 50K, tape x 2 150mV 50K, aux 150mV 50K. Damping factor: 55 at 8 ohms. Controls: bass, treble, loudness filter, muting, balance, tape duplicate, cartridge load. Dimensions: 42 x 42.5 x 15cm. Features: non-switching circuit, fluorescent power meters, A-B, A+B speaker switching, all DC pre-amp. Typical Market Price: £279.90.

SA 7800

Integrated amplifier. Output: 65W at 8 ohms. THD: 0.009%. FR: 20Hz-20kHz ±0.2dB. Inputs: phono 2.5mV 50K, tuner 150mV 50K, tape 1/2 150mV 50K, aux 150mV 50K. Damping factor: 55 at 8 ohms. Controls: bass, treble, loudness, muting, filter, balance, tape duplicate. Dimensions: 45.3 x 37.6 x 15.5cm. Features: non-switching circuit, fluorescent power meters. Typical Market Price: £229.90.

SA410

Integrated amplifier. Output: 20W (RMS) 27W (DIN). THD: 0.1%. FR: phono 30Hz-20kHz +0.2dB. Controls (AC outlets): bass, treble, loudness, tape monitor, speakers A+B. Dimensions: 42 x 9.4 x 26.5cm. Slim-line styling. Price: on application.

SA 510

Integrated amplifier. Output: 30W (RMS) 38W (DIN). THD: 0.03%. FR: 20Hz-20kHz +0.2dB. Controls: bass, treble, loudness (2 pairs speakers), tape monitor, subsonic filter, A/C outlets. Dimensions: 42 x 9.4 x 34.7cm. Slim-line styling, F.L.T. power meters. Price: on application.

SA 610

Integrated amplifier. Output: 45W (RMS), 57W (DIN). THD: 0.03%. FR: 20Hz-20kHz +0.2dB. Controls: bass, treble, tone defeat, subsonic filter, tape 1 & 2, loudness control. Dimensions: 42 x 9.4 x 34.7cm. Slim-line styling, F.L.T. power meters. Price: on application.



Pye SX6393

SA 710

Integrated amplifier. Output: 65W (RMS), 78 (DIN). THD: 0.02%. FR: 20Hz-20kHz +0.2dB. Controls: treble, bass, subsonic filter, tape 1 & 2, tone defeat, speakers A & B, mode switch. Dimensions: 42 x 9.4 x 34.7cm. Slim-line styling, F.L.T. power meters. Price: on application.

■ PYE

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

SX 6392

Integrated amplifier with output of 20W per channel. THD: 0.04%. FR: 20Hz-20kHz +0.5dB -1.5dB. Inputs: 2.5mV/47K phono, 200mV/50K tuner. Control: contour, bass, treble, low and high filter. Dimensions: 42 x 10.5 x 31.2cm. Features: twin output power meters, dual stereo speaker outlets with front mounted selector switch. Typical Market Price: approx £89.00 (plus VAT).

SX 6393*

Integrated amplifier with output of 30W per channel. THD: 0.03%. FR: 20Hz-20kHz +0.5dB -1.5dB. Inputs: 2.5mV/47K phono, 200mV/50K tuner. Controls: contour, bass, treble, low and high filter. Dimensions: 42 x 10.5 x 31.2cm. Features: tape selectors for recording playback, two deck dubbing with monitoring facility. Typical Market Price: £99.00 (plus VAT).

SX 6394

Integrated amplifier with output of 40W per channel. THD: 0.03%. FR: 20Hz-20kHz +0.5dB -1.5dB. Inputs: 2.5mV/47K phono, 200mV/50K tuner. Controls: contour, bass, treble, low and high filter. Dimensions: 42 x 10.5 x 31.2cm. Features: tape selectors for recording playback, two deck dubbing with monitor facility. Typical Market Price: £109.00 (plus VAT).

2662

Five channel equaliser. Each channel has five LED displays which can be arranged so that on/off switch can be coupled to on/off switch of the main unit.

■ QUAD

The Acoustical Manufacturing Co Ltd,
St. Peter's Road, Huntingdon PE18 7DB.
Tel: Huntingdon (0480) 52561.

Quad 33

Pre-amplifier. Output: 0.5V into not less than 10K (3.7mV, 20mV or 100mV to recorder). THD: 0.02%. FR: 30Hz-20kHz ±0.5dB. Inputs/imp: radio (x 2) 100mV into 100K; tape 100mV, 400mV or 1V pre-set, 40K; disc pre-set for cartridges of 0.5-6mV/cm/sec magnetic or 25-80mV/cm/sec ceramic. S/N ratio: (0-30 phono weighting 15.7kHz bandwidth) -90dB. Controls: volume/on-off, balance, bass, treble, filter slope and frequency, channel selection, source selection. Features/facilities: variable slope filter switched at half octave intervals 5-10Hz; pre-set adjustments on plug-in boards for pick-up and tape parameters. Dimensions: 26 x 9.2 x 16.5cm. Price: £156.00 (inc. VST).

Quad 303

Power amplifier. Output: 45W per channel into 8 ohms. THD: 0.03%. FR (within 1dB): 30Hz-35kHz into 8 ohms and 20Hz-35kHz into 16 ohms. Inputs/imp: 0.5V RMS 22K in parallel with 60pF. Damping factor: output source 0.3 ohms

in series with 2000µF and 6µH. S/N ratio: -100dB. Features/facilities: unconditional stability, triple output circuit; output protected by current and voltage limiters. Dimensions: 12 x 15.9 x 32.4cm. Price: £136.00 (inc. VAT).

Quad 405

Power amplifier. Output: 100W per channel. THD: 0.1%. FR (Ref. 1kHz): -1dB at 20Hz, -0.5dB at 20kHz, -3dB at 50kHz. Inputs/imp: 0.5V RMS 20K in parallel with 50pF. Damping factor: source 0.03 ohms in series with 3.3µH. S/N ratio: ('A' weighted) -95dB, (unweighted) -90dB (15.75kHz bandwidth). Features/facilities: new current dumping circuit, instantaneous recovery up to +20dB overload, unconditional stability, output current limited, pre-set power limited for 50W, excellent input slew and output offset. Dimensions: 11.5 x 34 x 19.5cm. Price: £229.00 (inc. VAT).

Quad 50E

Power amplifier. Output: 50W per channel. THD: 0.1% at 1kHz. FR: (unbalanced input) -1dB at 30Hz and 20kHz, (balanced input) -2dB at 30Hz and 20kHz (Ref. 1kHz). Inputs/imp: 0.5V RMS, (unbalanced) 14-50K depending on pre-set gain, (balanced) >14K in parallel with 50H. Damping factor: source 0.5 ohms in series with 2.5µH for 17V output. S/N ratio: -80dB. Controls: continuously variable screwdriver pre-set gain. Features/facilities: input bridging for monitoring 600 ohms lines; output adjustable for any load 4-200 ohms; unconditional stability. Dimensions: 12 x 32.4 x 15.9cm. Price: £116.00 (inc. VAT).

44*

Pre-amplifier with output of 5V or 0.5V. THD: typically 0.02% 30-10,000Hz. FR: 30Hz-20,000Hz +0dB -1dB. Inputs: disc, tape, radio, aux. Controls: on/off, volume, balance, filter, tilt, bass. Dimensions: 32 x 21 x 10cm. Features: all inputs interchangeable. Price: 236.00 (plus VAT).

■ QUANTUM ELECTRONICS

Quantum Electronics,
8 Albion Street, Leicester.

201

Power amplifier. Output: 55W into 8 ohms mono. THD: <0.1% 1kHz, typically 0.005%. FR: 6Hz-50kHz -3dB. Inputs: 77mV at 50K. Damping factor: >50 at 20Hz. Dimensions: 25 x 26 x 6cm. Features: drives loads down to 3 ohms. Price: £93.56 (plus VAT).

202

Power amplifier with output of 45W per channel into 8 ohms. THD: <0.1% 1kHz, typically 0.005%. FR: 6Hz-50kHz -3dB. Damping factor: >50. Dimensions: 35 x 26 x 6cm. Features: drives loads down to 3 ohms. Price: £114.15 (plus VAT).

203

Power amplifier. Output: 130W into 8 ohms mono. Other details as 201. Price: £108.38 (plus VAT).



Quad 44

204

Power amplifier with output of 110W per channel into 8 ohms. Other details as 201. Price: £133.41 (plus VAT).

205

Power amplifier. Output: 145W into 8 ohms mono. Dimensions: 35 x 25 x 6cm. Features: drives loads down to 2 ohms. Price: £115.85 (plus VAT).

206

Power amplifier. Output: 210W into 8 ohms mono. Dimensions: 35 x 26 x 6cm. Price: £123.77 (plus VAT).

■ **RADFORD**

Radford High Fidelity International Ltd,
4 Sommerville Road, Bristol BS7 9AA.
Tel: Bristol (0272) 40878.

ZD22

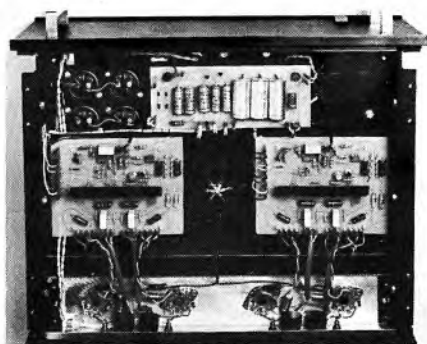
High definition stereo pre-amplifier control centre. Dual channel, virtually zero distortion. Intended for driving high quality power amps, it operates from disc, tuner and two tape machines. FR: 50Hz-20kHz disc, 20Hz-32kHz -1dB line input. Inputs: disc 47K, line nominally 27K varying with input level control setting. Controls: bass ±11dB at 30Hz, treble ±12dB at 20kHz. Dimensions: 43 x 11.5 x 28cm. Price: £258.75 (inc. VAT).

ZD50

Stereo transistor power amplifier. Output: 70W into 8 ohms, 120W into 4 ohms, 130W into 3 ohms per channel. Sensitivity: 1.0V for 70W into 8 ohms. THD: 1kHz 8 ohms and 4 ohms less than 0.004% typically 0.0015%; 10kHz 8 ohms less than 0.004% 4 ohms less than 0.008%. FR: low -3dB at 8Hz maximally flat 12dB/oct roll off; High -3dB at 50kHz 6dB/oct roll off. Inputs: 1V for rated output 47K. Dimensions: 44 x 13 x 30cm. Price: £316.25 (inc. VAT).

ZD100

Stereo power amplifier designed for professional use but suitable for home where higher sound pressure level or greater reserve power is required. Output: 90W into 8 ohms,



Radford TT100 underside with panel removed



Radford TT100 front view

150W into 4 ohms, 200W into 2.8 ohms per channel sensitivity: 1.0V for rated power output. Other details as ZD50. Dimensions: 44 x 13 x 36cm. Price: £431.25 (inc. VAT).

TT50

Stereo power amplifier with transistor input stages driving output stage using KT77 valves and providing nominal average power output of 50W per channel. Output impedance matching for 4-16 ohms loudspeakers. Sensitivity: 1.0V for rated power output. Dimensions: 44 x 14 x 35cm.

TT100*

Stereo power amplifier providing nominal average power output of 100W per channel. Professional option available using XLR-3 input sockets and output terminals mounted on front panel. Available 4-16 ohms and 50V/100V output matching. Amplifier suitable for guitar and music groups generally. Dimensions: 44 x 20 x 35cm. Price: £661.25 (inc. VAT).

■ **REVOX**

F. W. O. Bauch Ltd,
49 Theobald Street,
Borehamwood, Herts. WD6 4RZ.
Tel: 01-953 0091.

A722

Stereo power amplifier. Inputs: 0.75V 20K for (60W/4 ohms) Outputs: 60W per channel 4 ohms, 45 W per channel into 8 ohms, 30W per channel into 16 ohms. THD: less than 0.1% at rated power into 4 ohms. 1kHz. FR: 20Hz-20kHz -1dB, into 4 ohms. Power bandwidth: 10Hz-50kHz (DIN) into 4 ohms. S/N ratio: better than 90dB (ref. 60W/4 ohms). Price: £247.00 (plus VAT).

A740

Stereo power amplifier, 175W/channel into 4 ohms. THD: less than 0.1% up to rated output. FR: 20Hz-20kHz +0dB -0.7dB. THD: zero. S/N ratio better than 100dB (ref. 175W/4 ohms). Price: £750.00 (plus VAT).

B750 Mark II*

Integrated amplifier with output 75W into 8 ohms. THD: <0.1%. FR: 20Hz-20kHz ±0.5dB. Inputs: phono (2) optional, tuner, aux, tape (2), power amp in. Damping factor: >80 into 8 ohms. Controls: bass, treble, presence. Dimensions: 45.2 x 34.8 x 15.1cm. Features: tape copy facility, pre-amp/power amp are electronically separable. Price: £440.00 (plus VAT).

■ **ROGERS**

Swisstone Electronics Ltd,
Barmston Road, London SE6 3BN.
Tel: 01-697 8511.

A75 Series

Integrated amplifier with output 50W per channel. THD: <0.05% at 1kHz <0.05% 40Hz-20kHz. FR: ±1dB 25Hz-20kHz, ±2dB 20Hz-50kHz. Inputs sensitivity: disc: RIAA 2mV 47K ohms. Tuner, cassette, tape 100mV into 100K. Damping factor: 60 at 50Hz. Controls: bass,

treble variable low pass filter, speaker selection, input selection and tape dubbing. Dimensions: 26 x 28.5 x 11.5cm. Features: DC coupled units. Relay loudspeaker protection and switch-on delay. Price: £239.00 (plus VAT).

A100*

Integrated amplifier with output of 60W per channel. THD: <0.05%. FR: 20Hz-20kHz ±1dB. Inputs: disc 2mV 47K; tuner, aux, tape 1, tape 2, 100mV 47K. Damping factor: 60 at 50Hz. Controls: bass, treble, variable low pass filter, speaker selection, input selection, tape dubbing. Dimensions: 26 x 28.5 x 11.5cm. Features: tone filter cancel switch, DC coupled units, relay loudspeaker protection and switch-on delay. Price: £299.00 (plus VAT).

■ **ROTEL**

Rotel Hi-Fi Ltd,
2-4 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: (0908) 317707.

RA 350

Integrated amplifier with output of 35W per channel. THD: 0.09%. FR: 20Hz-20kHz. Inputs: 2.5mV/45K. Damping factor: 35. Controls: A+B loudspeakers, bass, treble, tape to tape copy, volume. Dimensions: 41 x 26.3 x 13cm. Typical Market Price: £79.90.

RA 314

Integrated amplifier with output of 25W per channel. THD: 0.07%. FR: 20Hz-20kHz. Inputs: 2.5mV/45K. Damping factor: 35. Controls: volume, bass, treble. Dimensions: 43 x 27.3 x 14.4cm. Features: power meters, loudness, Hi and Lo filter, A+B loudspeakers. Typical Market Price: £79.90.

RA 414

As RA 314 but with output of 35W per channel. Features include mode switch and tape copy. Typical Market Price: £89.90.

RA 2030

Integrated amplifier with output of 80W per channel. THD: 0.01%. FR: 2Hz-200kHz +0dB -3dB. Damping factor: 60. Dimensions: 48.2 x 40.8 x 14.3cm. Features: LED bar display, Hi and Lo filters, dubbing m/c inputs. Price: on application.



Rogers A100 amplifier



Revox B750



Rotel RA 1000

RA 2040

Integrated amplifier with output of 120W per channel. THD: 0.01%. FR: 2Hz-200kHz +0dB -3dB. Damping factor: 65. Dimensions: 48.2 x 40.8 x 14.3cm. Features: LED bar power display, Hi and Lo filters, dubbing, m/c inputs. Price: on application.

RA 1000*

Integrated amplifier with output of 40W per channel. THD: 0.03%. FR: 50Hz-70kHz +0dB -1dB. Controls: graphic equaliser, volume. Dimensions: 43 x 29 x 9.8cm. Features: tape dubbing, loudness, A/B loudspeakers. Price: £110.00 (plus VAT).

RA 2020

Integrated amplifier with output of 60W per channel. THD: 0.02%. FR: 2Hz-160kHz +0dB -3dB. Inputs: 1V/50K. Damping factor: 50. Controls: supersonic filter, volume, tape monitor, bass/treble. Dimensions: 48.2 x 32.8 x 14.3cm. Price: on application.

RB 1000*

Power amplifier with output of 65W per channel. THD: 0.03%. FR: 5Hz-100kHz. Inputs: 1V/20K. Dimensions: 43 x 29 x 9.8cm. Typical Market Price: £108.50.

RB 2000

Power amplifier with output of 120W per channel. THD: 0.01%. Inputs: 1.5V/50K. Damping factor: 60. Dimensions: 48.2 x 43 x 14.3cm. Price: on application.

RB 5000

Power amplifier with output of 500W. THD: 0.009%. Inputs: 1V/50K. Damping factor: 180. Dimensions: 48.2 x 43 x 24cm. Price: on application.

RE 700

Stereo graphic equaliser. FR: 10Hz-100Hz per channel. Tape monitor switch and tone defeat switch. 7 bands per channel. Centre frequencies: 40Hz, 125Hz, 400Hz, 1,000Hz, 2,500Hz, 6,000Hz, 15,000Hz. Output sensitivity: 0.775V 600 ohms. Input sensitivity: 0.775V 55K. S/N ratio: 100dB. Dimensions: 43 x 14.5 x 25.4cm. Typical Market Price: £68.90.

SAE TWO

Cambridge Audio Ltd,
105-109 Oyster Lane,
Byfleet, Surrey KT14 7JH.
Tel: Byfleet (083 23) 51051.

A14

Integrated amplifier with output of 140W per channel. THD: 0.05%. FR: 10Hz-60kHz. Inputs: phono MC 0.1/0.1/500, phono MM 0.12/2.5/47K, aux 7.2/150/50K. Damping factor: >40. Controls: volume, low frequency, high frequency, speakers, balance, parametric, monitor, dubbing. Dimensions: 14.7 x 46.4 x 38cm. Features: parametric equalisation, bargraph display, external processor input, single strata voltage amplifier, full complementary

outputs, relay speaker protection, moving coil input. Price: on application.

A7

Integrated amplifier with output of 70W per channel. THD: 0.05%. FR: 10Hz-60kHz. Inputs: phono MM 0.14/2.5/47K, aux 8.4/150/50K. Damping factor: >40. Controls: volume, bass, mid, treble, tone, monitor, dubbing, ext proc, mode, display, speakers, balance. Dimensions: 14.7 x 46.4 x 35cm. Features: low noise phono circuit, single strata voltage amplifier, full complementary outputs, relay speaker protection, three range tone controls, thermal protection, external processor loop, subsonic rumble filter. Price: on application.

SANSUI

Sansui Audio Europe NV,
Unit 10A, Lyon Industrial Estate, Lyon Way,
Rockware Avenue, Greenford,
Middlesex UB6 0AA.
Tel: 01-565 1133.

AU 317 Mk II

Integrated amplifier. Output: 60W. THD: 0.03%. FR: 5Hz-100kHz +0dB -1.8dB. Inputs: phono 2.5mV 47K, aux 150mV 47K, mic 8mV 10K. Damping factor: 70. Controls: bass/treble filters, loudness. Dimensions: 43 x 34 x 11cm. DC circuitry. Typical Market Price: £116.90.

AU 217 Mk II

Integrated amplifier. Output: 40W. THD: 0.06%. FR: 10Hz-50kHz +0.5dB -1.5dB. Inputs: phono 2.5mV 47K, aux 150mV 47K. Damping factor: 80. Controls: bass/treble filters, loudness. Dimensions: 43 x 34 x 11cm. Typical Market Price: £115.90.

AU-XI

Integrated amplifier. Output: 160W. THD: 0.007%. FR: DC-500kHz +0dB -3dB. Inputs: phono 1 2.5mV 47K, phono 2 0.1mV 200K, aux/tuner/tape 200mV 47K. Damping factor: 100. Dimensions: 48 x 45 x 19.7cm. Features: moving coil phono input. Price: on application.

AU 919

Integrated amplifier. Output: 100W. THD: 0.008%. FR: 5Hz-100kHz +0dB -3dB. Inputs: phono 2.5mV 47K, moving coil 0.1mV 33K, aux/tuner/tape 150mV 47K. Damping factor: 100. Dimensions: 43 x 42.8 x 16.8cm. Features: two turnover frequencies for treble/bass. Moving coil phono input. Price: £432.00 (plus VAT).

AU 719

Integrated amplifier. Output: 90W. THD: 0.008%. FR: 5Hz-100kHz +0dB -3dB. Inputs: phono 2.5mV 47K, moving coil 0.1mV 33K, aux/tuner/tape 150mV 47K. Damping factor: 100. Other details on request.

BA-F1

Power amplifier. Output: 110W. THD: 0.008%. FR: DC-600kHz +0dB -3dB. Inputs: 1V 25K. Damping factor: 100 into 8 ohms. Dimensions: 43 x 43 x 18.7cm. Features: diamond differential, direct coupled, peak indicator. Price: on application.

CA-F1

Pre-amplifier. THD: 0.008%. FR: 5Hz-600kHz ±3dB. Inputs: phono moving coil 0.1mV 10K, phono 2.5mV 47K, aux 150mV 47K. Controls: selector, loudness, tone defeat, subsonic filter. Dimensions: 43 x 43.5 x 60cm.

Features: moving coil phono unit. Price: on application.

A 40

Integrated amplifier. Output: 25W. THD: 0.009%. FR: 10Hz-50kHz +0.5dB -2dB. Inputs sensitivity/impedance: phono 2.5mV 47K, tuner 150mV 47K, aux 150mV 47K, tape 150mV 47K. Controls: treble, bass, balance, loudness, volume Hi-filter. Dimensions: 43 x 25.1 x 14.7cm. Features: power meters. Finish: silver or black. Price: £65.90 (plus VAT).

A 60

Integrated amplifier. Output: 45W. THD: 0.09%. FR: 5Hz-70kHz +0.5dB -2dB. Inputs sensitivity: phono 2.5mV 47K, tuner/tape/aux 150mV 47K. 2 tape inputs/outputs. Dimensions: 43 x 25.1 x 14.7cm. Features: LED power meters. Finish: silver or black. Price: £92.40 (plus VAT).

A 80

Integrated amplifier. Output: 65W. THD: 0.05%. FR: 5-70kHz +0.5dB -2dB. Inputs sensitivity: phono (MM) 2.5mV 47K, phono (MC) 0.1mV 10K, aux/tape/tuner 150mV 47K. Controls: treble, bass, loudness, muting, Hi-Lo filter. Dimensions: 43 x 25.1 x 14.7cm. Features: power meters, MC phono input, 2 tape in/outputs, 2 pairs speaker outputs. Price: £139.00 (plus VAT).

SCOTT

Clement Electronics Ltd,
Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57131.

480A

Integrated amplifier with output of 85W per channel into 8 ohms. THD: 0.03%. FR: 20Hz-20kHz. Inputs: phono (1) 2.5mV, phono (2) 2.5/5.0mV, other 150mV. Damping factor: >100. Features: two completely independent phono pre-amplifiers featuring separate record and input selector switches, two tape monitors with full tape copy capability. Dimensions: 14 x 43 x 30cm.

460A

Integrated amplifier with output of 70W per channel into 8 ohms. THD: 0.04%. FR: 20Hz-20kHz. Inputs: phono (1) 1.5mV, phono (2) 2.5/5.0mV, others 150mV. Damping factor: >100. Dimensions: 14 x 43 x 30cm. Features: two separate phono pre-amplifiers, 11 position detented bass, treble, mid tone controls with bypass, 5 position mode selection, bimodal electro-sensor relay.

440A

Integrated amplifier with output of 55W per channel into 8 ohms. THD: 0.05%. FR: 20Hz-20kHz. Inputs: phono 2.5mV, others 150mV. Damping factor: >100. Dimensions: 14 x 43 x 40cm. Features: 11 position detented bass/mid/treble controls, dual wide range output power level meters, bimodal electro-sensor relay protection circuit with front panel LED indicator, two tape monitors with full tape copy facility.

430A

Integrated amplifier with output of 45W per channel into 8 ohms. THD: 0.08%. FR: 20Hz-20kHz. Inputs: phono 2.5mV, others 150mV. Damping factor: >50. Dimensions: 14 x 43 x 30cm. Features: 11 position detented bass, treble, mid tone controls with bypass, two tape



Rotel RB 1000 power amp

monitors, LED indicator lights, high filter, loudness countor.

420A

Integrated amplifier with output of 40W per channel into 8 ohms. THD: 0.08%. FR: 20Hz-20kHz. Inputs: phono 2.5mV, others 150mV. Damping factor: >60. Dimensions: 14 x 43 x 30cm. Features: two tape monitors with full copy capability, 11 position detented bass and treble tone controls.

410A

Integrated amplifier with outout of 30W per channel into 8 ohms. THD: 0.1%. FR: 20Hz-20kHz. Inputs: phono 2.5mV, others 150mV. Damping factor: >40. Dimensions: 14 x 43 x 21.7cm. Features: 11 position detented bass, treble, tone controls, connections and front panel switching, A or B, A+B plus headphone, detented logarithmic tape volume control, loudness contour.

■ **SEOOM**

Videotone Ltd,
98 Crofton Park Road, London SE4.
Tel: 01-690 1914.

SA4130

Integrated amplifier with output of 30W per channel. THD: 0.03%. FR: 8Hz-60kHz. Inputs: moving coil 0.2mV/100K, moving mag 2.2mV/47K, aux 125mV/50K. Controls: input selector, volume, bass, treble. Dimensions: 43 x 28.5 x 18.4cm. Features: moving coil input, tone cancel button, full tape monitoring, subsonic filter. Price: £65.33 (plus VAT).

■ **SONY (UK) LTD**

Consumer Information:
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

TA E88B

Stereo pre-amplifier with THD: <0.002% (10V output). FR: DC-500kHz +0dB -1dB tuner tape aux. Inputs: phono 1 & 2, head amp, tuner, tape 1, 2, aux. Controls: power attenuator, output level, balance, mode monitor. Dimensions: 48 x 37 x 8cm. Features: rugged classic construction. Price: £699.00 (inc. VAT).

TA N88B

Stereo power amplifier with 160W output per channel. THD: <0.5%. FR: 5Hz-40kHz +0.5dB -5dB. Inputs: 1.4V-50K. Damping factor: 20. Controls: power on/off. Dimensions: 48 x 36 x 8cm. Features: professional pulse width modulation amplifier which combines high power in a compact cabinet weighing only 11kg. Price: £699.00 (inc. VAT).



Sony TA-E7B Pre-amp and TA-N7B Amplifier

TA E7B*

Stereo pre-amplifier with THD less than 0.003%. FR: 1Hz-150kHz +0dB -1dB tuner, aux, tape. Inputs: phono 1, 2, head amp, tuner, aux 1, 2, tape 2. Controls: volume, muting, bass, treble, balance, mode, tape and tape copy, high and low filters. Dimensions: 43 x 32 x 17cm. Features: amplifier adjustable to suit most moving coil cartridges. Price: £533.00 (inc. VAT).

TA N7B

Stereopower amplifier with output of 100W per channel both channels operating into 8 ohms at 20Hz-20,000Hz. THD: <0.01% at rated output 20Hz-20,000Hz. FR: DC-100kHz +0dB -1dB direct. Inputs: 1.3V-50K. Controls: power on/off. Dimensions: 43 x 34 x 17cm. Features: two toroidal transformers. Price: £580.00 (inc. VAT).

■ **SPENDOR**

Spendor Audio Systems Ltd,
Station Road Industrial Estate,
Hailsham, Sussex.
Tel: Hailsham (0323) 843474.

D40

Integrated amplifier with output of 40W per channel into 8 ohms. THD: <0.1%. FR: 40Hz-25kHz ±1dB. Inputs: aux (1, 2, & 3) 80mV 50K, RIAA 3mV 50K. Damping factor: >25. Controls: volume (stepped attenuator), balance, input selector/power. Dimensions: 33.2 x 22.3 x 9.6cm. Price: on application.

RB50

Power amplifier with output of 50W per channel into 8 ohms. THD: <0.1%. FR: 20Hz-20kHz ±0.5dB. Inputs: 0.7V 20K, optional balanced input. Damping factor: >30. Controls: power on/off, individual pre-set channel gain controls. Dimensions: 48.3 x 20.6 x 8.9cm. Features: Cannon XLR input and output connectors. Price: on application.

■ **J. E. SUGDEN**

J. E. Sugden & Co Ltd,
Carr Street, Cleckheaton, Yorks. BD19 5LA.
Tel: Cleckheaton (0274) 872501.

CS1 Control Unit

Transistorised stereo control unit for P51 power amplifier. Inputs: radio, tape and aux, each 150mV into 250K for flat response. Phono (1) 2.5mV 47K RIAA. Phono (2) same as phono (1) or any characteristic to choice with basic sensitivity 0.25mV. Internal pluggable connection allows high output moving coil cartridges to be accommodated. Controls: bass ±14dB at 40Hz, treble ±14dB at 10kHz, volume ±1dB per channel, balance ±6dB for 180° rotation fade out at full rotation. Rumble filter: 12dB/octave below 30Hz. Treble filter: 4kHz,



Sugden A48 restyled

7kHz and 10kHz. THD: 0.1%. S/N: better than 85dB on 150mV inputs, better than 75dB on PU inputs. Push button selection of inputs and operating mode. Power: obtained from P51 amplifier. Dimensions: 11 x 3½ x 7in. Price: £120.00 (plus VAT).

A48 Series Two*

Integrated stereo amplifier. Inputs: 2 disc inputs to accommodate high output cartridges, Hi sens. 1.7mV, Medium 3.5mV, Low 7.0mV, radio 100mV 200K, two tapes 100mV 200K. Noise level: (PU input) -70dB, (other inputs) -82dB. Output: 45W. Controls: bass ±14dB at 40Hz, treble ±14dB at 10kHz, balance ±6dB at 180° rotation, fade out at full rotation, volume, input selectors, LF filter 18dB/octave from 70Hz, HF filter at 4, 7, or 10kHz, push button selection of slope (step 18dB/octave, gradual 6dB/octave), quiet button (-16dB loudness compensated), mono/stereo, stereo reverse, THD: <0.1%. FR: 30Hz-30kHz ±1dB. Dimensions: 16 x 5¼ x 11¼in. Finish: Nextel with brushed aluminium panel. Special output stage. Price: £220.00 (plus VAT).

P51

Mono or stereo power amplifier. 21 transistors, 20 diodes. Input: 500mV 300K. Noise level: -90dB. Output: 50W RMS into 8 or 4 ohms, or with mono connection 100W into 8 ohms. Mono/stereo switch. THD: 0.05% at 8 ohms, 0.1% at 4 ohms. FR: 30Hz-20kHz ±0.75dB at all power levels. Finish: case finished in embossed PVC with matt PVC facing on aluminium panel. Price: £140.00 (plus VAT).

■ **TANDBERG**

Tandbert (UK) Ltd,
81 Kirkstall Road, Leeds LS3 1HR
Tel: Leeds (0532) 35111.

TPA 3003*

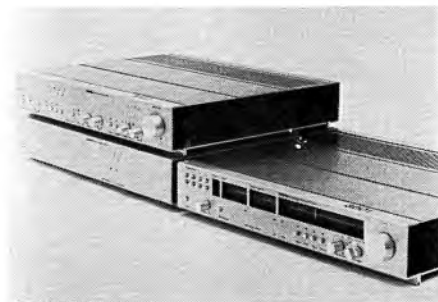
Power amplifier. Output: 150W, high speed direct coupled design, peak clipping indicators and ultra-low THD, IM and DIM distortion. Price: £443.48 (plus VAT).

TCA 3002*

Control amplifier with electronic source switching, moving coil and moving magnet phono inputs, two tape monitors with dubbing, headphone jack with separate level adjustment, tone defeat switch and calibrated volume control. Price: £338.26 (plus VAT).

■ **TEAC**

Harmon UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (0409 481) 5331.



Tandberg TPA 3003 and TCA 3002 in use with TPT 3001 tuner

Sansui High Rise Hi-Fi

**The best property
value in town.**

Neat as a music centre, but it's pure hi-fi from top to bottom. That's Sansui High Rise Hi-Fi.

Before you listen: look. A pulsing light indicates radio signal strength. Two large meters tell you when your recording levels are spot-on.

There's even a cunning little 'traffic light' which first monitors peak reception, then locks in the station for you.

The cassette deck is Dolby* of course – and prices for the range of Sansui High Rise systems start from around £300 complete with speakers.

Get the lowdown on High Rise Hi-Fi. Post the coupon.

Sansui

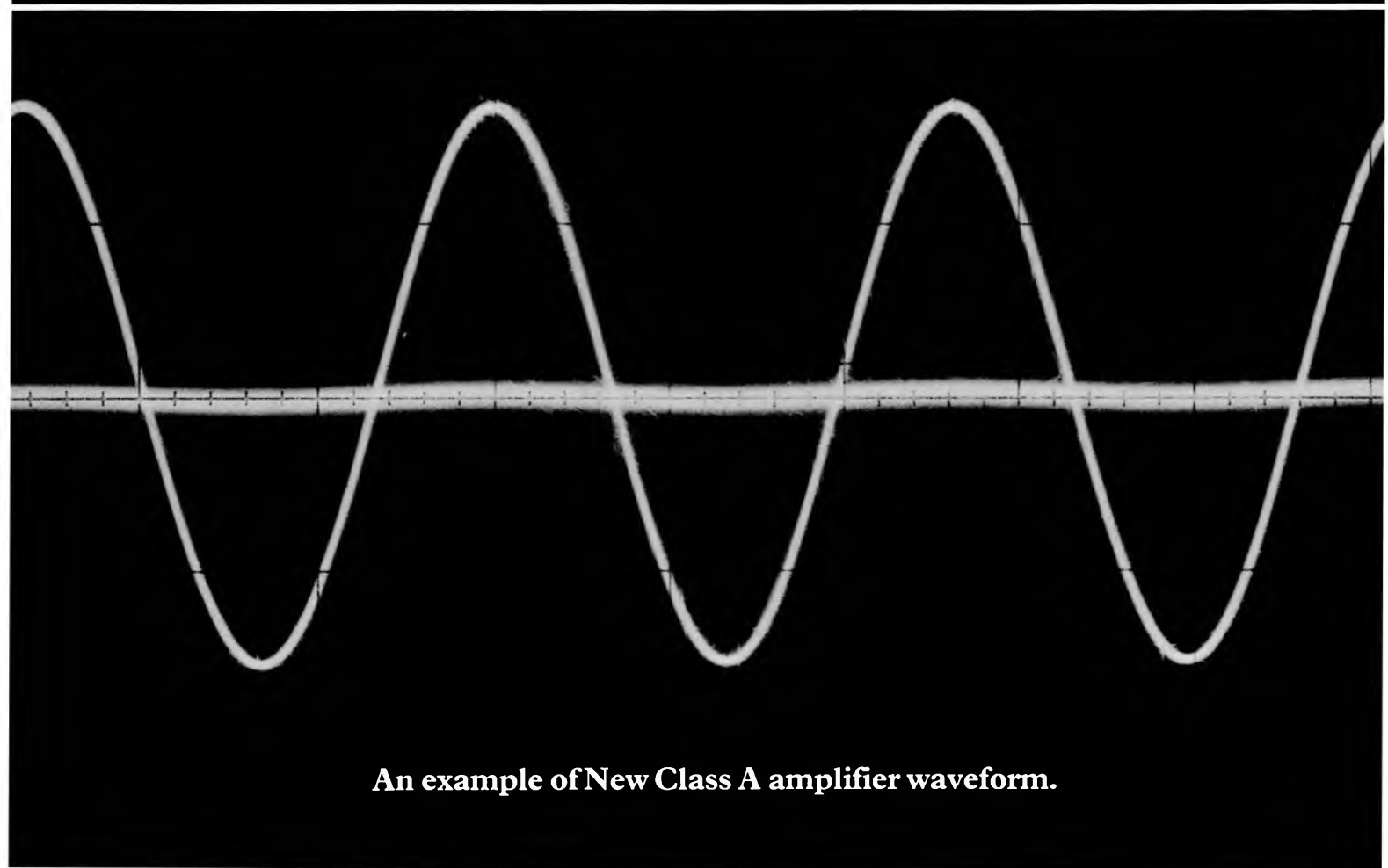
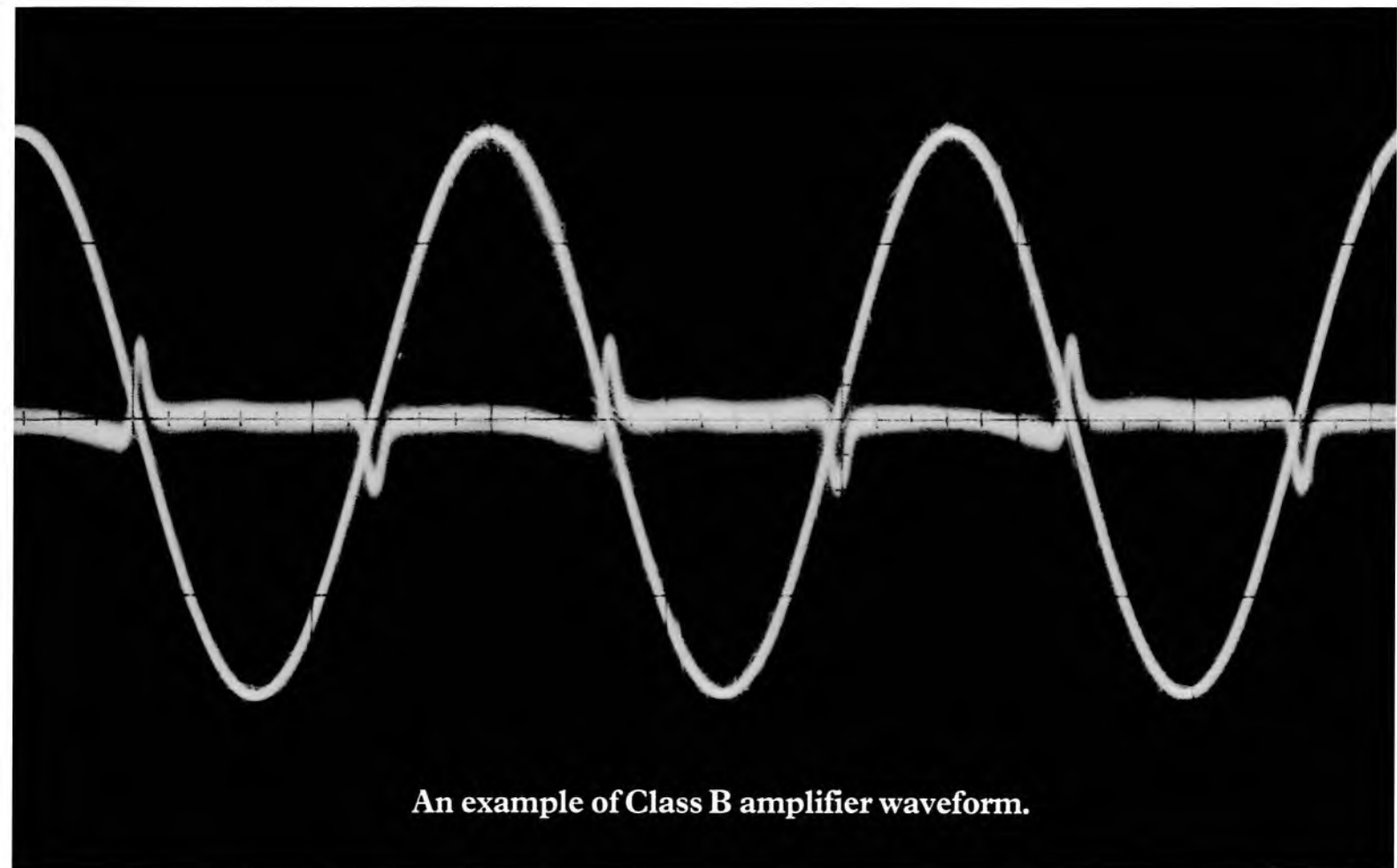
**Even the name
makes music**

*Dolby is a trade mark of Dolby Labs Inc.



Sansui Information Centre PO Box 26C Esher Surrey KT10 9QZ
Please send me your High Rise colour brochure and list of stockists.
NAME _____
ADDRESS _____
Postcode _____

You no longer have to take 1



he rough with the smooth.

Even today, over 90% of power amplifiers are in the B or AB class.

Chances are, then, our top picture shows the kind of waveform you have to live with.

Not a pretty sight, is it?

Now our New Class A amplifiers present you with an altogether smoother picture.

Which, of course, translates into better sound quality with less distortion.

Ah, but isn't there a snag with Class A amplifiers? Something about poor power conversion efficiency?

Quite right.

Three years ago, we came closer to cracking the problem with our revolutionary Class A+ amplifiers.

Indeed, many critics hailed them as the first Class A amplifiers to offer Class B efficiency.

Still, we weren't satisfied.

So instead we decided to take a completely different approach by using a

synchro-bias technique.

Which in turn led us to develop new circuit components that overcame the problems of using transistors for tube applications.

All that thinking has now gone into our four New Class A amplifiers.

Called our 'V' series, they start at 40 watts per channel and rise to a mighty 105 watts per channel.

Even at Technics we're convinced they're the first amplifiers to combine Class B efficiency with the joys of Class A distortion-free sound.

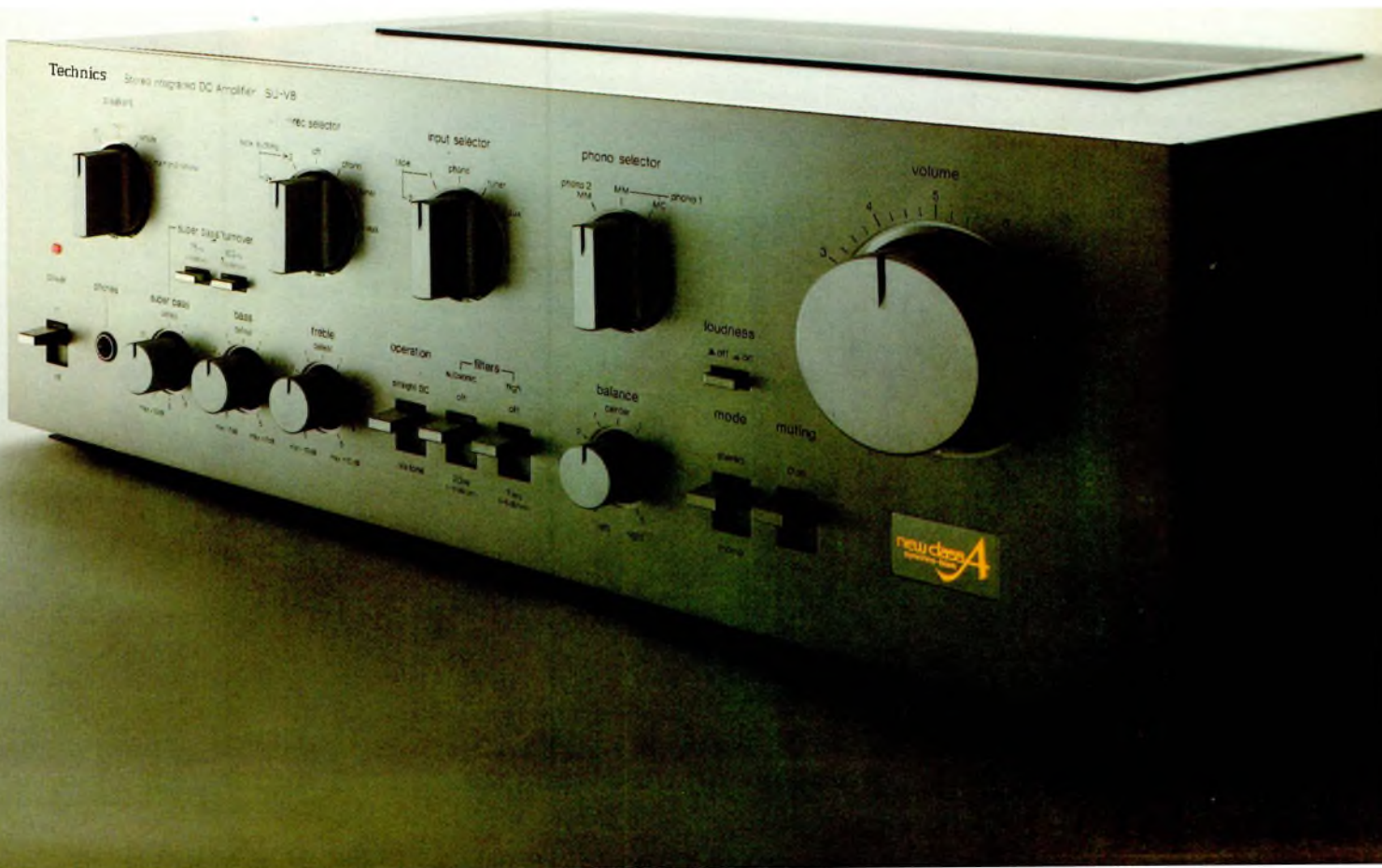
Their warm vitality and effortless clarity has to be heard to be believed.

Until then, you'll just have to believe your eyes.

Technics

New Class A Amplifiers

300/318 Bath Road, Slough, Berks SL1 6JB. Tel: Slough 34522.



PERFECTION ONLY HAPPENS AFTER YEARS OF TRYING.



 BLACK TULIP

PHILIPS

Simply years ahead.



BX-500

Rated output power: 55W + 55W, both channels, 8 ohms, 20Hz-20kHz, 0.05% THD. THD: 1kHz, at rated output power, 0.005%. FR: Tuner/aux/tape 1, 2 to Sp. out, Pre-Amp DC-100kHz +0 -0.2dB, Phono to Rec Out 20Hz-20kHz ±0.2dB. Input sensitivity: Phono MC 50µV/33 ohms, Phono MM 2.5mV/47K ohms, Tuner/aux/tape 1, 2, Pre Amp 150mV/33K ohms. Rated output voltage/impedance Tape Rec 1, 2: 150mV/2.2K ohms. Damping factor: 50. Power consumption: 100W. Dimensions: 41 x 14 x 27.2cm. Price: £129.57 (plus VAT).

BX-300

Rated output power: 35W + 35W, both channels, 8 ohms, 20Hz-20kHz, 0.06% THD. THD: 1kHz, at rated output power, 8 ohms, 0.006%. Frequency response: tuner/aux/tape 1, 2 to Sp. out, 10Hz-100kHz +0 -0.5dB. Input sensitivity: Phono MC 50V/15 ohms, Phono MM 2.5mV/47K ohms, tuner/aux/tape 1, 2, Pre Amp 150mV/33K ohms. Rated output voltage/impedance tape Rec 1, 2: 150mV/2.2K ohms. Damping factor: 50. Power consumption: 90W. Dimensions: 41 x 14 x 27.2cm. Price: £94.78 (plus VAT).

TECHNICS

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3RD.
Tel: Slough(0753) 27516.

SU9011

Pre-amplifier. FR: RIAA +0.2dB. Inputs: phono MM 2.5mV 47K, phono MC 70µV 10 ohms, tuner, aux, 150mV 47K, tape (1) 180mV 47K, tape (2) 150mV 47K mic 4mV 10K. Controls: volume, bass, treble, balance, input selector, tape monitor select, Hi and Lo filter, mode, loudness, mic volume, MC/MM selector. Dimensions: 43 x 28.5 x 9.8cm. Features: moving coil input, mic input with separate volume control. Price: £168.84 (plus VAT).

SE9021

Power amplifier. Output: 65W. THD: 0.01%. FR: 20Hz-20kHz +0 -0.1dB. Inputs: 1V 47K. Damping factor: 100. Controls: DC operation 2Hz filter, two speaker switch. Dimensions: 43 x 33.1 x 9.8cm. Features: power meters. Price: £204.00 (plus VAT).

SE A1

Power amplifier. Output: 350W. THD: 0.003%. FR: DC-100kHz +0 -0.1dB. Inputs: 1V-10V 47K. Dimensions: 45 x 55 x 24.9cm. Features: class A + DC power amp. Price: £4,088.84 (plus VAT).

SU A2

Pre-amplifier. THD: 0.003%. FR: DC-20kHz +0 -0.1dB. Inputs: phono, tuner, aux, mic, tape. Dimensions: 45 x 57.4 x 20.5cm. Features: class A, DC coupled control pre-amp. Price: £6,133.29 (plus VAT).

SU9070

Pre-amplifier. THD: 0.003%. FR: 20Hz-20kHz +0 -0.5dB. Inputs: phono MM 2.5mV 47K, phono MC 60µV 47 ohms, tuner, aux 150mV 47K, tape 1, 2, 3 150mV 47K. Controls: volume, balance, muting, phono select, input select, rec select, mode, lo filter, output selector. Dimensions: 45 x 36.9 x 9.2cm. Features: flat pre-amplifier to select inputs used with SH9010 graphic equaliser. Price: £328.84 (plus VAT).

SE9060

Power amplifier. Output: 75W stereo 200W

mono. THD: 0.02%. FR: DC-100kHz +0 -1dB. Inputs: 1V 47K. Damping factor: 100. Controls: left/right level, DC operation, 2Hz filter, two speaker switches. Dimensions: 45 x 37.6 x 9.2cm. Features: stereo or mono operation. Price: £328.84 (plus VAT).

SU CO1

Pre-amplifier. THD: 0.003%. FR: 20Hz-20kHz +0 -0.5dB. Inputs: phono MM 2.5mV 47K, phono MC 100µV 47K, tuner, aux 150mV 47K, tape 150mV 47K. Controls: volume, balance, bass, treble, selector, tape monitor, Hi and Lo filter, loudness. Dimensions: 29.7 x 24.1 x 4.9cm. Features: moving coil input. Price: £152.96 (plus VAT).

SE CO1

Power amplifier. Output: 50W. THD: 0.03%. FR: DC-100kHz +0 -1dB. Inputs: 1V 47K. Damping factor: 50. Controls: meter range. Dimensions: 29.7 x 26.2 x 4.9cm. Features: LED power meter, pulse power supply. Price: £296.96 (plus VAT).

SU-Z2*

Stereo integrated amplifier with output of 35W per channel. THD: 0.03%. FR: 20Hz-20kHz ±1dB. Features: Two VU power meters, subsonic and high filter switch. Newly developed IC in differential-amplifier first stage. Dimensions: 41 x 14.2 x 21.9cm. Price: on application.

SU-Z1

Stereo integrated amplifier with output of 25W per channel. THD: 0.08%. FR: 20Hz-20kHz -3dB. Class A driver stage and two-stage Darlington output IC. Dimensions: 41 x 14.2 x 21.9cm. Price: on application.

SU-V2*

Integrated amplifier with output of 40W per channel. THD: 0.02%. FR: RIAA standard curve ±0.8dB. Inputs: phono 2.5mV/47K, aux 150mV/27K, tape (1) 180mV/33K, tape (2) 150mV/27K. Dimensions: 43 x 25.7 x 14.2cm. Features: two speaker pairs, rec selector, meters, DC power amp. Price: on application.

SU-V4

As JU-V2 but with output of 55W and dimensions: 43 x 29.2 x 14.2cm.



Technics SU-Z2



Technics SU-V2

TELETON

Teleton Electro (UK) Co Ltd,
Somerton Works, Price Avenue,
Westcliff-on-Sea, Essex.
Tel: Southend (0702) 337681.

A500

Integrated amplifier. Output: 30W per channel. THD: 0.5% at 30W. FR: 35Hz-20kHz ±2dB. Inputs: phono (mag) 3mV, aux tuner 200mV 47K. Damping factor: 20. Controls: bass, treble, loudness, high filter, low filter. Dimensions: 42 x 29 x 12.3cm. Features: four speaker switching, dubbing and monitoring. Price: on application.

TENSAI

Wren Electronics Ltd,
Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

TA2045

Stereo amplifier. Output: 2 x 48W at 1kHz. THD: 0.02%. FR: 10Hz-50kHz ±3dB. Inputs: aux 160mV 47K, phono 2.5mV 47K. Damping factor: 80. Controls: two tone, volume, balance, mic level, two tape dubbing, high/low filter, loudness. Dimensions: 43 x 13.2 x 33cm. Features: tape dubbing, VU meters, mic input. Price: approx £78.00.

TP 2200*

Pre-amplifier. THD: 0.01%. FR: 4Hz-200kHz. Inputs: aux 150mV 80K, phono 2.5mV 47K, mic 2.5mV 10K, tape 150mV 80K. Controls: bass, mid, treble, loudness. Dimensions: 43 x 25 x 8cm. Features: two tape inputs, tape dubbing, mic mixing, subsonic filters, hi filter. Price: see TM2250.

TM 2250*

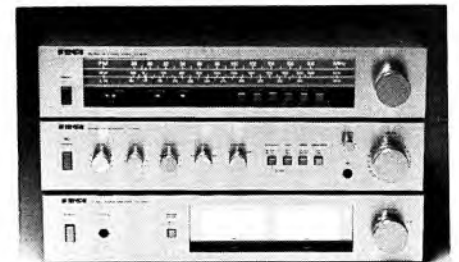
Power amplifier sold with TP 2200 as a single package. Output: 2 x 50W. THD: 0.01%. FR: 5Hz-60kHz. Damping factor: 45. Dimensions: 43 x 25 x 8cm. Features: large dual range power meters. Price: approx £105.00 for both TP 2200 and TM 2250.

TA2330

Integrated amplifier with output of 35W per channel. THD: 0.06%. FR: 10Hz-50kHz. Inputs: aux 150mV 80K, phono 2.5mV 47K, tape 150mV 80K. Damping factor: 47. Controls: bass, treble, loudness. Dimensions: 43 x 25 x 10.5cm. Features: two tape inputs, 20dB mute switch, LED power indicators. Price: approx £70.00.

TA 2350

Integrated amplifier with output of 50W per channel. THD: 0.06%. FR: 10Hz-52kHz. Inputs: aux 150mV 80K, phono 2.5mV 47K, tape 150mV 80K. Damping factor: 44. Controls: bass, treble, loudness. Dimensions: 43 x



Tensai TM 2250 amplifier set up with TA2345 and TP2200

HIGH SPEED AMPLIFIERS: IS ONE MILLIONTH OF A SECOND FAST ENOUGH FOR YOU?

Anyone can design an amplifier which will react *fairly* quickly to a sudden complex sound (a cymbal for instance).

And most people do.

But to design an amplifier which will react in less than one millionth of a second is rather more difficult.

- Such an amplifier must by definition have a very short 'rise time' and a very high 'slew rate', particularly for high frequencies and at high outputs.

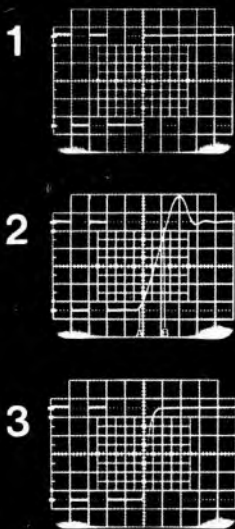
If it doesn't, the output will be distorted, because some of the signal components will be delayed and will emerge out of phase with the rest.

The Trio KA80 DC high speed amplifier Output: 48 watts RMS per channel.



Front panel opens for access to essential controls

What are 'rise time' and 'slew rate'?



The charts show you. No. 1 defines the input signal. Neat. Square.
No. 2 shows a conventional amplifier response. Look at the rise time (A to B). Look at the slew rate (the slope between A and B).
Now look at Chart 3, taken from a Trio high speed amplifier. See how close both rise time and slew rate are to Chart 1.
Finally, look at the additional distortion at the top of the slope on Chart 2. It shows how a conventional amplifier in attempting a high speed rise 'overshoots' and makes things even worse.
Trio high speed amplifiers have totally integrated circuits which give a *controlled* stable rise time of 0.9 microseconds or less. Only your ears can tell you how important a millionth of a second can be.
Try them.
But send the coupon and read all about it first.



Please send me full information about Trio high speed amplifiers, and the name of my nearest dealer.

HFYB

NAME _____

ADDRESS _____

Exclusive United Kingdom Distributors:
B. H. Morris & Co. (Radio) Ltd., Precision Centre,
Heather Park Drive, Wembley, Middx. HA0 1SU.
Phone: 01-902 9422.

25 x 10.5cm. Features: two tape inputs, tape dubbing, 20dB mute switch, hi filter, lo filter, LED power indicators. Price: £87.09 approx.

■ **TOSHIBA**

Toshiba (UK) Ltd,
Toshiba House, Girling Way,
Great South West Road, Feltham, Middlesex.
Tel: 01-751 1281.

SB-230

Integrated amplifier with output of 35W per channel into 8 ohms or 40W into 4 ohms. THD: 0.2%. FR: tuner 10Hz-50kHz ±2dB or phono 30Hz-15kHz ±0.5dB. Inputs: phono 2.5mV 47K, tuner 150mV 47K, tape 150mV 47K. Damping factor: 25. Controls: bass, treble, balance. Dimensions: 42 x 14.6 x 25.7cm. Features: power output meters, full mic mixing. Price: £97.33 (plus VAT).

SB-820

Stereo amplifier. Cascade connected differential first-stage followed by three-stage Darlington connected driver section with constant current supplies to reduce distortion at low listening levels. Output: 82W. THD: 0.2%. FR: 20Hz-20kHz. Inputs: phono 2.0mV 50K, phono 2mV 50K, tuner 150mV 50K, aux 150mV 50K. Damping factor: 40. Dimensions: 45 x 14.8 x 37.5cm. Price: £301.78 (plus VAT).

SB-620*

Stereo amplifier. Power amplifier section features cascade connected differential first-stage, direct coupled full complementary transistor configuration and OCL circuitry. Output: 62W. THD: 0.5%. FR: 20Hz-20kHz +0dB -1dB. Inputs: phono 2.0mV 50K, phono 2.2mV 50K, tuner 150mV 50K, aux 150mV 50K. Damping factor: 30. Dimensions: 45 x 14.8 x 37.5cm. Price: £212.89 (plus VAT).

■ **TRIO**

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex.
Tel: 01-902 9422.

L-07CII

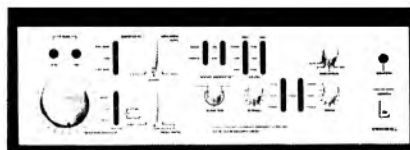
Pre-amplifier. Output: max 10V into less than 10 ohms. THD: 0.003%. FR: 20Hz-20kHz ±2dB. Inputs: phono 1 2.5mV 50K, phono 2 0.2mV 600 ohms, tuner 140mV 25K, aux 140mV 25K. Controls: subsonic filter, balance, bass, treble, volume, tape, output. Dimensions: 48 x 34 x 10cm. Features: suitable for MM and MC. Price: £586.95 (inc. VAT).

L-07MII

High speed power amplifier. Output: 150W. THD: 0.007%. FR: DC-600kHz +0dB -3dB. Inputs: 1V 50K. Damping factor: 120. Dimensions: 20 x 39 x 15.5cm. Features: Rise time 0.55µs. Slew rate: 170V/µs. Price: £391.30 (inc. VAT).

L-05M

High speed power amplifier. Output: 100W.



Toshiba SB620

THD: 0.005%. FR: DC-600kHz +0dB -3dB. Inputs: 1V 50K. Damping factor: 150. Dimensions: 20 x 39 x 15.5cm. Features: rise time 0.55µs. Slew rate: 170V/µs. Price: £273.91 (inc. VAT).

KA 907

High speed integrated amplifier with output of 150W. THD: 0.01% rated power. FR: 0Hz-400kHz +0dB -3dB. Inputs: moving coil 0.1mV 100 ohms, moving magnet 2.5mV 47K, tuner, aux and tape 150mV 50K. Damping factor: 100. Controls: bass, treble, subsonic, low and high filter, tone defeat, loudness, volume, balance. Dimensions: 46 x 46.3 x 16.1cm. Features: rise time 0.8µs. Slew rate 230V/µs. Price: £575.74 (inc. VAT).

KA 801

High speed integrated amplifier with output of 110W. THD: 0.015% at rated power. FR: 0Hz-400kHz +0dB -3dB. Inputs: two moving magnet 2.5mV 50K; tuner, aux, tape 200mV 50K. Damping factor: 100. Controls: bass, treble, subsonic, filter, volume, tone defeat, loudness, attenuator, balance. Dimensions: 44 x 40.7 x 15.3cm. Features: Rise time 0.8µs. Slew rate: 150V/µs, power meters. Price: £328.60 (inc. VAT).

KA 701

High speed integrated amplifier with output of 80W. THD: 0.02% at rated power. FR: 0Hz-400kHz +0dB -3dB. Inputs: two moving magnet 2.5mV 50K; tuner, aux, tape 200mV 50K. Damping factor: 100. Controls: bass, treble, loudness, tone defeat, attenuator, subsonic, high filters, volume, balance. Dimensions: 44 x 40.7 x 15.3cm. Features: rise time 0.9µs. Slew rate 120V/µs. Price: £246.22 (inc. VAT).

KA 601

High speed integrated amplifier. Output: 60W. THD: 0.02% at rated power. FR: 0Hz-400kHz +0dB -3dB. Inputs: two moving magnet 2.5mV 50K, tuner, aux, tape 200mV 50K. Damping factor: 100. Dimensions: 44 x 40.7 x 15.3cm. Features: rise time 0.9µs. Slew rate: 120V/µs. Price: £200.45 (inc. VAT).

KA 60*

Integrated amplifier with output of 30W per channel. THD: 0.08%. FR: 10Hz-100kHz. Inputs: phono 2.5mV/50K, tuner, aux, play tape 150mV/50K. Damping factor: 40. Controls: mic, mix, bass, treble. Dimensions: 44 x

38.8 x 7.8cm. Features: slimline. Price: £82.33 (plus VAT).

KA-400

Integrated amplifier with output of 45W per channel. THD: 0.035%. FR: 5Hz-55kHz. Inputs: phono 2.5mV/50K, tuner, aux, tape play 150mV/50K. Damping factor: 50. Controls: bass, treble, loudness. Dimensions: 40 x 34.1 x 13.9cm. Features: LED peak power level display. Price: £91.48 (plus VAT).

KA 80

Integrated amplifier with output of 48W per channel. High speed DC, slimline style. THD: 0.02%. FR: DC-450kHz. Inputs: phono 2.5mV/50K, tuner, aux, tape play 150mV/50K. Damping factor: 120. Controls: bass, treble, tape mon. Dimensions: 44 x 33 x 7.8cm. Price: £128.10 (plus VAT).

KA 500*

Integrated amplifier with output of 43W per channel. THD: 0.1%. FR: 10Hz-30kHz. Inputs: phono 2.5mV/50K, tuner, aux, tape play 150mV/30K. Damping factor: 40. Controls: bass, treble, loudness. Dimensions: 44 x 28.1 x 13.3cm. Features: remote control. Price: £137.25 (plus VAT).

KA 405

Integrated amplifier with output of 55W per channel. THD: 0.05%. FR: 2Hz-250kHz. Inputs: phono 2.5mV/50K, tuner, aux, play tape 150mV/30K. Damping factor: 45. Controls: direct tone circuit, mic mix tone controls. Dimensions: 40 x 29.6 x 13.9cm. Features: power output meters. Price: £137.25 (plus VAT).

KA 501

Integrated high speed amplifier with output of 65W per channel. THD: 0.03%. FR: 2Hz-300kHz. Inputs: phono 2.5mV/50K, tuner, aux, play tape 150mV/50K. Damping factor: 60. Dimensions: 44 x 40.7 x 15.3cm. Price: £164.71 (plus VAT).

L-01A

Integrated amplifier with output of 110W per channel. High speed DC. THD: 0.006%. FR: DC-400kHz. Inputs: phono (1) 2.5mV/50K, phono (2) 0.1mV/100K, tuner, aux, tape play 200mV/50K. Damping factor: 1,000. Controls: subsonic filter, loudness. Dimensions: 44 x 45.2 x 13.6cm. Non-magnetic. Price: £778.03 (plus VAT).

■ **WYE**

Wye Audio Products Ltd,
27 Station Road, Brimington,
Chesterfield S43 1JJ.
Tel: Chesterfield (0246) 70297.

SA501

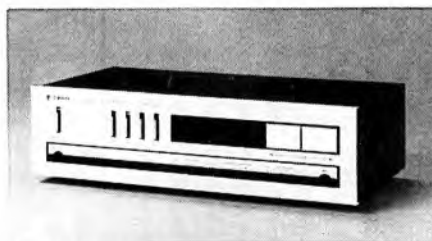
Stereo amplifier with output: 20W into 8 ohms. THD: 0.3%. FR: 35Hz-20kHz ±dB. Inputs: mag 2.5mV, ceramic 150mV, tape 150mV, tuner 150mV. Controls: bass, treble, balance, volume, loudness, high filter. Dimensions: 38 x 15 x 26.5cm. Finish: metal. Price: on application.

■ **VIDEOTONE**

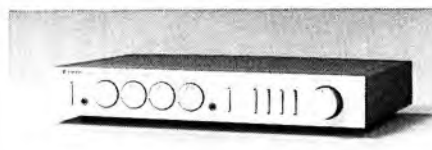
Videtone Ltd,
98 Crofton Park Road, London SE4.
Tel: 01-690 1914.

Sirac 50

Power amplifier with output of 20W. THD:



Trio KA 500



Trio KA 60

continued on page 69

CASSEIVERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

AC3400L

Casseiver with power output of 30W per channel. THD: 0.3%. S/N ratio: >95dB. FR: 35Hz-13kHz L/N, 35Hz-14kHz chrome. Two heads. Sensitivity: 1.9µV. Soft cassette eject. Radio tuner covers FM, L, M. Speakers included. Price: £292.00 (inc VAT).

■ BANG AND OLUFSEN (UK) Ltd

Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

Beocenter 4000*

FM/AM receiver and cassette recorder. Amplifier output: 2 x 40W into 4 ohms. FR: 20Hz-30kHz±1.5dB. S/N: >60dB. Inputs: PU, tape. Output: tape, headphones. Two pair loudspeakers/switchable. Tuner covers FM/AM. Variable tuning with 5 FM presets. Cassette system: C60, C90. FR: 30Hz-15kHz. LED record level indicator. Dimensions: 65.5 x 8.5 x 31cm. Finish in teak or rosewood; oak and white to special order. Price: £472.00 (plus VAT).

Beocenter 2600

FM/AM receiver and cassette recorder. Amplifier output: 2 x 25W. FR: 20Hz-35kHz, damping factor: >50. Tuner covers FM/AM. Variable tuning with 4 presets on FM. Cassette system: C60, C90. W and F: <±0.2%. S/N: 64dB. FR: 30Hz-14kHz. Dimensions: 60 x 9 x 27cm. Finish: Teak or rosewood; oak to special order. Price: £315.00 (plus VAT).

■ FERGUSON

Thorn Consumer Electronics,
284 Southbury Road, Enfield, Middlesex.
Tel: 01-363 5353.

3926*

Stereo casseiver. W and F: 0.15%. Dolby "B" noise reduction unit. FR: 60Hz-11kHz Fe₂O₂, 60Hz-12kHz CrO₂. Bias switch. Twin record level meters, LED record indicator. Inputs: magnetic PU 3.5mV 47K, tape 350mV 47K, microphone 0.2mV 2K. Outputs: tape 1mV/K, headphone 8-600K, headphone 13V 220K. Mains voltage: 240V. Dimensions: 59 x 33.5 x 13.5cm. Price: £185.00 (plus VAT). Optional speakers 39267 approx £50.00.

3925B

Stereo casseiver. W and F: 0.35%. FR: 100Hz-6.5kHz. Twin record level meters, LED record



Beocentre 4000

indicator. Inputs: mag PU 3mV 47K, aux 300 mV 1M, mic 3mV 1K, mixing 5.5mV 2K. Outputs: aux 1.2mV/K, headphone load imp 8-600K. Dimensions: 54.5 x 30.5 x 15cm. Price: £130.00 (plus VAT). Optional speakers 39257.

■ GRUNDIG

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

RC 60

Combined Hi Fi receiver and cassette deck. Total power output: 100W. Dolby system. Wavebands: VHF, L, M. 8 programme selectors for VHF. Features: AFC, muting, linear, contour, noise filter controls. Front loading deck with variable fade in/out control. Tape selector. Dimensions: 63 x 15 x 34cm. Finish: black or metallic brown. No rec. retail price.

■ SONY

Sony (UK) Ltd,
Consumer Information,
Sony Showroom,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

HST 89A*

Amplifier with output of 25W per channel. FR: 40Hz-20kHz ±1dB. Radio with FM, L, M, S wavebands. Four-track cassette. S/N: 50dB normal. THD: 2%. Dimensions: 48.1 x 14.7 x 37.6cm. Features: accessories supplied include ribbon antenna, mains lead, head changing set. Price: £288.90 (inc VAT).



Ferguson 3926



Sony HST-89A

■ TELETON

Teleton Electro (UK) Co Ltd,
Somerton Works, Prince Avenue,
Westcliff-on-Sea, Essex.
Tel: Southend 337681.

SX 500

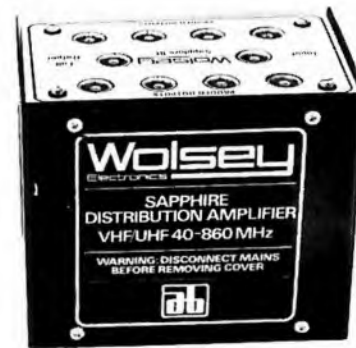
Casseiver with amplifier output: 20W into 8 ohms. FR: 30Hz-25kHz. Damping Factor: 10. Inputs: phono, aux. Controls: muting, AFC high filter, loudness, tape phono, mono, bass, treble. Dolby noise reduction unit. Tapes: FeCr, CrO₂. Dimensions: 52 x 39 x 14.5cm. Price: on application.

AERIALS VHF/FM

continued from page 36

Sapphire 41/81 Distribution Amplifier *

Ultra Broad Band Amplifiers with a single input. With either four or eight padded outputs and one high level output in each version. These amplifiers are ideal for small installations, shops and showrooms, and are suitable for VHF/FM and Television. Price: Sapphire 41 £41.93 (plus VAT), Sapphire 81 £51.85 (plus VAT).



Walsey Distribution Amplifier

CASSETTE DECKS AND RECORDERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AIWA

Aiwa (UK) Ltd,
Aiwa House, 30-32 Concord Road,
Westwood Park Trading Estate,
London W3 0TH.
Tel: 01-993 1672.

AD 6900 Mk II

Stereo cassette deck. W and F: 0.04% WRMS. Double Dolby. FR: LH 25Hz-16kHz DIN, CrO₂ 25Hz-13kHz DIN, FeCr 25Hz-19kHz DIN, metal 25Hz-19kHz DIN. Bias switch for chrome and ferrochrome cassettes. VU. Inputs: mic 0.25mV 3K, line in 50mV 50K, DIN 0.25mV 3K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motor: 38-pulse FG servo motor, electronically controlled, 2-speed DC servo. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 32.7 x 12cm. Typical price: £380.00 (plus VAT).

AD 6700

Stereo cassette deck. W and F: 0.04% WRMS. Dolby. Bias switch for chrome and ferrochrome cassettes. VU. Inputs: mic 0.25mV 3K, line in 50mV 50K, DIN 0.25mV 2.7K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motor: 38-pulse FG servo motor, electronically controlled, 2-speed DC servo. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 32.7 x 12cm. Typical price: £299.00 (plus VAT).

ADM 700

Stereo cassette deck. W and F: 0.04% WRMS. Dolby. Bias switch for chrome and ferrochrome cassettes. VU peak LED. Inputs: mic 0.3V 200K, line in 50V 50K, DIN 0.1 2.7K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motor: 1 x DC servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 27 x 12cm. Typical price: £249.00 (plus VAT).

ADM 600*

Stereo cassette deck. W and F: 0.04% WRMS. Dolby. Bias switch for chrome and ferrochrome cassettes. VU, peak LED. Inputs: mic 0.3mV 200K, line in 50mV 50K, DIN 0.1mV 2.7K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motor: 1 x DC servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 30 x 12cm. Price: £215.00 (plus VAT).

ADM 450

Stereo cassette deck. W and F: 0.04% WRMS. Dolby. Slide-type selector for chrome and ferrochrome cassettes. VU, peak LED. Inputs: mic

0.3mV 200k, line in 50mV, 50k, phones 2mW 8 ohms. Outputs: line out 0.41V 50K, DIN 0.41V 50k, phones 2mW 8 ohms. Motors: 1 x DC servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 42 x 28 x 12cm. Price: to be announced.

ADL 450

Stereo cassette deck. W and F: 0.04% WRMS. Dolby. Slide-type selector for chrome and ferrochrome cassettes. LED bargraph. Inputs: mic 0.3mV 200K, line in 50mV 50K, DIN 0.1mV 5.6K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motors: 1 x DC servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 42 x 28 x 12cm. Price: to be announced.

ADM 800

Stereo cassette deck. W and F: 0.04% WRMS. Dolby (double). Bias switch for chrome and ferrochrome cassettes plus fully automatic bias and EQ with memory function. VU and peak LED. Inputs: mic 0.3mV 200K, line in 50mV 50K, DIN 0.1mV 2.7K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motors: 1 x FG servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 30 x 12cm. Price: to be announced.

ADR 500*

Stereo cassette deck. W and F: 0.05% WRMS. Dolby. Automatic manual switch for metal tapes. VU and peak LED. Inputs: mic 0.3mV 200K, line in 50mV 50K, DIN 0.1mV 8 ohms. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motors: 1 x FG servo, 1 x DC. Mains voltage tappings: 120/240V 50/60Hz. Dimensions: 45 x 27.5 x 12cm. Price: to be announced.

ADL 300

Stereo cassette deck. W and F: 0.06% WRMS. Dolby. Bias switch for chrome and ferrochrome cassettes. LED bargraph. Inputs: mic 0.3mV 200K, line in 50mV 50K, DIN 0.1mV 2.7K. Outputs: line out 0.41V 50K, DIN 0.41V 50K, phones 2mW 8 ohms. Motor: DC servo. Mains voltage tappings: 240V 50/60Hz. Dimensions: 42 x 29 x 15cm. Price: to be announced.

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

CS 703D

Front loading cassette deck. W and F: <0.2%.

Dolby noise reduction unit. FR: 40Hz-13kHz L/N. 40Hz-15kHz chrome, FeCr. DC ESD motor. Dimensions: 38 x 15 x 26.6cm. Features: soft eject, auto stop, direct function controls, direct mic input. Price: £106.50 (inc. VAT).

GXC 704D

Front loading cassette deck. W and F: <0.05%. Dolby noise reduction unit. FR: 35Hz-14kHz L/N, 35Hz-15kHz chrome, FeCr. DC ESD motor. Dimensions: 38 x 15 x 29.5cm. Features: Glass crystal (GX) heads guaranteed for life, peak level indicator, output level control, bias switch. Price: £140.00 (inc. VAT).

GX706D

Front loading cassette deck. W and F: <0.06%. Dolby noise reduction system. FR: 35Hz-13kHz L/N, 35Hz-14kHz L/N high output, 35Hz-15kHz chrome, FeCr. DC electronically speed controlled motor. Dimensions: 44 x 15 x 28.5cm. Features: GX recorder/replay head guaranteed for life, variable output control, mic/line input control, +7dB peak level indicator, 4-way tape select. Price: £159.50 (inc. VAT).

GXC 709D

Front loading cassette deck. W and F: <0.06%. Dolby noise reduction system. FR: 35Hz-14kHz L/N, 35Hz-15kHz chrome and FeCr. DC electronically speed controlled motor. Dimensions: 44 x 16.5 x 28.5cm. Features: GX head, ADR system, mic/line mixing device, multiplex filter, twin peak level indicators. Price: £205.00 (inc. VAT).

GXC 706DX

Front loading cassette deck. W and F: <0.04%. ADRES noise reduction unit. FR: 35Hz-14kHz L/N, 35Hz-15kHz chrome and FeCr. DC ESD motor. Dimensions: 44 x 15 x 28.5cm. Features: 76dB S/N ratio (ADRES on). Price: £250.00 (inc. VAT).

GXC 715D

Front loading cassette deck. W and F: <0.04%. Dolby noise reduction system. FR: 35Hz-14kHz L/N, 35Hz-15kHz chrome, 35Hz-16kHz FeCr. Two DC ESD motors plus one DC motor. Dimensions: 44 x 13.8 x 27.3cm. Features: IC logic feather touch controls, repeat/memory functions, mic/line mixing control, timer switch, record mute facility. Price: £269.00 (inc. VAT).

CS 732D

Front loading cassette deck. W and F: <0.06%. Dolby noise reduction system. FR: 35Hz-13kHz L/N, 35Hz-14kHz chrome, 35Hz-15kHz FeCr. DC ESD motor. Dimensions: 44 x 16 x 29cm. Features: auto reverse record/playback, 0.25 sec tape turn around time, twin indicator lights, instant direction change control, wide scale VU meters, monochoque chassis construction. Price: £249.00 (inc. VAT).



Aiwa ADM 600



Aiwa ADR 500

GXC 735D

Front loading cassette deck. W and F: <0.045%. Dolby noise reduction system. FR: 35Hz-14kHz L/N, 35Hz-15kHz chrome, 35Hz-16kHz FeCr. Two DC ESD and one DC motor. Features: Akai linear shifting GX head, auto reverse record/playback, IC logic function control, recessed non-reflect VU meters, timer facility. Price: £330.00 (inc. VAT).

GXM 50

Metal tape compatible deck. 4 track, 2 channel. W and F: <0.04%. Dolby noise reduction system. FR: 25Hz-15kHz L/N, 25Hz-17kHz L/N high output, 25Hz-17.5kHz chrome, 25Hz-21kHz FeCr. DC ESD motor. Dimensions: 44 x 15.8 x 27.6cm. Features: new super GX heads, three head system, FLD bargraphs, record mute facility, double Dolby facility. Price: £250.00 (inc. VAT).

GXM 30

Metal tape compatible deck, 4 track, 2 channel, W and F: <0.04%. Dolby noise reduction system. FR: 30Hz-15kHz L/N, 30Hz-16kHz L/N high output, 30Hz-16.5kHz chrome, 30Hz-19kHz FeCr. DC ESD motor. Dimensions: 44 x 15.8 x 27.6cm. Features: New super GX heads, record mute facility, repeat play function. Price: £180.00 (inc. VAT).

Other metal tape decks

GX-M10 £160.00, GX-F80 £330.00, GX-F90 £400.00. Price inc. VAT. Full details on application.

AMSTRAD

Amstrad Consumer Electronics Ltd, 1-7 Garman Street, London N17 0UF. Tel: 01-801 4431.

EX 770*

Stereo cassette deck. W and F: 0.085%. Dolby noise reduction system. FR: 25Hz-14kHz ferric, 25Hz-16kHz chrome, 25Hz-17kHz metal. Bias switch. LED indicators. Inputs: DIN 5mV 18K, mic 0.5mV. Outputs: 0-580mV variable 10K. 12V DC motor. Mains: 240V. Dimensions: 42 x 24 x 13cm. Typical Market Price: £71.90.

C202

Stereo cassette deck. As EX 770 plus FR: 25Hz-15kHz on ferro-chrome. Dimensions: 30 x 22.5 x 13.2cm.

BEOCORD

Bang & Olufsen UK Ltd, Eastbrook Road, Gloucester GL4 7DE. Tel: Gloucester (0452) 21591.

1900

Stereo cassette deck with Dolby. W and F: less than 0.15%. FR: 30Hz-15kHz. S/N ratio: better than 64dB. Bias switch for chrome and ferrochrome. VU meter. Inputs: radio, mic. Outputs: Amplifier. Mains: 110/220V. Features: Sendust combined record/replay head. Dimensions: 40 x 25 x 8cm. Price: £170.00 (plus VAT).

1500

Stereo cassette deck. W and F: <±0.2%. Dolby



Amstrad EX770

noise reduction system. FR: 30Hz-14kHz (chrome). Bias switch. VU meters. Inputs: 2mV 22K radio, 0.175mV 2.2K mic. Outputs: 700mV 22K radio. Two servo drive motors. Mains voltage: 110/220V. Finish: teak or rosewood. Dimensions: 40 x 25 x 8cm. Price: £174.00 (plus VAT).

8000*

Stereo cassette deck. W and F: <±0.1%. Dolby noise reduction system. FR: 30Hz-16kHz ±2.5dB chrome/metal. Automatic biasing for ferric, chrome, and metal tape switch. Peak programme meters 8 LED's per channel. Inputs: 1mV 10K radio, 0.1mV 2.2K mic, 120mV 1.2M aux. Outputs: 800m (400-1,600mV) 2K radio, max 9V 56 ohms headphones. Servo controlled DC motor. Mains: 220V tapped transformer. Dimensions: 53 x 30 x 13cm. Finish: teak or rosewood. Price: £375.00 (plus VAT).

B-I-C

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey KT14 7JH. Tel: Byfleet (09323) 51051.

T1

Front loading stereo two speed cassette deck. W and F: 0.06% on 1½ and 0.04% on ¾. Dolby noise reduction system. FR: 35Hz-17kHz on 1½, 35Hz-20kHz on ¾. Three position bias switch, two position equalisation. Peak meters, LED multicolour indicator. Inputs: 200mV 8-600 ohms. Outputs: line 1.0V into 10K, headphones 0.5V into 150 ohms. Two speed tachometer feedback DC servo motor. Mains: 220/240V. Dimensions: 39 x 23 x 15cm. Price: £175.00 (plus VAT).

T2

Front loading stereo two speed cassette deck. W and F: 0.06% at 1½, 0.04% at ¾. Dolby noise reduction system. FR: 30Hz-18kHz on 1½, 30Hz-21kHz on ¾. Three position bias switch, two position equalisation. Peak meters, LED multi-colour indicator. Inputs: 200mV 8-600 ohms. Outputs: line 2.0V into 10K, headphones 0.7V into 100 ohms. Two speed tachometer feedback DC servo motors. Mains: 220/240V.



Beocord 8000



B.I.C. T3

Dimensions: 42.5 x 23 x 15cm. Price: £219.00 (plus VAT).

T3*

Front loading stereo two speed cassette deck. W and F: 0.05% on 1½ and 0.035% on ¾. Dolby noise reduction system. FR: 25Hz-19kHz on 1½, 25Hz-22kHz on ¾. Three-position bias switch, two-position equalisation. Peak meters, LED multicolour indicator. Inputs: 200mV 8-600 ohms. Outputs: line 2.0V into 10K, headphones 0.7V into 100 ohms. Two speed tachometer, feedback DC servo motor. Mains: 220/240V. Dimensions: 45.5 x 26 x 16.5cm. Price: £299.00 (plus VAT).

T-4M

Two-speed stereo cassette deck. W and F: 0.05% at 1½ ips, 0.03% at ¾ ips. Dolby noise reduction system. FR: 20Hz-21kHz at 1½ ips, 20Hz-24kHz at ¾ ips. Bias switch for chrome. Peak LED and 45dB Bar. Inputs: 200mV for 'O' VU line, 8-600 ohms, mic. Three motors, three heads, two capstans. Mains voltage tapping: 110/220V, 50/60Hz. Dimensions: 45.72 x 25.71 x 16.51cm. Price: £495.00 (plus VAT).

T-05

Stereo cassette deck. W and F: 0.07%. Dolby "B" noise reduction system. FR: 30Hz-18kHz. Bias switch for chrome. VU meters. Inputs: 200mV line, 8-600 ohms mic. Output: 1.0V into 10K. DC servo motor. Price: £129.00 (plus VAT).

DENON

Eumig (UK) Ltd, 14 Priestley Way, London NW2 7TN. Tel: 01-450 8070

DR 230*

Metal compatible deck, 4-track, 20 channel. W and F: less than 0.04%. Dolby noise reduction system. FR: 30Hz-16.5kHz metal, 30Hz-16kHz CrO₂, 30Hz-16kHz FeCr, 30Hz-15kHz LH tape. Inputs: 0.4mV 50k mic, 70mV 50K line. Outputs: 500mV 10K line, 1.2mW 8 ohms headphones. DC servomotor (capstan), DC motor (reel). Power supply: 120V, 200/220/240V. Dimensions: 43.4 x 11.2 x 30cm. Price: approx. £190.00 (inc. VAT).

DUAL

Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW. Tel: Gerrards Cross (028 13) 88447.

C839RC

Stereo cassette deck. W and F: 0.03%. Dolby noise reduction system. FR: 30Hz-20kHz. Bias switch for metal, chrome, ferrochrome. Peak level LED display meters. Two motors, double capstan drive. Mains: 240V. Dimensions: 44 x 15 x 36cm.

C830

Stereo cassette deck. W and F: 0.035%. Dolby noise reduction unit. FR: 20Hz-20kHz. Bias switch for metal, chrome, ferrochrome. Peak



Denon DR-230

level LED display meters. Dimensions: 44 x 15 x 36cm.

C820

Stereo cassette deck. W and F: 0.04%. Dolby noise reduction unit. FR: 20Hz-19kHz. Bias switch for chrome and ferrochrome. Peak level LED display meters. Dimensions: 44 x 15 x 36cm.

C810*

Stereo cassette deck. W and F: 0.045%. Dolby noise reduction system. FR: 20Hz-17kHz. Bias switch for chrome and ferrochrome. Peak level meters. Dimensions: 44 x 15 x 36cm.

■ EAGLE

Eagle International, Precision Centre, Heather Park Drive, Wembley, Middlesex HA0 1SU.
Tel: 01-902 8832.

C8000

Stereo cassette deck with W and F: 0.06%. Dolby noise reduction system. FR: 25Hz-15kHz, 24Hz-18kHz metal. Bias switch for LN/CrO₂/metal positions. LED VU meters. Inputs: mics 0.03mV 600-10,000 ohms, line 70mV at 100K, DIN 1mV at 1K. Outputs: 740mV 47K. Electronically controlled DC motor. Mains: 240V. Dimensions: 44 x 34 x 13cm.

■ FIDELITY

Fidelity Radio Ltd, Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

35-C

Stereo cassette deck. W and F: 0.07%. Dolby noise reduction system. FR: Fe 35Hz-14.5kHz, CrO₂ 35Hz-15.5kHz, FeCr 35Hz-15.5kHz. Bias switch for chrome and ferrochrome. Dolby NR LED indicator, record indicator, lit cassette compartment, two VU meters, counter with memory facility, pause control. Inputs: mic 0.25mV/2K, DIN 0.8mV/10K. Outputs: 0.16-1.3V variable at 5K. Electronically speed controlled DC motor. Dimensions: 45 x 28 x 15.5cm.

■ GRUNDIG

Grundig International Ltd, Newlands Park, London SE23 5NQ.
Tel: 01-659 2468.

CF5500

Stereo cassette deck. W and F: 0.12% DIN. Dolby. FR: 25Hz-18kHz. Bias switch for chrome and ferrochrome cassettes. LED indicators. Inputs: mic 1mV 10K 2 x 100mV 1M ohm, radio 2 x 5mV 47K, line 2 x 100mV 1M ohm. Outputs: radio 2 x 0.2-2V 15K, monitor 2 x 0.2-2V 15K, headphone 2 x 0.2-4V 150 ohms. Two motors. Mains voltage tapings: 220/230V. Dimensions: 45 x 33 x 11cm.

CF5000

Stereo cassette deck. W and F: 0.15% DIN. Dolby. FR: 30Hz-16kHz. Bias switch for chrome and ferrochrome cassettes. LED in-

dicators. Inputs: mic 1mV 10K, phone 100mV 1M ohm, radio 5mV 50K. Outputs: radio 0.5-1.5V 10K. One motor. Dimensions: 45 x 33 x 11cm.

MCF 100

Stereo cassette deck. W and F: 0.15% DIN. Dolby. FR: 30Hz-16kHz. Bias switch for chrome and ferrochrome cassettes. Inputs: radio 150mV 10K, mic 0.5-50mV 10K. Outputs: radio 700mV 10K. One motor. Mains voltage tapings: 220/230V. Dimensions: 27 x 22 x 12cm (mini).

MCF 600

Stereo cassette deck. W and F: 0.12% DIN. High-com noise reduction. FR: 30Hz-16kHz. Bias switch for chrome, ferrochrome and metal tapes. LED indicators. Inputs: mic 2 x 13-130mV 5.6K, 2 x 0.1-10V 1M ohm, line 2 x 50mV 470K, radio 2 x 0.1-10µA 5.6K. Outputs: radio 2 x 0.35-1.2V 10K. Two motors. Mains voltage tapings: 220/230V. Dimensions: 27 x 22 x 12cm (mini).

■ HARMAN/KARDON

Harman UK, St. John's Road, Tyler's Green, High Wycombe, Bucks.
Tel: High Wycombe (049-481) 5331.

hk705

Specially designed to use all existing types of tape. W and F: 0.04% (NAB WRMS), 0.07% (DIN 45507). Noise reduction system: Dolby B. FR: 20Hz-19kHz ±3dB (metal tape, 20Hz-18kHz ±3dB (70 s tape), 20Hz-17kHz ±3dB (low noise tape). Bias switch for chrome, ferrochrome and metal tapes. LED level indicator. Dimensions: 38.5 x 32 x 7.25cm.

D455

Stereo cassette deck with Dolby noise reduction unit. Front loading. Slimline styling. Metal compatible. Fluorescent level display. Price: £119.90 (plus VAT).

D3300M

Metal tape compatible stereo cassette deck with automatic tape response system, Double Dolby. FR: 20Hz-20kHz. S/N: 60dB DIN Dolby off, 68dB DIN Dolby on. Distortion: 1.0%. Dimensions: 43.5 x 16.5 x 25.6cm. Price: £349.00 (plus VAT).

D85S

Stereo cassette tape deck with Dolby noise reduction unit. Metal tape compatible. Slimline styling. Features: IC logic control, fluorescent level control. Price: £149.00 (plus VAT).

D22S

Stereo cassette deck with metal tape compatibility. Dolby noise reduction unit. Slimline styling. Price: £82.00 (plus VAT).

D35S

Stereo cassette deck with metal tape compatibility. Front loading. Slimline styling. Dolby noise reduction unit. Price: £99.00 (plus VAT).

■ HITACHI

Hitachi Sales (UK) Ltd, Hitachi House, Station Road, Hayes UB3 4DR.
Tel: 01-848 8787.

D5500M*

Stereo cassette deck with metal tape compatibility. W and F: 0.09% DIN. Dolby noise reduction system. FR: 20Hz-20kHz. Bias switch for chrome and ferrochrome, auto-tape

response system. Twin VU meters. S/N: 60dB DIN Dolby off, 68dB DIN Dolby on. Distortion: 1.2% (0VU). 1 Unitorque, 1 DC motor. Mains voltage: 240V. Dimensions: 43.5 x 32 x 18.6cm. Price: £499.00 (plus VAT).

■ HMV

Intersound Electronics Ltd, Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

4000C Cassette Deck

Front loading stereo cassette deck with Dolby noise reduction system. FR: 35Hz-14.5kHz normal, 35Hz-15.5kHz chrome, 35Hz-15.5kHz ferrochrome. Distortion: 1.3%. Features: lit cassette compartment, autostop, VU meters, digit counter with memory, pause control. Dimensions: 45 x 28 x 15.5cm. Price: £103.48 (plus VAT).

■ ITT CONSUMER PRODUCTS (UK) LTD

Chester Hall Lane, Basildon, Essex.
Tel: Basildon (0268) 3040.

HIFI 8025

W and F: 0.12% (DIN/BS/IEC), 0.06% (WRMS). Dolby noise reduction. FR: 25Hz-18kHz (ferric), 25Hz-19kHz (chrome), 25Hz-21kHz (ferrochrome). Inputs sensitivity: microphone 0.3mV, line 100mV. DIN 5.6mV. Outputs sensitivity: headphones 90mV, line 440mV, DIN 440mV. Dimensions: 48 x 35 x 14cm. Finish: champagne.

■ JVC

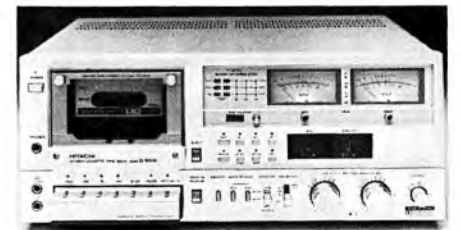
JVC (UK) Ltd, Eldonwall Trading Estate, Staples Corner, 6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

KD-720*

Top loading stereo cassette deck with Dolby NR. W and F: 0.07%. FR: 40Hz-15,000Hz typical chrome, 40Hz-14,000Hz typical normal. Bias switch for ferric, chrome and ferrochrome tapes. Electronic governor DC motor. Mains: 120/220/240V, 50/60Hz. Dimensions: 39 x 12.8 x 25cm. Price: £108.00 (inc. VAT).

KD-95

Front loading stereo cassette deck. W and F: 0.20% (DIN). FR: 30Hz-16,000Hz chrome typical. Dimensions: 21.1 x 42 x 32cm. Price: £440.00 (inc. VAT).



Hitachi D550M



JVC KD720



Dual C810

KD-10

Stereo cassette deck. W and F: 0.06%. Dolby noise reduction system. FR: 40Hz-15kHz. Bias switch for chrome. VU meters and five multi-peak LED's. Inputs: 80mV 100K line, 0.1mV DIN. Outputs: 410mV 3K line, 0.3mV DIN. Motor: electronic governor DC. Mains voltage tappings: 240V. Dimensions: 42 x 26.4 x 14.7cm. Price: £142.00 (plus VAT).

KD-A8

Computerised metal tape compatible stereo cassette deck, front loading. FR: 25Hz-17kHz, 40Hz-12.5kHz ± 1 dB metal. S/N ratio: 60dB. W and F: 0.035%. THD: 1.0%. Frequency controlled DC servo motor, DC motor. Dimensions: 45 x 12.4 x 39cm. Price: £506.00 (inc. VAT).

KD-A77

Metal tape compatible stereo cassette deck. Front loading. FR: 25Hz-18kHz. S/N ratio: 60dB. W and F: 0.04%. THD: 1.0%. Frequency controlled DC servo motor, DC motor. Dimensions: 45 x 12 x 38cm. Price: £373.00 (inc. VAT).

KD-A7

Metal tape compatible stereo cassette deck, front loading. FR: 25Hz-17kHz. S/N ratio: 60dB. W and F: 0.04%. Frequency controlled DC servo motor, DC motor. Dimensions: 45 x 12 x 32.7cm. Price: £305.50 (inc. VAT).

KD-85

Stereo cassette deck, front loading. FR: 30Hz-17kHz. S/N ratio: 57dB. W and F: 0.04%. Frequency controlled DC servo motor. Dimensions: 45 x 15.8 x 32.7cm. Price: £408.00 (inc. VAT).

KD-65

Stereo cassette deck, front loading. FR: 30Hz-16kHz. S/N ratio: 56dB. W and F: 0.05%. Frequency controlled DC servo motor. Dimensions: 45 x 15.8 x 33.5cm. Price: £278.00 (inc. VAT).

KD-A5

Metal tape compatible stereo cassette deck, front loading. FR: 30Hz-16kHz. S/N ratio: 60dB. W and F: 0.04%. Electronic Governor DC motor. Dimensions: 42 x 12 x 30cm. Price: £239.00 (inc. VAT).

KD-A3

Metal tape compatible stereo cassette deck, front loading. FR: 30Hz-16kHz. S/N ratio: 60dB. W and F: 0.055%. Electronic Governor DC motor. Dimensions: 42 x 14.9 x 26.2cm. Price: £172.75 (inc. VAT).

KD-A2

Stereo cassette deck, front loading. FR: 40Hz-15kHz. S/N ratio: 57dB. W and F: 0.08%. Electronic Governor DC motor. Dimensions: 42 x 14.9 x 27cm. Price: £110.00 (inc. VAT).

KD-S201

Stereo cassette deck, front loading. FR: 30Hz-16kHz. S/N ratio: 56dB. W and F: 0.14%. ANRS/SA head. Dimensions: 50 x 16.7 x 35.9cm. Price: £254.50 (inc. VAT).

LUXMAN

Howland-West, 3-5 Eden Grove, London N7 8EO. Tel: 01-609 0293.

K 12

Stereo cassette deck. W and F: 0.04%. Dolby

noise reduction system. FR: 30Hz-21kHz metal tape, 30Hz-20kHz CrO₂, 30Hz-16kHz LH tape. Bias switch. Plasma level meter, digital tape counter. Inputs: line in 100mV 50K, mic 0.25mV. Outputs: line out 580mV ohms, headphone 1mW 8 ohms. Two motors: 1 servo capstan and one electronic governor reel drive. Mains: 220-240V. Dimensions: 43.8 x 37 x 12.6cm. Price: £475.00 (plus VAT).

SK50

Stereo cassette deck. W and F: 0.03%. Dolby noise reduction system. FR: 30Hz-18kHz CrO₂ tape, 25Hz-18kHz LH tape. Variable control bias switch. Plasma level meter, digital tape counter. Inputs: line 100mV 50K, mic 0.25mV, DIN. Outputs: line out 580mV 500 ohms, headphone 1mV 8 ohms. Three motors: capstan direct drive, two electronic governor reel drive. Mains: 220/240V. Dimensions: 44.2 x 36.2 x 13.2cm. Price: £990.00 (plus VAT).

K5A

Stereo cassette deck. W and F: 0.06%. Dolby noise reduction system. FR: 30Hz-20kHz metal, 30Hz-18kHz CrO₂, 20Hz-16kHz LH tape. Bias switch. LED peak indicators, peak level meters, memory counter. Inputs: line in 100mV/50K, mic 0.45mV/10K, DIN 2mV/1K. Outputs: line out 580mV, headphones 1mV/8 ohms. Bridge motor, single capstan. Mains: 220/240V. Dimensions: 43.8 x 26.4 x 15cm. Price: £200.00 (plus VAT).

K8*

Stereo cassette deck. W and F: 0.055%. Dolby noise reduction unit. FR: 20Hz-20kHz metal, 20Hz-18kHz CrO₂, 20Hz-16kHz LH tape. Bias switch. Fluorescent peak indicator, tape counter, memory counter. Inputs: line in 100mV, mic 0.3mV/10K. Outputs: 1V, headphone 1.25W 8 ohms. DC servo motor, single capstan. Mains: 220/240V. Dimensions: 43.8 x 28.5 x 10.5cm. Price: £280.00 (plus VAT).

MARANTZ

Audio UK Ltd, Debmanc House, 203 London Road, Staines, Middlesex. Tel: Staines (0784) 50132.

SD1000

Stereo cassette deck. W and F: 0.8%. Dolby noise reduction system. FR: 40Hz-16.5kHz. Bias switch for chrome. VU meters. Inputs: 25mV 100K. Outputs: 650mV 2.5K. DC servo motor. Mains voltage tappings: 240V. Dimensions: 41.6 x 23.9 x 14.6cm. Price: £86.00 (plus VAT).

SD3000

Similar to above. Incorporating LED peak bar. Price: £112.00 (plus VAT).

SD4000

Two-speed stereo cassette deck. W and F: 0.06%. Dolby noise reduction system. FR: 35Hz-18kHz. Bias switch for chrome, metal, LED peak bar. Inputs: 25mV 100K. Outputs: 650mV 2.5K. DC servo motor. Mains voltage

*Lux K8*

tappings: 240/110V. Dimensions: 41.6 x 24.3 x 14.6cm. Price: £190.00 (plus VAT).

SD6000

Two-speed stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 30Hz-17.5kHz. Bias switch for chrome, metal. LED peak bar. Inputs: 25mV 100K. Outputs: 650mV 2.5K. Two DC servo motors. Mains voltage tappings: 240/110V. Dimensions: 41.6 x 24.3 x 14.6cm. Price: £225.00 (plus VAT).

SD8000*

Two-speed stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 30Hz-18.5kHz. Bias switch for chrome, metal. LED peak bar. Inputs: 25mV 100K. Outputs: 650mV 2.5K. Two DC servo motors. Mains voltage tappings: 240/110V. Features: full microprocessor control. Dimensions: 41.6 x 24.3 x 14.6cm. Price: £346.00 (plus VAT).

MITSUBISHI

Mitsubishi Electric (UK) Ltd, Otterspool Way, Watford, Herts WD1 8LD. Tel: Watford 40566.

DT-530*

Front-loading stereo metal tape cassette deck with Dolby NR. W & F: 0.07%. FR: 30Hz-16kHz (metal, special, FeCr). Twin two-colour LED peak indicators. Soft-touch switching, one-touch recording, background cassette illumination. Dimensions: 42.4 x 22.4 x 15.4cm. Retail price: £122.00 (inc. VAT).

NAKAMICHI

Natural Sound Systems, 10 Byron Road, Wealdstone, Harrow, Middlesex. Tel: 01-863 8622.

N480

Stereo cassette deck. W and F: 0.06%. Dolby noise reduction system. FR: 20Hz-18kHz. Bias switch for chrome. Peak meter. Inputs: 50mV, 30K. Outputs: 600mV 2.2K. Three motors. Mains: 240V. Dimensions: 45 x 13½ x 29cm. Price: £240.00 (plus VAT).

N481

As above except FR: 20Hz-20kHz. Price: £282.00 (plus VAT).

N482

As N481. Price: £325.00 (plus VAT).

*Marantz SD 8000**Mitsubishi DT-530*

N580

Stereo cassette deck. W and F: 0.5%. Dolby noise reduction system. FR: 20Hz-20kHz. Bias switch for chrome. Peak meter. Inputs: 50mV 50K. Outputs: 1V 2.2K. Three motors. Mains voltage: 240V. Dimensions: 50 x 13 x 35cm. Price: £255.00 (plus VAT).

N581*

As above. Price: £420.00 (plus VAT).

N582

As N580. Price: £480.00 (plus VAT).

N670ZX

Stereo cassette deck. W and F: 0.04%. Dolby noise reduction system. FR: 10Hz-22kHz. Bias switch for chrome. Peak meter. Inputs: 50mV 50K. Outputs: 1V 3.3K. Four motors. Mains: 240V. Dimensions: 48 x 14 x 34cm. Price: £520.00 (plus VAT).

N680ZX

As above. Price: £600.00 (plus VAT).

DT 350

Stereo cassette deck. W and F: 0.08%. Dolby noise reduction system. Bias switch for Chrome. Peak meter. Mains: 240V. Dimensions: 18.5 x 9 x 24cm. Price: £210.00 (plus VAT).

■ **NEAL**

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX.
Tel: South Shields (0632); 566321.

312

Stereo recorder, studio cassette deck with Dolby HX system and metal tape capability. Three AC motors and full logic control including motion sensor and full remote control facility. Horizontal and vertical operation. Dolby B NR with built-in calibration oscillator and 'Varitape' facility. Two large illuminated peak reading meters. W and F: less than 0.09% DIN. FR: 35Hz-14kHz +1-3dB normal ferric tape, 35Hz-15kHz +1-3dB metal/special ferric/chrome tape, S/N ratio: Dolby HX on, Dolby NR off -57dB; Dolby HX on, Dolby NR on -66dB. Inputs: mic 300µV 2K jack, high level line 80mV 200K phono, low level line 3mV 10K DIN. Overload margin better than 40dB.

Outputs: line (phono) and DIN 600mV fixed 1K; headphones/high level line 4V controlled 50 ohms. Crosstalk: better than 37dB. Mains: 200/250V 50Hz or 105-125V 60Hz. Dimensions: 446 x 226 x 155mm. Weight: 8kg. Price: £399.00 (plus VAT).

302*

Stereo recorder, studio cassette deck with three AC motors and full logic control including motion sensor and full remote control facility. Horizontal and vertical operation. Dolby B with built-in calibration oscillator. Two large illuminated peak reading meters can also read fully variable bias in both normal and special tape settings. W and F: less than 0.09% DIN. FR: 35Hz-12kHz +1-3dB normal; 35Hz-15kHz +1-3dB special tape. S/N ratio: normal ferric and chrome (Dolby off) 53dB, (Dolby on) 62dB; special ferric and chrome (Dolby off) 55dB, (Dolby on) 64dB. Inputs: mic 500µV 2K, high level line 50mV 200K, phono, low level line 2.5mV 10K DIN. Overload better than 40dB. Outputs: line (phono) and DIN 600mV fixed 5K, headphone/high level line 2.5mV 10 ohms variable. Mains: 110-125, 200-250V. Dimensions: 44.6 x 22.6 x 15.5cm. Price: £328.57 (plus VAT). Also available in black or two tone brown with soild wood end cheeks. Price: walnut £334.27 (plus VAT), teak £347.00 (plus VAT).

330 AV

Three channel cassette recorder, 3 motor deck as 302. Stereo channels plus sync channel for audio visual applications. Audio/sync can be recorded/replayed simultaneously or separately. Two audio channels have full metering facilities, Dolby B and selection for normal and special tape with 'Varitape' facility; performance spec. as 302. Sync channel for external pulse coding/decoding equipment but with built-in sync pulse generator decoded for direct connection to projector. Audio channels: inputs, mic 0.35mV 1K jack, high level line 100mV 20K phono, low level line 3.5mV 10K DIN. Outputs line 600mV 1K phono, line 600mV 1K DIN, high level line/phones 4V variable 50 ohms jack, 1/4in. 3 contact. Sync channel: inputs: line 100mV 20K phono, line 100mV 20K DIN. Outputs: line 4V 50 ohms phono, line 4V 50 ohms DIN. Frequency response: (All channels) 35Hz-12kHz +1, -3dB normal tape; 35Hz-15kHz +1, -3dB

special tape. Signal to noise ratio: normal ferric (Dolby off) 53dB, (Dolby on) 64dB. Special ferric and chrome (Dolby off) 55dB, (Dolby on) 64dB. Crosstalk (audio) better than 40dB at 1kHz; (audio/sync) better than 55dB at 1kHz, 40dB at 5kHz. Full logic control, remote control facility. Calibration tone. Price: £623.00 (plus VAT).

340*

Four channel cassette recorder, 3 motor deck as 302. Tracks can be recorded simultaneously or in two stereo pairs. Four identical audio channels each having full metering facilities, Dolby B and selection for normal and special tape with 'Varitape' facility; performance spec. as 330. Price: £761.00 (plus VAT).

312

Stereo recorder, studio cassette deck with Dolby HX system and metal tape capability. Three AC motors an full logic control including motion sensor and full remote control facility. Horizontal and vertical operation. Dolby B NR with built-in calibration oscillator and 'Varitape' facility. Two large illuminated peak reading meters. Sen-alloy heads for extended head life. W and F: less than 0.09% DIN. FR: 35Hz-14kHz +1-3dB normal ferric tape; 35Hz-15kHz +1-3dB metal/special ferric/chrome tape. S/N ratio: Dolby HX on, Dolby NR off -57dB; Dolby HX on, Dolby NR on -66dB. Inputs: mic 300µV 2K jack, high level line 80mV 200K phono, low level line 3mV 10K DIN. Overload margin better than 40dB. Outputs: line (phono) and DIN 600mV fixed 1K; headphones/high level line 4V controlled 50 ohms. Crosstalk: better than 37dB. Mains: 200/250V 50Hz or 105-125V 60Hz. Dimensions: 446 x 226 x 155mm. Weight: 8kg. Price: £399.00 (plus VAT).

■ **OPTONICA**

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane, Manchester M10 8HL.
Tel: 061-205 7321.

RT3838C

Stereo cassette deck with microprocessor control. W and F: 0.15%. Dolby B noise reduction system. FR: 30Hz-16kHz FeCr. Bias switch. VU and peak LED indicator. Inputs: mic 0.2mV 40K, line 70mV 50K, DIN 0.1mV 40K. Outputs: line 0.775 50K, DIN 0.775 50K. Quartz lock PLL servo motor. Dimensions: 44 x 35 x 14cm.

RT5100N

Stereo cassette deck. W and F: 0.18%. Dolby B noise reduction system. FR: 30Hz-16kHz CrO₂. Bias switch. Fluorescent display. Two FG DC motors. Dimensions: 43 x 38 x 15cm.

RT7100N

Stereo cassette deck. W and F: 0.15% DIN. Dolby B noise reduction system. FR: 30Hz-17kHz. Bias switch. Fluorescent tube indicator. Two motors. Dimensions: 43 x 38 x 15cm.

RT9100N

Stereo cassette deck. W and F: 0.12% DIN. Dolby B noise reduction unit. FR: 30Hz-20kHz FeCr. Bias switch for chrome, ferrochrome and metal. Fluorescent tube indicator. Two motors. Dimensions: 43 x 38 x 15cm.

RT3535

Stereo front loading cassette deck, with Dolby. W and F: 0.15%. FR: 30Hz-17,000 FeCr, 30Hz-16,000 CrO₂, 30Hz-15,000Hz normal. Separate



Nakamichi 581



Neal 302



Neal 340

bias equaliser. Level indicator, record indicator APLD selector. Inputs: 70mV 50K, 0.1mV. Outputs: 580mV, 58mV.

■ PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3DR.
Tel: Slough (0753) 27516.

RS 619

Stereo cassette deck. W and F: 0.08% WRMS. Dolby B noise reduction. Takes normal, chrome and metal tapes. 2 VU meters. Inputs sensitivity: line 0-250mV 33K, mic 600 ohms -10K. Outputs: 420mV 22K. 1 electronically controlled DC motor. Mains: 240V 50Hz. Dimensions: 41 x 20.5 x 14.7cm. Part of package system, not sold separately.

■ PHILIPS

Philips Electrical Ltd, City House,
420 London Road, Croydon, Surrey.
Tel: 01-689 2166.

N 2533

Stereo cassette deck. W and F: 0.25%. Dolby B noise reduction unit. FR: 40Hz-14kHz (DIN 45511). Bias switch for chrome and ferrochrome cassettes. Two peak reading meters. Inputs: line in DIN 0.2mV into 2K, phono 50mV into 220K; mic 0.25mV into 2K. Outputs: DIN/phono 0.5V into 5K. Headphones suitable for 8-600 ohms phones. DC motor. Mains voltage: 240V. Dimensions: 38 x 26.8 x 14.3cm. Price: £83.94 (plus VAT).

N5431

Stereo cassette deck. W and F: 0.15%. Dolby noise reduction system. FR: 40Hz-16kHz chrome, 40Hz-16kHz ferrochrome, 40Hz-14kHz ferro. Bias switch for chrome and ferrochrome cassettes. Level meters. Inputs: mic 0.2mV 2K, line in 25mV 250K, DIN 0.2mV 2K. Outputs: 0-1V adjustable 50K. DC tachometer-controlled motor. Mains voltage: 240V. Dimensions: 45 x 29 x 15cm. Price: £150.74 (plus VAT).

N5438

Specification as above. Price: on application.

N2552

Stereo cassette deck. W and F: 0.1%. Dolby noise reduction system. FR: 30Hz-20kHz. Bias switch. Meters. Inputs: line in 60mV at 300K, DIN 200mV at 1M/0.4mV at 2K, mic 0.4mV at 47K. Outputs: 0-1V adjustable. Direct drive capstan motor, DC winding motor. Mains voltage tappings: 110, 127, 220, 240V. Dimensions: 48 x 33 x 15cm. Price: £399.09 (plus VAT).

N2554

As N2552 with computer coded search. Price: £476.00 (plus VAT).

N5748

Stereo cassette deck. W and F: 0.1%. Dolby noise reduction unit. FR: 30Hz-20kHz. Bias switch, meters. Inputs: line in 60mV at 300K, DIN 200mV at 1K/0.4mV at 2K, mic 0.4mV at 47K. Outputs: 0-1V adjustable. Direct-drive capstan motor, DC winding motor. Mains voltage tappings: 110, 127, 220, 240V. Dimensions: 48 x 33 x 15cm. Price: £399.09 (plus VAT).

N5430

Stereo cassette deck. W and F: 0.15%. Dolby noise reduction unit. FR: 40Hz-16kHz chrome

and ferrochrome, 40Hz-14kHz ferro. Bias switch, level meters. Inputs: mics 0.2mV at 2K, line in 25mV at 250K, DIN 0.2mV at 2K. Outputs: 0-1V. adjustable 50K. DC tachometer-controlled motor. Mains: 240V. Dimensions: 48 x 26 x 14cm. Price: on application.

N5151

Stereo cassette deck. W and F: 0.35%. Dolby noise reduction unit. FR: 40Hz-14kHz chrome, 40Hz-12kHz ferro. Bias switch, level meters. Inputs: line in 50mV at 220K, DIN 0.2mV at 2K, mic 0.25mV at 2K. Outputs: 0.5V at 50K. DC motor. Mains: 240V. Dimensions: 42 x 26 x 14cm. Price: on application.

N5361

Stereo cassette deck. W and F: 0.2%. Dimensions: 45 x 27 x 14cm. Other details as per N5151.

■ PIONEER

Pioneer High Fidelity (GB) Ltd,
Pioneer House, The Ridgeway,
Iver, Bucks SL0 9JL.
Tel: Iver(0753) 652222/7.

CT 200

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 25Hz-17kHz ±3dB. Bias switch for chrome and metal tapes. Two VU meters, full logic controls. 1 DC servo motor. Mains: 220/240V 50Hz. Dimensions: 42 x 9.8 x 32cm.

CT 300*

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 25Hz-17kHz ±3dB. Bias switch for chrome and metal tapes. F.L.T. meter, full logic controls. 1 DC servo motor. Mains: 220/240V 50Hz. Dimensions: 42 x 9.8 x 32.7cm.

CT 400

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 20Hz-18kHz ±3dB. Bias switch for chrome, ferrochrome and metal tapes. F.L.T. meters, record mute switch, full logic controls. 1 DC servo motor. Mains: 220/240V 50Hz. Dimensions: 42 x 9.8 x 33cm.

CTF 750*

Stereo cassette deck with Dolby. W and F: 0.05%. FR: 25Hz-17kHz ±3dB. Bias switch for chrome, ferrochrome and metal tapes. F.L.T. meters, 3 head (auto reverse). 1 DC servo motor.



Pioneer CT300



Pioneer CTF 750

Mains: 220/240V 50Hz. Dimensions: 42 x 15 x 33.5cm. Typical Market Price: £213.90.

CTF 850

Stereo cassette deck with Dolby. W and F: 0.04%. FR: 25Hz-18kHz ±3dB. Bias switch for chrome, ferrochrome and metal tapes. F.L.T. meters, full logic controls, adjustable bias. 1 DC motor, 1 DC motor FF/F rewind. Mains: 220/240V 50Hz. Dimensions: 42 x 15 x 36.1cm. Typical Market Price: £233.90.

CTF 950

Stereo cassette deck with Dolby. W and F: 0.04%. FR: 25Hz-18kHz ±3dB. Bias switch for chrome, ferrochrome and metal tapes. F.L.T. meters, microprocessor-controlled adjustable bias. 1 DC servo, DC motor FF/F rewind. Mains: 220/240V 50Hz. Dimensions: 42 x 18.7 x 36.85cm. Typical Market Price: £333.90.

CTF 1250

Stereo cassette deck with double Dolby. W and F: 0.03%. FR: 25-18.5kHz ±3dB. Bias switch for chrome, ferrochrome and metal tapes. F.L.T. peak meters, adjustable tape calibration (bias eq. level), line mic mixing, pitch control. Motors: quartz PLL and DC motor FF/F rewind. Mains: 220/240V 50Hz. Dimensions: 42 x 18.7 x 36.95cm. Typical Market Price: £458.90.

■ PLUSTRON

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs ST5 0SW.
Tel: (0782) 615131.

CD-501*

Front loading stereo cassette deck. W and F: 0.1%. Dolby noise reduction system. FR: 30Hz-13kHz LN tape, 30Hz-15kHz Cr tape, 30Hz-15kHz Fe tape. Bias switch for chrome and ferrochrome. VU and peak LED indicators. Inputs: line in 30mV 100K, mic 10K, DIN 30K. Outputs: line out 0.58V, DIN 0.58V. Mains: 240V. Dimensions: 42 x 25 x 13.5cm. Price: £95.00 (plus VAT).

■ PYE

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

SR 3170

Stereo cassette deck. W and F: ≤0.2%. Dolby "B" noise reduction unit. FR: 40Hz-12.5kHz. Bias switch for chrome and ferrochrome. Illuminated VU meter. Inputs: 100mV at 33K. Electronically controlled DC motor. Mains: 240V. Dimensions: 42 x 26 x 15cm. Typical Market Price: £85.00 (plus VAT).

SR 3370*

Stereo cassette deck. W and F: ≤0.2%. FR: 40Hz-14kHz chrome, 40Hz-15kHz ferrochrome, 40Hz-12.5kHz ferro. Otherwise as SR1170. Price: £109.00 (plus VAT).



Plustron CD 501

SR 3390

Stereo cassette deck. W and F: $\leq 0.18\%$. Dolby "B" noise reduction unit. FR: 40Hz-16kHz chrome, 40Hz-15kHz ferrochrome, 40Hz-12.5kHz ferro. Fluorescent tube display. Inputs: 100mV at 33K. Variable outputs. Electronically controlled DC motor. Mains: 240V. Dimensions: 42 x 26 x 14cm. Typical Market Price: £129.00 (plus VAT).

SR 3630

Stereo cassette deck. W and F: $\leq 0.2\%$. Dolby "B" noise reduction unit. FR: 40Hz-16kHz chrome, 40Hz-15kHz ferrochrome, 40Hz-14kHz ferro. Otherwise as SR 3390. Typical Market Price: £279.00 (plus VAT).

■ **ROTEL**

Rotel Hi Fi Ltd,
2-4 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 317707.

RD 18F

Stereo cassette deck. W and F: 0.08%. Dolby noise reduction unit. FR: 30Hz-30kHz ± 3 dB normal, 30Hz-15kHz ferrochrome. Bias switch. Outputs: 410mV. Electronically governed DC motor. Dimensions: 43 x 27.2 x 14.7cm. Typical Market Price: £79.90.

RD25F

Stereo cassette deck. W and F: 0.06%. Dolby noise reduction unit. FR: 30Hz-14kHz ± 3 dB normal, 30Hz-16kHz ferrochrome. Bias switch. Outputs: 410mV. Electronically controlled DC motor. Dimensions: 43 x 27 x 14.3cm. Typical Market Price: £117.90.

RD 300*

Stereo cassette deck. W and F: 0.08% Dolby noise reduction unit. FR: 30Hz-13kHz ± 3 dB normal, 30Hz-14kHz ± 3 dB ferrochrome. Outputs: 410mV. Electronically controlled DC motor. Dimensions: 41 x 26.3 x 13.1cm. Typical Market Price: £76.90.

RD 1000

Stereo cassette deck. W and F: 0.045%. Dolby noise reduction system. FR: 30Hz-15kHz ± 3 dB normal, 30Hz-16kHz ± 3 dB ferrochrome. FG-servo capstan motor. Dimensions: 43 x 29 x 11cm. Typical Market Price: £167.90.



Pye SR 3370



Rotel RD 300

RD 2000

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 30Hz-17kHz ± 3 dB normal, 30Hz-19kHz ± 3 dB ferrochrome. Bias switch for chrome and ferrochrome. Outputs: 980mV. Electronically controlled DC motor. Dimensions: 48.2 x 27 x 14.3cm.

RD 2200M

Stereo cassette deck. W and F: 0.045%. Dolby noise reduction unit. FR: 30Hz-17kHz ± 3 dB normal, 30Hz-19kHz ± 3 dB ferrochrome. Bias switch for chrome and ferrochrome. Outputs: 980mV. Electronically controlled DC motor.

■ **SAE TWO**

Cambridge Audio Ltd,
105-109 Oyster Lane, Byfleet,
Surrey KT14 7JH.
Tel: Byfleet (093 23) 51051.

C4

Stereo cassette deck. W and F: less than 0.06%. Dolby noise reduction system. FR: 30Hz-14kHz ± 3 dB normal, 30Hz-18kHz ± 2.5 dB metal and FeCr. Variable bias. Bar graph display. Inputs: mic 0.18mV at 10K, line 57mV at 20K. Output level: 350mV. FG motor drive. Dimensions: 14.7 x 46.4 x 34cm. Features: full logic control, designed to take metal tape, optional remote control unit.

■ **SANSUI**

Sansui Audio Europe NV,
Unit 10A, Lyon Industrial Estate,
Rockware Avenue, Greenford,
Middlesex UB6 0AA.
Tel: 01-575 1133.

SC 3300/30

Stereo cassette deck with Dolby NR. W and F: 0.04%. FR: metal ($-20\mu\text{V}$) 20Hz-18kHz, 20Hz-16kHz, metal ($0\mu\text{V}$) 20Hz-13kHz, chrome ($-20\mu\text{V}$) 20Hz-17kHz, chrome ($0\mu\text{V}$) 20Hz-9kHz, normal 20Hz-16kHz. LED bar graph level indicator. Inputs sensitivity/impedance: mic 0.3mV/200-5K ohms, line 70mV/100K ohms. Outputs: line 390mV (output control max. imp. 47K ohms), phones 65mV/8 ohms. Two DC motors. Mains: 100/120/220/240V, 50/60Hz. Finish: SC 3300 black, SC 3300 silver. Dimensions: 43.3 x 30.4 x 16cm. Price: £185.56 (plus VAT).

SC 1300/30

Stereo cassette deck with Dolby NR. W and F: 0.05%. FR: metal ($-20\mu\text{V}$) 20Hz-18kHz, 20Hz-16kHz, metal ($0\mu\text{V}$) 20Hz-13kHz, chrome ($20\mu\text{V}$) 20Hz-17kHz, 20Hz-16kHz, chrome ($0\mu\text{V}$) 20Hz-9kHz, normal 20Hz-16kHz, 20Hz-15kHz. LED bar graph level indicator. Inputs sensitivity/impedance: mic 0.3mV/200-5K ohms, line 70mV/100K ohms. Outputs: line 390mV (output control max. imp. 47K ohms), phones 65mV/8 ohms. One DC motor. Mains: 100/120/220/240V, 50/60Hz. Finish: SC 1300 silver, SC 1330 black. Dimensions: SC 1300 43.3 x 32 x 16cm, SC 1330 48.2 x 32 x 16cm. Price: £132.35 (plus VAT).

■ **SCOTT**

Clement Electronics Ltd,
Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57131.

670D

Stereo front loading cassette deck. W and F: 0.07%. Dolby noise reduction system. FR: 25Hz-16kHz CrO₂ and FeCr tape, 25Hz-14kHz

normal. VU meters. Inputs: line 60mV 47K, mic 5mV 5K. Outputs: 580mV. Electronically controlled DC drive. Mains: 220V. Dimensions: 14 x 43 x 30cm.

671DM

Stereo front loading cassette recorder. W and F: 0.07%. Dolby noise reduction system. FR: 25Hz-17kHz CrO₂ and FeCr, 25Hz-14kHz normal. VU meters. Inputs: line 60mV 47K, line 5mV 5K. Outputs: 580mV. Mains: 220V. Dimensions: 14 x 43 x 21.7cm.

610D

Stereo front loading cassette deck. W and F: 0.07%. Dolby noise reduction system. FR: 25Hz-15kHz CrO₂ and FeCr tape, 25Hz-14kHz normal. VU meters. Inputs: line 60mV 47K, mic 6mV 3K. Outputs: 580mV. Electronically controlled DC drive. Mains: 220V. Dimensions: 14 x 43 x 21.7cm. Features: soft eject, super hard permalloy heads.

■ **TANDBERG**

Tandberg (UK) Ltd,
81 Kirkstall Road,
Leeds LS3 1HR.
Tel: Leeds (0532) 35111.

TC D 320A*

Front loading stereo cassette deck with three motor dual capstan closed loop system giving accurate tape-transport and improved stability. Dolby B noise reduction system. W and F: 0.15% or 0.2%. FR: 30Hz-18,000Hz (DIN). Outputs: radio/line, headphone. Features: disengageable MPX filter which cuts out pilot signal when recording FM stereo. Slide controls for headphone and radio/line outputs. Functions all electrically operated. Pneumatically damped cassette compartment. Price: £347.00 (inc. VAT).

TC D 40A

Front loading stereo cassette deck taking metal tape. FR: 20Hz-20kHz ± 3 dB. S/N metal: 70dB. W and F: 0.12%. Power consumption: 40W. Dimensions: 47 x 23 x 10.5cm. Features: 3 motor dual capstan tape transport, 3 heads, 3 position switching for bias. Dolby B noise reduction system, remote control. Price: £599.00 (inc. VAT).

TC D 420A

Front loading stereo cassette deck taking metal tape. FR: 30Hz-18kHz ± 3 dB. S/N ratio: 68dB. W and F: 0.12%. Power consumption: 35W. Speed tolerance: $\pm 1\%$. Features: 3 motor dual capstan tape transport, 3 position switching for bias. Dolby B noise reduction system. VU meters, headphone socket. Dimensions: 47 x 23 x 10cm. Price: £399.00 (inc. VAT).

■ **TEAC**

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (049 481) 5331.



Tandberg TCD 320A

A 109

Front loading cassette deck with fluorescent indicators. Details on application. Price: £208.89 (plus VAT).

A 300

Three-head front loading cassette deck. Details on application. Price: £203.56 (plus VAT).

A 510

Cassette deck with fluorescent indicators. Details on application. Price: £297.78 (plus VAT).

A 800

Front loading, three-head, two-motor cassette deck with full logic control. W and F: 0.5%. Dolby noise reduction system. FR: 20Hz-20kHz CrO₂ tape, 20Hz-18kHz hi-fi tape. Three-stage bias/equalisation. Peak level meters. S/N ratio: 58dB, Dolby adds 10dB over 5kHz. Dimensions: 44 x 17.7 x 31.5cm. Features: independent erase, record, playback heads. Price: £443.56 (plus VAT).

C-1

Front loading, three-head, three-motor cassette deck with full logic control. W and F: 0.04%. Dolby noise reduction system. FR: 20Hz-20kHz CrO₂, 20Hz-18kHz hi-fi tape. Interchangeable bias/eq module for CrO₂ tapes. Peak programme meters. S/N ratio: 60dB CrO₂, 80dB. Dual capstans driven by PLL motor, DC core-less rotor reel motors. Dimensions: 48.2 x 16.1 x 35.3cm. Price: £888.00 (plus VAT).

Other models

CX-210 at £86.09, CX-270 at £91.30, CX-650R at £291.30, A-430 at £204.35, C2 at £520.87, C3 at £294.78, A550RX at £260.00. Details on request. All prices subject to VAT.

TECHNICS

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks SL1 3DR.
Tel: Slough (0753) 27516.

RS M10

Stereo cassette deck. W and F: 0.06%. Dolby noise reduction system. FR: 40Hz-13kHz. Bias switch for chrome and ferrochrome. VU meter. Inputs: mic 0.25mV 33K, line 60mV 47K, DIN 1mV 8.2K. Outputs: line 420mV 22K, headphone 65mV 8 ohms, DIN 420mV 47K. DC motor. Mains: 110, 125, 220, 240V. Dimensions: 43 x 25.1 x 14.2cm. Price: £115.51 (plus VAT).

RS M88

Stereo cassette deck with facility for metal tape. W and F: 0.035%. Dolby noise reduction system. FR: 30Hz-16kHz. Bias switch for chrome and ferrochrome cassettes. FL peak meter. Inputs: mic 0.25V 8K, line 60mV 68K, DIN 0.25mV 6.4K. Outputs: line 700mV 22K, headphone 140mV 8 ohms, DIN 700mV 1.5K. Two motors: 1 quartz locked, 1 DC. Mains voltage: 110, 125, 220, 240V. Dimensions: 45 x 40.3 x 9.7cm. Price: £386.00 (plus VAT).

RS 686

Stereo cassette recorder. W and F: 0.07%. Dolby noise reduction system. FR: 50Hz-16kHz. Bias switch for chrome and ferrochrome cassettes. VU meter. Inputs: mic 0.25mV 8K, line 60mV 100K. Outputs: line 420mV 22K, headphone 65mV 8 ohms, earphone 65mV 8 ohms (mono). FG servo motor. Mains voltage: 110, 125, 220, 240V with AC adaptor. Dimensions: 24.3 x 20 x 7.7cm. Price: £426.62 (plus VAT).

RS M03

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 40Hz-14kHz. Bias switch. LED peak meter. Inputs: mic, line, DIN. Outputs: line, headphone, DIN. DC motor. Mains voltage: 110, 125, 220, 240V. Dimensions: 29.7 x 24 x 14.7cm. Price: £198.18 (plus VAT).

RS M63

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 30Hz-16kHz. Bias switch for chrome, ferrochrome and metal tapes. FL peak meter. Inputs: mic, line, DIN. Outputs: line, headphone, DIN. DC motor. Price: approx. £310.00 (plus VAT).

RS M65

Stereo cassette deck. W and F: 0.035%. Dolby noise reduction system. FR: 40Hz-14kHz. Bias switch for chrome and ferrochrome. FL peak meter. Inputs: mic, line, DIN. Outputs: line, headphone, DIN. Two motors: 1 direct drive, 1 DC. Price: approx. £310.00 (plus VAT).

RS M95

Quartz-locked direct drive cassette deck with microprocessor tape tension control and metal tape recording. W and F: 0.03%. Dolby noise reduction system. FR: 20Hz-20kHz (DIN) metal, 20Hz-20kHz ±3dB, CrO₂/FeCr 20Hz-19kHz (DIN), 20Hz-19kHz ±3dB. Presettable bias fine adjustment. Dimensions: 45 x 14.2 x 34.8cm. Features: 3-head configuration, 4-position tape selector, microprocessor tape counter and triple-mode memory functions, two colour peak VU meters. Price: £579.09 (plus VAT).

RS M45

Vertical hold direct-drive cassette deck. W and F: 0.035%. Dolby noise reduction unit. FR: metal tape 20Hz-20kHz, 30Hz-18kHz (DIN). CrO₂/FeCr 20Hz-19kHz, 30Hz-18kHz (DIN). FG servo direct-drive capstan motor. Features: IC logic control, feather touch operation, bar graph FL meters, optional remote control. Dimensions: 43 x 9.8 x 34.5cm. Price: approx. £109.00 (plus VAT).

RS M24*

Vertical hold cassette deck. W and F: 0.05%. Dolby noise reduction unit. FR: metal 20Hz-18kHz, 30Hz-17kHz (DIN), CrO₂/FeCr 20Hz-18kHz, 30Hz-16kHz (DIN). Electronically controlled DC motor. Features: soft touch tape transport controls, one button recording, FL meters. Dimensions: 43 x 11.9 x 28.2cm. Price: on application.



Technics RS-M02 Mini deck



Technics RS-M24

RS M02*

Front-loading mini cassette deck with direct drive motor. W and F: 0.035%. FR: metal 20Hz-20kHz, CrO₂/FeCr 20Hz-18kHz. FL bargraph meters. Features: timer stand-by facility, feather-touch controls. Dimensions: 29.7 x 9.7 x 22.9cm. Price: £260.83 (plus VAT).

RS M8

Stereo cassette deck. W and F: 0.07%. Dolby noise reduction system. FR: 20Hz-16kHz CrO₂. Bias switch for metal, CrO₂ or normal. FL meter. Mains: 240V. Dimensions: 41 x 20.5 x 14.2cm. Price: approx. £75.00 (plus VAT).

RS M12

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 20Hz-17kHz CrO₂. Bias switch for metal, CrO₂, FeCr and normal. FL meter. Inputs: 0.25mV 33K. Outputs: 420mV at 1K. Mains: 110, 220, 240V. Dimensions: 43 x 25.1 x 14.2cm. Price: £95.00 (plus VAT).

RS M14

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction system. FR: 20Hz-18kHz, CrO₂. Bias switch for normal, CrO₂, FeCr, metal. Peak hold FL meter. Dimensions: 43 x 28.2 x 11.9cm. Price: approx. £125.00 (plus VAT).

RS M04

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction unit. FR: 20Hz-18kHz CrO₂. Bias switch for metal, CrO₂, FeCr, normal. FL meter. Dimensions: 29.7 x 23.2 x 12.2cm. Price: approx. £150.00 (plus VAT).

TELETON

TeletonElectro (UK) Co. Ltd,
Somerton Works, Prince Avenue,
Westcliff-on-Sea, Essex.
Tel: Southend (0702) 337681.

C500

Stereo cassette deck. W and F: less than 0.095%. Dolby B noise reduction unit. FR: 40Hz-12.5kHz normal, 40Hz-14kHz CrO₂. Bias switch for chrome and ferrochrome. Level indicator. Inputs: Input 0.2mV/K line input 25mV 470K. Mic output 0.4mV 10K. Outputs: DIN 750mV 6K, line O/P-380mV 1.5K. Mains: 240V. Dimensions: 42 x 25 x 15cm.

C330

Stereo cassette deck. W and F: 0.2%. Dolby noise reduction system. FR: 40Hz-13kHz normal, 40Hz-15kHz CrO₂. CrO₂ switch, VU meters. Inputs: line in 50mV/600 ohms, DIN in 1M/5K. Outputs: line out 580mV, DIN out 580mV. Low voltage DC motor. Mains: 240V. Dimensions: 36 x 22 x 14.8cm. Price: £80.00 (plus VAT).

TENSAI

Wren Electronics Ltd,
1-4 Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: 0908 71611.

TLF 806

Stereo cassette deck. W and F: 0.15%. Dolby noise reduction system. FR: 40Hz-12.5kHz FeCr, 40Hz-14kHz CrO₂. Bias switch. VU meters. Inputs: line 100mV at 10K, mic 0.77mV at 600 ohms. Output: variable up to 520mV at 100K. DC servo motor. Mains: 240V. Dimensions: 43 x 23 x 10.5cm. Price: approx. £78.00 (plus VAT).

TFL 807*

Stereo cassette deck. W and F: 0.08%. Dolby noise reduction system. FR: 30Hz-14kHz Fe, 30Hz-15kHz CrO₂. Bias switch, LED meters. Inputs: 100mV at 10K, 0.77mV at 600 ohms. Outputs: variable up to 775mV at 47K. DC servo motor. Mains: 240V. Dimensions: 43 x 23 x 10.5cm. Price: £113.00 (plus VAT) approx.

TFL 808

Stereo cassette deck. W and F: 0.09%. Dolby noise reduction system. FR: 30Hz-12kHz ferric, 30Hz-14kHz CrO₂. Bias switch, VU meters. Inputs: line 60mV at 50K, mic 0.3mV at 10K. Outputs: 580mV at 50K. DC servo motor. Mains: 240V. Dimensions: 43 x 22 x 13.2cm. Price: approx. £78.00 (plus VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd,
Toshiba House, Frimley Road, Frimley,
Camberley, Surrey GU16 5JJ.
Tel: Camberley (0276) 62222.

PC 230

Stereo cassette deck with Dolby. W and F: 0.1%. FR: 70Hz-10kHz. Two step selector switch. 2 x dB meter. Inputs: mic, line, DIN. Outputs: headphones, line, DIN. Bridge servo DC motor. Mains: 240V 50Hz. Dimensions: 42 x 28 x 16.6cm. Price: on application.

PC 335

Stereo cassette deck with Dolby. W and F: 0.065%. FR: 40Hz-14kHz. Three-step selector. 2 x dB meter. Inputs: mic, line, DIN. Outputs: headphone, line, DIN. Bridge servo DC motor. Mains: 240V 50Hz. Dimensions: 42 x 28 x 14.6cm. Price: on application.

ADRES AD-5 and PC-X6AD

Automatic Dynamic Range Expansion System is a new noise reduction system for cassette or open-reel tape decks. This Toshiba audio set-up can make any Hi-Fi cassette deck a better performer with up to 85dB dynamic range and a 30dB improvement in signal-to-noise ratio. Price: on application.

PC X10

Stereo cassette deck. W and F: 0.06% WRMS. Dolby. FR: 30Hz-15kHz (CrO₂). Bias switch for chrome tapes. VU. Inputs sensitivity: mic 0.25mV 600 ohms, line 100mV 50K. Outputs:

**Aurex PCX6AD****Aurex AD-5****Tensai TFL 807**

headphone 0.25mV 8 ohms, line 0.5mV 50K. DC servo motor. Mains: 240V. Dimensions: 42 x 20.5 x 14.4cm. Price: £81.22 (plus VAT).

PC X12

Stereo cassette deck. W and F: 0.06% WRMS. Dolby. FR: 30Hz-18kHz (metal). Bias switch for chrome and metal tapes. VU. Inputs sensitivity: mic 0.25mV 600 ohms, line 100mV 50K. Outputs: headphone 0.25mV 8 ohms, line 0.5mV 50K. DC servo motor. Mains: 240V. Dimensions: 42 x 27.2 x 14.2cm. Price: £96.52 (plus VAT).

PC X20

Stereo cassette deck with Dolby. W and F: 0.05% WRMS. FR: 20Hz-18kHz (metal). LED indicator. Inputs: mic 0.25mV, line 70mV, headphone 1mV. Outputs: line 0.5V, headphone 1mV. DC servo motor. Mains: 240V. Dimensions: 42 x 28.2 x 11.6cm. Price: £132.61 (plus VAT).

PC X40 + MMQS

Stereo cassette deck with Dolby. W and F: 0.05% WRMS. FR: 20Hz-18kHz (metal). LED level meters. Inputs: mic 0.25mV, line 70mV, headphone 1mV. Outputs: line 0.5V, 1mV. DC servo motor. Mains: 240V. Dimensions: 42 x 27.8 x 11.6cm. Price: £150.00 (plus VAT).

■ **TRIO**

B. H. Morris & Co. (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

KX-400

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction unit. FR: 40Hz-15kHz. Bias switch for normal and CrO₂. VU meters. Inputs: 77.5mV 50K. Outputs: 390mV 100K. Electronically controlled DC motor. Mains: 120/220-240V. Dimensions: 40 x 28.7 x 13.9cm. Price: £82.33 (plus VAT).

KX-500

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction unit. FR: 30Hz-16kHz. Bias switch for metal, CrO₂, FeCr and normal. All electronic fluorescent display level meters. Inputs: 77.5mV 50K. Outputs: 390mV 100K. Electronically controlled DC motor. Mains: 120/220-240V. Dimensions: 40 x 28.1 x 13.9cm. Price: £109.79 (plus VAT).

KX-1060

Stereo cassette deck. W and F: 0.045%. Dolby noise reduction unit. FR: 30Hz-18kHz ±3dB. Bias switch for metal, CrO₂, normal. VU meters. Inputs: 77.5mV 50K. Outputs: 775mV 100K. Electronically controlled DC motor. Mains: 120/220-240V. Dimensions: 44 x 37.8 x 15.3cm. Price: £228.63 (plus VAT).

KX-2060

As KX-1060 but FR: 25Hz-18kHz ±3dB and fluorescent display level meter. Price: £320.36 (plus VAT).

**Trio KX-600****KX-600***

Stereo cassette deck. W and F: 0.05%. Dolby noise reduction unit. FR: 35Hz-15kHz. Bias switch for metal, normal, CrO₂, FeCr. VU meters. Inputs: 77.5mV 50K. Outputs: 390mV 100K. Electronically controlled DC motor. Mains: 120/220-240V. Dimensions: 44 x 28.5 x 13.3cm. Price: £137.25 (plus VAT).

■ **UHER**

Uher Ltd, 24 Market Place,
Falloden Way, London NW11.
Tel: 01-455 1771/01-458 8491.

CG 362

Stereo cassette deck with Dolby. W and F: 0.2%. FR: 20Hz-18,000Hz (CrO₂ and FeCr), 20Hz-14,000Hz (Fe₂O₃). Manual switching for tapes. Twin peak reading record level meters. Inputs: mic 0.2mV 100mV 3.3K. Tun/rec 2mV-600mV 22K. PU 150mV-3V 1M, dubbing 150mV-3V 1M. Outputs: Tuner/rec 0-900mV 16K, dubbing 900mV 470M, headphones 0.75V at 8 ohms. Motors: 3. Mains: 220/110V at 50, 60Hz. Dimensions: 40 x 29.5 x 10.4cm. Price: £328.00 (plus VAT).

CR 210

Stereo cassette deck. W and F: 0.2% DIN. FR: 30Hz-15kHz CrO₂ (DIN). Auto switch for tapes. Moving B or level indicator. Inputs: mic 0.2mV-200mV 500 ohms, car radio 500mV 15K, external speaker 2 x 2W 24 ohms. Outputs: battery operated 2 x 1W, mains operated 2 x 1.3W, built-in mono speaker. 1 non-commutator DC motor. Dimensions: 18.5 x 18 x 5.7cm. Price: £340.00 (plus VAT).

CR 240

Stereo portable cassette deck. W and F: 0.15%. Dolby system. FR: 30Hz-16,000Hz. Bias switch for chrome and ferrocchrome. Twin peak reading meters. Inputs: mic, tuner, aux. Outputs: tuner, car radio. Dimensions: 23.5 x 18.5 x 5.9cm. Price: £364.00 (plus VAT).

CG 330*

Stereo cassette deck with Dolby. W and F: 0.13%. FR: 40Hz-18,000Hz. Bias switch. VU meter. Inputs: mic, tuner, line. Outputs: tuner, line. Mains: 220V/50Hz/25W. Dimensions: 40 x 10 x 25.8cm. Price: £177.00 (plus VAT).

CR 240AV

As CR 240 with additional film pilot track facility.

CG 340

Stereo cassette deck with Dolby. W and F: 0.18%. DIN. FR: 40Hz-16,000Hz. Bias switch. VU meter. Price: £174.00 (plus VAT).

CG 350

Stereo cassette deck with Dolby. FR: 30Hz-17,000Hz. Bias switch. VU and peak meters. Three motors, full logic. Price: £291.00 (plus VAT).

continued on page 85

**Uher CG330**

Construction Kits

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ RICHARD ALLAN

Richard Allan Radio Ltd,
Bradford Road, Gomersal,
Cleckheaton, Yorkshire BD19 4AZ.
Tel: Cleckheaton (0274) 872442.

RA8 Assembly*

Speaker kit comprising: LP8B bass/mid unit, DT20 dome treble, CN 820 crossover, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 80Hz-20kHz ± 3 dB. HC: 30W RMS 50W programme. Imp: 8 ohms. Recommended enclosure 40 x 27 x 25cm. Based on RA8 enclosure. Price: £34.00 (plus VAT).

RA82 Assembly

Speaker kit comprising: HP8B bass/mid unit, DT20 dome treble, CN35L/H filters with control, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 50Hz-20kHz ± 3 dB. HC: 45W RMS, 70W programme. Imp: 8 ohms. Recommended enclosure: 55 x 28 x 25cm. Based on RA82 enclosure. Price: £53.50 (plus VAT).

RA82L Assembly

Speaker kit comprising HP8B bass/mid unit, DT20 dome treble unit, CN35L/H filters with control, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 40Hz-20kHz ± 3 dB. HC: 45W RMS, 70W programme. Imp: 8 ohms. Recommended Labyrinth enclosure: dimensions 73 x 35 x 29cm. Price: £58.50 (plus VAT).

Tango Assembly

Speaker kit comprising: FB8 bass/mid unit, DT30 treble unit, CN54M crossover, BAF wadding, fixing hardware, terminals. FR: 90Hz-20kHz ± 3 dB. HC: 30W RMS 50W programme. Impedance: 8 ohms. Recommended enclosure: 40 x 27 x 25cm. Based on Tango enclosure. Price: £30.00.

Maramba Assembly

Speaker kit comprising: DT30 treble unit, FB8 bass/mid unit, CN54M crossover, AB8 auxiliary bass radiator. Choice of fret material, fixing hardware, BAF wadding. FR: 80Hz-20kHz ± 3 dB. HC: 20W RMS 30W programme. Impedance: 8 ohms. Recommended enclosure: 60 x 25 x 22cm. Based on Maramba enclosure. Price: £42.00.



Richard Allan RA8 Assembly

Charisma Assembly

Speaker kit comprising: CG12C bass unit, PB8 mid-range unit, DT30 treble unit, CN230 crossover network, BAF wadding, fixing hardware, terminals. FR: 40Hz-20kHz ± 3 dB. Impedance: 8 ohms. Recommended enclosure: 69 x 39 x 31cm. Based on Charisma enclosure. Price: £60.00.

■ AUDIOKITS

Audiokits, 6 Mill Close, Borrowash, Derby.
Tel: Derby (0332) 674929.

Audiokits 30*

High quality kit using passive disc equalisation and MOSFET power output devices. PCB and components available separately. With case as illustrated £130.00. With predrilled metal chassis and wood veneered cover £160.00. Head amp for moving coil cartridges and components £10.00. Pre-amp mute for reducing preamp switch on transients £5.00.

■ BADGER

Badger Sound Services Ltd,
46 Wood Street, Lytham St. Annes,
Lancs FY8 1QG.
Tel: St. Annes (0253) 729247.

Loudspeaker Kits

The following kits contain drive units, crossover networks, wool or wadding, felt panels as appropriate, duct tubes as appropriate, T-Nuts, grille fixing studs and input panels to make a pair. Cabinet details available on request. Woodwork not supplied.

System A

14 litre bookshelf system 17in. H x 10in. W x 8in. D. LF unit Sonaudax HD17B25-H, HF unit Sonaudax HD129D25, suitable for amplifiers 15-30 watts under domestic conditions. 8 ohms imp.

System B

21 litre bookshelf system 18½in. H x 11in. W x 9in. D. LF unit Sonaudax HD20B25-J-4, HF unit Sonaudax HD129D25, suitable for amplifiers 15-35 watts under domestic conditions. 8 ohms imp.

System C

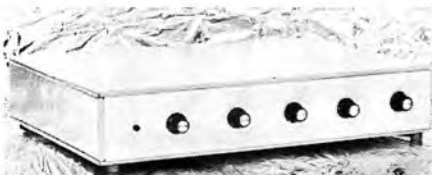
42 litre reflex system 25in. H x 12½in. W x 12in. D. LF unit Sonaudax HD20B25-H-4, HF unit Sonaudax HD129D25, suitable for amplifiers 15-40 watts under domestic conditions. 8 ohms imp.

System D

84 litre floor standing reflex system 33in. H x 17in. W x 14in. D. LF unit Sonaudax HD24S45, MF Sonaudax HD17B25-H, HF unit Sonaudax HD129D25, suitable for amplifiers 15-50 watts under domestic conditions. 8 ohms imp.

System G

35 litre bookshelf system 23in. H x 12½in. W x



Audiokits 30

11in. D. LF unit Peerless KP825WF, HF unit Peerless K010DT, suitable for amplifiers 10-60W. 8 ohms imp.

System H

25 litre bookshelf system 20in. H x 12in. W x 9in. D. LF unit Peerless K0825WG, HF unit Peerless MT24 HFC, suitable for amplifiers 10-40 watts. 8 ohms imp.

System 107

High efficiency high power (100 watt) 90 litre system. Uses two bass units per speaker. 29in. H x 17in. W x 14½in. D. Bass units 2 x Peerless KP100WF, MF unit Peerless K040MRF, HF unit Peerless K010DT. 4 ohms imp.

B110/T27 Monitor Quality Compact

Small monitor system comparable in all essential respects with similar commercial types. 12in. H x 7½in. W x 9in. D. LF unit KEF B110, HF unit KEF T27. Sophisticated crossover networks. Imp 8 ohms. Cabinet/crossover details not available separately.

System 104

30 litre bookshelf system 22in. H x 12in. W x 10in. D. LF unit KEF B200, HF unit Isophon KK8. Imp 8 ohms.

System 108

As for system 104 but with Sonaudax HD129D25 tweeter.

System 68

As for system 104 but with Peerless K010DT tweeter.

NOTE

For improved bass response systems 104, 108 and 68 could be constructed in the system C enclosure and additional items would be included on request.

System J

Now published as the *Hi-Fi Answers Compact*. 60 litre system 28 x 13½ x 13in. LF unit modified Sonaudax HD24S45C, mid unit modified Peerless K040, HF unit Isophon KK8. Suitable for amplifiers 15-70W. Impedance: 8 ohms.

System K

7 litre bookshelf system 12 x 9½ x 7¼in. LF unit, Peerless K050WG, HF unit Peerless KD10DT or MT24CT. Suitable for amplifiers 10-40W under domestic conditions.

System L

14 litre high power bookshelf system 19½ x 10 x 8½in. Twin Peerless K050WG bass unit, HF unit Peerless KD10DT or MT24CT. Suitable for amplifiers 15-80W under domestic conditions. 8 ohms impedance.

Magazine Designs

Kits available for most current loudspeaker magazine designs. Particulars on request.

Prices

On application.

■ CATRONICS

Catronics Ltd, Communications House,
20 Wallington Square, Wallington, Surrey
Tel: 01-669 6700.

Teletext Decoder Kit

Based on design published in *Wireless World*. Decoder has all the usual features including full colour characters graphics, newflash, subtitle and time page facilities. To take advantage of latest facilities available eg double height characters, colour background, conceal/reveal etc, an additional module (Board '3') is available. Kit contains the printed circuit boards and all components necessary to build the complete decoder including power supply and video switching unit. Assembly instructions, full layout diagrams and reprint of the *Wireless World* articles are supplied. Price: £145.00 (with board extra £33.65) (plus VAT).

■ CHEKITS

Chromasonic Electronics,
56 Fortis Green Road,
Muswell Hill, London N10 3HN.
Tel: 01-883 3705

75-X

10W audio amplifier. Price: £3.95 (plus VAT).

75-B

7W audio amplifier. Price: £3.19 (plus VAT).

■ CRIMSON ELEKTRIK

Crimson Elektrik, 1a Stamford Street,
Leicester LE1 6NL.
Tel: Leicester (0533) 553508

Hi-Fi Kits and Electronic modules

See details listed under "Amplifiers", which are available in kit form.

■ HAFLER

Howland-West,
3-5 Eden Grove, London N7 8EG.
Tel: 01-609 0293.

DH 101 (Kit)

Pre-amplifier with output of 3W. THD: 0.001%. FR: 20Hz-20kHz +0dB -0.25dB. Inputs: phono 6mV 47K, others 300mV at 25K. Controls: power, volume, balance, bass, treble, dubbing, tone control defeat. Dimensions: 35 x 8.25 x 21.3cm. Features: two phono, tuner, aux, two tape. Price: £160.00 in kit, £240.00 assembled (plus VAT).

DH 200

Power amplifier with output of 100W. FR: 20Hz-20kHz. Inputs: 1.5V 100W 80 ohms. Damping factor: 150-1kHz 8 ohms, 50 to 10K 8 ohms. Features: complementary push-pull circuit from input to output. Separate jacks provide choice of either DC coupled or conventional capacitor unit. Price: £260.00 in kit, £340.00 assembled (plus VAT).

■ INTEGRIX

Integrix Ltd,
Portwood Industrial Estate, Church Gresley,
Burton-on-Trent, Staffs DE11 9PT
Tel: Burton (0283 21) 5432

S2020 Stereo amplifier kit Mk2

Power output: 20+20W into 8 ohms. Sensitivity: 20W into 8 ohms. Input impedance: 47k at 1kHz. Tone controls: treble +10 -12dB at 15kHz, bass ±16dB at 30Hz. THD: 15W into 15 ohms 0.05% at 1kHz, 20W into 8 ohms 0.09% at 1kHz. FR(16+16W into 8 ohms): -1dB 14Hz to 22kHz, -3dB less than 7Hz to 35kHz. Dimensions: 39.1 x 17 x 6.9cm. Price: £35.95 (plus VAT).

Nelson Jones Stereo Tuner Mk2

Six position push button tuning module. AFC facility with restricted range. LED tuning indicator. LED stereo indicator. Push button tuning. S/N ratio: 30dB at 1.5µV (mono). Tuning range: 87.5-108MHz. FR: 10Hz-15kHz ±1dB. Price: £69.95 (plus VAT).

Wireless World Dolby Noise Reducer

Intended mainly for hiss reduction in magnetic-tape recording machines, this noise reduction unit can be switched to decode commercially-available Dolby B-encoded cassette tapes, Dolby B-encoded FM radio transmissions (current in the USA), or to encode blank tapes from any source. As an alternative it can be used in trading some of the noise improvement for reduced distortion at peak recorded levels. Noise reduction better than 9dB weighted. THD: 0.01% at Dolby level. Signal-to-noise ratio: 75dB. Sensitivity: 30mV. Dynamic range: ±90dB.

NRDC—Ambisonic Surround Sound Decoder

Input level: 40mV to 2Vrms, switched internally. Output level: 600mV rms. THD: <0.03% Dynamic range: >90dB. Kit features: no test equipment is required. With the exception of the mains transformer, fuse, switch and LED, all components are printed circuit board mounted for ease and accuracy of assembly. The P.C. board is fibreglass, drilled, tinned and printed with component locations. Comprehensive instructions are included. Dimensions: 39.4 x 17.3 x 6.9cm. Price: complete kit £49.50 (plus VAT), ready built £67.50 (plus VAT).

■ JORDAN WATTS

Jordan Watts Ltd, Benlow Works,
Silverdale Road, Hayes,
Middlesex UB3 3BW.
Tel: 01-573 6928.

H.F. Unit Kit

Wide angle dome tweeter, moving coil. Capacity for up to 80W systems. FR: 1500-22,000Hz. Rec. cross-over frequency: 1500Hz. Supplied complete with 50 ohms wirewound resistance, capacitor and connector block. Price per kit: £10.70 (plus VAT).

■ JPW

JPW Loudspeakers Ltd,
P.O. Box 31, Plymouth, Devon PL1 1YH.
Tel: Yelverton 4374.

Speaker Kits

Tavy—£30.34
Meavy—£42.61
Lopwell—£51.30
Buckland—£60.00
Barton—£68.70
Milton—£86.09
(Plus VAT)

For full details see Speaker Enclosures.

■ MAPLIN

Maplin Electronic Supplies Ltd,
P.O. Box 3, Rayleigh, Essex (Mail Order)
284 London Road, Westcliff-on-Sea, Essex
(Shop)
Tel: 0702 554155

(MES 34) Stereo Tuner MT310

Supplied in easy to assemble pre-aligned modules. Covers VHF/FM, L.M and UHF TV bands. VHF band gives stereo reproduction of all BBC and local radio transmission plus ability to receive high quality sound broadcast by TV stations. Price: £145.00 (plus VAT).

(MES 33) 40W Stereo Amplifier MA310

Stereo amplifier with output of 40W per channel. Features include two tape inputs and outputs plus monitoring facilities to accept recording from any source including another tape recorder. Three-position filter, variable slope, bass/treble controls with two operating ranges, two position rumble filter. Price: £220.00 (plus VAT).

3800 Synthesiser

Fully digital 48-note keyboard, two oscillators with five different shapes, low oscillator, switched interconnections allowing fast set-up times. Price: £388.00 (plus VAT).

MES 50 Electronic Organ *

Stereo organ with two keyboards of 49 or 61 notes, 13 or 32 note pedalboard, over 70 stops, auto chord, rhythm generator, walking bass, arpeggio, drawbars, touch-sensitive piano, rotating speaker system. Prices: from £105.00 to £1,250 (plus VAT).

Organ and Bass Guitar Pedal Unit

Add-on unit for organs in shape of a 13-note pedalboard with four organ voices, bass guitar and sustain. Price: £100.00 (plus VAT).

(MES 37) Graphic Equaliser *

Ten controls per channel making a total of twenty plus two overall volume controls. Design avoids the need for complicated coils and also makes use of a special op-amp designed for use in audio circuits and featuring low noise input specification. Price: £66.00 (plus VAT).

Monitor Timer

Accurate timer that will switch mains appliances on and off at precise times. Two 13A sockets are fitted and up to 1kW may be switched at any one time by plugging appliance into timer instead of a wall socket. Also functions as a standard 24-hour clock. Price: £38.27 (plus VAT).



Maplin MES 37 Graphic Equaliser



Maplin MES 50 Electronic organ

(MES 22) Touch-sensitive Piano

Electronic piano with realistic voicing and touch-sensitive keys that automatically make notes louder the harder they are hit. Features include a 61 note keyboard, dynamic range of >30dB, loud and soft pedals, voices (piano, honky-tonk, clavichord). Price: £210.00 (plus VAT).

Drumset Rhythm generator

With 16 rhythms and nine instruments. Features include touch switching, LED lights, start-stop touch switches, calibrated tempo control, realistic voicing, back-screened perspex front panel and chromed touch-plates. Price: £73.00 (plus VAT).

150W Stereo Disco

Stereo discotheque with output of 150W per channel into 4 ohms. Unit features an auto voice operated fader, monitor facilities and three-channel light show each capable of driving 1kW. Light show has auto gain control and steep filters to ensure that signals relating to one channel do not operate the bulbs of another channel. Price: £340.00 (plus VAT).

5600S Stereo Synthesiser

Features include a fully digital 48-note keyboard, four oscillators each with five different shapes, low oscillator, stereo output with voltage controlled panning, 900 socket patch-board, voltage controlled, solid state. Price: £650.00 (plus VAT).

■ **PEERLESS**

Distributor: Ross Electronics,
32 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

Expertly chosen and accurately matched drive units arranged to operate over their optimum frequency ranges through specially designed dividing networks. All kits contain: speaker fixing clamps, sealing strip, solderless connecting cables, and comprehensive instructions on system connection and cabinet construction. All kits have an input imp of 8 ohms.

Kit 1060*

8 1/4 in. woofer with foam roll surround. 1 in. dome tweeter. HC: 50W. FR: 30-22,000Hz. Crossover: 1600Hz. Rec. cabinet vol: 20 litres. Price (per pair): £88.50 (plus VAT).

Kit 1070*

2 x 7 in. woofer with foam roll surround. 4 in. enclosed midrange. 1 in. dome tweeter. HC: 60W. FR: 25-22,000Hz. Crossover: 500 and 4000Hz. Rec. cabinet vol: 30 litres. Price: £78.87 (plus VAT).

Kit 1120

2 x 10 in. woofer with foam roll surround. 4 in. enclosed midrange. 1 in. dome tweeter. HC: 100W. FR: 20-22,000Hz. Crossover: 500 and 4000Hz. Rec. cabinet vol: 60 litres. Price (each kit): £85.89 (plus VAT).

Kit 2050

8 1/4 in. woofer with foam roll surround and 2-1/8 in. tweeter. HC: 50W. FR: 50 to 20,000Hz. Crossover: 1500Hz. Rec. cabinet volume: 20 litres. Price (per pair) £60.15 (plus VAT).

Kit 2060

8 1/4 in. woofer with foam roll surround, 4 1/2 in. midrange and 2-1/8 in. cone tweeter. HC: 50W. FR: 50-20,000Hz. Crossover: 700 and 4000Hz. Rec. cabinet volume: 20 litres. Price (per pair): £80.82 (plus VAT).

■ **POWERTRAN**

Powertran Electronics,
Portway Industrial Estate,
Andover, Hants SP10 3NN

Transcendent DPX

Digitally controlled, touch sensitive polyphonic, multi-voiced synthesiser. 5 octave keyboard with two audio outputs. On the first is a harpsichord sound while the second gives a wide range of different voices including piano both straight and honky tonk. Kit includes cabinet, metalwork and all components down to a 13A plug. Complete kit price: £299.00 (plus VAT).

T20+20 Amplifier

Power output: 20W per channel. FR: 5Hz-35kHz. THD: 0.09% at 20W or 0.05% at 15W. Treble and bass controls. Suitable for 8 or 15 ohm speakers. Kit prices: £33.10 (plus VAT).

T30+30 Amplifier

Output of 30W per channel. Suitable for 8 or 15 ohm speakers. As 20+20 but with additional circuitry. Price: £38.40 (plus VAT).

Powertran SFMT

Radio tuner. Sensitivity: 1.2µV for 26dB. AM rejection: 60dB. AFC. THD: less than 0.5%. Aerial impedance: 75 ohms, adjustable mute level. Price: £35.90 (plus VAT).

WW SFMI II

Cost reduced model to complement T20+20 and T30+30 amplifiers. Frequency meter of advanced model has been omitted and mechanics simplified. Facilities include switchable AFC, adjustable switchable muting, LED tuning indicators, push button channel selection. Price: £47.70 (plus VAT).

SQMI-30

Quadraphonic decoder—30W rear channel amplifier. Price: £40.75 (plus VAT).

75 W amplifier

Designed by Linsley-Hood for a popular Hi-Fi magazine. Suitable for 8 or 15 ohm speakers. Treble and bass control. Harmonic distortion: 0.01%. Power amplifier input impedance: 220K. Output impedance: 0.22 ohms. Bandwidth: 3Hz-40kHz. Price on application.

De Luxe Linsley-Hood amplifier

Output 75W per channel. Suitable for 8 or 15W speakers. Bass and treble controls. THD: 0.01%. Power amp. input impedance: 220K. Price: £99.30 (plus VAT).

Linsley-Hood Cassette Deck

As published by *Wireless World*. FR: 35Hz-12kHz ±1dB. Channel separation: 45dB at 1kHz. Erasure better than 50dB. Replay amp. background noise: —56dB. Price: £79.60 (plus VAT).

Other models

M1 matrix decoder £5.90; L1 logic decoder £22.60; 2000 synthesiser £168.50; MPA 200 100W mixer/amp £49.90; Chromatèque 5000S channel lighting effects system £49.50 (plus VAT).

■ **QUANTUM ELECTRONICS**

Quantum Electronics,
8 Albion Street, Leicester.

P1

201 power amplifier in kit form. Price: £64.90 (plus VAT).

P2

202 power amplifier in kit form. Price: £75.90 (plus VAT).

P3

203 power amplifier in kit form with on/off switch and pre-amp supply. Price: £79.70 (plus VAT).

P4

204 power amplifier in kit form. Price: £95.15 (plus VAT).

P5

205 power amplifier in kit form including on/off switch and pre-amp supply. Price: £89.77 (plus VAT).

P6

206 power amplifier in kit form but including on/off switch and pre-amp supply. Price: £97.69 (plus VAT).

CZ

Pre-amp module as used in 102 but with hard wired cartridge and matching components. Easily converted from magnetic to moving coil. Price: £45.00 (plus VAT).

HK1

Hardware kit required to make complete pre-amp. Price: £16.70 (plus VAT).

MC1

Moving coil head amp module, hard wired cartridge matching components. Price: £13.95 (plus VAT).

MCI 's'

Moving coil head amp module with plug-in cord defining the sensitivity and cartridge load. Price: £20.87 (plus VAT).



Peerless Kit 1060



Peerless Kit 1070

HK3

Hardware kit to build complete battery powered head amp using MC1 or MC1 's'. Price: £10.93 (plus VAT).

CS1

Kit for mains supply for 102 (or CZ and HK1) pre-amp. Equivalent to 401. Price: £10.55 (plus VAT).

CS2

Kit for mains supply for 102 (or CZ and HK1) pre-amp with on/off switch and three switched mains outlets. Equivalent to the 402. Price: £26.89 (plus VAT).

■ **SEAS**

Radio Components Ltd.
Unit E2, Hunton Bridge Works,
Bridge Road, Hunton Bridge,
nr Watford, Herts.
Tel: Watford (0923) 68399.

Loudspeaker Kits *

Kit 223 is a three-way system at a reasonable price, designed for use in a 20-25 litres closed cabinet. The 5cm tweeter is viscously damped by magnetic oil in the airgap. This ensures a smooth frequency response and a low distortion level at high frequencies. Price: £50.07 per pair (plus VAT).

Kit 253 is designed for bass reflex cabinets. The 1in. dome-tweeter has a vacuum formed, high loss plastic diaphragm, with a shape optimised for the high frequency range. Price: £74.42 per pair (plus VAT).

Kit 403 is a 3-way system with a 10in. woofer, a 4.5in. midrange unit and a 1in. dome tweeter. In a 40 litres, ported cabinet this system delivers smooth and effortless reproduction of the entire audible sound spectrum. Price: £92.22 per pair (plus VAT).

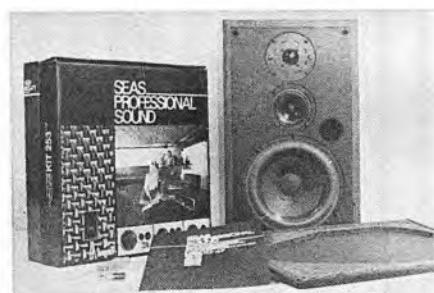
Kit 603 is a 3-way system, built for a 60 litres bass reflex cabinet. High efficiency and excellent reproduction of transient characterises this system. Price: £139.92 per pair (plus VAT).

Disco 47

Loudspeaker kit designed to reproduce high sound levels with little distortion. Disco-47 is a 4-way system, consisting of 7 units. Two 12in. woofers, two 6in. midrange units, two 4in. tweeters and a horn loaded supertweeter for use in bass reflex cabinet of about 100 litres internal volume. Good transient performance, especially in the low frequency area.

Power handling capacity of 160W, automatic protection device for the midrange and treble units.

Cabinets for Disco-47 are available supplied in black veneer finish. Damping material, cloth, front grille with stands are included. Price: £192.44 per pair (plus VAT).

**SEAS Kit 253****Cabinet Kits**

SEAS Cabinet Kits are available for all loudspeaker kits. Cabinet kits for 223, 253, 403 and 603 are supplied as ready cut chipwood boards, with a brown laquered ash-veneer finish. The front baffle has a dark brown finish. Everything the constructor needs is included such as damping material, cloth, glue, and front grille. They are designed for ease of construction and require no special tool for assembly. A detailed building instruction is enclosed. The SEAS cabinet kits are acoustically optimised to each loudspeaker kit. Prices: 223: £45.15. 253: £46.40. 403: £61.45. 603: £82.35. Disco cab: £192.25. Prices per pair (plus VAT).

■ **TELERADIO**

The Teleradio Co. (Edmonton) Ltd.
325 Fore Street, London N9.
Tel: 01-807 3719.

Kits

Suppliers of kits and modules for high specification amplifiers and instrumentation.

AO 113

Very low distortion signal generator for checking Hi-Fi systems. Price: from £24.00 (assembled) (plus VAT).

Distortion Analyser *

THD analyser. Low cost device as a kit or assembled. Price: from £32.00 (plus VAT).

**Teleradio THD Analyser****AMPLIFIERS AND CONTROL UNITS**

continued from page 55

0.15% at 50W or 0.025% at 10W. FR: 10Hz-20kHz. Damping factor: 50. Dimensions: 17¼ x 14¾ x 7in. Price: £247.83 (plus VAT).

■ **YAMAHA**

Natural Sound Systems,
10 Byron Road, Wealdstone, Harrow,
Middlesex.
Tel: 01-863 8622.

A450 *

Integrated amplifier with output of 30W into 8 ohms. THD: 0.05%. FR: 20Hz-20kHz ±0.03dB. Inputs: phono, tuner, tape 1, tape 2, aux. Damping factor: better than 50. Controls: bass, treble, Hi filter, variable loudness, balance. Dimensions: 43.5 x 11 x 33.8cm. Features: tape to tape. Typical Market Price: £114.95.

A550

Integrated amplifier with output of 40W into 8 ohms. THD: 0.02%. FR: 20Hz-20kHz ±0.2dB. Inputs: phono, tuner, tape 1, tape 2, aux.

Damping factor: better than 50. Controls: bass, treble, balance, speaker. Dimensions: 43.5 x 11 x 33.8cm. Features: record out selector, Hi filter, variable loudness. Typical Market Price: £139.95.

A1

Integrated amplifier with output of 70W into 8 ohms. THD: 0.02%. FR: 20Hz-20kHz ±0.2dB. Inputs: phono, tape, tuner, aux, mic. Damping factor: better than 100. Controls: loudness, Hi filter. Dimensions: 43.5 x 12 x 38cm. Features: disc priority, MC head amp. Typical Market Price: £320.00.

**Yamaha A450**

AHEAD 50 YEARS



When Beyer Dynamic first took a lead in headphone technology many record players still had to be wound up. Fifty years of design innovation and production experience later, we're still thinking ahead. Still designing our products to give people new ideas of what headphones can achieve.

Beyer Dynamic is the most popular name in recording studio headphones, and our hi-fi range uses the same technology and is built with the same care and precision.

Beyer Dynamic headphones. They teach you what listening is about.

Beyer 
Dynamic

**Worldwide manufacturers of
headphones, microphones and
accessories for more than half a century.**

Beyer Dynamic (GB) Ltd, 1 Clair Rd., Haywards Heath, Sussex RH16 3DP, Tel: (0444) 51003

PLAY-FAIR

Record Accessories

Stylus Timers, Stylus Cleaners, Antistatic Cleaning Pads, Antistatic Fluid, Discodusters (Record Changer and Single Player models), Record Care Kits, Record Cleaners, Record Cleaning Arms, Conductive Fibre Record Brush, Carbon Fibre Record Cleaning Arms, Hi-Fi Care Compendium, Record Sleeves (PVC, Cardboard, Paper, Masterbags), Record Carrying Cases.

Tape Accessories

Tapehead Cleaning Fluid, Tape Cassettes and Cartridges, Tape Library Cases, Cassette and Cartridge Cleaners, Cassette Index Cards, Swab Sticks, Tapehead and Capstan Cleaners, Cassette Care Kits, Cassette and Cartridge Carrying Cases, Standard and Long-Play Tapes, Tape Spools, Plastic Tape Boxes, Leader Tapes, Splicing Tapes.

Video Accessories

Video Cassette Carrying Cases, Video Albums/Wallets, Video Cleaning Packs (for Service Dept. only).

MICRO-DIAMOND and MICRO-SAPPHIRE

Replacement Styli

Most Comprehensive range of replacement styli, including many Japanese types. Micro-Diamond retipping service. Also (original) SHURE styli and cartridges.

TAPE HEADS

Woelke Magnetbandtechnik (Germany)
Cassette Heads, 1/4" Studio Heads, 1/2"-3" Studio Heads, Film Heads. Mini-Cassette Heads.

Manufacturers and Distributors:

LENNARD DEVELOPMENTS LTD

206 Chase Side, Enfield, Middx. EN2 0QX
Tel: 01-363 8238

STYLUS SERVICE?

We make a point of it!

- our bigger-than-ever range of over 1350 types
- diamonds—double diamonds—and sapphires still, too
- also many manufacturers' original styli
- all at highly competitive prices—ask for list
- we specialise in styli and cartridges only

STRICTLY TRADE ONLY

AGENTS THROUGHOUT THE COUNTRY

There's no service like SWA Service!



E. and W. MAGEE LTD.
SPRING GARDENS,
BIGBURY, KINGSBRIDGE,
DEVON TQ7 4AP
BIGBURY-ON-SEA 323
STD CODE: 054 881 323

SWA means Styli With Assurance

Headphones and Accessories

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd, Unit N22,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288.

H25 *

Stereo moving coil headphone. FR: 15Hz-20kHz. Imp: 4-300 ohms. Weight: 0.40kg. Finish: black stitched leather. Features: self-coiling lead. UVD system. 3W power handling. Price: £21.00 (plus VAT).

H61 Three-Way Junction Box

Providing headphone/loudspeaker/both listening. Two tone grey casing can be wall mounted or free standing. Features: stereo jack sockets, slide switch selection. Rating: 20W. Price £1.65 (plus VAT).

H62 Remote Control Unit (Stereo)

With variable balance and gain controls, headphone/loudspeaker switching, in free standing case. Price: £3.89 (plus VAT).

H65 Stereo Headphone Adaptor

Instant switching between headphone and loudspeaker listening. DIN plug connections to speaker. Jack plug entry for two headphone. Price: £4.32 (plus VAT).

■ AKG

AKG Acoustics Ltd, 191 The Vale,
London W3.
Tel: 01-749 2042.

K 80

Dynamic moving coil. FR: 20Hz-18kHz. Imp: 200 ohms. Weight: 180g. Features: large diaphragm, open dynamic stereo headphones, soft contact ear pads, lightweight. Price: £22.70 (plus VAT)

K 140

Dynamic moving coil. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 175g. Features: large diaphragms, open dynamic stereo headphone, lightweight, soft contract earpieces, self adjusting headband, 14 diaphragms. Price: £27.00 (plus VAT).

K 160

Dynamic moving coil. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 330g. Features: closed

dynamic stereo headphones, flexible double headband, detachable earpieces. Price: £35.20 (plus VAT)

K 240

Dynamic moving coil. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 295g. Features: large earcups each containing 1 transducer and 6 passive diaphragms to improve frequency responses. Open/closed stereo headphone. Price: £50.50 (plus VAT).

K 141

Dynamic moving coil. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 265g. Features: semi open large diaphragm stereo headphone. Self adjusting headband and earpieces. Price: £34.20 (plus VAT).

K 241

Moving coil headphones. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 280g. Features: provides a slightly dry, direct and spacious sound characteristic of much modern music. Price: £54.00 (plus VAT).

K 340 *

Combined moving coil and electrostatic headphones. FR: 16Hz-25kHz. Imp: 400 ohms. Weight: 380g. Features: each earpiece contains two different kinds of transducer system. A moving coil (dynamic) capsule is used for optimum production of both bass and mid frequencies. A low mass self-energising electrostatic transducer unit is used to reproduce High frequencies. Another feature is use of five passive radiators for each channel. Price: £85.00 (plus VAT).

■ AKAI

Akai (UK) Ltd, c/o The Production Village,
82-86 Cricklewood Lane, London NW22 2DP.
Tel: 01-450 2011.

ASE80C

Electret condenser headphone. FR: 20Hz-22kHz. Imp: 4-16 ohms. Weight: 58g. Price: £88.50 (inc VAT).

■ ARNOLD ELECTRONICS

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade (0767) 314252.

Six-way Headset Switch

Designed as a headset comparator with compact styling to enable its use in the home where several may wish to enjoy listening with headsets. Dimensions: 13 x 9 x 4.5cm. Easy to connect. Silver brushed aluminium case. Suitable for language laboratories. Switch to disconnect speakers. Price: £10.45 (plus VAT).

Audio Switch units

Various switch units for selecting different combinations of speakers and headsets. With 'S' denoting speaker outputs, 'H' headphone outputs and 'C' control. Finished in silver brushed aluminium. Prices range from £6.50 to £10.45 (plus VAT).

■ BANG & OLUFSEN

Bang & Olufsen UK Ltd, Eastbrook Road,
Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

U70 *

Orthodynamic semi-open headphones. FR: 16Hz-20kHz. Imp: 140 ohms. Weight: 300g. Finish: leather/aluminium. Features: adjustable headband, adjustable cups. Price: £35.00 (plus VAT).

■ BEYER

Beyer Dynamic (GB) Ltd,
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath (0444) 51003.

Details not available at time of going to press.

■ DYNATRON

Dynatron Radio Ltd, Ditton Walk,
Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

SP6 *

Orthodynamic stereo headphone. FR: 16Hz-



Adastra H25



AKG K340



Bang and Olufsen U70

20kHz. Imp: 140 ohms. Weight: 210g. Colour: black. Lead wire supplied with standard jack plug. No rec. retail price. Approx "going" price: £30.00 (inc VAT).

■ **EAGLE**

Eagle International. Precision Centre. Heather Park Drive, Wembley HA0 1SU. Tel: 01-902 8832.

SE 660

Polymer-film transducer. Black/brushed metal. Fully adjustable leather effect padded headband, felt covered earpads. Lightweight. Coiled lead with moulded plug. Volume controls. Typical market price: £20.00.

■ **GRUNDIG**

Grundig International Ltd, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

216 K

Moving coil headphones. FR: 20Hz-20kHz. Imp: 400 ohms. Padded. No rec retail price.

223 K

Orthodynamic headphones. FR: 20Hz-20kHz. Imp: 400 ohms. Weight: 350g. No rec retail price.

■ **HITACHI**

Hitachi Sales (UK) Ltd, Hitachi House, Station Road, Hayes, Middlesex UB3 4DR. Tel: 01-848 8787.



Hitachi

HD 70

Moving coil headphone. FR: 20Hz-20kHz. Imp: 25 ohms. Sensitivity: 101dB/mW. Input maximum: 300mW. Price: £27.60 (inc. VAT).

HD 80

Moving coil headphone. FR: 20Hz-20kHz. Imp: 100 ohms. Sensitivity: 103dB/mW. Input maximum: 500mW. Price: £28.75 (inc. VAT).

■ **HOWLAND-WEST**

Howland West, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293.

CIS 1100 *

Moving coil headphone. FR: 18Hz-20,000Hz. Imp: 4-150 ohms. Weight: 4.6oz. Black and aluminium finish. Light-weight, super thin 25 micron diaphragm. Price: £23.00 (plus VAT).

CIS 1500

Moving coil headphone. FR: 18Hz-20,000Hz. Imp: 4-150 ohms. Weight: 5.5oz. Black and silver finish. Light-weight, stretch cord, standard jack plug. Price: £29.00 (plus VAT).

CIS 1750 *

Moving coil head phone. FR: 18Hz-22kHz. Imp: 4.15 ohms. Weight: 7oz. Finish: black/aluminium. Features: two rare-earth speakers for upper/lower frequency, standard jack. Price: £42.00 (plus VAT).



Howland West CIS 1750

■ **JVC**

JVC (UK) Ltd, Eldonwell Trading Estate, Staples Corner, 6-8 Priestley Way, London NW2 7AF. Tel: 01-450 2621.

HM 200E

Moving coil headphone. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 600g. Finish: black/silver. Price: £55.20 (inc VAT).

HP660

Moving coil high velocity headphone. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 195g. Finish: brown/ gold. Price: £30.40 (inc VAT).

■ **KOSS**

Tape Music Distributors Ltd, 114 Ashley Road, St Albans, Herts AL1 5JR. Tel: St Albans (0727) 64337.

K/145

Moving coil dynamic stereo headphone. FR: 20Hz-20kHz. Imp: 90 ohms at 1kHz. Weight: 388g. Pneumalite ear cushions. Adjustable headband with stainless steel bands, self-adjusting yokes, soft vinyl cover. One rotary volume balance control on each earcup. Price: £29.95 (plus VAT).

Technician 2

Moving coil dynamic headphones. FR: 10Hz-22,000Hz. Imp: 245 ohms. Weight: 450g. Brown finish with brown cushions. Ext. stainless steel headband with self-adjusting yokes and extra-wide glove-soft vinyl cover. Koss Pneumalite cushions. Brown "Y" shaped coil cord. Boom mic mount on left earcup. Price: £40.00 (plus VAT).

Technician VFR

Moving coil dynamic headphones. FR: 10Hz-22kHz. Imp: 245 ohms. Weight: 475g. Black finish with black cushions. Wide extendable steel headband with self-adjusting yokes and stitched vinyl cover. Koss Pneumalite cushions. Boom Mount. One slide variable frequency response control on each earcup. Price: £47.50 (plus VAT).

HV 1A

Moving coil dynamic headphones, velocity operated. FR: 15Hz-30kHz. Imp: 157 ohms. Weight: 260g. Finished in ebony teak with champagne gold highlights. Rosewood grained inlays. Ext. headband with self-adjusting pivoting yokes and soft padded vinyl cover. Soft acoustical sponge ear cushions. High velocity lightweight open-back phone. Price: £34.00 (plus VAT).

HV 1LC

Moving coil dynamic headphones velocity operated. FR: 15Hz-30kHz. Imp: 132 ohms. Weight: 280g. Styled in ebony teak with champagne gold highlights. Rosewood grained inlays. Ext. headband with self-adjusting pivoting yokes and soft padded vinyl cover. Soft acoustical sponge ear cushions. High velocity lightweight open-back phones. Price: £37.75 (plus VAT).

PRO4 Triple A

Moving coil dynamic headphones. FR: 10Hz-22kHz. Imp: 220 ohms. Weight: 440g. Beige finish. Exclusive direct contour Pneumalite ear cushions virtually eliminate pressure against head. Extendable Pneumalite headband, coiled cord. Controls: boom, microphone mount. Price: £44.00 (plus VAT).



Dynatron Headphones



ESP10

Electrostatic headphone. FR: 10Hz-22kHz. Imp: 3 ohms min at 20Hz and 20kHz, 180 ohms max. at 800Hz. Weight: 450g. Black finish. Special safety feature of ESP 10 is that the energizer takes its power supply from a small external 12V transformer. Energizer has two special quasi-peak-reading VU meters. Automatic overload protective circuit prevents excessive input and has LED indicator. Adjustable headband. Pneumalite ear cushions. Semi-vented earcups. Coiled cord. Price: £295.00 (plus VAT).

HV2A

Moving coil construction. FR: 15Hz-22kHz. Imp: 168 ohms at 1kHz. Weight: 265g. Finish: black. Earcup vents indirect rear sound waves for improved transient response. Acoustically transparent earcushions and padded lightweight headband. Price: £24.50 (plus VAT).

HV/X*

Moving coil construction. FR: 15Hz-35kHz. Imp: 90 ohms at 1kHz. Weight: 220g. Finish: black. Features: patented variable density ear-cushion, dual suspension headband. Price: £42.00 (plus VAT).

HV/XLC*

Moving coil construction. FR: 15Hz-35kHz. Imp: 85 ohms at 1kHz. Weight: 240g. Finish: black. Features: as HV/X. Controls: one slide-type control on each earcup. Price: £45.00 (plus VAT).

■ **MICRO SEIKI**

Harmon UK, St. John's Road, Tyler's Green, High Wycombe, Bucks. HP10 8HR. Tel: Penn (049 481) 5331.



Koss HV/X



Koss HV/XLC

MX5

Electrostatic headset with energiser control. Price: £75.56 (plus VAT).

■ **MITSUBISHI**

Mitsubishi Electric (UK) Ltd, Watford, Herts. WD2 8LD. Tel: Watford 40566.

Stereo dynamic headphones. FR: 18Hz-22kHz. Imp: 4-150 ohms. Sensitivity: 100 dB SPL/mW. Lightweight. Weight: 108g. Retail price: £28.00 (inc VAT).

■ **NEAL-FERROGRAPH**

North East Audio Ltd, Simonside Works, South Shields, Tyne & Wear NE34 9NX. Tel: South Shields (0632) 566321.

MB

Electrostatic stereo headphones. FR: 20Hz-20kHz \pm 3dB. Imp: 130K at 10kHz; connects via adaptor box to 4-16 ohm outputs (5W or greater). Permanently polarised capsule (no power supply needed). Weight 365g including 3 metres of cable and plug. Adjustable headband with soft cover. Earpads—replaceable, soft foam filled, with simulated black leather cover. Price: £57.65 (plus VAT).

MBS

Electrostatic stereo headphones. As MB but with connections for loudspeakers and switch to select 'phones' or 'speakers'. For amplifiers having only one pair of speaker outputs. Price: £65.88 (plus VAT).

Dyna-X

Dyna-magnetic stereo headphones. Smooth frequency response over audio band. Imp: 120 ohms. Weight: 365g including 3 metres of cable and stereo phones jack plug. Adjustable headband with soft cover. Earpads—replaceable, soft foam filled, with simulated black leather cover. Price: £30.59 (plus VAT).

■ **PICKERING**

Sound Source, Station Approach, Rickmansworth, Herts. Tel: Rickmansworth (092 57) 75242

OA-3A

Stereo moving coil headphones. FR: 20Hz-20kHz. Sensitivity: 100dB SPL at 0.10V input at 1kHz each channel. Imp: 15 ohms. Power Handling: 0.2W per channel. Weight: 230g. Finish: brown. Price: £25.00 (plus VAT).

OA-7

Moving coil headphones. FR: 20Hz-22kHz. Imp: 100 ohms. Weight: 170g. Brown finish. Features: power handling 0.2W per channel. Price: £36.00 (plus VAT).

OA-5A

Moving coil headphones. FR: 20Hz-22kHz. Imp: 100 ohms. Weight: 190g. Finish: brown. Power handling: 0.25W per channel. Price: £31.00 (plus VAT).

■ **PIONEER**

Pioneer HiFi (GB) Ltd, Pioneer House, The Ridgeway, Iver, Bucks. Tel: 0753 652222.

SE 2

Dynamic stereo headphones. FR: 20Hz-20kHz.

Impedance: 150 ohms. Weight: 255g with connection cord. Finish: black vinyl. Features: polyester drivers click stop headband, multi-swivel frame, S.T.D. 1/4in. jack plug. Connection cord: 8ft. 2in.

SE 4

Dynamic stereo headphones. FR: 20Hz-20kHz. Max input per channel: 200mW. Impedance: 250 ohms. Weight: 262g with connection cord. Finish: black vinyl. Features: polyester drivers click stop headband, multi-swivel frame, S.T.D. 1/4in. jack plug. Connection cord: 9ft. 5in.

SE 6

Dynamic stereo headphones. FR: 20Hz-20kHz. Max input per channel: 200mW. Impedance: 150 ohms. Weight: 251g with connection cord. Finish: black vinyl. Features: polyester drivers click stop headband, multi-swivel frame, S.T.D. 1/4in. jack plug. Connection cord: 9ft. 5in.

SE 450

Dynamic stereo headphones FR: 20Hz-20kHz. Max input per channel: 1W. Impedance: 22 ohms. Weight: 360g with connection cord. Finish: black. Features: click stop headband, S.T.D. 1/4in. jack plug, Litz connection cord. Connection cord: 8ft. 2in.

SE 550

Dynamic stereo headphones. FR: 20Hz-20kHz. Max input per channel: 1W. Impedance: 22 ohms. Weight: 300g with connection cord. Finish: black. Connection cord: 9ft. 5in. Features: click stop headband, S.T.D. jack plug, Litz connection cord.

SE 650*

Dynamic stereo headphones. FR: 20Hz-20kHz. Impedance: 22 ohms. Weight: 330g with connection cord. Finish: black vinyl. Features: click stop headband, S.T.D. jack plug, Litz connection cord, independent volume controls, high sensitivity. Connection cord: 9ft. 5in.

Monitor 10

Dynamic stereo headphones. FR: DIN 20Hz-20kHz. Sensitivity: 100dB/mW. Impedance: 4-16 ohms. Power handling: 700mW per channel. Finish in black leather. Low sound leakage design. High efficiency drive units. Headband has click stop locking adjustment. Weight: 530g. Typical market price: £35.00.

■ **P.W.B.**

P.W.B. Electronics Ltd, 1 Norfolk Gardens, Leeds LS7 4PP. Tel: Leeds 682550.

Orthodynamic Dyna-X2

Utilising the same techniques as the Orthodynamic speaker panels. Price: £37.37 (inc VAT).



Pioneer SE 650

■ QED

QED Audio Products Ltd.
Unit 12 Ashford Ind. Est.,
Shield Road, Ashford,
Middlesex.
Tel: Sunbury (07842) 46236.

Headphone Control 5/2*

Suitable for connecting an additional pair of headphones to amplifiers not having that facility or to expand on present facilities. The headphones controls allow volume to be adjusted and speakers to be switched on or off. Dimensions: 6.5 x 10 x 5cm. Price: £11.00 (plus VAT).

Headphone Adaptor 5/3*

Provides attenuated non-adjustable outlets for two pairs of headphones. Connects to speaker output terminals. Price: £7.82 (plus VAT).

■ REVOX

F. W. O. Bauch Ltd.
49 Theobald Street,
Borehamwood, Herts. WD6 4RZ.
Tel: 01-953 0091.

RH 310

Dynamic headphone. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 260g. Black finish with soft foam earpads. Cushioned headband. Price: £25.00 (plus VAT).



Q.E.D. 5/3



Q.E.D. Headphone Control 5/2

■ ROSS ELECTRONICS

Ross Electronics,
32 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

RE-268*

Superlightweight—120 grams, superslim—only 10mm thick. Fitted with advanced technology drive units that outperform bulkier, more expensive headphones. Leather grain finish, adjustable twin headband. Aluminium backed earcups with supra aural foam earpads. Open back. With 2 metre ribbon cable and moulded jack plug. FR: 18Hz-22kHz. Sensitivity: 100dB. SPL at 1mW. Weight: 120g. Matching Imp: 4-15 ohms. Price: £26.90 (plus VAT).

RE-261

High-velocity, professional series headphones fitted with rare-earth metal super magnets and specially curved diaphragms. Superslim wire foam-filled, cloth faced ear cushions, adjustable leather grain headband and specially designed yokes. 2.5 metre ribbon cable and standard jack plug. Imp: 8-1,000 ohms. FR: 9-26,000Hz. Weight (less cable): 180g. Price: £25.00 (plus VAT).

RE-272

Studio monitor series stereo headphones employing Samarium cobalt super-magnets and ultra-thin diaphragms to provide distortionless, full-range response. Softly padded slimline earcups and adjustable headband with specially designed, swivel mounted yokes. Fitted with "Neglex" no-loss cable and shielded jack plug. Imp: 8-1,000 ohms. FR: 8-28,000Hz. Weight (less cable): 185g. Price: £32.00 (plus VAT).

RE-267

Closed back Studio Monitor headphones. Drive units have-curved diaphragms only 12 microns thick that combine with powerful Samarium cobalt magnets to provide wide, distortion-free response. Softly padded earcups and adjustable headband with swivel mounted yokes. Fitted connecting lead and shielded jack plug. Imp: 8-1,000 ohms. FR: 8-28,000 Hz. Price: £26.90 (plus VAT).

RE-278

2-way Studio Monitor headphones employing a 2in. woofer and 12 micron diaphragm, copper voice coil and Samarium cobalt magnet, and 1in. dome tweeter with aluminium voice coil coupled with a built-in inductance/capacitor dividing network. Leather grained padded earcups and headband with yokes that fit any



Ross RE 268

headshape. With connecting lead and shielded jack plug. Price: £37.60 (plus VAT).

■ S.A.E.

Cambridge Audio Ltd.
105-109 Oyster Lane, Byfleet,
Surrey KT14 7JH.
Tel: Byfleet 51051.

7000

Dynamic headphones. FR: 30Hz-19kHz. Imp: 400 ohms. Weight: 10oz. Features: semi-isolation design. Price: £27.50 (plus VAT).

■ SENNHEISER ELECTRONIC

Distributors: Hayden Laboratories Ltd.
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks. SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

HD414

Stereo headphones. Lightweight robust design. Removable washable sponge earpads. FR: 20Hz-20kHz. Imp: 2,000 ohms per capsule. Weight: 5oz. Price: £23.50 (plus VAT).

HMD414

Stereo headset HD414 with close-talking boom microphone located near corner of mouth. Especially high ratio of desired sound to background noise. Sensitivity: 0.1mV/μbar. Imp: 200 ohms. Price: £58.00 (plus VAT).

HD224X

Moving coil headphone. FR: 16Hz-20kHz. Imp: 200 ohms. Weight: 252g. Black finish. Mono/stereo, enclosed. Price: £46.00 (plus VAT).

HD424*

Stereo headphones with good low frequency response. FR: 16Hz-20kHz. Imp: 2K. Weight: 170g. Price: £33.50 (plus VAT).

HD412

Stick type headphone designed for use in record booths, etc. FR: 20Hz-20kHz. Imp: 2K. Price: £28.45 (plus VAT).

HD400

Moving coil stereo headphone. FR: 20-18,000Hz. Imp: 600 ohms. Price: £14.60.



Sennheiser HD 424

SI406

Infra-red headphone transmission system consisting of: mono transmitter SI406, small compact mains powered unit which can be placed at any convenient point in a room and radiates infra-red light. Frequency modulated by any suitable audio signal. Technical data: Supply: 220V, 50/60Hz. Power consumption: 3W. Carrier frequency: 95kHz. Wavelength of infra-red light: 930nm. Modulation FM. Deviation: ± 50 kHz. Pre-emphasis: 50 μ s. Audio frequency response: 40 to 15,000Hz. Distortion: <2%. Dynamic range: as source material. Dimensions: 200 x 80 x 17mm. Finish: flat black, plastic housing. Price: £49.00.

HDI406

Lightweight mono stethoset receiver for use with the SI406, consisting of an infra-red receiver, volume control and stethoset headphones. The power for this comes from a small plug-in unit containing rechargeable battery and charger. A full charge will power the HD1406 for 5hrs. Extra battery plugs are available. Technical data: Battery voltage: 2.3 to 2.6V. Wavelength of light carrier: 930nm. Modulation: FM. Carrier frequency: 95Hz. Deviation: ± 50 kHz. De-emphasis: 50 μ s. Acoustical system: dynamic driver, sound tubes to ears. Distortion at max, deviation: less than 3%. Audio frequency response: 100Hz-10kHz. Max. loudness: 104dB SPL. S/N ratio at 4m distance in normally lit room, facing transmitter 60dB. Facing opposite wall: 52dB. Weight: 65g. Price: £49.00.

SI434

SI434 compact two-channel infra-red transmitter mains powered, designed to operate with domestic Hi-Fi systems. The modulation level is indicated by an LED. The area covered by the transmitter can be increased by connecting an additional power radiator. Short technical data: Colour: dull black. Dimensions: approx 200 x 80 x 17mm. Power supply: 220V, 50-60Hz, approx. 10W. Modulation: FM. Carrier frequencies: left channel I = 95kHz, right channel II = 250kHz. Pre-emphasis: 50 μ s. Nominal deviation at 1V input: ± 35 kHz. Peak deviation at 1.5V input: ± 50 kHz. Audio connector: 5-pin DIN-headphone connector. Sync-output socket: 3.5mm jack socket. Audio frequency response: 20Hz-20,000Hz. Price: £79.00.

HDI434

Lightweight open-ear headphones with built-in infra-red stereo receivers. Individual volume controls. Provision for stereo, and left or right signal to be fed to both headphones. The receiver is powered by a 9V dry cell. Short technical data: Modulation: FM. Deviation: max ± 50 kHz. Receiving frequencies: left channel 95kHz, right channel 250kHz. Frequency response: 20Hz-20,000Hz. Max. SPL: approx. 108dB. THD at 1,000Hz: <1%.

**Sennheiser Unipolar**

Weighted signal to noise ratio: approx. 60dB. Power: 9V, approx. 4mA, level dependent. Operating time: approx. 100h, level dependent. Colour: black-silver. Weight: approx. 380g. Price: £94.00.

Unipolar*

Electrostatic headphone. FR: 16Hz-22kHz. Imp: 4-8 ohms. Black finish. Electret. Fitted control unit. Price: £122.00 (plus VAT).

Unipolar 2000

Electret headphone. FR: 16Hz-22kHz. Imp: 4-8 ohms via transformer. Weight: headphones 345g, transformer extra. Finish: black and silver. Features: two headphones can be driven by one transformer. Controls: phone or loudspeaker switch, attenuation on one phone set. Price: Phones £70.00, transformer £52.00 (plus VAT).

HD420

Moving coil headphones. FR: 18Hz-20kHz. Imp: 600 ohms. Weight: 127g. Finish: black and gold. Features: open air. Price: £29.00 (plus VAT).

HD430

Moving coil headphones. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 190g. Finish: black and gold. Features: open air. Price: £39.00 (plus VAT).

SHARP

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane, Manchester M10 8HL.
Tel: 061-205 7321.

HP400*

Stereo headphones. Fully adjustable slide fittings. Extra thick padding for comfort. Twin units in each earpiece. Independent volume controls. FR: 30Hz-20kHz. Complete with lead and jack plug.

SITCO

R. Sitlani & Co. Ltd,
487-489 Commercial Road, London E10 0HA.
Tel: 01-790 8797/0326

Sitco

Headphones. FR: 18Hz-22kHz. Input: 0.5W. Imp: 4-16 ohms. Features: padded headband. Price: approx. £25.00 (inc VAT).

**Sharp HP 400****SONY**

Sony (UK) Ltd, London Showroom,
Consumer Information,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

ECR 500*

Electret condenser stereo headphone. FR: 20Hz-20kHz. Imp: 30 ohms at 1kHz. Power handling: max. input 12V 1kHz. Weight: 350g, adaptor 1kg. Adaptor includes switch for headphone or speakers. Price: on application.

STAX

Wilmex Ltd, Import Division,
Compton House, New Malden,
Surrey KT3 4DE.
Tel: 01-949 2545.

SR5/SRD 6SB

Stereo electrostatic headphones. FR: 30Hz-25kHz. Sensitivity: 96dB at 100V RMS input. Imp: 130K at 10kHz. Power handling: 8W continuous. Weight: 390g. Finish: white, black leather, stainless steel. Supplied with SRD 6SB self energiser. Controls: switch on SRD6 headset or loudspeakers. Price: £99.50 (plus VAT).

**Sony ECR 500****Stax SRD6**

SR44

Stereo electret headphones. FR: 25Hz-25kHz. Sensitivity: 95dB at 100V RMS. Impedance: 150K at 10kHz. Power handling: 5W continuous, 30W momentary. Weight: 250g. Finish: black. Supplied complete with SRD4 adaptor box for connection to loudspeaker output on amplifier. Controls: switch on SRD4 to select between headset and loudspeaker. Price: £68.50 (plus VAT).

SRX3

Stereo electrostatic headphones with SRD65B self energiser. FR: 30Hz-27kHz. Sensitivity: 97dB at 100V RMS. Imp: 130K at 10kHz. Power handling: 8W continuous. Weight: 380g. Finish: black/stainless steel. Supplied with SRD65B self energiser. Controls: switch on SRD65B for speakers or headset. Price: £155.00 (plus VAT).

Sigma with SRD65B

Electrostatic headphone. FR: 30Hz-35kHz. Imp: 122,000 ohms/10kHz. Weight: 460g. Finish: grey. Features: Panoramic type sound. Controls: loudspeaker/earspeaker switching on energiser. Price: £230.00 (plus VAT).

LAMBDA/SRD65B*

Electrostatic headphones. FR: 8Hz-35kHz. Imp: 122K. Weight: 32.5kg. Finish: charcoal. Features: semi-panoramic sound. Controls: switchable on energiser/earspeakers-loudspeakers. Price: £176.90 including energiser (plus VAT).

■ **SUPEREX**

Goldring Products Ltd, Anglian Lane, Bury St. Edmunds, Suffolk IP32 6SS. Tel: Bury St. Edmunds (0284) 64011.

SM 700

Dynamic headphones. FR: 10Hz-20kHz. Imp: 35 ohms. Weight: 10oz. Finish: foam filled vinyl cushions, padded steel and aluminium headband. Features: Advanced magnetic circuit, Mylar diaphragm, 15in. retractable cable with lapel clip. Price: £41.25 (plus VAT).

TRL-99

Dynamic headphone. FR: 15Hz-20kHz. Imp: 35 ohms. Weight: 10oz. Finish: fabric faced cushions, padded headband. Features: Advanced Mylar driver, retractable 15in. cable with lapel clip. Price: £33.30 (plus VAT).

TRL-77

Dynamic headphone. FR: 45Hz-20kHz. Imp: 80 ohms. Weight: 11½oz. Finish: stainless steel headband, replaceable foam cushions. Features: high efficiency Mylar driver. Price: £20.95 (plus VAT).

CL-1

Dynamic headphones. FR: 10Hz-20kHz. Imp: 35 ohms. Weight: 10.6oz. Finish: foam filled vinyl cushions; padded steel and aluminium headband. Features: wide range Mylar driver, 15in. retractable cable. Price: £38.00 (plus VAT).

TRL-88*

Lightweight Dynamic headphones. FR: 18Hz-24kHz. Imp: 100 ohms. Weight: 12kg. Finish: soft plastic covered spring steel, adjustable headband, reticulated foam replaceable cushions. Price: £31.45 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR. Tel: Slough (0753) 27516.

EAH 300

Ergonomically designed for comfortable fatigue-free fit. FR: 20Hz-20,000Hz. Sensitivity: 95dB/mW. Imp: 125 ohms. Weight: 260g. Price: £43.95 (inc VAT).

EAH 510

Moving coil headphone. FR: 15Hz-25kHz. Imp: 125 ohms. Weight: 260g. Finish: brown/silver. Duo cone. Price: £23.36 (plus VAT).

EAH 520

Moving coil headphone. FR: 15Hz-30kHz. Imp: 125 ohms. Weight: 260g. Finish: black/silver. Duo cone. Price: £29.66 (plus VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Middx. Tel: 01-751 1281.

HR811

Complementary back electret headphones. FR: 20Hz-20kHz. Imp: 8-600 ohms. Weight: 240g. Black/silver finish. Adjustable impedance control for deck or amplifier. Price: £35.11 (plus VAT).



Superex TRL-88



Toshiba HR-F1

HR-X1

Complementary back electret condenser type. FR: 20Hz-20kHz. Imp: 8-600 ohms. Weight: 160g. Black/silver finish. Adjustable impedance control for deck or amplifier. Price: £28.89 (plus VAT).

HR-FI*

Back-electret condenser headphones. FR: 20Hz-20kHz. Imp: 8 ohms, 600 ohms switchable. Weight: 170g. Price: £23.56 (plus VAT).

■ **TRIO**

B.H. Morris & Co (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middlesex HA0 1SU. Tel: 01-902 9422.

KH 85

Planar-dynamic headphones. FR: 20Hz-20kHz. Impedance: 60 ohms. Weight: 370g. Features: sliding headband adjusters. Price: £32.02 (plus VAT).

KH 65

Dynamic headphones. FR: 20Hz-20kHz. Impedance: 60 ohms. Weight: 190g. (inc. cord). Features: sliding headband adjusters. Price: £20.13 (plus VAT).

■ **UHER**

Uher Ltd, 24 Market Place, Falloden Way, London NW11. Tel: 01-455 1771/01-458 8491. St. Albans, Herts. Tel: St. Albans 30236/7.

W675

Stereo moving coil headphones. FR: 20Hz-20kHz. Fitted with DIN 5-pin headphone plug. Price: £21.06 (plus VAT).

W775

Multi-membrane. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 330g. Black finish. Half open. 1 active 6 aux. membranes per system. Price: £44.19 (plus VAT).

■ **YAMAHA**

Natural Sound Systems Ltd, 10 Bryon Road, Wealdstone, Harrow, Middlesex HA3 7TL. Tel: 01-863 8622.

YH 1000

Orthodynamic headphones. Imp: 100 ohms. FR: 20Hz-20kHz. Sensitivity: 103dB Weight: 550g.

HP1

Orthodynamic headphones. Imp: 150 ohms. Weight: 290g. FR: 20Hz-20kHz. Typical Market Price: £35.00.

HP2

Orthodynamic headphones. Imp: 150 ohms. Weight: 230g. FR: 20Hz-20kHz. Typical Market Price: £26.00.

Microphones and Accessories

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd, Unit N22,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288.

M.26

Electret microphone, cardioid pattern. FR: 10Hz-10kHz. Imp: 50K. With 'U' bracket for stand/boom mounting. Features: 20ft. lead, windshield, internal battery. Price: £27.90 (plus VAT).

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

ACM 100

Electret. FR: 40Hz-16,000Hz. Supplied with two different coloured mufflers. FR: 30Hz-17kHz. Impedance: 600 ohms. Price: £30.25 (inc VAT).

ACM 300

Professional quality electret condenser microphone. Tone selector switch (music/voice), impedance switch and 0-10 dB switch. FR: 30Hz-17kHz. S/N better than 50dB. 5 metre cord with single head plug. Price: £109.75 (inc VAT).

■ AKG

AKG Acoustics Ltd,
191 The Vale, Acton, London W3.
Tel: 01-749 2042.

D 120E

Moving coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting—stand adaptor included. Supplied with cannon connector complete with cable. Price: £38.50 (plus VAT).

D 120HL

Moving coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: adjustable 40K and 600 ohms. Hand held or stand mounting—stand adaptor included, cable attached. Price: £42.00 (plus VAT).

D 130E

Moving coil microphone, omni-directional. FR: 50Hz-13kHz. Imp: 200 ohms. Hand microphone, but stand adaptor supplied. Price: £45.00 (plus VAT).

D 140E

Moving coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting—stand adaptor included. Features: built-in bass cut switch serves to reduce rumble and handling noise. Built-in wind/pop screen with cannon connector. Price: £63.00 (plus VAT).

D 170E

Moving coil microphone, cardioid pattern. FR: 30Hz-15kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Built-in wind/pop screen suitable for close mouth vocals, with cannon connector. Price: £72.00 (plus VAT).

D 160E1

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: specially insensitive to vibration and handling noise, with cannon connector. Price: £63.00 (plus VAT).

D 190E

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: Sintered bronze cap, with cannon connector. Price: £51.00 (plus VAT).

D 190C

Moving coil, cardioid pattern. FR: 30Hz-16kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. Features: Sintered bronze cap with cannon connector. Price: £51.50 (plus VAT).

D 190ES*

Same as D 190E plus on/off switch. Price: £55.80 (plus VAT).

D 190CS

Same as D 190C with on/off switch. Price: £55.80 (plus VAT).

D 190ES/HI

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features as D 190E. Price: £60.00 (plus VAT).

D 190 CS/HI

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190C. Price: £60.00 (plus VAT).

D 190E/HI

Moving coil microphone, cardioid. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190E. Price: £55.80 (plus VAT).



AKG D190 ES

D 190C/HI

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190C. Price: £55.80 (plus VAT).

D 200E1

Moving coil microphone, cardioid pattern. FR: 30Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Uses two way technique, with cannon connector. Price: £75.60 (plus VAT).

D 202E1

Moving coil microphone, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Mounting as D 202ES. Features: uses two way technique. Two position bass cut switch (—7, —20dB at 50Hz) and on/off switch. Individual frequency response plot, with cannon connector. Price: £97.70 (plus VAT).

D 222E

Moving coil microphone, cardioid pattern. FR: 20Hz-18kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. Features: two way technique two position bass cut switch (—6, —12dB at 50Hz). With cannon connector. Price: £90.00 (plus VAT).

D 224E

Moving coil microphone, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: uses two way technique built-in two position bass cut switch (—7, —12dB at 50Hz). Individual frequency response plot, with cannon connector. Price: £145.00 (plus VAT).

D 310E

Moving coil microphone, cardioid pattern. FR: 60Hz-18kHz. Imp: 600 ohms. For hand held use or stand mounting, stand adaptor included. Features: robust with built in wind and pop protection, primarily for use on the stage. Price: £52.00 (plus VAT).

D 320EB

Moving coil microphone, hyper-cardioid pattern. FR: 60Hz-18kHz. Imp: 600 ohms. For hand held use or stand mounting, stand adaptor included. Features: robust with three-position bass switch, built-in wind and pop protection. For use on the stage. Price: £70.00 (plus VAT).

D 330EBT

Moving coil microphone, hyper-cardioid pattern. FR: 50Hz-20kHz. Imp: 200 ohms. Hand microphone, but stand adaptor included. Features: robust with built-in wind and pop protection, three position bass cut switch, three position treble lift. Price: £88.00 (plus VAT).

D 510B

Moving coil microphone, omni-directional. FR: 100Hz-15kHz. Imp: 200 ohms. Goose neck mic. Price: £44.00 (plus VAT).

D 590

Moving coil microphone, cardioid pattern. FR: 150Hz-17kHz. Imp: 200 ohms. Goose neck mic. Price: £44.00 (plus VAT).

D 591

Moving coil microphone, cardioid type. FR: 250Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. Features: lockable push button switch (start/stop function for remote control of tape recorder or radio set). Price: £44.00 (plus VAT).

D 900E

Moving coil microphone, polar pattern. FR: 60Hz-12kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. 'shotgun' microphone, narrow angle pick-up even at great distance from sound source. Built-in bass cut switch (-7, -20dB at 50Hz), with cannon connector. Price: £96.90 (plus VAT).

D 1200E

Moving coil microphone, cardioid type. FR: 25Hz-17kHz. Imp: 200 ohms. Stand or hand held. Stand adaptor included. Features: Built-in pop screen, selectable sound pattern by adjustable frequency response characteristic (bass-medium-sharp) with cannon connector. Price: £66.00 (plus VAT).

7D 2000E

Moving coil microphone, cardioid pattern. FR: 25Hz-15kHz. Imp: 200 ohms. Stand or hand held. Stand adaptor included. Built-in wind/pop screen, adjustable frequency response characteristic (bass-medium switch), also built-in on/off switch with cannon connector. Price: £78.00 (plus VAT).

SE 5E/10

Supply unit for CE1, 2, 5, 8, 10 capsules. Battery container for 5.6V battery. On/off switch, integral circuitry for universal phantom power (9.52V). FR: 20Hz-20kHz. Imp: 200 ohms. Features: cannon connector. Price: £33.60 (plus VAT).

CE1

Electret capsule, cardioid pattern. FR: 30Hz-20kHz. Imp: 200 ohms. For use with SE5 power supply unit. Price: £29.40 (plus VAT).

CE2

As CE1 but omni-directional. Price: £29.40 (plus VAT).

CE5

Electret capsule, cardioid type. FR: 30Hz-20kHz. Imp: 200 ohms. Integral shock mount and windscreen for use with SE5 power supply unit. Price: £37.80 (plus VAT).

CE8

Electret capsule, Hypercardioid 'shotgun'. FR: 70Hz-20kHz. Imp: 200 ohms. Designed to minimise ambient noise and room reverberation. For use with SE5 power supply unit. Price: £56.70 (plus VAT).

CE 10/1

Electret capsule, omni-directional. FR: 20Hz-18kHz. Imp: 200 ohms. Features: Tie clip Lavalier microphone for use with SE5 power supply unit. Price: £69.30 (plus VAT).

C 501E/10

Electret microphone, cardioid type. FR: 30Hz-20kHz. Imp: 200 ohms. Hand held or stand mounting. adaptor included. Features: microphone consists of CE1 capsule and SE5 supply unit with cannon connector. Price: £60.90 (plus VAT).

C 501C/10

As C 501E with DIN connector. Price: £60.90 (plus VAT).

C 505E/10

Electret microphone, cardioid pattern. FR: 30Hz-20kHz. Imp: 200 ohms. Stand or hand held, stand adaptor included. Features: microphone consists of CE5 capsule and SE5 supply unit, with cannon connector. Price: £75.60 (plus VAT).

C 510E/11

Electret microphone, omni-directional. FR: 20Hz-18kHz. Imp: 200 ohms. Lavalier tie clip. Microphone consists of CE10-1 capsule and CE5 supply unit with H16 belt mounting clip and two W6 windscreens, cannon connector. Price: £102.90 (plus VAT).

C 535EB*

Electret microphone, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Hand microphone, but stand adaptor supplied. Features: Built-in wind and pop filter. Integral switch, combination pre attenuator, bass cut. Low handling noise. Price: £118.00 (plus VAT).

C 451E

FET pre-amplifier, for universal phantom powering (9-51) power consumption (dependent on source resistance and operating voltage=5.5mA. FR: 5Hz-30kHz. Imp: 200 ohms. Features: for use with CK range of capsules, cannon connector. C 451 C has DIN. Price: £63.70 (plus VAT).

C 451EB

Same as C 451E but with built-in two-position bass-cut switch (-7, -20dB) at 50Hz at cut off frequencies of 75 and 150Hz. C 451 CB as DIN connector. Price: £78.30 (plus VAT).

C 452EB

Same as C451EB but adapted for 48V phantom power supply, with cannon connector. Price: £78.30 (plus VAT).

CK1

Condenser Capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. For use with C451/452 FET pre-amps. Price: £41.40 (plus VAT).

CK1S

Condenser capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 20 ohms. Presence boost at approx. 10,000Hz of about 6dB for use with C451/452 FET pre-amps. Price: £41.40 (plus VAT).

CK2

Condenser capsule, omni-directional. FR:

20Hz-20kHz. Imp: 200 ohms. For use with C451/452 FET pre-amps. Price: £41.40 (plus VAT).

CK5

Condenser capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Elastically suspended system with built-in windscreen. For use with C451/452 FET pre-amps. Price: £78.40 (plus VAT).

CK8

Condenser capsule, Hypercardioid 'Shotgun' pattern. FR: 30Hz-20kHz. Imp: 200 ohms. Short shotgun for use with C451/452 FET pre-amps. Price: £78.40 (plus VAT).

CK9

Condenser capsule, Hypercardioid 'Shotgun' type. FR: 30Hz-18kHz. Imp: 200 ohms. Long shotgun for use with C451/452 FET pre-amps. Price: £95.00 (plus VAT).

C 414EB

Studio condenser microphone. Switchable 4 patterns cardioid, omni-directional, figure of eight, hypercardioid. FR: 20Hz-20kHz. Imp: 150 ohms. Stand, stand adaptor included. Features: two position bass cut switch (-7, -20dB at 50Hz). Two position sensitivity pre-attenuator (-10, -20dB) individual response curve. Price: £284.00 (plus VAT).

B 46E

Battery power supply unit for C 451E or C 414EB. Price: £44.00 (plus VAT).

N 66E

Power supply unit for feeding up to six C451 series microphones or C 414EB. 110 or 220V. Price: £116.00 (plus VAT).

■ AUDIO-TECHNICA

Audio-Technica Ltd, Unit 6,
Hunslet Trading Estate, Low Road,
Hunslet, Leeds LS10 1BL.
Tel: 0532 771441.

AT 801

Omni-directional electret microphone featuring back electret system and vaporised gold diaphragm for accurate transient response and stable long-term performance. Applications: studio vocals or handheld. Cannon XLR3 or Switchcraft S3F connections. Price: £37.56 (inc VAT).

AT 802

Dynamic omni-directional microphone, zinc case with epoxy nickel reflective coating. Features freedom from proximity effect. Applications: stage performance. Price: £37.56 (inc VAT).

AT 803S

Tie-clip/lapel-type omni-directional electret microphone. Applications: stage/T.V. studio use for speech. Price: £30.08 (inc VAT).

AT 805S

Tie-clip/lapel-type omni-directional electret microphone. Applications: stage/T.V. studio use for speech. Price: £33.77 (inc VAT).

AT 811

Electret cardioid microphone with back electret system and vaporised gold diaphragm. Applications: P.A. control or music and vocal recording. Price: £41.61 (inc VAT).



AKG C535 EB

AT 812

Dynamic cardioid microphone. Applications: portable boom use with music recording or individual instrument pick-up. Price: £45.47 (inc VAT).

AT 813

Back electret system cardioid microphone. Applications: vocal—stand or handheld. Price: £49.43 (inc VAT).

AT 814

Specifically produced for highly accurate vocal reproduction. Applications: studio use. Price: £79.07 (inc VAT).

■ **BEYER**

Beyer Dynamic (GB) Ltd.
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath (0444) 51003.

Details not available at time of going to press.

■ **COLES**

Coles Electroacoustics Ltd.
Pindar Road,
Hoddesdon, Herts EN11 0BZ.
Tel: Hoddesdon 66685/60060.

4115

Noise cancelling ribbon mic, bi-directional. FR: 80Hz-8kHz. Imp: 30 ohms, 300 ohms. Sensitivity: -70dB. Distortion: less than 1%.

4021

Moving coil mic, omni-directional. FR: 40Hz-12kHz. Imp: 30 ohms. Sensitivity: -80dB. Distortion: less than 0.5%.

MR1

Semi-cardioid miniature ribbon mic with nominal figure of eight polar response. FR: 50Hz-20kHz. Ribbon resonance is set at 60Hz ±10Hz. Finish: matt black frame, satin chrome shells.

4119

Double ribbon microphone. Polar response: cardioid back to front discrimination 15dB. FR: 50Hz-15kHz. Imp: 30 ohms, 300 ohms. Sensitivity: -79dB. Distortion: less than 0.1%.

4037A

Moving coil hand microphone. Polar response: omni-directional. FR: 30Hz-12kHz. Imp: 30 ohms, 200 ohms. Sensitivity: -84dB. Distortion: less than 0.5%. Weight: 260gm type A or 198gm type B.

4105

Moving coil microphone. Polar response: cardioid. FR: 80Hz-12kHz. Imp: 30 ohms. Sensitivity: -82dB. Distortion: 0.5%.

4136

Capacitor mic, uni-directional cardioid. FR: 40Hz-20kHz. Imp: 30 ohms, 300 ohms. Sensitivity: -51dB. Distortion: less than 0.1% at normal operating levels. Finish: satin chrome. Power supply in silver grey hammertone.

4140

Cardioid microphone. FR: 50Hz-15kHz. Imp: 200 ohms. Sensitivity: -75dB. Finish: silver. Weight: 160gm.

4148

Cardioid microphone. FR: 50Hz-15kHz. Imp: 200 ohms. Sensitivity: -75.5dB. Finish: black.

■ **EAGLE INTERNATIONAL**

Heather Park Drive, Wembley, Middx. HA0 1SU
Tel: 01-902 8832.

PRO-M20*

Mono uni-directional capacitor microphone. FR: 30Hz-17kHz. Sensitivity: -60dB. Sub-miniature FET circuit built into capsule.

PRO M90

Moving coil mic, cardioid 10dB front to back. FR: 40Hz-16kHz. Imp: 600 ohms. Hand mic supplied with hold for stands. Studio quality, heavy diecast body. Three-layer windshield.

PRO M80

Moving coil mic, cardioid 10dB front to back. As M90 but finished in all gold.

PRO M40

Capacitor super-directional 'gun' type, super cardioid pattern. FR: 20Hz-18kHz. Imp: 600 ohms. Hand held, or adaptor for stand use. 'Rifle' barrel, on/off, detachable windshields, high sensitivity, highly directional.

PRO M60

Capacitor, miniature tie-clip type, omni-directional. FR: 35Hz-18kHz. Imp: 60 ohms. Supplied with tie-clip and tie-pin. Features: 7 x 7 miniature capsule, remote power supply, spring-reinforced signal lead.

PRO M50

Electret super-directional 'gun' type, super cardioid pattern. FR: 30Hz-16kHz. Imp: 600 ohms. Hand held, pistol-grip (supplied), screws into integral shock-mount. Features: 'Rifle'



Eagle PRO-M20

barrel, detachable windshield. Extremely directional.

■ **FERGUSON**

Thorn Consumer Electronics,
284 Soutbury Road,
Enfield, Middlesex.
Tel: 01-363 5353.

TA66

Condenser microphone (electret). Uni-directional 120deg. FR: 40Hz-18kHz. Imp: 600 ohms. Stand adaptor. Switching for vocal, channel balance within 1.5dB. Double windshield reducing outdoor wind and breathing noise. Price: approx £28.00

■ **GARDNERS**

Gardners Transformers Ltd,
Christchurch, Dorset BH23 3NP.
Tel: Christchurch (020 15) 2284.

Audio Transformers*

Wide range of miniature microphone transformers, standard microphone and A.F. line matching transformers, wide band microphone and A.F. line matching transformers, extra wide band microphone and A.F. line matching transformers, super fidelity wide band microphone and line matching transformers, high-voltage-proof A.F. line matching transformers, high-level A.F. line matching transformers, sub-miniature A.F. matching transformers, miniature open-type microphone transformers and miniature open A.F. line matching transformers. Specifications and prices on request.



Gardners Microphone Transformers



Ferguson Accuracy Range

■ **GRUNDIG**

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

GDM 308 Report *

Moving coil microphone. Omni-directional. FR: 80Hz-15kHz. Imp: 700 ohms. Hand held. Motor stop/start switch.

GCM 319

Capacitor mic. 60Hz-18kHz. Imp: 100 ohms. Hand/desk stand. Built-in FET amplifier.

GCSM 332

Capacitor mic. FR: 60Hz-18kHz. Imp: 100 ohms. Desk/stand. Built-in FET amplifiers.

GDM 314

Omni-directional microphone. FR: 80Hz-15,000Hz. Imp: 200 ohms/10K ohms. Sensitivity: 0.13mV/ μ bar — 0.9mV/ μ bar.

■ **JVC**

JVC (UK) Ltd, Eldonwall Trading Estate,
Staples Corner, 6-8 Priestley Way,
London NW2 7AF.
Tel: 01-450 2621.

M510

Super-directional, uni-directional electret condenser microphone. Price: £122.90 (inc. VAT).

M201

Electret condenser stereo microphone. Price: £32.20 (inc. VAT).



Grundig GDM 308 Report

■ **MELODIUM**

Amdio Ltd,
26-28 Reading Road South,
Fleet, nr. Aldershot, Hants.
Tel: Fleet (025 14) 20567.

C133 *

Cardioid dynamic general purpose microphone. FR: 50-15kHz. Imp: 10 or 200 ohms. DIN or XLR connectors with/without switches. Price: from £49.84 (plus VAT).

M097D *

Cardioid dynamic high quality microphone, recommended for speech and music. Fitted with on/off switch and supplied with 5m cable and XLR connecting plug. FR: 60Hz-18kHz. Imp: 200 ohms. Price: £64.30 (plus VAT).

79A *

Omni-directional dynamic Lavalier microphone. Wide FR: 60Hz-16kHz. Imp: 200 ohms, 50K. Price: £40.00 (plus VAT).

■ **KEITH MONKS**

Keith Monks (Audio) Ltd,
26-28 Reading Road South,
Fleet, nr. Aldershot, Hants.
Tel: Fleet (025 14) 20568/9.

MS/W

Studio microphone floor stand on wheels. Height: 45-78in. Will take BA/L boom arm. Price: £68.00 (plus VAT).

■ **NAKAMICHI**

Natural Sound Systems Ltd,
10 Byron Road, Wealdstone, Harrow,
Middlesex.
Tel: 01-863 8622.

CM-1000

Condenser microphone-cardioid. FR: 20Hz-20kHz. Imp: 600 ohms.

CM-700

Electret condenser microphone. Cardioid. FR: 20Hz-20kHz. Imp: 600 ohms.

CM-100

Electret condenser. Cardioid. FR: 30Hz-18kHz. Imp: 200 ohms.



Melodium Range

CM-50

Electret condenser microphone—Super-omni. FR: 20Hz-18kHz. Imp: 250 ohms.

DM-1000

Moving coil dynamic microphone—Cardioid. FR: 30Hz-18kHz. Imp: 250 ohms.

DM-500

Moving coil dynamic microphone—Cardioid. FR: 50Hz-15kHz. Imp: 250 ohms.

■ **NEUMANN GMBH**

Sole UK Agents: F.W.O. Bauch Ltd,
49 Theobald Street,
Borehamwood, Herts WD6 4RZ.
Tel: 01-953 0091.

KM83

FET condenser. Omni-directional. FR: 40Hz-16kHz. Sensitivity: 0.5mV/ μ microbar. Imp: 50 or 200 ohms. Built-in transformer. Sensitivity switch: —10dB.

KM84

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/ μ microbar. Imp: 50 or 200 ohms. Built-in transformer. Sensitivity switch: —10dB.

KM86

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/ μ microbar. Imp: 50 or 200 ohms. Built-in transformer. Sensitivity switch: —10dB.

U87

FET condenser. Switchable to omni-directional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Imp: 50 or 200 ohms. Built-in transformer. Bass cut and sensitivity switch of —10dB.

KM88

FET condenser. Switchable to omni-directional or cardioid. FR: 40Hz-16kHz. Imp: 50 or 200 ohms. Sensitivity across 1k: approx. 0.7mV/ μ microbar. Built-in transformer. Sensitivity switch —10dB.

SM69 FET

Stereo transistor condenser. Both systems separately remote controlled: omni-directional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Sensitivity across 1k: 2mV/ μ microbar. Imp: 50 or 200 ohms. Built-in transformers. Pressure-gradients.

U47 FET

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.8mV/ μ bar. Imp: 150 ohms balance. Recommended load: \geq 750 ohms. Stand swivel with thread adaptor. Continues the tradition of the U47 produced from 1947-1960. Elastically mounted capsule and various switches; Finish: matt nickel plated.

KMA

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV open circuit. Imp: 800 ohms balanced. Recommended load: \geq 2.7k. Lavalier type. Tie-clip fitting. Low sensitivity to noise of clothing, etc. Finish: dark satin nickel plate.

KMS 84

Capacitor microphone, cardioid pattern. FR: 40Hz-18kHz. Imp: 150 ohms. Hand or stand-clip. Features: soloist condenser microphone for vocal or instrumental requirements.

■ PASO

Amdio Ltd.
26-28 Reading Road South,
Fleet, nr. Aldershot, Hants.
Tel: Fleet (025 14) 20567.

M8

Cardioid dynamic high quality public address microphone with music/speech switch. Complete with clamp. FR: 30Hz-20kHz. Dimensions: 3.6 x 16.5cm. Imp: 200 ohms. Price: £44.00 (plus VAT).

M300

Cardioid dynamic microphone for public address, broadcast and studio use. Built-in pop shield. Complete with plug, cable, anti-shock clamp. FR: 20Hz-20kHz. Dimensions: 5 x 16.7cm. Imp: 200 ohms. Price: £93.20 (plus VAT).

M400

Moving coil microphone, cardioid pattern. FR: 40Hz-18kHz. Imp: 200 ohms. Hand or stand mounting. Particularly suitable for singing and music. With or without switch. Price: from £47.60 (plus VAT).

■ PHILIPS

Pye Business Communications Ltd.
Cromwell Road, Cambridge CB1 3HE.
Tel: 0223 45191.

LBB 9033/05

Moving coil microphone. Cardioid polar pattern. FR: 150Hz-15kHz \pm 3dB. Impedance: 200. Stand or panel mounting. Features: 3m 2-core screened cable, 3-pole DIN 180 deg plug. Price: £46.50 (plus VAT).

LBB 9018/07

Moving coil noise cancel microphone, special cardioid with restricted sensitivity. FR: 100Hz-16kHz. Impedance: 200. Wall mounted or hand held. Features: complete with wall mounting bracket, 0.6-1.5m coiled cable with 5-pole 180 deg. DIN lockable plug. Price: £49.50 (plus VAT).

LBB 9101

Omni-directional moving coil microphone. FR: 60Hz-17kHz. Impedance: 200. Stand mounted or hand held. Features: complete with lift-off adaptor, speech/music switch. Low hand sensitivity. Price: £82.50 (plus VAT).

LBB 9032/05

Moving coil cardioid microphone. FR: 150Hz-15kHz 3dB. Impedance: 200. Stand or panel mounting. Features: 3m 2-core screened cable, 3-pole DIN 180 deg plug, on/off slide switch. Price: £51.50 (plus VAT).

LBB 9020/45

Moving coil cardioid microphone. FR: 60Hz-18kHz. Impedance: 200. Hand or stand use. Features: complete with locking DIN plug, on/off slide switch, speech/music filter switch, lift-off adaptor. Price: £85.40 (plus VAT).

LBB 9031/05

Moving coil cardioid microphone. FR: 150Hz-15kHz \pm 3dB. Impedance: 200. Hand held or stand mounted. Features: complete with lift-off adaptor, 3m 2-core screened cable with 3-pin DIN plug. Price: £48.50 (plus VAT).

LBB 9003/05

Moving coil, omni-directional Levalier microphone. FR: 50Hz-15kHz. Impedance: 200. Halter cord and clip. Features: complete with 10m 2-core screened cable and 180 deg DIN plug. Price: £44.50 (plus VAT).

LBB 9020/35

Moving coil cardioid microphone. FR: 60Hz-18kHz. Impedance: 200. Hand held or stand mounted. Features: complete with locking DIN plug and lift-off adaptor. Price: £79.60 (plus VAT).

■ PIONEER

Pioneer HiFi (GB) Ltd.
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: 0753 652222.

DM 51

FR: 80Hz-1.4kHz. Sensitivity: 72dB. Impedance: 600 ohms.

DM 61*

FR: 80Hz-1.2kHz. Sensitivity: 75dB. Impedance: 600 ohms.

■ REVOX

F.W.O. Bauch Ltd.
49 Theobald Street,
Boreham Wood, Herts WD6 4RZ.
Tel: 01-953 0091

M3500

Moving coil microphone, super-cardioid pattern. FR: 40Hz-18kHz. Imp: 600 ohms. Hand or stand use. Features: complete in case with cable and windshield. Price: £72.00 (plus VAT).

■ ROSS ELECTRONICS

32 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

RE-366*

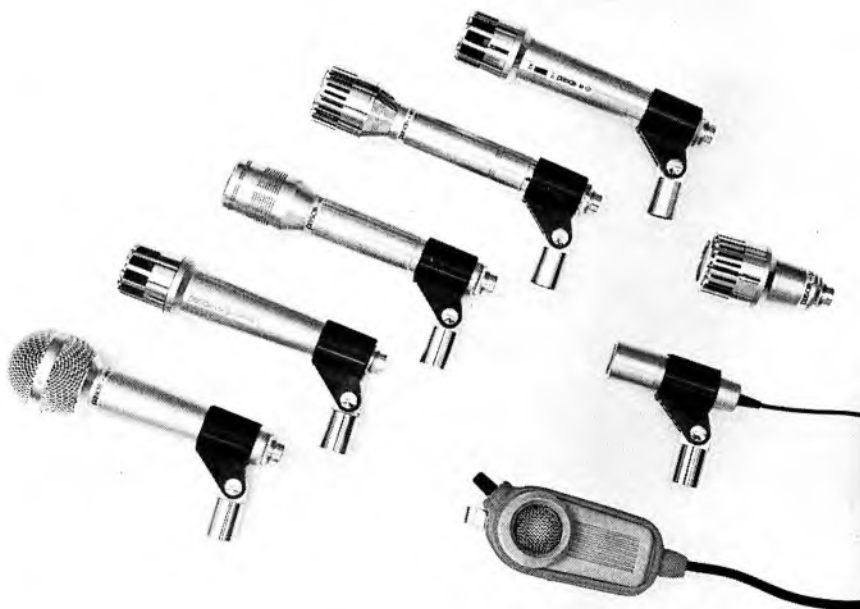
Professional quality electret condenser cardioid microphone, employing a specially developed generating element combined with an IC imp converter. Machined, light alloy case finished matt black with stainless wire-mesh grill. Imp: 600-750 ohms. FR: 30Hz-16kHz. Sensitivity: -68dB at 1kHz. S/N ratio: greater than 44dB. Output imp: Low Z. In fitted, hinged vinyl case. Supplied with 6-metre lead with self lock Cannon plug and moulded jack plug, stand holder and foam windshield. Price: £26.20 (plus VAT).

RE-380

Super cardioid Electret condenser microphone. Highly directional, superslim and mounted in an anti-vibration cradle to ensure isolation from shock, especially when hand held. Integral microphone stand holder provided with detachable hand grip. Fitted with 1.5 metre lead with standard jack plug and supplied with foam windshield and battery in a black vinyl case. Imp: 600 ohms. FR: 30-14,000Hz. Price: £28.30 (plus VAT).

RE-377

High-grade Electret condenser cardioid pattern microphone for studio, group, home recording or lectern use. Detachable XLR connector lead



Paso Range.



Pioneer DM-61



Ross Electronics RE-366 Electret Microphone

provides balanced or unbalanced connection facility. FR: 40-16,000Hz. Imp: 600 ohms. Output level: -72dB. Max. SPL: 120dB. Size: 37mm. diam. x 180mm. long. Price: £30.00 (plus VAT).

RE-378

Superior quality home recording or PA, cardioid pattern Electret condenser microphone. With interchangeable balanced or unbalanced lead connection feature: FR: 30-16,000Hz. Imp: 600 ohms. Output level: -70dB. Max. SPL: 120dB. Size: 22mm. diam. x 198mm. long. With swivel mounting standholder and 5 metre lead with shielded jack plug. Brushed aluminium finish. Price: £31.00 (plus VAT).

RE-384

Professional quality Electret condenser, cardioid pattern microphone. Features include: built-in windshields, noise-free switching, interchangeable balanced or unbalanced lead connection. FR: 30-18,000Hz. Imp: 600 ohms. Output level: -68dB. Max. SPL: 125dB. Size: 42mm. diam. x 200mm. long. Price: £32.00 (plus VAT).

RE-386

Studio quality Electret condenser cardioid pattern microphone. Features include: built-in windshields, noise-free switching, interchangeable balanced or unbalanced lead connection facility. With swivel stand holder and 5 metre XLR connector lead. Matt anodized finish. FR: 30-19,000Hz. Imp: 600 ohms. Output level: -66dB. Max. SPL: -125dB. Size: 50mm. diam. x 190mm. long. Price: £34.00 (plus VAT).

■ **SENNHEISER ELECTRONIC**

Distributors: Hayden Laboratories Ltd.
Hayden House, Churchfield Road,
Chalfont St. Peter, SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

MD211N

Omni-directional moving coil miniature studio microphone. Hand or stand use. FR: 30Hz-20kHz ± 2.5 dB. Sensitivity: 0.13mV/ μ bar ± 2.5 dB. Imp: 200 ohms. Rec. load: 1K. Metal case with satin chrome finish. Windshield MZW201 optional extra.

MD214*

Omni-directional moving coil Lavalier microphone. Built-in 'natural voice' equaliser to studio standards. FR: specially designed for Lavalier operation. Sensitivity: 0.10V/ μ bar ± 2.5 dB. Imp: 200 ohms. Rec. load: 1K. Metal case finished special 'non-glare' enamel.



Sennheiser MD 214

MD408N

Super cardioid moving coil microphone with flexible shaft. Specially suitable for PA applications. FR: 50Hz-15kHz ± 3 dB. Imp: 200 ohms. Sensitivity: 0.13mV/ μ bar ± 3 dB. Case of light gauze woven wire cloth.

MD402LM*

Mono moving coil super cardioid microphone. FR: 80Hz-12.5kHz. Sensitivity: 2.3mV/ μ bar. Imp: 750 ohms. Rec. load: 4K. Hand mic with stand and clip. Rugged construction. Frequency response tailored for domestic applications. Finish: satin chrome.

MD412LM

Moving coil super cardioid mono microphone. FR: 50Hz-12.5kHz. Imp: 800 ohms. Sensitivity: 0.2mV/ μ bar ± 3 dB. Built-in roll-off filter. With desk stand.

MD416NU

Moving coil mono microphone. Cardioid polar diagram. Insensitive to handling or mechanical vibration. Designed for vocal or instrumental soloists. FR: 50Hz-15kHz. Sensitivity: 0.13mV/ μ bar ± 3 dB. Imp: 200 ohms. Hand or stand microphone. Low sensitivity to pop and wind noises.

MD418

Moving coil microphone, super cardioid. FR: 200Hz-10kHz. Imp: 50 ohms. Stand/desk mount. Designed for conference and talkback use and can be used both as loudspeaker and microphone, complete with integral goose neck.

MD430-2

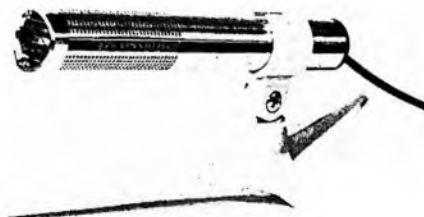
Moving coil microphone, super cardioid. FR: 200Hz-10kHz. Imp: 200 ohms. Hand/stand. Designed for close speaking in noisy surroundings. Range consists of MD430-2-T with integral switch and separate connections to switch, and ND 430-9 which is the shortened version.

MD421

Mono moving coil cardioid microphone. FR: 30Hz-17kHz. Sensitivity: 0.2mV/ μ bar at 1kHz. Imp: (HL series) 200 ohms and 24k; (N, U and 2 series) 200 ohms. Rec. load: (high Z version of HL series) 50K (all others) 1K. Hand/stand microphone $\frac{1}{8}$ in. thread fitting. Built-in bass cut switch. Low handling noise. Finish: (standard versions) grey plastic body with chrome grille.

MD441

Mono moving coil super cardioid microphone. FR: 30Hz-20kHz. Sensitivity: 0.2mV/ μ bar ± 3 dB. Imp: 200 ohms. Rec. load: 1K. Hand microphone, with optional mounting clip available. Choice of ten switchable frequency responses. Low handling noise. Polar diagram constant over frequency range. Finish: shock resistant metal case. Silver-plated metal grille on matt black body.



Sennheiser MD402LM

Profipower

Moving coil microphone, super cardioid pattern. FR: 40Hz-16kHz. Imp: 200 ohms. Hand/stand. Designed for the musician and includes built-in pop filter and on/off switch which is silent in operation. Microphone element is suspended within the housing to eliminate handling noise.

MKH 106T/TU

Mono capacitor omni-directional microphone. FR: 20Hz-20kHz. Sensitivity: 2mV/ μ bar. Imp: 20 ohms. Rec. load: 200 ohms or greater. Hand/stand microphone. Table stands MZ-T104 and 105 available. Low self noise. Windshield (MZW201) optional extra. Finish: satin chrome on brass.

MKH125

Mono capacitor omni-directional. FR: 40Hz-20kHz. Sensitivity: 0.32mV/ μ bar. Imp: 150 ohms. Rec. load: 200 ohms or greater. Lapel or Lavalier microphone with clip or lanyard. Small size: flat frequency response. Presence lift. Finish: matt grey enamel.

MKH126/P48

Mono capacitor omni-directional microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Imp: 10 ohms. Rec. load: 200 ohms. Lapel/Lavalier microphone with lanyard or clip. Small size. Flat frequency response. Presence lift. Finish: matt grey enamel.

MKH816P/48

Capacitor microphone super directional. FR: 50-20,000Hz. Phantom powered 48V cannon or tuchel versions available.

MKH416T/TU

Mono capacitor super cardioid microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Imp: 20 ohms. Rec. load: 200 ohms. Hand or stand microphone. Table stand MZT415 available. Low self noise. Good wind noise rejection. Windshield MZW415. Finish: satin chrome on brass.

MKH816T/TU

Mono capacitor uni-directional (narrow beam) microphone. FR: 50Hz-20kHz. Sensitivity: 4mV/ μ bar. Imp: 20 ohms. Rec. load: 200 ohms. Gun microphone. Fittings: boom MZS-805 or pistol grip MZP805. Low self noise. Very narrow beam. Windshield: MZW804 and MZW815. Finish: satin chrome on brass.

MKH406P/48

Capacitor microphone. FR: 40-20,000Hz. Cannon or tuchel plug versions available.

MKH416P/48

Capacitor microphone super cardioid. FR: 40-20,000Hz. Phantom powered 48V cannon or tuchel versions available.

MKE803

Electret microphone super cardioid. FR: 50-15,000Hz. Imp: 200 ohms. Cannon or tuchel plug versions available.

MKE403

Electret cardioid microphone. FR: 50-15,000Hz. Imp: 200 ohms. Cannon or tuchel plug versions available.

MKE2002

Electret mic. FR: 40Hz-20kHz. Imp: 47k ohms, SM connection, 1K ohm. SL connection Dummy head mic for binaural recordings using own head or with artificial head supplied. Complete with battery supply.

fact:
there's a Shure
microphone
that's right for your
application
& equipment...



SM81

First of the new breed of high-performance, studio-quality unidirectional condensers—technically state-of-the-art, exceptionally rugged and superb sound.



SM59

You've seen it on TV musical shows where sound quality is a must. Unidirectional, dynamic with *exceptionally* flat response, extremely low handling noise, mellow, smooth, and accurate sound.



SM58

The most widely used "on-stage" hand-held dynamic cardioid microphone—the world standard noted for its distinctive, crisp sound.



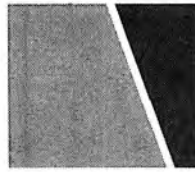
UNIDYNE® III

The world-famous UNIDYNE® III family offers top value for money. Uniform cardioid pattern helps control off-axis colouration, background noise, and feedback.



SM63

Omnidirectional dynamic. Elegant small and lightweight with low handling noise. New dent-resistant grille and handsome champagne finished aluminium case always looks great on camera!



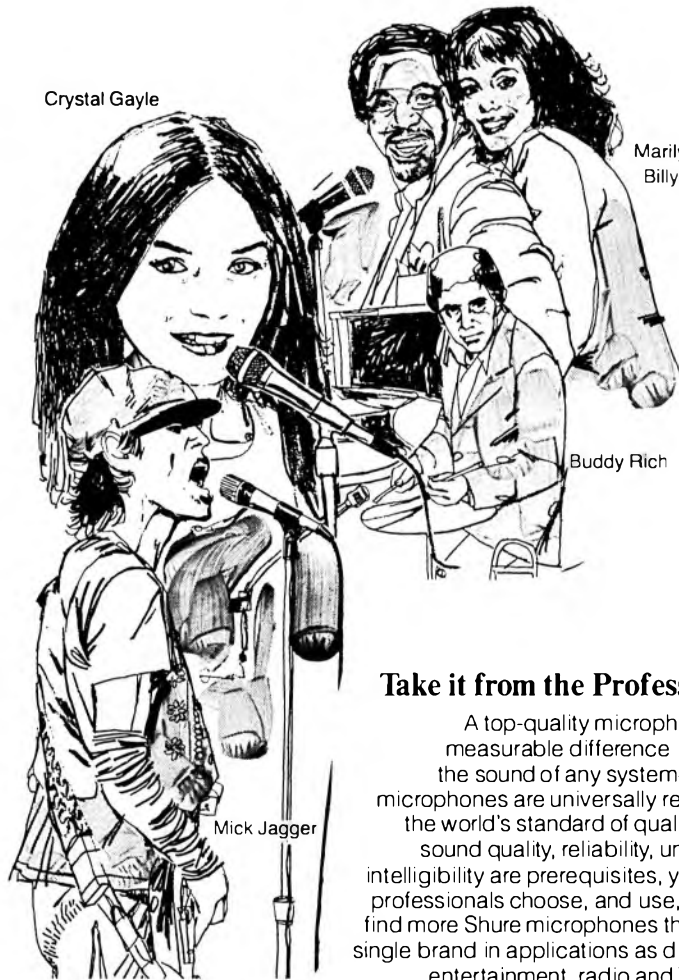
fact:
the microphone
is your link
with your
audience

Crystal Gayle

Marilyn McCoo and Billy Davis, Jr.

Buddy Rich

Mick Jagger



Take it from the Professionals...

A top-quality microphone makes a measurable difference in upgrading the sound of any system—and Shure microphones are universally recognized as the world's standard of quality. Wherever sound quality, reliability, uniformity, and intelligibility are prerequisites, you'll find that professionals choose, and use, Shure. You'll find more Shure microphones than any other single brand in applications as diverse as live entertainment, radio and TV, hotel and auditorium sound reinforcement, churches and cathedrals, boardrooms and council chambers, and public safety—anywhere that sound excellence is a prime consideration.

They are the reliable, professional connection between you and the people you're trying to reach. Send for complete literature. Please let us know your microphone application.

The Sound of the Professionals



Shure Electronics Limited
 Ecclestone Road, Maidstone ME15 6AU Telephone: Maidstone (0622) 59881

MKE10

Electret microphone, omni-directional. FR: 50Hz-20kHz. Imp: 4.7K unbalanced or 200K balanced depending on battery adaptor. Lavalier type mounting with clothing clip. Miniature electret Lavalier mic which operates in conjunction with battery adaptor. Three types available: MZA10 giving unbalanced output to work into load 4.7K. MZA 10N giving balanced 200 ohms output and has facilities for battery check, and MZA 10U which is same as MZA 10N but with XLR output connector.

MD-408

Moving coil microphone, super cardioid. FR: 50Hz-15kHz. Imp: 200 ohms balanced. Stand/desk mount. Designed for talkback use, complete with integral goose neck and on/off switch.

MKH406

RF capacitor, cardioid pattern. FR: 40Hz-20kHz. Imp: 200 ohms balanced. Hand/stand mount. Studio quality capacitor microphone with cardioid directional pattern. Requires 12V A-B powering.

MD 430

Moving coil microphone, super-cardioid. FR: 200Hz-10kHz. Imp: 200 ohms. Stand or goose neck. Features: close speaking for PA applications. Price: £50.00 (plus VAT).

■ **SHURE ELECTRONICS LTD**

Eccleston Road, Maidstone,
Kent ME15 6AU.
Tel: Maidstone (0622) 59881.

SM11

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 150 ohms. Lavalier or special applications. Miniature dynamic. Price: £41.40 (plus VAT).

SM17*

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 150 ohms. Mounting by special clips. Features: acoustic stringed instrument pick-up. Price: £43.80 (plus VAT).

SM54

Cardioid microphone. FR: 70-16,000kHz. Imp: 150 ohms. Sensitivity: -81dB. Hand, stand or boom. Versatile with switchable low end roll-off. Price: £149.00 (plus VAT).



Shure SM17

SM57

Cardioid microphone. FR: 40-15,000Hz. Imp: 50 and 150 ohms. Sensitivity: -82 and -76dB. Good feedback suppression. Price: £67.80 (plus VAT).

SM58

Cardioid microphone. FR: 50-15,000Hz. Imp: 50 and 150 ohms. Sensitivity: -84 and -77dB. Rugged construction with built-in windshield. Price: £87.00 (plus VAT).

SM59

Moving coil microphone, cardioid. FR: 50Hz-15kHz. Imp: 160 ohms. Hand/stand mounting. Features: very low handling noise, smooth wide frequency response. Price: £90.60 (plus VAT).

SM62

Cardioid microphone. FR: 100-10,000Hz. Imp: 150 ohms. Sensitivity: -82dB. Price: £69.00 (plus VAT).

SM81

Condenser microphone, cardioid. FR: 20Hz-20kHz. Imp: 85 ohms. Hand/stand mounting. Features: three-position bass response switchable. 10dB attenuator switchable. Price: £142.20 (plus VAT).

588SA

Cardioid microphone. FR: 80-13,000Hz. Imp: High, but low version available. Built-in windshield. Price: £35.40 (plus VAT).

545D

Cardioid microphone. FR: 50-15,000Hz. Imp: low/high. Slim style, true cardioid. Price: £54.00 (plus VAT).

548

Cardioid microphone. FR: 40-15,000Hz. Imp: low/high. Price: £63.00 (plus VAT).

565D

Cardioid microphone. FR: 50-15,000Hz. Imp: low/high. Built-in windshield. Price: £60.00 (plus VAT).

589S

Cardioid microphone. FR: 90-13,000Hz. Imp: low/high. Price: £42.00 (plus VAT).

516 EQ*

Moving coil mic. Cardioid. FR: 50Hz-15kHz. Imp: 150 ohms. Hand or stand, adaptor supplied. Four built-in filters to 'tailor' your recordings. Price: £57.60 (plus VAT).



Shure 516 EQ

579SB

Omni-microphone. FR: 50-15,000Hz. Imp: low. Price: £41.40 (plus VAT).

■ **SONY (UK) LTD**

Consumer Information, 134 Regent Street,
London W1R 6DJ.
Tel: 01-439 3874.

ECM270F

Electret uni-directional. FR: 40-16,000Hz. Imp: 200 ohms. Removable windscreen. Price on application.

B401

A portable matt black boom stand supplied with its own carrying case. Boom: 690mm. Stand: (2 stage) 593mm. Weight: 3.9kg. Microphone connection: U 5/16in. PF 1/2in. 14 thread.

PBR330*

A parabolic microphone reflector—diameter 330mm—can be hand held or stand mounted. Any 15-30mm diameter microphone can be accepted.

■ **SUPERSCOPE**

Marantz Audio UK Ltd,
193 London Road, Staines, Middlesex.
Tel: Staines (0784) 50132.

EC9P*

Condenser microphone, cardioid. FR: 30Hz-17kHz ±3dB. Imp: 250 ohms. Hand or stand. Features: 10dB pad switchable optional



Sony PBR 330



Superscope Range

phantom power operation. 12-49V in-built battery if required. Price: £42.25 (plus VAT).

■ TANDBERG

Tandberg (UK) Ltd, Farnell House,
81 Kirkstall Road, Leeds LS3 1HR.
Tel: Leeds (0532) 351111.

TM 6

Spherical omni-directional moving coil microphone. FR: 50Hz-15,000Hz +3 —6dB. Imp: 250 ohms. Complete with table stand and fixture for mounting on floor stand. Bigger table stand available as optional extra. Price: £36.55 with table stand (inc. VAT).

■ TECHNICS

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3DR.
Tel: Slough (0753) 27516.

RP 3210E

Electret microphone—Cardioid type. FR: 50Hz-12kHz. Imp: 600 ohms. Desk tripod, single point stereo mic. Price: £34.62 (plus VAT).

RP 3540E

Electret microphone—cardioid type. FR: 40Hz-14kHz. Imp: 600 ohms. Desk tripod, LED battery check. Price: £40.84 (plus VAT).

RP 3500E

Electret microphone—cardioid type. FR: 50Hz-12kHz. Imp: 600 ohms. Desk tripod. Price: £28.40 (plus VAT).

■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House,
Frimley Road, Frimley, Camberley,
Surrey GU16 5JJ.
Tel: Camberley (0276) 62222.

EM-420

Back-electret condenser microphone. uni-directional. FR: 50Hz-20kHz. Imp: 600 ohms. Weight: 270g. with battery. Price: £33.33 (plus VAT).

■ UHER LTD

24 Market Place, Falloden Way,
London NW11.
Tel: 01-455 1771/01-458 8491.

M634 (stereo)*

Dynamic cardioid stereo microphone system. Sensitivity: 0.23mV/ μ bar. FR: 50Hz-16kHz. Imp: 500 ohms. Comprises two M534 microphones, one M925 stereo bar and one M923 table stand. Speech/music switch. Price: £46.67 (plus VAT).

M641

Dynamic stereo microphone. Omni-directional characteristic, also suitable for mono recordings. Sensitivity: 0.25mV/ μ bar. FR: 70Hz-15kHz. With stop/start switch for Uher cassette recorders. Price: £34.70 (plus VAT).



Uher M634.

M646

Electret microphone, cardioid pattern. FR: 30Hz-20kHz. Imp: 280 ohms. Supplied with table stand and wind shield. Powered by internal primary battery from tape recorder via microphone cable, with 8 pole plug. Price: £48.73 (plus VAT).

■ UNISOUND

Condor Electronic Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

DM 1500

Dynamic microphone, cardioid. FR: 50Hz-17kHz. Imp: 200 ohms-20K. Hand or stand mounting. Features: dual impedance, wind-shield, mic holder. Price: £32.00 (plus VAT).

DM 12 *

Dynamic microphone, omni-directional. FR: 50Hz-17kHz. Imp: 600 ohms. For hand holding or stand mounting. Features: Cannon connector, dual impedance, microphone holder, on/off switch. Price: £34.00 (plus VAT).



Unisound DM12 from Condor

CASSETTE DECKS AND RECORDERS

continued from page 65

■ WYE

Wye Audio Products Ltd,
27 Station Road, Brimington,
Chesterfield S43 1JJ.
Tel: Chesterfield (0246) 70297.

SC501

Stereo cassette deck. W and F: 0.15%. Dolby noise reduction system. FR: 30Hz-12kHz —3dB normal, 30Hz-14kHz —3dB CrO₂. VU meters. Inputs: mic x 2, line x 2. Output: line x 2. Mains voltage tappings: 117/220V 50/60Hz. Dimensions: 40 x 14.4 x 26cm. Price: on application.

YAMAHA

Natural Sound Systems Ltd,
10 Byron Road, Wealdstone,

Harrow, Middlesex HA3 7TL.
Tel: 01-863 8622.

K-350

Stereo cassette deck. Dolby B noise reduction system. Mains: 240V. Dimensions: 43.5 x 11.1 x 32.6cm.

K-950

Stereo cassette deck. W and F: 0.028%. Dolby B noise reduction system. FR: 30Hz-22kHz \pm 3dB metal. Bias switch. Fluorescent bargraph. Inputs: 0.3mV 5K mic, 60mV 50K line. Outputs: 340mV. Two motors. Mains: 240V. Dimensions: 43.5 x 14 x 30.5cm.

K-850

Stereo cassette deck. W and F: 0.04%. Dolby B noise reduction system. FR: 30Hz-19kHz \pm 3dB metal. Bias switch. Peak needle. Inputs: 0.3mV 5K mic, 50mV 100K line. Outputs: 340mV. Mains: 240V. Dimensions: 43.5 x 11.1 x 32.6cm.



The magazine for CB users and
two-way radio enthusiasts

November/December 1980

Available through all newsagents in the UK

Price 60p

An IPC Electrical-Electronic Press publication

MUSIC CENTRES

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AIWA

Aiwa Sales and Service (UK) Ltd,
30 Concord Road,
Westwood Park Trading Estate,
London W3 0TH.
Tel: 01-993 6172.

AF 5300

Music Centre using Aiwa record deck. Amplifier output: 20W into 8 ohms. THD: less than 1%. Radio tuner covers FM, L, M, S. Dolby noise reduction system on tape deck. W and F: 0.07%. Two speakers with crossover frequency: 3kHz, two drive units and measuring 21 x 22 x 23cm. Main unit measures 59.1 x 46.9 x 16.8cm. Finish: grey brushed aluminium body and front panel. Features: 6 FM presets, synchronisation between record and cassette decks, cue/review facility on cassette deck. Price: £425.69 (plus VAT).

AF 5600*

Music Centre using Aiwa record deck. Amplifier output: 30W into 8 ohms. THD: less than 1%. Radio tuner covers FM, L, M, S. Dolby noise reduction system on tape deck. W and F: 0.07%. Dimensions of main unit: 60.6 x 46 x 21.1cm. Finish grey brushed aluminium body and front panel. Features: 6 FM presets, synchronisation between record and cassette decks, auto-repeat facility on record deck. Cue/review facility on cassette deck. Price: £528.89 (plus VAT).

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

AC3750L

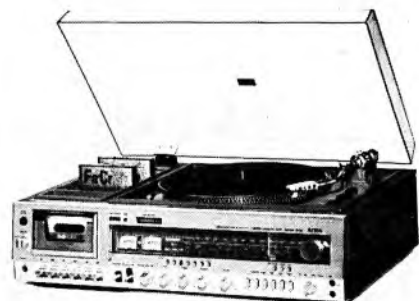
Music Centre with output of 25W per channel. Sensitivity: 1.9µV. Dolby noise reduction system. Radio tuner covers: FM, L, M. Soft cassette eject, beltdrive semi-auto turntable. W and F: 0.1%. Rumble: 60dB. Further details on application. Price: £376.00 inc speakers.

■ ALBA (RADIO AND TELEVISION) LTD

Bull Lane, London N18 1SD.
Tel: 01-803 4451.

9075*

Music Centre with BSR P200 record deck and



Aiwa AF 5600

ADC QLM 30 cartridge. Amplifier output: 25W. FR: 60Hz-10kHz. THD: less than 1%. Radio tuner covers FM, L, M. Dolby noise reduction system on tape deck. W and F: 0.15%. Speaker dimensions: 31.5 x 22 x 51cm. Main unit measures 61 x 40 x 24cm. Finish: teak with black front. No rec retail price.

9077

Music Centre with BSR P232 belt drive. Amplifier with output of 15W per channel. Radio tuner covers VHF/FM, L, M. Dolby noise reduction unit. Speakers measure 31.5 x 22.2 x 51cm. Finish: simulated teak. Main unit measures 76.3 x 36 x 15.4cm. No rec retail price.

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.

MC25

Music Centre with BSR P204 record deck, 8W per channel amplifier, and radio tuner covering FM, L, M wavebands. Tape deck with W and F: 0.15%. Speakers with two drive units measure 27 x 20 x 49cm. Main unit in teak finish measures 56 x 39 x 22cm. Features: LED indicators, front loading cassette deck, signal strength LED's.

■ BANG AND OLUFSEN

Bang and Olufsen (UK) Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

4600

Integrated AM/FM tuner/amplifier, stereo record player and cassette recorder. Output: 2 x 25W, 3 wavebands and 4 presets on FM. Electronic servo drive motor. Cassette system C60-C90. W and F: <0.2%. S/N with Dolby:



Alba 9075

64dB. FR: 30Hz-14kHz. Dimensions: 66 x 12 x 37cm. Finish in teak or rosewood. Price: £448.00 (plus VAT).

7000*

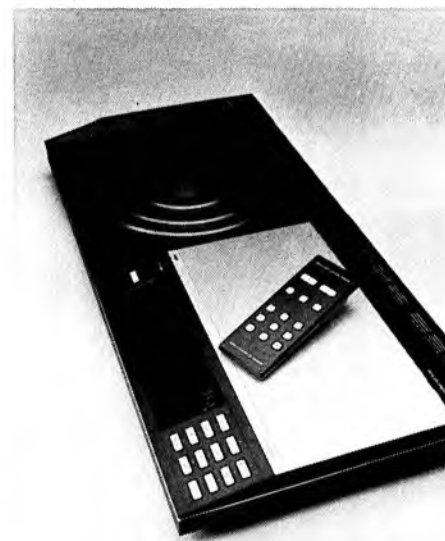
Music Centre with Beogram 2400 record deck and MMC20E cartridge. Amplifier output: 2 x 40W into 4 ohms, 2 x 30W into 8 ohms. FR: 20Hz-30kHz ±1.5dB. THD: <0.15%. Radio tuner covers FM, L, M. Tape deck with Dolby noise reduction system. W and F: <±0.15%. Speakers are not supplied. Main unit measures 72 x 38 x 9.5cm. Finish: teak, rosewood, oak, white. Features: Remote control on all functions operates record deck. 24 hour advance programming. Price: £650.00 (plus VAT).

■ CROWN

York Electronics Ltd,
73 Grosvenor Street, London W1.
Tel: 01-629 8368.

SHC 5500*

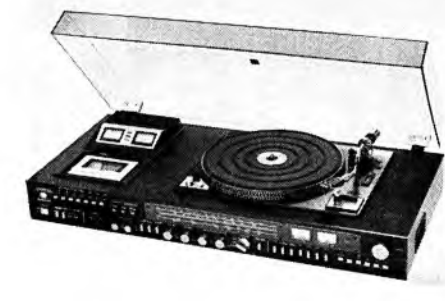
Music Centre with belt drive player. Amplifier: 50W per channel. THD: 1%. Radio tuner covers FM, L, M, S. Push button advance tuning and twin VU meters. W and F: less than



Beogram 7000



Amstrad MC 25



Crown SHC 5500

0.3%. Main unit measures 82 x 16 x 40cm. Features: 4-speaker stereo facility, stereo lamp, bias and equal. selectors, auto stop, memory rewind. Price: £430.00 (plus VAT).

■ DUAL

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks. SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

KA 380*

Music Centre with output of 60W per channel. Quartz controlled digital display for frequency and channel. 7 VHF memories with programme sensors. Input for second tape recorder. Turntable unit with Ortofon S5E pickup arm and elliptic stylus. Direct drive, Gimballed bearing, electronic pitch control, full sized turntable, quadruple stroboscope, continuous play circuit. 819 cassette deck incorporates separate drive for capstan and spool, two LED peak level indicators, memory counter, limiter, microphone mixer amp, Dolby noise reduction unit. Dimensions: 65 x 20.5 x 40cm. Price: on application.

■ DYNATRON

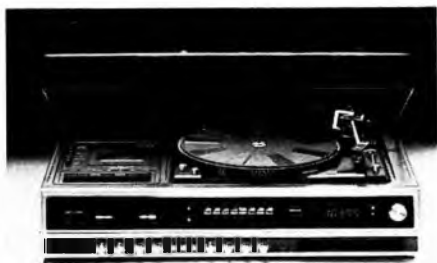
Dynatron Radio Ltd,
Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham 2781.

Burlington GC1010PW

Deck: Garrard 35SB single record playing, belt driven with a Vemtron V100 magnetic cartridge and diamond stylus. Tuner/Amplifier: FM, L, M. Cassette deck: Dolby noise reduction circuit and CrO₂ tape facility. Twin illuminated VU meters and recording level sliders. Power output: 20W. THD: 1% into 8 ohms. Cabinet: Queen Anne style, finished in walnut burr veneers. Cabriole legs, brass drop handles. Optional speaker model LS1225AC, one unit containing two 8 x 5in. speakers to fit underneath the cabinet. Dimensions: 62.9 x 97.8 x 41.8cm. No rec retail price. Approx "going" price: £520.00 (inc VAT).

Kensington GC1110PM

Deck: Garrard 35SB single record playing, belt driven, fitted with a Vemtron V100 magnetic cartridge and diamond stylus. Tuner/amplifier: FM, LW, MW. Cassette deck: Dolby noise reduction circuit and CrO₂ tape facility. Twin illuminated VU meters and recording level sliders. Power output: 20W. THD: 1% into 8 ohms. Cabinet: Regency style, finished in curled mahogany veneers. Ring handles, fluted legs. Optional speaker Model LS1225AC. One unit containing two 8 x 5in. speakers to fit underneath the cabinet. Dimensions: 62.9 x 97.8 x 41.8cm. No rec retail price. Approx "going" price: £510.00 (inc VAT).



Dual KA 380

Buckingham GC1410PW

Deck: Garrard SP25 Mk V, belt-driven, with Vemtron V100 cartridge and diamond stylus. Tuner/amplifier: FM, LW, MW. Slider controls for volume, bass, treble and balance. Toggle switches for contour and stereo/mono mode. Cassette deck: Dolby noise reduction circuit and CrO₂ facility. Twin recording slider levers and VU meters. Output: 16W. THD: <1%. Cabinet: Queen Anne style lowboy, finished with walnut burr veneers. Speakers incorporated into pedestals of deck. Dimensions: 72.1 x 97.4 x 41.9cm. No rec retail price. Approx "going" price: £650.00 (inc VAT).

Carlton GC1510PM

Deck: Garrard SP25 Mk V, belt-driven, with Vemtron V100 cartridge and diamond stylus. Tuner/amplifier: FM, LW, MW. Slider controls for volume, treble, bass and balance. Toggle switches for contour and stereo/mono mode. Cassette deck: Dolby noise reduction circuit and CrO₂ facility. Twin recording slider levers and VU meters. Output: 16W. THD: <1%. Cabinet: Regency style, based on knee-hole desk. Finished in curled mahogany veneers. Speakers are incorporated into pedestals of desk. Dimensions: 97.5 x 42 x 71.5cm. No rec retail price. Approx "going" price: £675.00 (inc VAT).

Balmoral MC1220PY

Deck: Philips GC037 two speed Hi-Fi belt-driven turntable, fitted with GP401 super "M" Mk 2 cartridge and elliptical diamond stylus. Features: Simple and accurate setting of stylus pressure aided by direct readout of weight on truespring balance. Simple and accurate setting of side-thrust compensation by clearly marked rotatable disc at base of tone arm mounting. Tuner/amplifier: FM, LW, MW. Manual tuning plus five presets for VHF. Mute switch. Signal strength meter doubles as tuning scale for tuning preset VHF buttons. Switchable AFC. Slider controls for treble, bass, volume and balance. Push-buttons for ambio, volume for extra speakers, contour and scratch filter. Cassette deck: Dolby noise reduction circuit, CrO₂ facility. Twin recording slider levers and VU meters. Power output: 30W. RMS at THD of better than 0.1% into 8 ohms, over power bandwidth 20Hz-30kHz. 40W at 1% THD. Four-channel sound simulation facility with two-position volume control for second pair of speakers. Cabinet: Regency style, finished in yew. Bracket feet. Front opening



Dynatron Marlborough

double doors to tuner/amplifier and record storage. Lid to record and tape deck. No rec retail price. Approx "going" price: £700.00 (inc VAT).

Marlborough MC1930PM*

Deck: BSR P200 with Vemtron V100 cartridge. 16W amplifier with FR: 50Hz-20kHz. Radio Tuner covers FM, L, M. Dolby noise reduction unit. W and F: 0.2%. LS6218PM speakers measuring 101 x 44 x 66cm. Finish: Regency Mahogany. Features: FM aerial socket, recording level meter, record storage space.

Marlow GC2030PM*

Record Deck: BSR P200 with Vemtron V100 cartridge. 16W amplifier with FR: 50Hz-20kHz. Radio Tuner covers FM, L, M. Dolby noise reduction unit. W and F: 0.2%. Built-in speakers measuring two x 8in., two x 3in. Speakers measure: 101 x 44 x 66cm. Finish: Regency Mahogany.

Walton GC1830PW

Specification as MC1930.

Oxburgh GC1730PK

Specification as MC1930.

■ FERGUSON

Thorn Consumer Electronics,
284 Southbury Road, Enfield, Middlesex.
Tel: 01-363 5353.

3928*

Music Centre with Garrard 126SB deck and Shure M75-65 cartridge. Amplifier output: 25W per channel. THD: less than 1%. Radio tuner covers FM, L, M, S. Tape deck with Dolby "B" noise reduction unit. W and F: 0.3% DIN. Speakers with drive units: 8in., 3 1/2in. Crossover frequency: 2,500Hz. Dimensions: 24 x 20 x



Dynatron Marlow



Ferguson 3928

46cm. Main unit measures 63.2 x 40.8 x 19.3cm. Finish: black. Features: LED, FM preset indicators, three position tape switching, memory rewind, auto release, Twin record level meters, meter for VHF tuning, inter-station muting on VHF, provision for 4 surround speakers, provision for dubbing to external tape recorder. Price: approx £325.00 (plus VAT).

3922

Music Centre with BSR P200 deck and Shure M75-65 cartridge. Amp. output: 25W. THD: less than 1%. Radio tuner covers FM, L, M, S with 7 touch sensors for VHF pre-set. 6 stations plus manual tuning. Tape deck with Dolby "B". W and F: 0.3% DIN. Three-way speaker with drive units: two x 12.5cm. and one 8.5cm. Dimensions: 24 x 20 x 46cm. Main unit measures 63.2 x 40.8 x 19.3cm. Finish: teak/silver. Features: as 3928. Price: approx £325.00 (plus VAT).

■ FIDELITY*

Fidelity Radio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

System 6-60

Music Centre with two-speed semi-auto belt drive record deck and Shure M75-65 magnetic cartridge. Amplifier output: 35W per channel. FR: 15Hz-30kHz \pm 1dB. THD: 0.1%. Radio tuner covers VHF/FM, L, M, S. Tape deck with Dolby noise reduction unit. W and F: 0.07%. Speakers with drive units: 8in. woofer, 3/4in. tweeter and lin. dome. Crossover frequency: 30Hz, 20kHz. Speakers measure: 28 x 23 x 57cm. Main unit measures: 82.5 x 43 x 19cm. Finish: champagne. Features: six presets, memory facility on cassette, FM mute, electronic autostop on cassette, DIN 45/500 standard.

■ GEC (RADIO AND TELEVISION) LTD

Langley Park, Slough SL3 6DP.
Tel: Slough(0753) 22201.

A 5025H

AM/FM radio, stereo cassette recorder/player and record player in moulded black cabinet with teak finish side pieces. Two loudspeakers in teak finish. BSR P182 turntable with tubular "S" arm, ADC magnetic pick-up, diamond stylus. Cassette unit with twin meters, slider controls, pause control, Dolby noise reduction unit. DIN socket for use with microphone. 4-band AM/FM radio with AFC and stereo decoder. Stereo amplifier 30W + 30W speech and music power (15W + 15W). Each speaker cabinet houses 165mm twin concentric cone. Imp: 8 ohms with 30W peak power handling. Speaker size: 30 x 20 x 40cm. Dimensions of main unit: 66 x 42 x 17.8cm. Price: on application.



Fidelity 6-60

■ GRUNDIG

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

RPC 2000

Music Centre with Grundig 740 deck and Philips M40011 cartridge. Amp output of 30W per channel into 4 ohms. FR: 20Hz-20kHz. THD: <0.05% at 1kHz. Radio tuner covers FM, L, M. Dolby noise reduction system. W and F: 0.05%. Features: 7 presets on FM, contour control, fully auto record deck. Finish: silver. Dimensions: 58 x 41 x 18cm.

■ HITACHI

Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes UB3 4DR.
Tel: 01-848 8787.

SDT 7785

Music Centre with two-speed belt drive Hitachi deck. Amplifier with output: 30W. Radio tuner covers FM, L, M, S. Tape deck with Dolby noise reduction system. Speakers to choice from Hitachi range. Main unit in brushed aluminium measures 67 x 40 x 19.7cm. Features: power assisted cassette ejection. Normal/CrO₂/FeCr tape selection, five preset FM buttons, bias equaliser, tuning meter. Price: £459.00 (inc VAT).

SDT 300

Music Centre with two-speed belt drive Hitachi deck with stroboscope. Amplifier: 25W. Radio tuner covers FM, L, M, S. Tape deck with Dolby noise reduction system and auto reverse. Two way speakers each with 200mm bass and 25mm dome tweeter. Speaker size: 27 x 24.5 x 47cm. Main unit in simulated teak measures 42.1 x 40.5 x 19.1cm. Features: signal strength meter, air damped cassette eject, switchable AFC, FM stereo indicator. Price: £419.00 (inc. VAT).

SDT 400

As above except main unit measures: 77.2 x 38.3 x 19.3cm. Features: separate tuning meters for each band. Normal/CrO₂/FeCr tape selector. Price: £459.00 (inc VAT).

SDT 170

Music Centre with two-speed belt drive Hitachi deck. Amplifier: 20W. Radio tuner: FM, L, M, S. Tape deck with Dolby noise reduction unit. Features: air damped cassette eject, LED recording indicator. A or B speaker selection, 5 FM preset buttons. Normal/CrO₂/FeCr tape. Price: £349.00 (inc VAT).

SDT 900M*

Music Centre with remote control with micro computer, 4 band tuner covering FM, L, M, S. Dolby noise reduction system. Integral digital



Hitachi STD 900M

clock. Direct drive two-speed record player. Output of 40W per channel. Price: £649.00 (plus VAT). Speakers extra at £149.00 per pair.

■ JVC

JVC (UK) Ltd,
Eldonwall Trading Estate, Staples Corner,
6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

MF 33

Music Centre with auto return/auto cut turntable, JVC cartridge. Amplifier output: 15W per channel. Radio tuner covers FM, L, M, S. Tape deck with Dolby. Speakers not supplied. Main unit measures 46 x 27 x 21.8cm. Price: £312.50 (inc VAT).

MF 55 Mk II

Music Centre with JVC cartridge. Amplifier output: 30W. Radio tuner covers FM, L, M, S. Tape deck with JVC's automatic noise reduction system. Speakers not supplied. Main unit measures: 70.1 x 38 x 15cm. Features: stroboscope on turntable. Price: £434.50 (inc VAT).

■ MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts.
Tel: Watford 40566.

MC 7500

Music Centre with Mitsubishi belt drive deck, with anti-skate device and pitch control. Amplifier output 2 x 25W. FR: 20Hz-20kHz. FM, MW, LW, SW tuner section. 7 FM preset stations. Dolby NR on cassette section. Black satin finish. Dimensions: 66.7 x 45 x 16.6cm. 3-way speakers included in retail price of £407.00 (inc VAT).

MC 8000

Vertical (upright) format using belt drive Mitsubishi linear tracking automatic deck. Amplifier output 2 x 20W. Cassette Deck is metal tape compatible and has Dolby NR. "Track" sensor on cassette section. FM, MW, LW tuner section. 6 preset FM stations. Inter-station muting, loudness control, microphone mixing, soft-touch switching. Dimensions: 51 x 28.5 x 64cm. (W x D x H). Retail price: £411.00 (inc VAT) including speakers and glass fronted cabinet.

■ PANASONIC

National Panasonic (UK) Ltd,
300-318 Bath Road, Slough, Berks. SL1 6JB.
Tel: Slough 34522.

SG 2200

Record deck: belt-drive, auto return. Cartridge: MM EPC 290. Amp: 20W into 4 ohms. THD: 5%. Radio tuner covers FM, MW, LW. Tape deck: Dolby "B". W and F: 0.15% WRMS. Speakers: Drive units 165mm, 65mm. Each speaker measures 26 x 20 x 40cm. Main unit dimensions: 65 x 39 x 13.5cm. Finish: silver. Features: CrO₂ tape selector, LED tuning indication. Price: to be announced.

SG 3200

Record deck: belt-drive, auto return. Cartridge: MM EPC 290. Amp: 20W into 4 ohms. THD: 5%. Radio tuner covers FM, MW, LW. Tape deck has Dolby "B". Speaker drive units: 165mm, 65mm. Each speaker measures 26 x 20 x 40cm. Main unit: 65 x 38.7 x 13.5cm. Finish: silver. Features: LED VU meter, normal/CrO₂/metal tape, tape programme sensor, FM auto/FM mono, full auto stop cassette. Price: to be announced.

SG 4200

Record deck: belt-drive, auto return. Cartridge: MM EPC 290. Amplifier: 25W into 4 ohms. THD: 1%. Radio tuner covers FM, MW, LW. Tape deck has Dolby "B". Speaker drive units: 165mm, 65mm. Each speaker measures 26 x 20 x 40cm. Main unit: 70 x 44.3 x 14.4cm. Finish: silver. Features: 2 x LED VU, tape programme sensor, normal/CrO₂/metal tape selector, FM presets, FM auto/FM mono, soft touch cassette operation, loudness control. Price: to be announced.

■ PERIOD HIGH FIDELITY

Period High Fidelity Ltd,
Clivemont Road, Cordwallis Trading Estate,
Maidenhead, Berks.
Tel: Maidenhead (0628) 21221/2.

PHF 1: 4: 6: 8: 9: 14: 15: 16: 17: 18: 20: 21*

All models in a wide range of period reproduction cabinets covering Regency, Queen Anne, Louis XV, etc. All have the same specifications: Garrard belt-drive record player. Amplifier with output of 25W per channel and FR range: 25Hz-30kHz. Tuner covers S, VHF, M and L with sensor touch tuning on VHF. Tape deck features Dolby noise reduction system, W and F: 0.3% DIN. Speaker drive units 1 x 8in. and 1 x 3in. with crossover frequency 1500Hz. Prices: £595.00 to £1,500.00 (plus VAT).

■ PYE

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (02205) 2781.

1602

Music Centre with amplifier output of 7.5W per channel. FR: 25Hz-16kHz -3dB. THD: less than 2%. Ceramic cartridge. Radio tuner covers VHF, L, M. Tape deck W and F: less than 0.35%. Bias switch for chrome, auto recording level. Single cone round speakers, measuring 24.5 x 15.2 x 36cm. Main unit measures 58 x 37 x 20cm. Finish: teak effect woodgrain surround with silver coloured front fascia.

1606

Music Centre with amplifier output of 20W per channel. FR: 50Hz-20kHz ±3dB. THD: less than 1%. Record deck uses BSR SC11M ceramic cartridge. Radio tuner covers VHF, L, M. Tape deck with Dolby "B" noise reduction system. W and F: <0.2%, <0.3% DIN. Single cone 6in. speakers measure 57.5 x 35 x 17.5cm. Main unit measures 24 x 15.2 x 39cm. Finish: teak effect cabinet with silver coloured front and trims. AFC. "S" shaped tone arm, VU meters.



Period High Fidelity PHF21 Escritoire

■ SALORA

Salora (UK) Ltd,
25A Techno Trading Estate, Swindon SN2 6EZ
Tel: Swindon (0793) 46321.

6000A

Music Centre with Dual 1237 record deck and Dual DMS 240E cartridge. Amplifier output: 40W per channel. FR: 20Hz-30kHz. THD: 0.1%. Radio tuner covers: FM, L, M. Tape deck with Dolby "B" noise reduction system. W and F: less than 0.2% DIN. Speakers not included but KS315 or KS330 recommended. Main unit measures: 64 x 40 x 17cm. Price: approx £407.00 (plus VAT).

6600*

Music Centre with Toshiba direct drive record deck. Amplifier output: 35W per channel. FR: 30Hz-25kHz. THD: 0.1%. Radio tuner covers FM, M. Tape deck with Dolby "B" noise reduction system. W and F: less than 0.15%. Speakers not included but KS315 or KS330 recommended. Main unit measures 64.5 x 36.5 x 20cm. Price per pair: approx £357.00 (plus VAT).

■ SANYO

Sanyo Marubeni (UK) Ltd,
8 Greycaine Road, Watford, Herts. WD2 7UD.
Tel: Watford (0923) 46363.

GXT 4580

Music Centre with Sanyo deck. Amplifier: 20W x 2 into 8 ohms. FR: 20Hz-20kHz ±3dB. Radio tuner covers FM, L, M, S. Tape deck with Dolby. W and F: 0.15% MC3 speakers comprising 20cm bass, 10.4cm mid and 6.8cm HF unit. Main unit measures 47 x 27 x 22cm and is of teak finish. Features: radio touch controls, FM pre-setting, piano keys, full auto stop, memory counter. FeCr/CrO₂/normal tape. Price: £349.95 (plus VAT).

G 2811 KL

Music Centre with Sanyo deck. Amplifier 18W x 2 into 8 ohms. FR: 30Hz-30kHz. Radio tuner with band coverage FM, L, M, S. Tape deck with Dolby, W and F: 0.1% Speakers: 20cm bass, 10.4cm mid, 6.8cm HF. Unit measuring 427 x 22cm. Main unit measures 68.6 x 17.5 x 35.8cm. Metal finish. Features: 3-digit tape counter, radio with colour console and 7 pre-select stations. Price: £309.50 (plus VAT) but not inc speakers.

■ SCHNEIDER

Wren Electronics Ltd,
1-4 Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

TS2233

Music Centre. Amplifier output: 35W per channel. Radio tuner covers VHF/FM, L, M. Tape deck with Dolby noise reduction unit. W and F: 0.14%. Speakers measure 25 x 20.5 x



Salora 6600

45cm. Main unit measures 79 x 35 x 17cm. Features: synthesised tuner, 6 programme memory auto search, digital readout of frequency and time. Price: approx £313.00 (plus VAT).

■ SHARP ELECTRONICS (UK) LTD

107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

SG 400/CP 400*

Record deck with IM cartridge. Amplifier output: 25W at 4 ohms. FR: 35Hz-20kHz. -1.5dB. THD: 1%. Tuner: VHF/FM, L, M, S. Tape deck with Dolby "D" noise reduction system. W and F: 0.2%. Speaker dimensions: 26 x 25.5 x 48cm. Main unit dimensions: 75.3 x 35.1 x 18cm. Five preset stations on FM.

SG 450

Music Centre with record deck with universal plug-in headshell and IM cartridge. Amplifier: 25W into 4 ohms. FR: 35Hz-20kHz. THD: 1%. Radio tuner covers FM, L, M, S. Four-track two-channel tape recorder with Dolby. W and F: 0.2%. Main unit in black finish measures 26 x 25.5 x 48cm. Features: DIN spec, APSS on tape, 6 preset sensors.

SG 500

Music Centre with direct drive record deck, VM cartridge. Amplifier: 45W. FR: 25Hz-15kHz. THD: 1%. Radio covers FM, L, M, S. Auto programme search system on tape, Dolby noise reduction system, remote control as optional extra (£88.95), sensor touch tuning on FM.

SG460/CP460

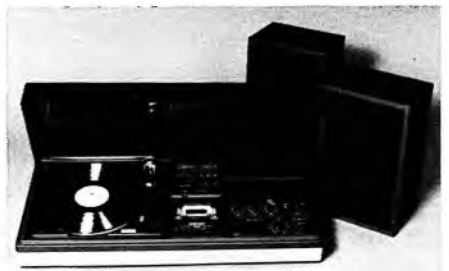
Music Centre with belt drive turntable, universal plug-in headshell with AM-type cartridge. Amplifier output: 33W. FR: 30Hz-20kHz. THD: 1%. Radio tuner: FM, L, M, S. Tape deck with Dolby noise reduction unit. W and F: 0.25%. CP460 speakers measure 30.4 x 23 x 57.5cm. Main unit measures: 84.7 x 39.5 x 17.4cm. Features: sensor touch electronic tuning, preset five station on FM, APSS—auto programme search system to find start of music sections on tape.

■ TOSHIBA (UK) LTD

Toshiba House, Frimley Road,
Camberley, Surrey.
Tel: Camberley (0276) 62222.

SM-3350

Toshiba belt-drive, semi-auto, cueing, magnetic cartridge. Amplifier: 23W x 2 into 4 ohms. FR: 20Hz-40kHz. THD: 1%. Radio tuner with FM presets covers FM, L, M, S. Compact cassette with Dolby, two meters, three step tape select, DC servo motor, W and F: 0.25%. Speakers: 17cm bass, 9.7cm HF, Crossover frequency: 5000Hz, dimensions 25.7 x 18.4 x 46cm. Main unit in silver and simulated wood measures 62 x 39 x 18cm. Features: free stop dust cover. Price: £310.67 (plus VAT).



Schneider TS 2233

SM-3650

Toshiba belt drive, semi-auto, cueing, magnetic cartridge. Amplifier: 26W x 2 into 4 ohms. FR: 20Hz-40kHz. THD: 1%. Radio tuner covers FM, L, M, S, with presets on FM. Tape deck: compact cassette with Dolby, two level meters, DC servo motor, W and F: 0.2%. Speakers: 20cm bass and 9.7cm HF, dimensions: 28.5 x 21.8 x 50cm. Main unit in silver and simulated wood measures: 81 x 43.5 x 18.5cm. Features: stand by timer with LED display for auto recording, electric clock, free stop dust cover. Price: £390.67 (plus VAT).

SM-3750*

Toshiba fully auto belt drive with stroboscope, FG servo, magnetic cartridge. Amplifier: 32W x 2 into 4 ohms. FR: 40Hz-40kHz. THD: 1.0%. Radio tuner with 6 FM presets covers FM, L, M, S. Tape deck: compact cassette with Dolby, three step tape select, two level meters, auto rec with timer. Speakers: 20cm bass, 9.7cm HF, crossover frequency: 5000Hz, dimensions: 28.5 x 21.8 x 50cm. Main unit: 69.2 x 43 x 10.9cm. Features: electronic clock with LED display for auto recording. Free stop dust cover. Price: £417.33 (plus VAT).

SM-3100

Belt drive turntable with MM cartridge, auto cut device. Amp. output: 2 x 8W into 8 ohms. THD: 1%. Radio tuner covers FM, L, M. Cassette deck with twin recording level meters, tape counter, tape select button. Speakers each measure 27.5 x 47 x 19cm. Main unit measures 69 x 36 x 20cm. Price: £248.00 (plus VAT).

SM-3150

Music Centre with belt drive turntable, cueing lever, auto-cut. Amplifier output: 2 x 12W into 8 ohms. THD: 1%. Radio tuner covers FM, L, M. Cassette deck with Dolby, twin recording level meters, tape counter, tape select, memory rewind. Two-way speakers measure 27.5 x 47 x 19cm. Main unit in walnut measures: 69 x 36 x 20cm. Price: £284.00 (plus VAT).

SM D30

Separate cassette/turntable (SR-F225), four wave-band radio with six preset FM stations, LED digital clock timer, Dolby. Output: 25W per channel. Price: £510.60 (plus VAT).

**Toshiba SM 3750****Waltham STM 55****SM-4750**

Music Centre with amplifier output of 44W per channel. FR: 20Hz-40kHz. THD: 1%. Radio tuner covers FM, MW, SW, LW. Dolby. W and F: 0.045%. Main unit measures 69.2 x 43 x 10.9cm. Features: quartz synthesiser, 32 presets. Price: £596.52 (plus VAT).

WALTHAM

Waltham Electronics (UK) Ltd,
155-159 Queens Road, Watford,
Herts. WD1 3QH.

Tel: Watford(0923) 24543.

STM 55*

Music Centre with BSR P182 record deck. Amplifier: 12.5W per channel. Radio tuner covers FM, L, M, S. Waltham cassette deck with twin VU meters. Speakers in simulated veneer measure 23 x 15 x 35.5cm. Main unit in black with silver trim measures 66.8 x 39.4 x 19.7cm. Features: hinged acrylic dust cover, built-in cassette storage compartments, chromium dioxide tape facility and noise reduction system. Headphone socket. No rec retail price.

STM 70

Music Centre with BSR 3 speed deck and SC11M or TC11M cartridge. Amplifier: 2 x 8W.

Radio tuner: VHF, L, M, S. Tape deck: W and F: 0.15%. Speaker dimensions: 23 x 15 x 35.5cm. Main unit in black with silver colour front panel measures: 52 x 36.7 x 17cm. Features: stereo indicator, LED clock can be pre-set to play or record.

STM 50

Music Centre with BSR P207 deck. Amplifier output: 5W into 4 ohms. THD: 10%. FR: 30Hz-14kHz ±3dB. Radio tuner: FM, L, M. Tape deck W and F: 0.2%. Speaker dimensions: 22.9 x 15.2 x 35.6cm. Main unit in dark brown with silver coloured fascia measures 58.4 x 43.2 x 12.7cm. Features: 12 hour Digitron clock which acts as a time unit only.

WYE ELECTRONICS LTD

27 Station Road, Brimington,
Chesterfield, Derbyshire.

Tel: Chesterfield(0246) 70297.

SMC 9008

Music centre with amplifier output of 15W per channel into 8 ohms. FR: 20Hz-20kHz. —3dB. Radio tuner covers FM, L, M. Tape deck with W and F: 0.15%. Two way speakers each measuring 50 x 28.5 x 20.9cm.



Audioophile Edition

The finest record and tape care accessories in the world



CASSETTE TAPE SLICER

Invaluable for repairing broken tapes or for accurate tape editing. Fitted with clamps for holding tape while diagonal or butt splices are made. Suitable for recording tape of any thickness.

Ref 24-AE £5.47

1/4" RECORDING TAPE SPLICER Ref 20-AE £5.47



STYLUS CLEANER

A delicate cleaning brush removes harmful deposits from the stylus tip. The built-in mirror enables stylus inspection and makes cleaning easy with special formula liquid supplied.

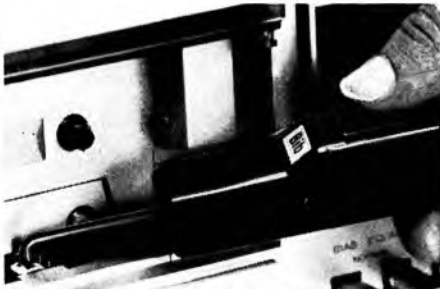
Ref 112-AE £3.98



RECORD CLAMP

Fits over centre spindle on single play decks and is locked in position creating a firm bond between the record and turntable. This helps to flatten warped records and eliminates record vibration.

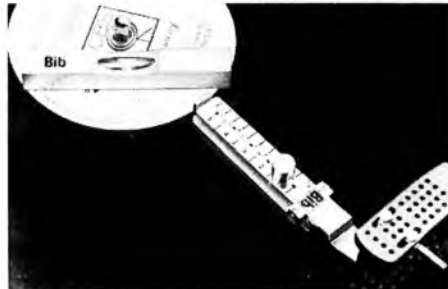
Ref 118-AE £5.47



TAPE HEAD DEMAGNETISER

Suitable for demagnetising the heads of all tape recorders. Supplied with two removable probes so that all machine heads may be reached. The Demagnetiser has a built-in switch which automatically switches off when not in use. Attractively styled and simple to use.

Ref 90-AE £8.74



STYLUS BALANCE AND DECK LEVEL

Uneven record decks and incorrect stylus pressure can lead to record and stylus wear. This precision-made stylus balance is calibrated to be accurate within 1/4 gram, from 1/4 to 5 grams. The record deck level shows at a glance if your deck is uneven.

Ref 117-AE £5.47



RECORD VALET

A hand-held record cleaner which gently and safely removes dust and dirt from record grooves, at the same time providing an anti-static effect. Anti-static liquid supplied for reservoir.

•Ref 110-AE £5.47



GROOV-KLEEN (PARALLEL TRACKING)

The light weight velvet covered roller and tracking brush track across the record grooves and collect all unwanted dust and dirt as the record plays, without adding any extra weight or making any noticeable effect on sound quality. Easy to install and suitable for all single play record decks.

*Ref 101A-AE £5.47



TAPE HEAD CLEANER

A unique multi-angled cleaning tool which is suitable for all types of tape recorders, for removing tape oxide, dust and dirt from all tape heads, capstans and pinch rollers. Supplied with inspection mirror, cleaning brush, bottle of cleaning fluid and replacement cleaning tips.

†Ref 115 AE £5.08



GROOV-STAT ELECTRONIC 3000

An electronic static reducer which safely and effectively neutralises static charge on gramophone records. Operated by a simple push-button which causes a continuous stream of ionised air to discharge the static. A flashing light and audible tone indicates that the battery powered unit is operating.

Ref 3000-AE £9.55

STATIC TESTER Ref 94-AE 99p

In difficulty send direct, plus 40p p & p. All prices include VAT



• Pat Pending Ref Des No 982790. † Pat Pending • Pat. Pending Reg Des No 981808
Bib Hi-Fi Accessories Ltd., Kelsey House, Wood Lane End, Hemel Hempstead, Herts. HP2 4RQ
Bib Hi-Fi Accessories Inc., 1751 Jay Ell Drive, Central Park, Richardson, Texas 75081, U.S.A.

PICKUP AND RECORD ACCESSORIES

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

D.50 Discoduster

A comprehensive record cleaning kit with balanced aluminium arm, impregnated cylinder and superfine groove brush. The weighted base can be permanently fixed or used free standing, and the two pivots with choice of arm location enable the Discoduster to be used with a wide variety of automatic, or transcription type decks. Supplied with two replacement treated cylinders, and fluff removing brush. Price: £2.50 (plus VAT).

A.114

Completely cabineted mains operated stereo preamplifier suitable for low output magnetic cartridges, tape head, etc. On/off switch. Tape/phono input selection, pilot lamp. Input impedance: up to 70K, crosstalk: -40dB, noise ratio -45dB. Input: 60mV max. Output: 2V. Price: £10.90 (plus VAT).

R.50 Cassette head cleaner

Simple-to-operate head cleaner which removes dust, dirt and oxide and maintains high polished surface on tape heads. Top pack presentation. Price: 45p (plus VAT).

■ ADC

BSR Ltd,
Powke Lane, Cradley Heath,
Warley, West Midlands B64 5QH.
Tel: Cradley Heath (0384) 65191.

ADC Sound Level meter

With pink noise frequency test record. Accessory for ADC frequency equalisers.

Stabiliser Weight

Low frequency 500g.

Slide Adaptor

Diecast SME type.

Extra headshell

Carbon fibre extra headshell for ADC LMF-2 Carbon fibre tonearm. Also low mass magnesium headshell.

■ AUDIO PACKS

Tape Recorder Spares Ltd,
206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844.

Audio Packs

Pre-packed spares and audio accessories.

Connecting cords

Cables of various types with plugs, sockets and other terminations covering all equipment in use for domestic radio.

Adaptors

Convert from any type of plug or socket termination to any other type.

Audio spares

Plugs, sockets, chassis mounted components, fuses and audio accessories. Pre-packed for counter or showroom display.

Mains units

Three different 4.5-9V battery eliminators complete with connecting leads for use with all standard battery-operated tape recorders and radios. Full specifications on request.

Sound selector units

A range of five units for routing signals to phones, speakers and amplifiers. Four of the units provide for the selections of up to three pairs of stereo headphones or up to three pairs of speakers. The fifth unit, model HZ793, provides facilities for connecting any three signal sources to any three amplifiers. Particularly suitable for demonstration purposes in showrooms and for comparative tests. Prices on request.

■ AUDIO TECHNICA

Harman UK,
St. Johns Road, Tyler's Green,
High Wycombe, Bucks HP10 8HR.
Tel: Penn (049 481) 5331.

AT 6008 Rotary Disc Cleaner

Complete with cleaning solution reservoir with special double layered padding construction which enables it to apply cleaner evenly over entire record. Price: £3.36 (inc. VAT).

AT 6010 Record Cleaning Kit

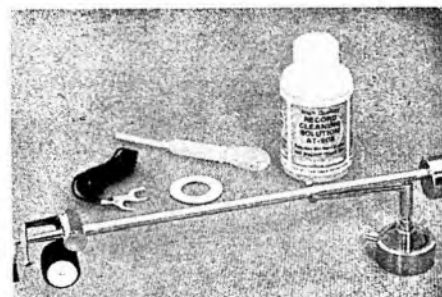
Special cleaning solution AT 6008, included in kit, is effective in loosening coagulated dirt in the groove. Price: £2.55 (inc. VAT).

AT 6003 Tri Capsule

Stand with thick acrylic covers which will hold up to three spare cartridges in headshells. Price: £4.58 (inc. VAT).

ATS Standard Headshell

For 1005 arm. Weight: 8g. Price: £4.16 (inc. VAT).



Audio Technica AT 6002

ATN Light Headshell

Price: £2.81 (inc. VAT).

ATD Headshell for AT1009 Arm

Weight: 7g. Price: £6.24 (inc. VAT).

AT 6002 *

Improved Autocleanica. Sweep arm. Conducting arm and brush with grounding wire, dissipates static charges. Supplied with record cleaning solution AT 608. Price: £4.58 (inc. VAT).

AT 605

Acoustic insulators. For use with turntable or speakers, will effectively neutralise both vertical and horizontal vibrations and minimise acoustic feedback. Adjustable for height, set of four complete with turntable spirit level. Price: £14.49 (inc. VAT).

AT 607

Stylus cleaner. Powerful cleaning solution, which effectively cleans the stylus. Small brush is attached to bottle cap for convenience. Price: £1.20 (inc. VAT).

AT L2

Oil lift, for use in conjunction with AT 1005 II arm. Price: £7.07 (inc. VAT).

MG 10

Anti-resonance magnesium head-shell, universal fitting. Price: £6.60 (inc. VAT).

AT 618

Disc stabiliser—designed to improve resistance to vibration and increase inertia thus improving the stability of the speed of revolution. Audio Technica claims that in properly tuned audio equipment it increases the firmness of the sound image and the depth of field of the reproduced sound. Particularly effective with good budget priced turntables. Price: £11.33 (inc. VAT).

AT 609

Ultra low-loss cartridge to headshell wiring featuring gold plated connectors to minimise corrosion. 99.99% pure silver Litz wire conductors for lowest resistance, lowest noise and maximum signal conductivity. Replaces all inefficient conventional connectors. Price: £2.48 (inc. VAT).

AT 620

Vital Link phono to phono lead giving maximum fidelity when used between source/amplifier and inter-amplifier connections featuring gold plated phono plugs for minimum corrosion; low capacity foam dielectric for minimum high frequency loss and minimum phase shift; braided sheath plus conductive propylene outer for superior RF shielding and hum protection; Litz wire inner conductor for superior signal conductivity. Price: £16.67 (inc. VAT).

AT6012

The Sonic Broom—a very special disc cleaner—full record width, humid leading edge collects large particles, controlled fibre size of mid section gets deep into the groove to remove smaller particles while rear edge removes residue left on record surface by most cleaners. Price: £5.23 (inc. VAT).

AT615

Spirit level—essential for correct turntable operation since turntables should be level to operate correctly. Price: £6.17 (inc. VAT).

AT610A

Improved low capacitance phono lead for turntable/amplifier connections reduces spurious noise and capacitive effects between pick up and equaliser circuitry. Price: £3.06 (inc. VAT).

AT606

Heavy duty audio insulator set, for use with speakers or turntables weighing 16 to 32kg. Adjustable for height and designed to absorb both horizontal and vertical vibration. Complete with spirit level. Price: £16.48 (inc. VAT).

AT6004

Telescopic record cleaning arm—easy to install on virtually any size of turntable or music centre. Price: £6.17 (inc. VAT).

AT608II

Improved anti-static fluid. Price: 75p (inc. VAT).

AT6010A

Modified and improved disc cleaner. Price: £3.19 (inc. VAT).

AT6010B

Hand disc cleaner. Price: £15.68 (inc. VAT).

PDQ

Complete record care kit comprising AT 6002 cleaning arm, anti-static fluid, hand disc cleaner, stylus cleaning solvent in presentation pack with compartment for cartridge of choice if required. Price: £10.63 (inc. VAT).

MS 10

Magnesium solid anti-resonance headshell with sterling silver Litz connectors—weight 10g Price: £12.36 (inc. VAT).

MG 9

Magnesium solid anti-resonance headshell with sterling silver Litz connectors—weight 9g. Price: £10.29 (inc. VAT).

LT 12

Aluminium solid anti-resonance headshell with sterling silver Litz connectors—weight 12g. Price: £10.29 (inc. VAT).

AT6005

Pneumatic cueing mechanism with remote control for use with tonearms where mounting is coupled to platter mounting causing vibration when cueing records with tonearm mounted cueing lift. Price: £11.72 (inc. VAT).

AT602

Replacement brush and roller set for AT 6002. Price: £1.59 (inc. VAT).

AT608

Supply of anti-static fluid for use with record cleaning devices. Price: 60p (inc. VAT).

■ **BASF**

BASF United Kingdom Ltd,
Audio/Video Tapes Division,
2-4 Fitzroy Street, London W1P 5AM.
Tel: 01-388 4200.

Checkpoint Accessories for Records

Stylus Cleaning Fluid 36p; Record cleaning arm £3.00; cleaning pad £2.10; cleaning cloth 28p; handling pad 56p; stylus cleaning kit £1.04; turntable levelling kit £2.28; replacement roller and brush 40p; record care kit £3.70; deluxe record care kit £6.44; record and cassette care kit £7.06; professional splicing deck £6.62; comprehensive cassette care kit £6.04 (all plus VAT).

■ **BIB**

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts HP2 4RQ.
Tel: Hemel Hempstead 61291.

Model 42

Record cleaner consisting of an aluminium arm with integral rest, fitted to a self-adhesive base, with a brush and velvet roller attached. Price: £2.99 (inc. VAT).

Model 45 Auto-changer Groov-Kleen

Finished in chrome and fits most units with flat top cartridge housings. Complete with velvet and stylus cleaning brush. Price: £1.59 (inc. VAT).

Model 43 Record care kit

Contains Groov-Kleen in chrome finish, record dust off, spirit level, stylus and turntable cleaner. Price £4.55 (inc. VAT).

Model 32A Stylus balance

Made from non-magnetic material and fitted with non-scratch base. Measures from 1/4 to 5g and calibrated to be accurate to within 1/4g. Simple to use and supplied with full instructions. In presentation case. Price: £2.28 (inc. VAT).

Ref: 71 Record Dust-Off

For removing dust and dirt quickly and simply from records to reduce record and stylus wear.

Measuring just over 5in, it is convenient to hold in the hand and covers the full width of record grooves, making it easy to remove surface dust by applying gently to the record as it revolves. Supplied with protective cover. Price: 99p (inc. VAT).

Ref: 69 Anti-Static Liquid

Non-flammable, non-toxic, ideal for cleaning tape heads, record styli, glass, plastic and colour TV screens. Price per two bottles: 99p (inc. VAT).

Ref: 102 Stat-Kleen Anti-Static Turntable Mat

A most effective way of removing static-charge from records immediately the record starts to play. The mat can be suited to fit all turntables and is placed over, or replaces, the existing mat. Price: £3.29 (inc. VAT).

Ref: 105 Music Centre Care Kit

An all-in-one record and cassette care kit, comprising Bib Groov-Kleen, cleaning brush, stylus cleaner, record dust-off, cassette head cleaner, re-record tabs and extractor tool, pack of replacement cassette title labels. Price: £6.53 (inc. VAT).

Ref: 101B Bib Groov-Kleen (Parallel Tracking)

Easy to install, the Bib Groov-Kleen is supplied with two types of base and two height extensions to suit any modern single play record deck. While records play, the delicate brush lifts out dirt (from the record grooves) which is then collected on the velvet roller. The brush and roller are housed on a lightweight carrier which tracks across the record at the same speed as the tone arm. A separate brush for cleaning the velvet is provided. Supplied complete with spare roller and brush, packed in a permanent storage case. Price: £4.69 (inc. VAT).

Ref: 44 Bib Record Level*

Maintains a perfectly level turntable, thereby preventing unnecessary wear on styli and records. Triangular in shape the Bib level is centrally positioned over the turntable spindle and has two spirit bubbles for accurate and easy checking. Made of durable plastic. Price: £2.51 (inc. VAT).

Static Reducer Electronic 3000AE

Gives controlled operation with both audio and visual signals, being a safe way of neutralising static charge. Electronic 3000 is battery powered and operates from a single HP11 cell. Both audio and visual signals indicate that the instrument is functioning correctly, and length of discharge time is under direct control by means of a simple push button. 3000 comes in a permanent storage box complete with free static tester for use before and after Bib Groov-Stat treatment. Price: £9.55 (inc. VAT).



Bib record and stylus cleaning kit Ref 64.



Bib Record level Ref 44

Record and Stylus Cleaning Kit Ref: 64*

Suitable for all records and styli. Comprises BIB record roller cleaner in dust free storage container, cleaning brush and anti-static fluid. Price: £2.12 (inc. VAT).

Record Valet Ref: 110AE

Handle incorporates reservoir for anti-static fluid. Removable brush searches out dust from the record grooves. Top and base cover of steel. Comes complete with 22cc bottle of anti-static fluid, pad cleaning brush. Price: £5.47 (inc. VAT).

De-Luxe Record Care Kit Ref: 107

Contains Groov-Kleen, Stylus cleaner and record dust-off. Price: £6.88 (inc. VAT).

Ref: 3000-AE Groov-stat

Electronic static reducer which neutralises static charge on records. Operated by simple push-button it causes a continuous stream of ionised air which discharges the static on any record placed before it. Flashing light and audible tone indicates that unit is operational. Battery operated. Price: £9.55 (inc. VAT).

Ref: 118-AE Record clamp

Fits over centre spindle on single play decks and is locked in position creating a firm bond between record and turntable. This helps to flatten warped records and eliminates record vibration. Price: £5.47 (inc. VAT).

Ref: 101A-AE Groov-Kleen (Parallel tracking)

Auto record cleaner which removes dust from surface while disc is playing. Lightweight velvet covered roller can be easily removed for cleaning. Suitable for all single play decks. Price: £5.47 (inc. VAT).

Ref: 117-AE Stylus Balance and Deck Level

Uneven record decks and incorrect stylus pressure lead to unwanted wear. This stylus balance is calibrated from ¼ to 5g and the record deck level indicates at a glance an uneven deck. Price: £5.47 (inc. VAT).

Ref: 110-AE Record Valet

Hand-held record cleaner and anti-static liquid. Brush detects dust in the grooves and deposits it on a soft velvet pad. Price: £5.47 (inc. VAT).

Ref: 112-AE Stylus Cleaner

Delicate cleaning brush with built-in mirror and liquid supplied. Price: £3.98 (inc. VAT).

Ref: 102-AE Anti-static Turntable Mat

Removes static charge from records as they play. Designed to fit all turntables and can be placed over, or replace existing turntable mat. Price: £3.29 (inc. VAT).

AF6-AE Record and Tape Care Fluids

Replacement bottles of fluid for all Bib Audiophile Edition kits.



Denon AU-310

Ref: 116-AE Disc Care Kit

Complete kit for record maintenance containing static reducer, record valet, stylus cleaner with inspection mirror. Price: £17.48 (inc. VAT).

Ref: 94-AE Static Tester

When record is placed within 5mm of the probe, movement of silver leaves denotes presence of static. Price: 99p (inc. VAT).

■ BSR

BSR Ltd.
Powke Lane, Cradley Heath,
Warley, West Midlands B64 5QH.
Tel: Cradley Heath (0384) 65191.

Cartridge Carrier

Quick-change slide-in carrier. Permits changing or inspecting cartridge easily and quickly without interfering with wiring. Models to suit all BSR McDonald pick-up arms (except 210 mini-changer).

■ CONDOR

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

C-113 Music Centre Care System

Presentation pack comprising record cleaning arm, disc wipe, record/stylus cleaning fluid with brush, cassette head cleaner, polishing stick and tape cleaning fluid. Price: £4.77 (plus VAT).

C-106 Record Care System

Cleaning arm, disc wipe, record/stylus cleaning fluid and stylus brush. Price: £3.45 (plus VAT).

C-100 Auto record cleaning arm

In bright chrome and black with 8-position roller, weighted base for free or permanent standing, brush tufts honed to a point enabling efficient sweeping and tracking action. Price: £2.40 (plus VAT).

C-116 Mini Record Care System

Record cleaner, cleaning cloth, 30cc bottle of record/stylus cleaning fluid and stylus brush in a kit. Price: £1.38 (plus VAT).

C-101 Record Cleaner

Newly designed record cleaner with two openings for adding fluid and stylus brush incorporated in the top. Price: 85p (plus VAT).

C-103 Stylus Cleaning Brush

Price: 12p (plus VAT).

C-119 Anti-Static Mat

Fibre mat for all turntables. Presented in record sleeve for use as point-of-sale literature. Price: £2.16 (plus VAT).

C-69S Record Stylus Cleaning Fluid

Price: 36p (plus VAT).

C92

Micron 8. New conductive fibre record cleaner uses a million tiny conductive fibre filaments to discharge dust particles from the base of the record grooves. Price: £4.40 (plus VAT).

C95

Stylus cleaning kit. 30cc bottle of anti-static record fluid plus stylus cleaning brush. Price: 55p (plus VAT).

C104

Record cleaning cloth. Cleaning cloth made of best quality material impregnated in order to

remove dust and reduce static on records. Price: 35p (plus VAT).

C108

Carbon auto record cleaning arm. Special features: carbon fibre brush head, lambs wool roller, earthing wire for reduction of static, weighted base for free or permanent mounting, adjustable pivot to suit most players, spare roller and free carbon fibre stylus brush. Price: £3.45 (plus VAT).

■ DENON

Eumig (UK) Ltd.
14 Priestley Way, London NW2 7TN.
Tel: 01-450 8070.

AU-320 Cartridge Transformer

Change-over between two cartridges and among two different impedances and "Pass" can be made by handling front switches. High S/N ratio is achieved by triple shielding. High performance secured by low-capacitance output cord and gold plating terminals. Flat wide band characteristic and excellent phase characteristic enables it to reproduce discrete 4-channel discs. Step-up ratio: 1/10, primary imp: 3 ohms, secondary imp: 4 ohms. FR: 10Hz-100kHz ± 1 dB. Dimensions: 9.7 x 6.5 x 15.5cm. Typical Market Price: £79.00.

AU-310 Cartridge Transformer *

With "Pass" position. Selection is possible between transformer circuits by handling front switch, convenient when MC-type and MM-type cartridges are mounted alternately on a single tone arm. Compact high performance transformer and high S/N ratio is ensured by double shielding and low-capacitance output cord. Step-up ratio: 1/10. Primary imp: 4 ohms, Secondary imp: 4 ohms. FR: 20Hz-40kHz ± 1 dB. Load imp: 50k. Dimensions: 5.1 x 5.3 x 18.1cm. Typical Market Price: £55.00.

■ DIAMOND STYLUS

DSC (Consumer Products) Ltd,
Colwyn Bay, North Wales LL28 5HD.
Tel: Colwyn Bay (0492) 40202/3.

Rotary Disc Cleaner

Bristles of the brush sweep up the dust for the silicone rubber roller to collect. Cleaner reaches into the record grooves for thorough cleaning. Cleaning and replacement is a simple process.

Stylus Cleaning Fluid

Suitable for all makes of styli.

■ DISC-A-VAC

Janorhurst Ltd,
Century House, Shortmead Street,
Biggleswade, Beds.
Tel: Biggleswade (0767) 314252.

Disc-A-Vac *

Recording cleaner on vacuum principle sucking air in through the top vent and blowing out dust through rear vent. As record revolves velvet pads clean the grooves and carbon fibre bristles remove majority of static. Full details included. Price: £19.90 (plus VAT).

■ EAGLE

Eagle International,
Precision Centre, Heather Park Drive,
Wembley HA0 1SU.
Tel: 01-902 8832.

PRE402

Mains-powered stereo pickup pre-amplifier for

magnetic cartridges including Eagle LC 05 and LC 07. Provided with dual phono sockets. RIAA equalisation.

FF2 Stereo pickup amplifier

Designed for use with magnetic cartridges, having RIAA equalisation. Fitted with phono socket input and outputs. Powered by a PP3 battery or equivalent.

HS 200

Replacement headshell, lightweight type, matt black finish, standard connector and colour-coded leads.

ELECTROLUBE

QED Audio Products Ltd,
Unit 12, Ashford Ind. Estate,
Ashford, Middlesex.

EL2 Record Clean*

When sprayed on disc Record Clean neutralises static charge, the solvent frees dust particles embedded in grooves, and dry lubrication ingredient allows stylus to track grooves with minimum resistance. Price: £1.81.



Disc-a-Vac



Electrolube Record Cleaner

EMI

EMI Tape Ltd,
Tape House, Dawley Road,
Hayes, Middlesex.
Tel: 01-573 3888.

Record Cleaning Arm

To remove dust and static from the record a split second before stylus tracks the groove. Replacement pack available.

Record Ioniser Fluid

Slow-drying anti-static fluid formulated for use with Record Cleaning Arm. Roller pad retains sufficient moisture to clean records being played without leaving surface residue.

Stylus Cleaner and Brush

Disposes of dirt particles and extending life of stylus.

Record Care Kit

Comprehensive package containing Record Cleaning Arm, Record Ioniser, Stylus Cleaner, Brush and Record cleaning roller.

Cleaning Pad

Four-sided cleaner with nylon plush pile surface.

Cleaning Cloth

Easy to use and helps maintain records in top condition.

Anti-Static Mat

Helps to eliminate static and improve sound. The mat neutralises negative charge in record so reducing interference.

EXPERT PICKUPS

PO Box No. 3, Ashtead, Surrey KT21 2QD.
Tel: Ashtead (037 22) 76604.

Stylus Replacement Services

For all makes of cartridge including magnetic and moving coil.

78 rpm Records

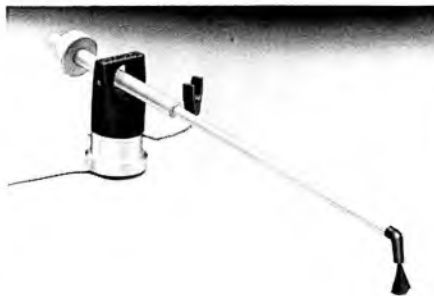
Stylus range for all periods including Edison, Pathe, etc. Advice available as to the best method of reproducing old 78 rpm records. Diamonds and sapphire styli made to original specifications.

GOLDRING

Goldring Products Ltd,
Anglian Lane,
Bury St. Edmunds IP32 6SS.
Tel: Bury St. Edmunds (0284) 64011.

Exstatic Turntable Mat

Anti-static carbon-fibre impregnated felt mat which reduces positive charge on disc, enabling dust to be swept away easily. Price: £3.60 (plus VAT).



Goldring Ex-static carbon fibre sweep arm.

Exstatic Disc Cleaning Brush*

Carbon fibre filaments penetrate into grooves removing deeply ingrained dust as well as surface dust. Price £6.00 (plus VAT).

GROOVAC

R.I. Audio,
Kernick Road, Penryn,
Cornwall TR10 9DQ.
Tel: Penryn (0326) 72753.

Groovac Mk V*

Anti-static vacuum record cleaner which consists of a precision lightweight arm and a suction unit acoustically isolated in a special enclosure, fitted with mains switch and indicator. Tracking force 0.4g. The nozzle is fitted with two brushes—one, an earthed carbon fibre brush to discharge static electricity and the other with fine hairs to facilitate removal of dust from the bottom of grooves. Counterbalanced and with integral rest incorporating anti-skating device. Fixes by magnetic base or self adhesive pad. Price: £19.95 (inc. of VAT and postage).

G. F. C. HADCOCK

Audio Division, The Old Vicarage,
Doveridge, Derby DE6 5NN.
Tel: Uttoxeter (088 93) 2452.

GH Uni-lift Mk III*

Raising and lowering device suitable for most pickup arms. Two-hole fixing for stability. Complete with template for easy installation. Screw adjustment of horizontal arm. Damped adjustable rate of descent ensures accurate lowering and cueing. Price: £8.50 (plus VAT).

HOWLAND-WEST

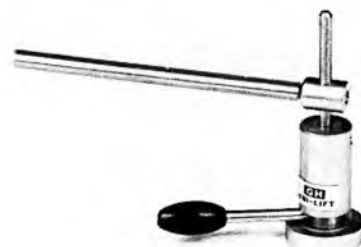
Howland-West,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293.

Alignment Protractor

Made in laminated perspex. Provides facilities for checking (1) vertical tracking angle, (2) lateral tracking angle and (3) channel balance and separation. Price: 80p (plus VAT).



Groovac Mk V



Hadcock GH Uni-lift

"AntiStat" Record Cleaner

A record cleaning device using a piezoelectric quartz crystal giving ionisation from a double element, complete with built-in velvet pad and nylon fibre brush. Designed for easy handling, finished in black, and supplied with separate stiff brush for cleaning velvet pad. Price: £5.25 (plus VAT).

■ **KEITH MONKS**

Keith Monks (Audio) Ltd,
26-28 Reading Road South,
Fleet, Aldershot, Hants.
Tel: Fleet (025 14) 2056819.

KMAL/S/BA — Record Sweeper

High quality brush assembly with antistatic lead and animal hair, variable height adjustment. Price: approx £7.80 (plus VAT).

KMAL/S/DLK Damped Levelling Kit

Set of four adjustable feet for turntable with spirit level. Price: approx £6.20 (plus VAT).

RCM Mark 2 — Record Cleaning Machine

Single Version Record Cleaning Machine process involves application of alcohol and distilled water; the liquid plus dirt is then removed by vacuum action. Used by broadcasting companies, sound studios, gramophone libraries, hi-fi and record shops and private enthusiasts. Price: approx £752.00 (plus VAT). Plastic cover £36.40. 1,000 sleeves with special high density plastic inners £45.00. Special spares pack for Record Cleaning Machine £38.00 (plus VAT).

RCM Mark 3

As above but twin deck version. Price: approx £1,040.00 (plus VAT). Plastic cover £47.60. List of approved record cleaning centres available on request.

KMAL/S/PBA Pivot Sweeper

Similar to Record Sweeper but with unipivot base. If required the base may be fixed to record deck. Incorporates an antistatic lead. Brush is of animal hair. Price: approx £7.20 (plus VAT).

KMAL/S/SL Spirit Level

A small round spirit level to aid levelling of record deck. Price: approx £1.75 (plus VAT).

KMAL/RCK. Record Cleaning and Stylus Maintenance Kit

Incorporating a disc preener and antistatic fluid. This kit also includes a stylus brush to aid stylus hygiene. Price: approx £1.70 (plus VAT).

KMAL RW50. Record Weight *

To prevent the stylus receiving unwanted resonances, this weight is placed over the record

on the turntable. This will help ensure even support throughout the record's area. It will also help create good disc to mat contact, necessary for high quality reproduction of discs. Price: approx £4.40 (plus VAT).

KMAL/S/RW50 *

Special limited edition. Stainless steel record weight in presentation box and metal 50Hz strobe. Price: approx £22.50 (plus VAT).

■ **KNOWIN**

Knowin (UK) Ltd.
Knowin House, 37 Churchill Way,
Fleckney, Leicestershire LE8 0UD.
Tel: Leicester (0533) 403331.

Archifix Boxes

Polystyrol boxes measuring 35 x 32 x 18cm available in a variety of colours, each storing 50 LP's. Single boxes may be systematically arranged in various ways either horizontally or vertically. If required they can be used for the construction of large shelf-walls for music shops or large collections. Connecting strips reinforce shelf construction and give the impression of an integral unit.

Archi-Boy 30cm

A box for 30 LP's measuring 35 x 32 x 12cm in polystyrol available in white, red or black. Units can be stacked, fixed to walls and given an integral appearance by use of connecting strips. Archi-Boy can be used with original Archifix.

Archifix Box 17cm

Mini-box with four partitions to hold 80 singles measures 20 x 19 x 27cm. Made of polystyrol and available in a variety of colours. May be integrated into the Archifix filing system.

"L" Racks

Will take up to 30 LP's. Measurements 33 x 33 x 15cm in polystyrol and available in a variety of colours. They can be free standing or wall mounted. Single stander 17cm will take approx 50 singles and measures 18 x 18 x 15cm.

Blatter Max

Facilitates choice of records. A polystyrol rack available in 30cm for LP's or 17cm for singles.

Disc-Case

Carrying case in range of colours to meet any taste. Designed for record carrying but also useful as a multipurpose case. Measures: 33.5 x 40 x 9cm. Made of polystyrol.

Disc-Antistatic K3000 *

Special liquid antistat mixture which removes dust, dirt or wet/dry liquids from the record surface without leaving residue. Reduces static charge. For this special liquid Knowin has designed a record washing device comprising record bath, funnel, sieve and ten filters to clean liquid after use.

Other Products

Above are only some examples of Knowin record and tape care. Full catalogue is available.

■ **LEDA**

Leda Audio Accessories Ltd,
7 Thane Works, Thane Villas,
London N7 7NU.
Tel: 01-607 1107/8.

LA 39 Combi-Cleaner

Record cleaners with access to apply Leda record cleaning fluid (LA 11). Safe, efficient record and stylus care.

LA 16 Record Cleaning Arm

Finished in black and silver, this arm complements most modern turntables. Adjustable height, minimum counterbalance overhang, and light tracking, make this a most useful and effective accessory.

LA 29 Record Supa-Care Pack 1

Plush velvet disc wipe, record handling grip, fluid and brush, are the record and stylus protection products stored in this custom made storage case.

LA 40 Hi-Fi Care Compendium

This comprehensive set of Audio Care items includes: Self-tracking Cleaning Arm, Disc Wipe, Cassette Head Cleaner, Cloths, Brushes and Fluids. Complete Hi-Fi maintenance kit for the Audiophile, assembled in a large illustrated presentation pack.

LA12 Stylus Cleaner

Compact 20cc container with stylus cleaning brush incorporated effectively and safely removes residue from stylus assembly.

LA13 Record Spray Pack

Record Spray fluid applied with sponge applicator gives new lease of life to older records in particularly dirty condition by mild washing action. Stylus brush included.

LA30 Music Centre Care System

Record cleaning arm is incorporated in the system, which also includes humid record cleaner, cassette head cleaner, hi-fi cleaning fluid and tape head polishing tool. Comprehensive music centre care.

LA38 Micron 8 Carbon Fibre Record Cleaner

Highly effective record cleaning medium is constructed with a million tiny fibre filaments to form a brush that can reach deeper into the groove than almost any other material. Conductive properties of the carbon fibre provide an effective discharging effect.

LA24 Microtrac Carbon Fibre Cleaning Arm

Microtrac cleaning arm complements LA38 Micron 8 record brush. Microtrac uses a small



Keith Monks Record Weight limited edition.



Knowin K3000



Leda LA 43 Carbon Fibre Record Care System.

brush made up of 25,000 fibre filaments permanently attached to a small headshell. The arm itself is adjustable for height and telescopically for length. With these adjustments, the user can be assured of the most effective tracking. When the arm is installed on the turntable, the earthing lead included may be attached to a suitable earthing point, i.e. rear of audio amplifier, hence conducting static from the record surface via the carbon fibre brush.

LA43 Carbon Fibre Record Care System*

Micron 8 and the Microtrac record cleaners stored in an attractive custom-made storage case.

■ **LYRICHORD**

N. Miers & Co Ltd,
Piercing Hill, Theydon Bois,
Epping, Essex CM16 7LE.
Tel: 037-881 2611.

Cartridge carriers

Slide-in type for BDS 80, 90, 95 MP60, P128, P200. Price £2.30 (plus VAT).

Plinth

Afromosia veneered wood plinth suitable for BSR units. Price: £8.97 (plus VAT).

Dust cover

Lift off dust cover for above plinth, £5.50 (plus VAT).

Dust cover

Friction hinged dust cover for above plinth. Price: £10.90 (plus VAT).

LMG

Lightweight magnesium headshell. Price: £4.21 (plus VAT).

LMH-2

Low mass carbon fibre headshell for ADC units. Price: £7.00 (plus VAT).

■ **MAYWARE**

15 Heather Walk, Edgware, Middlesex
HA8 9TS.
Tel: 01-958 9421.

Alignment Protractor Mk II*

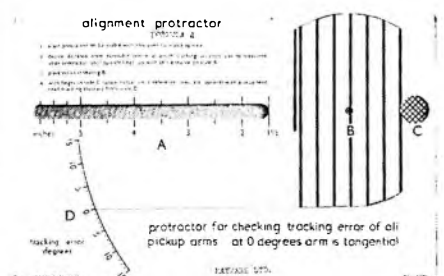
Devised by Percy Wilson to improve stereo image. Enables correct setting up of any pickup arm/cartridge combination and measures tracking accuracy over entire disc surface with Stevenson zero error points for minimum distortion.

■ **METROCARE**

Cambrasound Ltd,
Freedex House, 4-10 North Road,
Islington, London N7 9HN.
Tel: 01-607 8141.

M11A Hi-Fi Stylus Cleaning Kit

Bottle of specially developed mild solvent fluid.



Moulded plastic retaining clip on bottle for soft nylon cleaning brush. Price: 85p (inc. VAT).

M26A Ioniser

High-fidelity record cleaner. Permanently anti-static humid soft velvet enclosed in plastic moulding. Price: £1.09 (inc. VAT).

M43A Super Groovemaster

High quality record cleaning arm finished in satin anodised aluminium and contrasting black; pivoted on dye-cast free standing base. Brush supplied for cleaning velvet roller after use. Price: £3.56 (inc. VAT).

M52A Hi-Fi Kit No. 2

Moulded record cleaner with plush velvet foam backed pad held in protective tray. Bottle of record/stylus cleaning fluid and stylus cleaning brush. Price: £1.35 (inc. VAT).

M53 Hi-Fi Kit No. 3

Metrocare ioniser, record/stylus cleaning fluid and stylus cleaning brush contained in permanent moulded storage case with tinted transparent cover. Price: £2.54 (inc. VAT).

M11BA Record Care Kit

Metrocare Super Groovemaster, ioniser, record/stylus cleaning fluid and stylus cleaning brush. Price: £5.40 (inc. VAT).

M55A Autochange Groovemaster

Record cleaning device attached to pickup headshell by means of self-adhesive shoe. Finished in bright chrome plate. Whole unit weighs less than 1½g. Price: £1.68 (inc. VAT).

M66A Stylus Balance

A professional stylus balance calibrated to within 1/20g with scale divisions at 1/10g between 0 and 3g. Ensures accurate tracking weight of pickup in tone arm. Price: £3.76 (inc. VAT).

M72 Turntable Care Kit

Comprises spirit level, oiler of advanced design with special oil to reach and lubricate all bearings and moving parts, cleaning brushes and cloth and fluid for cleaning stylus and deck. Housed in a special purpose permanent storage case. Price: £4.90 (inc. VAT).

M34A Ioniser Fluid

For use in conjunction with M26 ioniser. Price: 54p (inc. VAT).

M44 Groovemaster Replacement Kit

Spare brush and roller for M43 super groovemaster cleaning arm. Price: 45p (inc. VAT).

M67A Anti-Static Aerosol Spray

Metrocare anti-static spray will reduce static

and clean surfaces of records and turntable covers. The aerosol action assists spread and penetration of the fluid. Supplied with a velvet applicator pad. Price: £2.24 (inc. VAT).

M89 Replacement Kit

Replacement brush, felt pad, self-adhesive base fixing for M90 Lintrack or M95 Super Lintrack. Price: 54p (inc. VAT).

M95A Super Lintrack

Similar to M90 but with extra-long runners, low profile base and pillar, spare roller and adhesive pad, which makes it suitable for 99% of turntables on the market. Price: £4.28 (inc. VAT).

M100A Turntable spirit level

Combines precision engineering and high accuracy needed when testing the level of transcription turntables. Visibility is greatly enhanced due to contrast provided by the black ring around the cavity and the chrome plated outer bezel. Price: £1.66 (inc. VAT).

M106 Q-up tone arm lift

Particularly suited to Thorens TD 160, TD 166 but is fully adjustable and can be installed on most manual turntables. A boon to owners of turntables which do not incorporate end of side arm lift. Action is triggered by the tone arm entering run-out groove. Tripping and lifting force are both adjustable as is height of lifting lever. Price: £6.45 (inc. VAT).

M96A Rotary Cleaner

Latest technique in record cleaning uses a soft polymer roller with a very high surface tension to lift dust from the record surface. Washing the roller with soap and water cleans it and restores its tackiness. Cannot harm record surfaces and will last for years. Price: £5.87 (inc. VAT).

M102 Record Cleaner Pad

Attractive low price cleaning aid. Price: 61p (inc. VAT).

M104A Microniser Carbon Fibre Brush

Hand-held cleaner containing approx. one million fine carbon fibres. Effectively reduces static charges and enables harmful deposits to be brushed away at the same time. Price: £6.16 (inc. VAT).

M105A Antistatic Record Cleaner

A safe and effective method for removing dirt and dust particles and reducing static from the record surface during the actual playing cycle. Features: carbon fibre brush (containing approx. 20,000 fibres), lambswool roller and earth lead. Incorporates a variable pivot adjustment by means of a knurled collet that will accommodate the majority of platter heights. The counterbalance is pre-set during manufacture to obtain the minimum possible tracking weight. Price: £5.38 (inc. VAT).

M107A Ioniser with Fluid

Combines popular ioniser (M26A) with a bottle of special ioniser fluid (M34A) in one handy pack. Price: £1.48 (inc. VAT).

M108A Anti-Resonance Record Clamp*

This high quality acrylic device provides an immediate improvement with almost any good hi-fi system—clearer and more detailed bass, improved separation in the mid-range and a better defined treble. Price: £4.54 (inc. VAT).

M114A Record Rejuvenating Fluid*

Simply apply fluid to any dirty record, allow to dry for one hour, then peel off. Removes all



Metrocare M108A Anti-Resonance Clamp.

foreign matter including fingerprints, penetrating right to the bottom of the grooves. Also contains short-term anti-static protection. Sufficient for 36 LP sides. Price: £4.24 (inc. VAT).

M120A Discguard

An everlasting anti-static treatment for records. This specially formulated fluid will give permanent protection against static charges with no detectable change in sound quality. Contains 60cc fluid sufficient to treat 40 LP records (both sides), spray pump, ioniser for buffing. Identification labels for treated records. Price: £4.50 (inc. VAT).

■ **MICRO SEIKI**

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks. HP10 8HR.
Tel: Penn (049 481) 5331.

Headshells

H505X — cast magnesium weighing 9g. £8.44;
H707X — spare headshell for MA707 arm
£5.78; H10 — cast magnesium headshell £4.89
(all plus VAT).

SE22

Heavy rubber compound turntable mat. Price:
£16.44 (plus VAT).

ST10

Brass disc stabiliser. Price: £25.33 (plus VAT).

AST05

Tonearm stabiliser. Price: £14.67 (plus VAT).

MLC12S

Silver co-axial connecting cable gold-plated 5-
pin plug to 2 gold-plated phono plugs. Price:
£48.44 (plus VAT).

MLC75

Silver co-axial connecting cable gold-plated
phono plugs at each end. Price: £48.44 (plus
VAT).

AX1

Extra tonearm mount. Price: £11.11 (plus
VAT).

AX2

Tonearm mount. Price: £26.22 (plus VAT).

■ **MONITOR**

Monitor Audio (Accessories Division) Ltd,
347 Cherry Hinton Road, Cambridge CB1 4DJ.
Tel: (0223) 42898.

POD*

Light and effective record clamp which couples
directly to turntable platter to prevent record
slippage. It also reduces intermodulation



Metrocare M114A Record Rejuvenating Fluid.

distortion, improves presence and clarity. Low mass design. Made from tough polycarbonates. Price: £6.75 (plus VAT).

■ **MUSONIC**

S & B Trading,
Stylus House, 34-38 Verulam Road,
St. Albans, Herts. AL3 4DF.
Tel: St. Albans (0727) 50611/2.

DisClens (MR8)

A soft cloth impregnated with an anti-static
preparation. One wipe removes dust and dirt
from the record, leaving it clean and static free.
This helps increase stylus and record life. Price:
45p (plus VAT).

Stylus Cleaner (MR9)

A specially prepared solution which, when
applied to the stylus tip with the brush
provided, cleans and renders it antistatic for
longer stylus and record life. Attractively
packed in a re-usable plastic wallet. Price: 60p
(plus VAT).

DisClosures (MR14)

Special heavy duty welded sleeves made from
glass clear PVC. The clarity and strength of
these sleeves make them ideal for record shop
browsers or for protecting private record
collections. Price: £18.75 per 100 (plus VAT).
MR35 double LP type £37.13; MR34 7in type
£11.00.

Disc Guards (MR15)

In plain white paper with see-through centre
and lined throughout with polythene. Designed
to fit snugly inside the printed LP sleeve and
provide extra protection for valuable LP
records. Price: £7.80 per hundred (plus VAT).

Super Active 30cc (MR16) 15cc (MR17)

This is the famous formula anti-static fluid
which produces excellent results in cleaning and
neutralising static in records and other plastic
products. The fluid can be applied with a
sponge or cloth, and is ideal for re-charging all
anti-static cleaning devices. Supplied in dropper
bottles of either 30cc or 15cc approximately.
Price: MR16 45p; MR17 38p (plus VAT).



Monitor Audio POD



Musonic MR25 Trackduster

Steel Needles (MR18)

Steel needles in packs of 20. Price: 75p (plus
VAT).

Stroboscope (MR19)

Enables check on accuracy of turntable speed.
Price: 15p (plus VAT).

Stylus cleaning brush (MA21)

Price: 15p (plus VAT).

Kleen-Sweep (MR22)

Hand-held record cleaner incorporating stylus
cleaning brush. Can be used wet or dry. Price:
£1.13 (plus VAT).

Kleen-Sweep Fluid (MR23)

Specially formulated fluid for record and stylus
cleaning to be used in conjunction with MR22.
Price: 53p (plus VAT).

Record and Stylus Cleaning Kit (MR24)

Consisting of one Kleen-Sweep with one bottle
of Fluid. Price: £1.88 (plus VAT).

Trackduster (MR25) *

Record cleaning arm fashioned in black and
chrome finish to complement any turntable.
Cleans while records are played by usual brush
and roller method. Arm height is adjustable,
and unit can be used free standing or fitted
permanently. Price: £3.00 (plus VAT).

Trackduster Spares Kit (MR26)

Price: 75p (plus VAT).

Antistatimat (MR27)

Made from carbon impregnated rubber and
therefore electrically conductive. It will drain
the static charge from a record without the aid
of fluid or cloths. Price: £2.55 (plus VAT).

Precision turntable level (MR28)

Circular spirit hubble level mounted in plastic
with transparent plastic dome. Accurate level-
ling ensures correct tracking and minimises
stylus and record wear. Can be stuck or screwed
to any deck. Price: £1.13 (plus VAT).

Hi-Fi Care Kit (MR32)

Price: £5.33 (plus VAT)

Music Centre Care Kit (MR33)

Price: £5.63 (plus VAT)

■ **NAGAOKA**

J. Osawa & Co (UK) Ltd,
10 Forge Court, Reading Road, Yateley,
Camberley, Surrey GU17 7RX.
Tel: Yateley (0252) 879121.

Stat Tissue No. 101

Paper with coating film to eliminate elec-
trostatic charge. Can also be used on plastic
materials. Price: £6.72 (plus VAT).

Static Electricity Remover No. 103

Hand held gun with transistor circuit. Ions
generated removes static electricity from discs
and since the equipment is not in direct contact
with discs no trace is left on record surface. Uses
a UM-2 battery. Indicator lamp. Price: £16.99
(plus VAT).

Anti-Static Record Sleeve No. 102

Anti-static disc file is a bag which eliminates
production of electrostatic charge. Price: £4.99
(plus VAT).

Super Rotor Stat

Special soft metal fibre brush collects static
electricity on a record disc placed in a floating
condition and removes it completely. Price:
£13.90 (plus VAT).

Wet and Dry Cleaner

A velvet cleaner with two pads, one used dry and the other slightly moistened to ensure that all dust is dislodged and swept away. Price: £6.49 (plus VAT).

RC-200 Rolling Cleaner

Roller is run smoothly over the record surface which enables it to pick up all dust and dirt from the bottom of each groove. Price: £9.99 (plus VAT).

RC-101 Rolling Cleaner

As above but with different shaped grip. Price: £6.92 (plus VAT).

Argento -4

Velvet cleaner pad. Price: £3.49 (plus VAT).

Whity 1

Velvet cleaner pad. Price: £1.99 (plus VAT).

Rondo 4

Cleans a larger area of record surface at one time compared with conventional pads. Round shape. Price: £3.99 (plus VAT).

Vertical -1 Automatic Cleaner

Unlike conventional swing-arm cleaners, the arm of the vertical cleaner is locked in the same position throughout the playing of the record while the cleaning pad rides the grooves straight across from outside to centre. Price: £7.99 (plus VAT).

Auto -1 Clean-Master

Velvet pad with long fine pile is fixed to a lightweight counterbalanced arm mounted on heavy-weight base requiring no fixing. Price: £4.99 (plus VAT).

Hi-Clean

Liquid stylus cleaner. Price: £1.69 (plus VAT).

Player-Level PL-1

Bubble-level gauge to simplify level-setting of turntable. Price: £4.49 (plus VAT).

■ **NION**

Roy Martin Freeman (RTB) Ltd.
141A London Road, Camberley,
Surrey GU15 3JY.
Tel: Camberley (0276) 20572.

Nion Dust Remover *

Incorporates a negative ion emitter which creates a negative atmosphere on existing mat.



Nion dust remover

Nion claims that Dust Remover releases dust and collects it on a velvet pad. Adjustable stand with choice of magnetic or adhesive fixing and removable trailing arm which tracks grooves accurately. Price: £19.90 (inc. VAT).

RMF40 Turntable Mat

Can be used on its own or as an addition to an existing mat. Nion claims that it is anti-static mat and reduces rumble and improves stylus tracking by minimising the stall on the record. Price: £2.90 (inc. VAT).

■ **OSAWA**

J. Osawa : Co(UK) Ltd,
10 Forge Court, Reading Road, Yateley,
Camberley, Surrey GU17 7RX.
Tel: Yateley (0252) 879121.

Diskmat OM10

High density rubber turntable mat. Price: £8.66 (plus VAT).

■ **PYSER**

Pyser Ltd.
Fircroft Way, Edenbridge, Kent.
Tel: Edenbridge (0732) 864111.

Sound Guard Cleaner Kit *

Contains a 2 fl. oz. bottle of record cleaning solution, a spray pump, cellulose contaminant extractor pad, and velvet drying pad. Refills are available separately. Price: kit £4.99 (inc. VAT), refill £2.99 (inc. VAT).

Total Record Care System

Combination kit containing all the preservative/anti-static and cleaner components. Price: £9.48 (inc. VAT).

Stylus Care Kit *

For stylus maintenance. Kit contains 1 fl. oz. bottle of stylus cleaning solution with applicator brush, soft dry stylus brush, bulb air blower and 3 x and 10 x magnifier for stylus inspection. Price: £5.45 (inc. VAT).

Work Pad

Lint-free, non-slip work surface providing a safe mat for placing records whilst cleaning them and applying preservative/anti-static. Price: £4.99 (inc. VAT).

■ **QAS**

Quality Audio Supplies,
Woollaton Road, Beeston,
Nottingham NG9 2PB.
Tel: Nottingham (0602) 256141.

Wide range of individually blister-packed audio, TV accessories including plugs, sockets, leads, connectors.



Pyser Sound Guard Range

Dusta-Disc

Counterbalanced arm to mount alongside turntable for cleaning records while playing

Record Care Kit *

Including cleaning pads, anti-static cleaning cloths (2 per pack), anti-static fluid 30cc bottle.

■ **Q.E.D**

Q E.D. Audio Products,
Unit 12, Ashford Ind. Estate,
Ashford, Middlesex.

Dice Switching Unit

Enables two record player decks to be connected and controlled without changing leads by hand. Fitted with phono sockets Size: 10 x 6.5 x 5cm. Price: £9.40 (plus VAT).

Interference Suppressors

Plug-in type which reduces interference by approx. 1,000 times. Max. current 3A, operating voltage 250V Price: on application

Light Switch Suppressor

Radio frequency interference generated by light switches and reproduced via audio system in form of clicks can be overcome by this device which is easy to fit and does not require soldering. Price on application

Dust Cover Renovator *

The Dust Cover Renovator contains a very effective scratch removal paste together with a concentrated anti-static polish, supplied complete with cleaning cloths After treatment, the dust cover really will look like new. Price: around £3.50 (plus VAT).



QAS Record Care



Q.E.D. Dust Cover Renovator.

Variable Cartridge Equaliser

Switchable ranges of resistors and capacitors allow the user to accurately match cartridge to amplifier. Complete with matching list. Price: around £16.00 (plus VAT).

■ **ROGERS**

Swisstone Electronics Ltd,
4-14 Barmeston Road,
London SE6 3BN.
Tel: 01-697 7511.

Dumpa Record Damping Anti-Rumble Mat

Constituted of several layers of polyurethane and silicone of various densities. By use of the Dumpa mat Swisstone claims that distortion is reduced and sound improved. Price: £20.12 (inc. VAT).

Anzai A75 Moving Coil Cartridge Step-up Transformer

A limited availability step-up transformer for correct matching of moving-coil pickup cartridges to a normal 47K input impedance RIAA equalised high fidelity disc input. Especially recommended for Denon DL 103, DL 103S, Entre EC-1. Koetsu, EMT, Supex 900, Supex 909 cartridges. FR: 5Hz-100K-1dB at 100K. Primary imp: to suit cartridge requiring 6-40 ohms input imp (optimum 100 ohms). Secondary Load: 47-56K. There is no secondary load resistor as the transformer has no impedance peaks which require loading down. Distortion less than 0.05%. Core: 78% mumetal; Triple Shield. Price: £99.56 (inc. VAT).

■ **ROSS ELECTRONICS**

Ross Electronics Ltd,
32 Rathbone Place,
London W1P 9AD.
Tel: 01-580 7112.

Connecting Leads

Purpose made connecting leads with a variety of end fittings that permit instant connection or extension between pickup sources and amplifiers with dissimilar input/output connectors. Display packed with header card.

Shielded Adaptors

One-piece, male/female interconnectors to provide direct connection between a wide variety of dissimilar plugs and sockets.

RE-612

Ioniser record cleaner. Anti-static velvet pad aligns ions in one direction on record surface to thus eliminate static. Also removes dust and dirt to keep records noise-free and preserve life. Price: 96p (plus VAT).

RE-614

Special formula, low-toxicity cleaning fluid for use with RE-612 ioniser record cleaner and most other types. Price: 48p (plus VAT).

RE-615

Stylus cleaning kit with purpose made brush and special cleaning fluid removes static, dirt and grit from record styli safely and completely. Price: 78p (plus VAT).

RE-616

Record care kit of ioniser, velvet pad and cleaning fluid spray removes static, dirt and grit from record surfaces to improve reproduction and preserve record life. Price: £1.38 (plus VAT).

RE-623

Record auto cleaner. Precision engineered arm with offset head pivoted on heavy, free-standing base reduces record wear and improves reproduction by removing dirt and grit from surfaces and grooves in advance of the record stylus. Anti-static liquids are not required. Price: £3.26 (plus VAT).

RE-637

Compact audio care kit containing essential equipment for the maintenance of audio systems, including music centres with automatic record decks. Kit comprises: headshell-fitting record groove cleaner, ioniser record cleaner, stylus cleaning brush and fluid, plus cassette cleaner. In fitted, plastic storage case with instructions. Price: £3.52 (plus VAT).

RE-639

Music centre care kit. All the record and cassette care equipment needed to ensure consistent, trouble-free operation from high-fidelity systems and music centres. Kit comprises: record auto cleaner, stylus brush and cleaning fluid, ioniser, record cleaner. A cassette head cleaner system and music centres. Kit and tape head cleaning fluid with tool are also included. In fitted plastic case that provides permanent storage. Price: £6.65 (plus VAT).

RE-625

Linear tracking record cleaner arm that overcomes problems that prevent the use of conventional types. In particular, high mass affecting turntable speed is eliminated by a tracking weight of less than 0.5g. Height above record is reduced to a minimum and there is no overhang to hinder operation in confined spaces. Price: £3.90 (plus VAT).

Connectors

Plugs and sockets, chassis mounting and in-line, to DIN and USA standards.

RE-627*

The Rosstat dual electron emission gun neutralises the surface of vinyl records to thus prevent the attraction of airborne particles which can cause noisy reproduction and increased wear of the stylus and record. Pressure on the trigger causes the emission of a stream of positive electrons to neutralise the negative charge on the record surface; as the trigger is released, the gun emits negative electrons which



Ross RE-627 Rosstat

are not attracted so that the record remains neutral. Ergonomically styled in white plastic with chrome-plated trigger. Price: £7.40 (plus VAT).

Stereo Preamplifier

Permits use of magnetic cartridges with amplifiers providing inputs for ceramic or crystal only. Shielded case. Phono input and output. FR: 30Hz-20kHz. Input impedance: 50K. Gain: 10mV to 0.5V output. Maximum input: 30mV. Price: £8.70 (plus VAT).

■ **R.T.J.**

R.T.J. (Electro-Mechanical) Ltd,
PO Box 67, Barnet, Herts. EN5 1QF.

Phono Equalisers *

Adaptors with built-in capacitance to enable input load for optimum response to be increased simply by plugging in line with pickup leads. Each equaliser has integral phono socket and phono plug for connecting in line, the gold plated all metal body providing complete screening for the one piece central signal conductor which is again gold plated for negligible contact resistance. A number of capacitance values are available including 220pf, 330pf, 68nf and 1.5µf. Prices per pair: £7.15 for 220pf, or 330pf, £8.90 for 68nf, £9.90 for 0.22µF or 1.5µF. Experimental set for £16.20. (all prices inc. VAT).

■ **SHURE ELECTRONICS LTD**

Eccleston Road, Maidstone,
Kent ME15 6AU.
Tel: Maidstone (0622) 59881.

SFG-2 Stylus Force Gauge

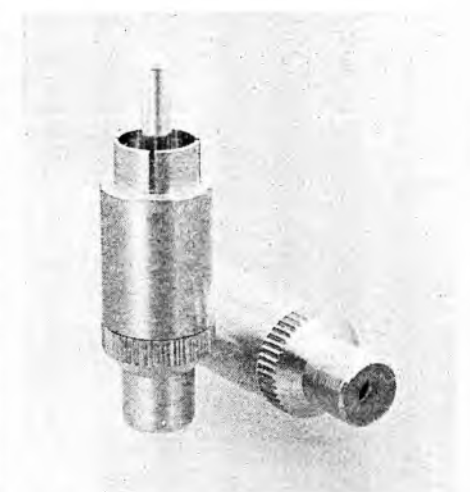
Accurate beam balance type gauge designed for measuring tracking force in the range of 0.5g to 3g. Measures existing playing weight of arm, or can be used to adjust arm to a desired tracking force. Price: £4.20 (plus VAT).

■ **SME**

SME Ltd,
Steyning, Sussex BN4 3GY.
Tel: Steyning (0903) 814321.

FD 200 Fluid Damper

Accessory for Series IIIS pickup arm. It does not resist normal slow passage of the arm across the record, but any influence which would tend to produce over-rapid arm motion is resisted because of the flow characteristic of the fluid. Benefits include smoother bass, resistance to external shock, reduction of spurious low



R.T.J. Phono Equalizers.

frequencies. Kit provides parts, fluid, instructions to apply vertical and lateral damping to Series II improved arms. Price: £21.75 (plus VAT).

FD IIS Fluid Damper

As above applicable to Series IIS arms. Price: £12.65 (plus VAT).

■ **SONY (U.K.) LTD**

Consumer Information, Sony Showroom, 134 Regent Street, London W1R 6DJ. Tel: 01-439 3874.

Head Shell SH 135

For PS 1350, 2350, 1700, 3300, 4300, 11, 22, lightweight weighing only 7.5g. Price: on application.

Head Shell SH 150

For PS 6750, HMK 70, 77. Fully compatible with most types of arm. Weight: 10.5g. Price: on application.

Head Shell SH 160*

Carbon fibre headshell weighing 12.5g with high stiffness and low resonance for low sound coloration. Ideal for moving coil cartridges. Price: on application.

RK 112/113

One metre lead, two phono plugs for connection of record deck to amplifier. Plugs are gold plated to give low contact resistance. RK 113 same but two metres long. Price: on application.

RK 114

A one metre lead, 2 phono plugs to two phono sockets, to extend record deck lead equipped with phono plugs. Low capacitance. Plugs are gold plated to give low contact resistance. Price: on application.

■ **SOUNDS PROFESSIONAL**

A division of F. W. O. Bauch Ltd, 49 Theobald Street, Borehamwood, Herts. Tel: 01-953 0091.

EARC Antistatic Record Cleaner

Combines both electrostatic and conventional cleaning within a single simple-to-use unit so that the record can be completely cleaned in a single sweep. The user merely passes it slowly over the rotating record from the centre outwards. Any static is eliminated by a powerful positive and negative field generated by piezoelectric technique operated by finger pressure alone — no batteries are needed. EARC's soft brushes sweep up the loosened particles on to a velvet cushion for easy removal. Price: £7.99 (inc. VAT).

■ **TANTRAK**

Tantrak Ltd, 7 Kiln Lane, Brockham, Betchworth, Surrey RH3 7LX.

Tangential Record Cleaner*

British designed tangential tracking record cleaner for removing dust from the surface of a record as it is played. Tantrack is a free-standing device with heavy base which supports a static arm parallel to the record surface. Roller carrier assembly slides along the arm driven by the fabric-covered roller tracking the grooves of the record. Assembly is simply lifted off the arm at the end of the record so that dust collected on the underside of the roller may be brushed away. Tantrack is designed especially for use on turntables with a very low profile platter, but a second, higher, arm is supplied for turntables with high profile platters with strobe markings, for example. Price: £6.00 approx. (plus VAT).

■ **3M**

3M United Kingdom Ltd, 3M House, PO Box 1, Bracknell, Berks RG12 1JU. Tel: Bracknell 58357.

Dustguard*

This cushion of conductive polymeric foam reduces dust-attracting electrostatic field giving protection from dust and fluff. Price: £3.50 (plus VAT).

■ **CECIL E. WATTS LTD**

Darby House, Sunbury-on-Thames, Tel: Sunbury-on-Thames (093 27) 83252.

Dust Bag

Automatic record cleaner—effective method of removing dust from the record whilst being played. New formula Parostatik antistatic fluid provides a humid condition to minimise static build-up during play. Adjustable dual pedestal for temporary or permanent fixing. Price: £2.35 (inc. VAT).

Parostatik Disc Preener*

Unique roller design removes dust and dirt from record surface and micro-particles of dust from the record grooves. Built in non-ionic compound prevents static build-up. Price: £1.28 (inc. VAT).

Stylus Cleaner

For all types of pickups. Close pile nylon velvet ribbon efficiently and safely removes pollution from the stylus tip. Price: 51p (inc. VAT).

Manual Parastat

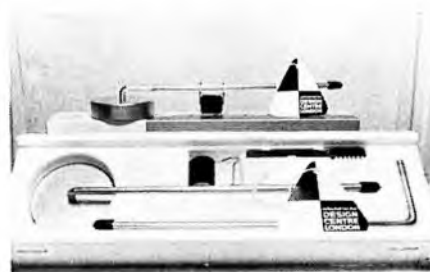
An alternative Parostat pack without Humid Mop. Offers the same cleaning function but utilises sponge pad in lid to provide the essential humidity. Price: £6.42 (inc. VAT).

Humid Mop Kit

Provides even greater efficiency in record cleaning when used with Watts Record cleaning devices. Cleans and conditions the brushes and pads of the Manual Parastat and Professional Parastat. Also an invaluable aid for cleaning and activating the Dust Bag, Parostatik Disc Preener and Stylus Cleaner. Removes all pollution collected from the record and provides the essential humidity to relax and disperse static charges. Price: £1.67 (inc. VAT).



Sony SH-160



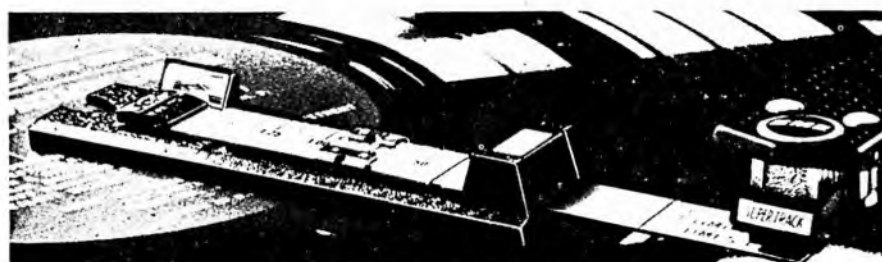
Tantrak Tangential Record Cleaner



3M Dustguard



Cecil E. Watts Parastatic Disc Preener.



Shure SFG2 Force Gauge

Parastat Wash Brush

For washing dirty records. Dislodges extraneous matter from the grooves and surface without harming the record in any way. Price: £1.69 (inc. VAT).

Hi-Fi Parastat

For use with new records which are to be played at extremely low tracking pressures. The brush is packed with finer nylon bristles than those used in the Manual Parastat. Provides a greater density of pointed bristles to explore the record grooves with maximum thoroughness. Specially designed case maintains the essential humid condition. Complete with stylus cleaner. Price: £5.45 (inc. VAT).

New Formula Parostatik Antistatic Fluid

Provides static control without producing any harmful surface film. Developed primarily for use with Watts record cleaning devices but also recommended for controlling static in plastic materials. Price: 31p 1/4oz size; 51p 1oz size (plus VAT).

Distilled Water Dispenser

Handy dispenser with dropper nozzle is included with the Hi-Fi Parastat and Humid Mop Kit, also available separately for replacement. Ideal for any application requiring the use of distilled water. Price: 39p (inc. VAT).

Xstatic

Designed to combat static on records by temporarily neutralising dust attracting charges. It is not a cleaning device but it enables dust to be removed more readily in the interest of sound quality and record life. A piezoelectric element within the Xstatic is the source of high electrical voltages which are fired towards the record surface. The Xstatic should be used on both sides of the record before it is played and followed by cleaning. Price: £7.76 (inc. VAT).

■ **WILMEX**

Wilmex Ltd,
Compton House, New Malden,
Surrey KT3 4DE.
Tel: 01-949 2545.

Avon Audio-Mat

High density rubber compound turntable mat designed to eliminate resonances in turntable platters thus improving bass performance and stabilising stereo image. Weight 550g, diameter 299mm, external thickness 4mm. Finish: matt black. Price: £8.92 (plus VAT).

■ **ZEEPA**

Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

Static Eliminator *

For neutralising static charges on records. Price: £6.95 (plus VAT).

Dust Lifter

Using carbon fibre conductive bristles for cleaning records and neutralising static. Price: £4.60 (plus VAT).

Clean Sweep

For cleaning dust off records while on turntable using carbon fibre conductive brush earthed to the record deck. Price: £5.55 (plus VAT).

Dust Bridge

For cleaning dust and static charges while record is on turntable, using conductive bristles

earthed to record deck or tuner/receiver/amp. Can also be used separately as a record brush. Price: £7.85 (plus VAT).

T-101 Moving Coil Step-up Transformer

Uses a specially developed alloy which allows even extremely weak magnetic flux to pass to the amplifier without degradation. The winding technique employed reduces the line capacitance allowing smooth frequency response over an extremely wide range. Permalloy is used for the magnet shield, each channel being independently shielded and encased in a further shield for improvement of crosstalk and signal-to-noise ratio. All terminals are gold plated to prevent poor contact. Price: £56.25 (plus VAT).

Anti-Static Mat

Using unique conductive fibre for reducing static charges while playing record. Price: £2.75 (plus VAT).

Anti-Static Cloth

Impregnated cloth for cleaning records. Price: 90p (plus VAT).

High Definition Cartridge Leads

Pure silver leads for connecting cartridge to headshell, all colour coded. Price: £3.50 (plus VAT).

Solid Silver Low Capacitance

Phono-to-phono Lead

1 metre high quality, especially for connecting moving coil transformer to amplifier. Price: £54.50 (plus VAT).

Acrylic Cartridge Headshell Holder

Tidy method of storing headshells in one unit. Price: £14.60 (plus VAT).



Zeepa Static Eliminator.



Zeepa Disc-Mask

Carbon Fibre Headshell

Universal fitting, non-resonant headshell with gold plated tags. Price: £6.95 (plus VAT).

High Definition Speaker Cable

Total overall sound is improved especially in HF area. Price: £28.60 per pair 10m (plus VAT); £16.80 per pair 5m (plus VAT).

Gold Cartridge Matcher

Available in 50, 100, 200 and 300ft. For matching cartridges to non-compatible amplifiers. Price: £2.45 (plus VAT).

Disk-Mask *

Removes dust and grit from the record surface by applying liquid that dries on the record and peels off taking dust with it. Price: £5.85 (plus VAT) for 500cc bottle.

Sonic Magic

Treatment that removes static permanently also eliminates all crackles and noises. Price: £4.67 (plus VAT).

Record Stabiliser

Solid brass record weight eliminates resonances during record play. 550g. Price: £12.50 (plus VAT).

■ **ZEROSTAT**

Zerostat Components Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon,
Cams. PE17 4LF.
Tel: St. Ives (0480) 62225.

Anti-Static Pistol

Zerostat pistol is the original piezo-electric device for neutralising the static charge developed by records, thus reducing the surface noise caused by static and the dust it attracts. With one squeeze of the trigger it emits a stream of positive and negative ions which discharge the disc surface. The pistol needs no power supply, batteries or refills, and lasts for at least 50,000 operations (at 25 LP's a week, that's nearly 20 years). Used with a good record cleaner such as the Discwasher D3 system, the Zerostat pistol can greatly prolong record and stylus life. Price: £7.45 (inc. VAT).

D3 Record Cleaning System

Discwasher D3 system comprises a fabric-covered pad equipped with rows of micro-fibres, a bottle of specially formulated fluid, and a DC-1 pad grooming brush. The fluid and brush are integrated parts of the D3 system, fitting into the solid walnut handle of the pad. The fluid releases dust and dirt from record grooves and disperses fingerprints and other contaminants, while protecting critical vinyl additives essential for long record life. The capillary action of the micro-fibres draws all the fluid into the fabric of the pad, along with dust and dirt, resulting in a reduction in surface noise and record wear. Price: £7.45 (inc. VAT).

D3 Fluid

Discwasher D3, supplied with the D3 Record Cleaning System, is also available separately. Formulation dissolves fingerprints and other common disc contaminants, puts micro-dust and dirt into suspension, and reduces static charges without leaving a sticky coating or damaging the record vinyl. Used with the Discwasher system, it ensures that nothing is left on the record except the audio signal. Price: 1oz 99p, 6oz £4.75, 16oz £8.99 (inc. VAT).

SC-1 Stylus Cleaner

Discwasher SC-1's bristles are bound together to a specific density—stiff enough for effective stylus cleaning, especially when used with D3 fluid, yet gentle enough to protect the delicate stylus cantilever from damage. The SC-1 is built into a walnut case, complete with integral magnifying mirror for ease of stylus inspection. Price: £3.99 (inc. VAT).

DiscKit

Discwasher DiscKit combines Zerostat Pistol, the Discwasher D3 Record Cleaning System, and the SC-1 Stylus Cleaner. The Discorganiser storage tray is included, and the whole DiscKit is available at a saving over the total price of the the separate items in it. Price: £26.50 (inc. VAT).

Discorganiser

Walnut storage tray with smoked acrylic dust cover. Specially shaped recesses will hold the Zerostat Pistol, D3 Record Cleaning System with Fluid, and the SC-1 Stylus Cleaner. Additional spaces are provided for an international headshell, screwdrivers, etc. Practical way to keep record care accessories tidy and accessible. Price: £9.95 (inc. VAT).

VRP Record Protection Sleeves

VRPs are extremely smooth for scratch-free record removal and replacement. They are made of a stable material which, even under adverse conditions, remains separate from the record surface—unlike other plastic sleeves which can stick to the disc, or paper ones which may 'texture' it. VRPs and records are made from electrostatically compatible materials, which means that dust-attracting static charges are removed during the storage and removal of records. Price: £1.95 (inc. VAT).

Gold-Ens Connection Leads

Superior audio cables of very low capacitance, terminated with gold-plated connectors. With much lower bulk resistivity than more common connecting metals, gold ensures optimum signal transfer at all times. Since it does not corrode, time will not alter its characteristics. The wires have stranded centre conductors, braided outer shielding and individually soldered connections. A moulded nylon insulating sleeve protects and strengthens these connections. Additional protection is provided by steel spring strain reliefs. A variety of cable lengths and plug configurations is available. Prices: 2 phono—2 phono 0.5m £5.99, 2 phono—2 phono 1m £6.95, 2 phono—2 phono 2m £7.75, 5 Pin DIN—4 phono 1m £9.45, 5 Pin DIN—2 phono 1m £7.50. Phono—Phono Coupler (4 per pack) £6.90 (inc. VAT).

Z-Track Tonearm/Cartridge Damper

Zerostat Z-Track is a precision damper with an effective mass of 0.5g which fits easily to most headshells. Its secret is a tiny, silicone fluid-damped piston. The cylinder in which the piston moves is an integral part of the Z-Track's main body which, in turn, is carried on a low-friction PTFE skid wide enough to ride the record surface without tracking. The damping action of the silicone fluid on the piston controls resonances. Badly warped records (of which there is an increasing number) sound as if they were perfectly flat. The effects of feedback are reduced. The Z-Track is adjustable for most arm/cartridge combinations, has no harmful side-effects, and can transform the sound of records. Price: £9.95 (inc. VAT).

Smoglifters Loudspeaker Cables

Smoglifters are designed to fulfil the complex specifications necessary for perfect signal transfer between amplifier and loudspeakers. Each cable has 180 strands of high purity copper conductors in a concentric pattern—and each end is finished, braided and tinned. Smoglifters are unique in their combination of extremely low resistance, inductance and capacitance, and can improve the performance of a hi-fi system in terms of transient response, bass extension and stereo image. Price per pair: 3m £14.95, 6m £27.60, 10m £44.95 (inc. VAT).

DiscFoot System

The Discwasher DiscFoot is the first product of its kind to be designed to complement existing turntable suspension systems. Other 'isolation' feet can actually amplify resonances in some areas of the musical spectrum, even if they reduce them in other regions. The DiscFoot system's four isolation pads are totally different from the rubber-type substances used in competitive products, and have two functions. First, they minimise turntable response to airborne speaker feedback which can lead to blurred bass frequencies in the 30-200Hz region, achieving up to 25dB reduction. Second, they offer as much as 20dB improvement in isolation from surface-borne vibrations such as footsteps near the turntable. Price: £12.95 (inc. VAT).



Zerostat Z-track

Pickup Cartridges and Arms

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd, Unit 22,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

D.1 Crystal Turn-over

This well proved cartridge is suitable for a wide range of pickup heads and its high output matches most record players and phono equipment. Turnover clip-on sapphire stylus, 33/45 (LP) and 78rpm with standard replacements easily obtainable. Supplied with miniature connectors and individually boxed. Output at 1kHz: 2.0V. Compliance: 2.0 x 10⁻⁶cm/dyne. Frequency: 30-15,000Hz. Stylus pressure: 5-8g. Size: 19 x 20 x 46mm. Weight: 9g. Price: £1.60 (plus VAT).

D.2 Mono/Stereo Compatible Crystal

An almost universal replacement cartridge enabling 'pre-stereo' equipment to play stereo records monaurally without damaging effects. 0.7mm sapphire stylus 'flipover' 33/45 (LP) and 78rpm. Moulded carrying bracket with fixing slots, centre hold and clip-on shield. Individually boxed. Output at 1kHz: 2.0V. Compliance: 1.5 x 10⁻⁶cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4g. Size (less shield): 18 x 21 x 32mm. Weight: 4.6g. Price: £1.40 (plus VAT).

D.5 Crystal Turn-over

Intended as the stereo version of Model D.1, this versatile high output cartridge is an ideal replacement for both mono and stereo equipment. Standard fitting bracket; clip-on 33/45 (LP) and 78rpm sapphire stylus. Individually boxed. Output at 1kHz: 1.5V. Compliance: 1.5 x 10⁻⁶cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4-6g. Size: 18 x 20 x 51mm. Weight: 10g. Price: £2.95 (plus VAT).

D.6 Ceramic

Will fit most head shells and features sapphire 'flip-over' stylus with 33/45 (LP) and 78rpm selection and protective shield. Individual casket presentation. Output at 1kHz: 0.5V. Compliance: 1.5 x 10⁻⁶cm/dyne. FR: 20-15,000Hz. Stylus pressure: 4-6g. Size (less shield): 18 x 22 x 32mm. Weight: 3g. Price: £3.10 (plus VAT).

D.12 Replacement Stylus for D.11 Cartridge (JSP.1)

Genuine replacement diamond LP stereo stylus already assembled in slide-in housing available in see-through plastic box presentation. Price: £3.50 (plus VAT).

D.16

Pickup cartridge with diamond stylus. Playing weight: 1-3g. Compliance: 10 x 10⁻⁶cm/dyne at 100Hz. FR: 20Hz-25kHz. Output: 4mV. Recommended load: 30-100K ohms. Low cost diamond tipped, moving magnet, easy slideout replacement for stylus. Price: £6.00 (plus VAT).

D.17 Replacement Stylus for D.16 Cartridge

Diamond tipped replacement stylus assembly for D.17 model. Price: £4.40 (plus VAT).

■ ACUTEX

Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.

M210 IIE

Moving magnet cartridge with Bi-radial stylus. Playing weight: 1-2g. Compliance: 12 x 10⁻⁶cm/dyne. FR: 15Hz-30kHz. Output: 4mV. Recommended load: 47K.

M207 IIE

Moving magnet cartridge with Bi-radial stylus. Playing weight: 1.5-2.5g. Compliance: 12 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 5mV. Recommended load: 47K.

M312 IIISTR*

Moving magnet cartridge with STR stylus. Playing weight: 0.75-1.5g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 20Hz-25kHz. Output: 3.5mV. Recommended load: 47K. Features: symmetrical tri-radius stylus.

M310 IIIE

Moving magnet cartridge with Bi-radial stylus. Playing weight: 1-2g. Compliance: 24 x 10⁻⁶cm/dyne. FR: 20Hz-35kHz. Output: 3.5mV. Recommended load: 47K.

M320 IIISTR

Moving magnet cartridge with perfect STR stylus. Playing weight: 0.75-1.5g. Compliance: 36 x 10⁻⁶cm/dyne. FR: 20Hz-40kHz. Output: 3.5mV. Recommended load: 47K. Features: symmetrical tri-radial stylus.

M315 IIISTR

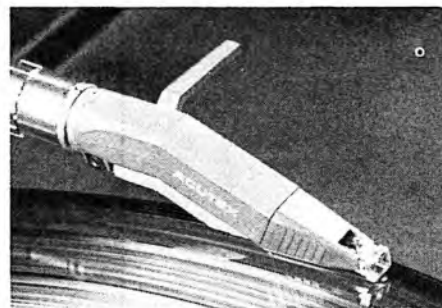
Moving magnet cartridge with perfect STR stylus. Playing weight: 0.75-1.5g. Compliance: 42 x 10⁻⁶cm/dyne. FR: 20Hz-45kHz. Output: 3.2mV. Recommended load: 47K. Features: symmetrical tri-radial stylus.

■ ADC

BSR Ltd,
Powke Lane, Cradley Heath,
Warley, W. Midlands B64 5QH.
Tel: Cradley Heath (0384) 65191.

LMF-1 Carbon Fibre Tone Arm

Layered carbon fibre. Total length: 313mm. Length pivot-tip: 237mm. Offset angle: 21°. Over-hang tip: 15mm. Rear over-hang: 76mm max. Tracking error: 0° at 60mm. Suitable cartridge 4-10g. Resonance (XLM) 1g 11Hz



Acutex M312

10dB peak. Eff. arm mass: 5.5g. Controls: stylus pressure 0-1.5g. Anti-skate: 0-2g. Arm height adjustment 38-80mm. Counterweights: 7-15-30g.

LMF-2 Carbon Fibre Tone Arm

Layered carbon fibre. Total length: 313mm. Length pivot-tip: 237mm. Offset angle: 21°. Over-hang tip: 15mm. Rear over-hang: 76mm max. Tracking error: 0° at 60mm. Suitable cartridge: 3-11g. Resonance (XLM 1g) 11Hz 10dB peak. Eff. arm mass: 8g. Controls: stylus pressure 0-1.5g. Anti-skate 0-2g. Arm height adjustment 38-80mm. Counterweights 15-30-45g.

ADCZLM Improved

Induced magnet cartridge with omni-pivot and nude aliptic TM tapered cantilever stylus. Tracking force: 1g ±0.25g. FR: 10Hz-20kHz ±1dB, 20Hz-26kHz ±1½dB. Output: nominal output at 1kHz, 1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware, signed frequency response curve.

ADC XLM Mk III

Induced magnet cartridge with omni-pivot and nude .0002 x .0007in. elliptical tapered cantilever stylus. Tracking force: 1.2g ±0.3g. FR: 10Hz-20kHz ±1dB, 20Hz-24kHz ±1.5dB. Output: nominal output at 1kHz, 1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware, signed specification card.

ADC VLM Mk III Improved

Induced magnet cartridge with omni-pivot and nude .0007 x .0003in. elliptical straight cantilever stylus. Tracking force: 1.2g ±0.3g. FR: 15Hz-24kHz ±2dB. Output: nominal output at 1kHz, 1.1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware.

ADC QLM36 Mk III Improved

Induced magnet cartridge with omni-pivot and DIASA (nude—diamond + sapphire) elliptical .0003 x .0007in. straight cantilever stylus. Tracking force: 1.2g ±0.3g. FR: 15Hz-22kHz ±2dB. Output: nominal output at 1kHz, 1.1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware.

ADC QLM 34 Mk III

Induced magnet cartridge with bushed .0003 x .0007in. elliptical straight cantilever stylus. Playing weight: 1-3g. FR: 20Hz-20kHz ±2dB. Output: nominal output at 1kHz, 1.8mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush screwdriver, all mounting hardware.

ADC QLM32 Mk III

Induced magnet cartridge with bushed .0004 x .0007in. elliptical straight cantilever stylus. Playing weight: 2-4g. FR: 20Hz-18kHz ±2dB. Output: nominal output at 1kHz, 1.5mV per

cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware.

ALT-1 Aluminium Tone Arm*

Incorporating many features of LMF-1 and LMF-2. Total length: 305mm max. Length pivot-tip: 237mm. Offset angle: 24.6°. Overhang tip: 19mm. Zero tracking angle error at 69mm and 129mm. Maximum tracking angle error: 1.25° at 60mm, 94mm and 146mm. Cartridge weight range: 4-11g. Stylus force range: calibrated 0.4 in 1/4g steps. Bearings type: stainless steel ball bearings. Effective arm mass: 7g with counterweight set for ADC XLM cartridge. Anti-skate range: 0-4g. Arm height adjustment: 38-80mm.

■ **AKG**

AKG Acoustics Ltd,
191 The Vale, London W3 7QS.
Tel: 01-749 2042.

P6R

Variable reluctance moving iron cartridge with spherical diamond tip .0007in. stylus. Playing weight: 2.4g. Tip mass: 0.9mg. FR: 20-20,000Hz. Output: 6.25V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system P6R designed to withstand backcueing. Price: £16.50 (plus VAT).

P6E

Variable reluctance moving iron cartridge with elliptical diamond .0004in. x .0008in. stylus. Playing weight: 1.5-3g. Tip mass: 0.9mg. FR: 20-20,000Hz. Output: 6.25V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system. Price: £21.50 (plus VAT).

P7E

Variable reluctance moving iron cartridge with elliptical diamond tip .0003in. x .0007in. stylus. Playing weight: 1.25-2.50g. Tip mass: 0.6mg. FR: 10-21,500Hz. Output: 4.5V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system. Price: £32.50 (plus VAT).

P8E

Variable reluctance moving iron cartridge with elliptical diamond .0002in. x .0007in. stylus. Playing weight: 0.75 x 1.25g. Tip mass: 0.45mg. FR: 10-2,000Hz. Output: 4V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system, naked mount diamond stylus, each P8E is supplied with own frequency response curve. Price: £60.00 (plus VAT)

P8ES*

Variable reluctance moving iron cartridge with elliptical diamond .0002in. x .0007in. stylus.



ADC ALT-1 Aluminium Tone Arm

Playing weight: 0.75-1.25g. Tip mass: 0.42mg. FR: 10-28,000Hz. Output: 3.75V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system, naked mount diamond stylus, each P8ES is supplied with own frequency response curve. Price: £68.50 (plus VAT).

■ **A & R**

Amplification and Recording (Cambridge) Ltd,
French's Mill, French's Road,
Cambridge CB4 3NP.
Tel: Cambridge (0223) 354507.

C77/P77*

Moving magnet cartridge with either C77 standard conical or P77 Paroc nude stylus. Playing weight: 1.5-2g. Compliance: 20 x 10⁻⁶cm/dyne, FR: 20Hz-20kHz. Output: 5mV. Recommended load: 47K. Price: C77 spherical stylus £13.00 (plus VAT), P77 Weinz Paroc stylus £34.70 (plus VAT).

■ **AUDIO TECHNICA**

Audio Technica Ltd,
Unit 6, Hunslet Trading Estate, Low Road,
Hunslet, Leeds LS10 1BL.
Tel: Leeds (0532) 771441.

AT-14SA

Stereo/CD-4 magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-45kHz. Channel separation: 32dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Compliance: 28 x 10⁻⁶cm/dyne. Price: £34.74 (inc. VAT).

AT-15SS

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel separation: 33dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Compliance: 30 x 10⁻⁶cm/dyne. Channel separation: 33dB. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Price: £63.73. (inc. VAT).

AT-10

Stereo V-magnet cartridge. Stylus: 0.7 spherical diamond. FR: 20Hz-20kHz. Channel

separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec. Price: £8.89 (inc. VAT).

AT-11E

Stereo V-magnet cartridge. Stylus: 0.4 x 0.7 elliptical diamond. FR: 15Hz-28kHz. channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec. Price: £11.16 (inc. VAT).

AT-13EA*

Stereo dual moving magnet cartridge. Stylus: 0.2 x 0.7 nude elliptical diamond. FR: 10Hz-35kHz. Channel separation: at 10kHz 20dB, at 1kHz 25dB. Output: 42mV at 5cm/sec. Price: £19.50 (inc. VAT).

AT-20SS

Hand selected limited production series featuring all the advantages of the AT-15SA but with tighter performance parameters. Recommended only for the best low mass tonearms. Price: £73.67 (inc. VAT).

AT-25

New design possessing all the advantages of the dual magnet patented design but built into an anti-resonance magnesium sleeve headshell which plugs directly into any Universal fitting tonearm. Better channel definition, clarity, frequency response and trackability. Features laminated pole pieces for better signal transmission and toroidal shielded coils for improved signal fidelity. Price: £73.67 (inc. VAT).

AT-30E

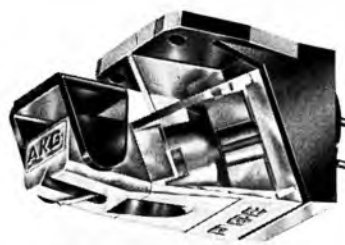
Dual moving coil cartridge, with user replaceable stylus. The coils are integral with the stylus assembly allowing a worn or damaged stylus to be replaced just like a moving magnet cartridge. Good tracking is achieved by controlling effective mass and utilising a radial damping system. Compliance is individually controlled during manufacture of each assembly to optimise performance. Price: £36.27 (inc. VAT).

ATP-1

Professional dual magnet cartridge. Frequency response: 20Hz-20kHz. Channel balance: 1.5dB. Tracking force 3-5g. Backcueing capability. Stylus 0.6thou. spherical diamond. Price: £12.15 (inc. VAT).

ATP-2

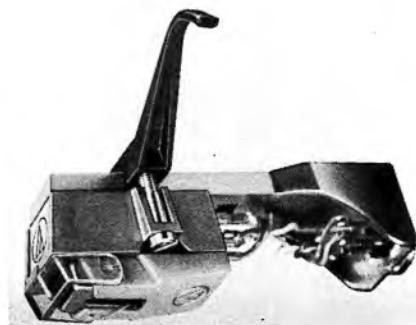
Professional dual magnet cartridge. Frequency response: 15Hz-22kHz. Channel balance: 1.5dB. Tracking force: 3.5g. Backcueing capability. Stylus 0.4 x 0.7 thou. elliptical diamond. Price: £13.29 (inc. VAT).



AKG P8ES



A & R cartridges



Audio Technica AT13 EA

YOUR TURNTABLE PROBABLY DESERVES A BETTER PICK-UP.

If you've spent a fair amount of time and money on your audio system, it's likely your turntable is ready for the new MMC 20CL cartridge. You do need a tonearm which can track successfully at one gram, one that has its own resonance well damped, and one which features minimal horizontal and vertical friction. Many of today's higher quality units meet these criteria; the one you own is probably among them.

THE MMC 20CL, A REFRESHING PERSPECTIVE IN CARTRIDGE DESIGN.

Critical acclaim has identified the MMC 20CL as an exceptional cartridge. It is. It will not only give you more music from your records, but will ensure that those records last significantly longer. However, it is not one of those 'astounding breakthroughs' that always seem to be hovering around cartridge design. No, while the 20CL does incorporate new thinking, new materials, and new manufacturing methods, it should be reasonably viewed just as it is: simply one step closer to the theoretical ideal. When we gave Europe its first stereo cartridge over 20 years ago, we knew that someday we would have the 20CL. Our approach to cartridge engineering tells us that 20 years from now we will have something significantly better.

SINGLE CRYSTAL SAPPHIRE, BECAUSE THE CANTILEVER IS CRITICAL.

Unlike aluminium and beryllium, single crystal sapphire transfers the motion of the stylus tip without adding any measurable vibration, and hence distortion, of its own. The absence of this vibration and flexibility in the cantilever means the undulations in the record groove are transferred exactly and generate an exceptionally accurate electrical signal. Music is no longer lost between the stylus tip and the armature. Your records yield up their music with new clarity, definition, and spaciousness.

REDUCING EFFECTIVE TIP MASS, BANG & OLUFSEN'S ENGINEERING TRADITION.

As early as 1958, our research demonstrated that effective tip mass (ETM) was the single most influential factor behind record wear and the loss of high frequency sound information. While some manufacturers are now beginning to realise the importance of this specification, only Bang & Olufsen can look back upon a continuous chain of improvements in this critical area. Today, the MMC 20CL with its Contact Line, nude diamond, ultra-rigid sapphire cantilever, and the patented Moving Micro Cross armature features an ETM value of only 0.3mg.

LOW INDUCTANCE, OUTPUT REMAINS CONSTANT REGARDLESS OF LOAD.

As you know, low inductance in a cartridge is directly related to the strength and constancy of the electrical signal fed to your preamplifier input. What you may not know is that the MMC 20CL has an inductance among the lowest of all high quality cartridges available today. This is due to a design which incorporates an exceptionally powerful permanent magnet and coil cores of very low permeability. This design results in very low cartridge induced noise. Subsequently you receive an excellent signal-to-noise ratio without having to use auxiliary equipment.

INDIVIDUALLY CALIBRATED.

When you manufacture very high quality cartridges, each unit must be tested – not one out of two, or ten, or twenty, but each one. This is why, when you purchase the MMC 20CL, you will receive the test results for your individual cartridge. These results include: output voltage, channel balance, channel separation, tracking ability, and a frequency response graph for each channel.

BRAND LEADER.

The MMC 20CL is Bang & Olufsen's brand leader in the field of pick-up cartridges. It is part of a complete pick-up range called the MMC 20 Series. Other models use the same cartridge chassis matched to a variety of stylus types, suitable for less highly-specified tone arms.

Prices range from about £19.00 to £96.00.

All MMC 20 Series pick-ups are available with standard 1/2" mounting bracket or with the ultra-lightweight universal plug-in connector. Send today for descriptive literature, including our free Technical Design Story on the MMC 20 Series.

Give your turntable what it deserves. The MMC 20CL with our new universal connector can be mounted directly onto most high quality tonearms.

Bang & Olufsen

**THIS TIME
MAKE THE
RIGHT
CONNECTION**

Bang & Olufsen UK Limited
Eastbrook Road, Gloucester GL4 7DE

ATP-3

Professional dual magnet cartridge. Frequency response: 15Hz-25kHz. Channel balance: 1.5dB. Tracking force: 2-3g. Backcuing capability. Stylus 0.3 x 0.7 thou. nude elliptical diamond. Price: £16.82 (inc. VAT).

ATP-16T

Precision professional tone-arm. Static balance type. Length 16in. All adjustments lockable by grub screws. For disco and studio use. Price: £82.00 (inc. VAT).

AT-12 XE

Dual magnet generating element situated on cantilever pivot to ensure maximum information retrieved from the groove. Stylus: 0.3 x 0.7 nude elliptical diamond. Playing weight: 1-1.75g. Tip mass: 0.45mg. Compliance: 25. FR: 15Hz-28kHz. Output: 4.2mV at 5cm/sec. Recommended load: 47K. Price: £17.89 (inc. VAT).

AT-15 XE

As above. Stylus: 0.2 x 0.7 nude elliptical diamond. Playing weight: 0.75-1.75g. Tip mass: 0.45mg. Compliance: 43. FR: 5Hz-30kHz. Output: 4.2mV at 5cm/sec. Recommended load: 47K. Price: £47.25 (inc. VAT).

AT-1100

Integrated low mass tonearm featuring dynamic tracing system and super conductive silver Litz wire. Price: £159.95 (inc. VAT).

ATP-12T

Broadcast series 12in. tonearm. All setting up adjustments are lockable via grub screws. Three point mounting adjustable for height and horizontal level. Accepts selection of universal plug in headshells. De-coupled counterweight shaft. Price: £81.42 (inc. VAT).

■ BANG & OLUFSEN

Bang & Olufsen UK Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

MMC 20S

Integrated stereo spherical cartridge. Weight: 1.5g. Tip mass: 0.5mg. Compliance: 20cu. FR: 20Hz-20kHz ±3dB. Output: >2.12mV. Recommended load: 47K. With standard 1/2in. mounting bracket. Price: £27.00 (plus VAT).

MMC 20E

Integrated stereo elliptical cartridge. Weight: 1.5g. Tip mass: 0.5mg. Compliance: 20cu. FR: 20Hz-20kHz ±2.5dB. Output: 2.12mV. Recommended load: 47K. With standard 1/2in. mounting bracket. Price: £38.00 (plus VAT).

MMC 20EN

Integrated stereo cartridge. Nude elliptical. Weight: 1.2g. Tip mass: 0.4mg. Compliance: 25cu. FR: 20Hz-20kHz ±2dB. Output: 2.12mV. Recommended load: 47K. With standard 1/2in. mounting bracket. Price: £43.00 (plus VAT).

MMC 20CL

Integrated stereo cartridge. Contact line. Weight: 1g. Tip mass: 0.3mg. Compliance: 30cu. FR: 20Hz-20kHz ±1dB. Output: 2.12mV 47K. Features: with standard 1/2in. mounting bracket. Single crystal sapphire cantilever. Price: £80.00 (plus VAT).

■ CORAL

Videotone Ltd,
98 Crofton Park Road, London SE4.
Tel: 01-690 1914.

MC81

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.8-2.3g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 10Hz-45kHz. Output: 0.25mV. Recommended load: 20-100 ohms. Features: separation 30dB, channel balance 1dB, weight 5g. Price: £42.50 (plus VAT).

666 Ex

Moving magnet cartridge with elliptical diamond stylus. Playing weight: 0.9-1.2g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 10Hz-45kHz. Output: 4.5mV. Recommended load: 47-100K. Features: Samarium cobalt magnet, beryllium cantilever, weight 5g. separation 30dB. Price: £28.24 (plus VAT).

555 E

Moving magnet cartridge with elliptical diamond stylus. Playing weight: 1-2.5g. FR: 10Hz-30kHz. Output: 4mV. Recommended load: 47-100K. Features: separation 25dB, weight 6g. Price: £12.40 (plus VAT).

555 Ex

Moving magnet cartridge with spherical diamond stylus. Playing weight: 0.75-2g. FR: 15Hz-27kHz. Output: 4mV. Recommended load: 47-100K. Features: separation 25dB, weight 6g. Suitable for CD 4. Price: £6.33 (plus VAT).

777

Moving coil cartridge. Playing weight: 5.5g. Compliance: 13 x 10⁻⁶cm/dyne. FR: 10Hz-35kHz. Output: 0.3mV (50cm/sec). Load: 10.2 ohms. Price: £25.22 (plus VAT).

T100 Step-up transformer

Low cost and efficient means of giving required signal boost. FR: 5Hz-50kHz. Gain: 26dB. Input imp: 6 ohms. matching output imp: 47K. Crosstalk: 50dB. Price: £21.52 (plus VAT).

777EX

Moving coil cartridge with elliptical diamond stylus. Playing weight: 1.3-2.3g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 5Hz-40kHz. Output: 3mV. Price: £30.43 (plus VAT).

■ DENON

Eumig (UK),
14 Priestley Way,
London NW2 7TN.
Tel: 01-450 8070.

DL 1035

Moving coil stereo cartridge with elliptical tip stylus. Playing weight: 1.8-2.5gm. Compliance:



Denon DL-303

8 x 10⁻⁶cm/dyne. FR: 20Hz-60kHz. Output: 0.3mV 1K. Price: approx: £99.00 (plus VAT).

DL303*

Moving coil stereo cartridge with elliptical diamond tip. Playing weight: 1.6g. Compliance: 35 x 10⁻⁶cm/dyne static, 13 x 10⁻⁶cm/dyne Dyn. Output: 0.2mV 1K. Price: approx. £170.00 (plus VAT).

■ DIAMOND STYLUS

DSC (Consumer Products) Ltd,
Colwyn Bay,
North Wales LL28 5HD.
Tel: Colwyn Bay (0492) 402202/3.

Empire 66/X

Diamond stylus. FR: 18Hz-22kHz, 20Hz-20kHz ±3dB. Output voltage per channel 5cm/sec groove velocity: 7.1mV. Separation: 25dB at 20Hz-10kHz, 12dB at 10Hz-20kHz. Tracking force: 1 1/2-3g. 0.7 mil spherical diamond.

Empire 66E/X

Diamond stylus. FR: 18Hz-22kHz, 20Hz-20kHz ±3dB. Output voltage per channel 5cm/sec groove velocity: 7.1mV. Separation: 25dB at 20Hz-20kHz, 15dB at 10kHz-20kHz. Tracking force: 1 1/2-2 1/2g. Stylus type: 0.3 x 0.7 mill elliptical diamond.

Empire 66PE/X

Diamond stylus. FR: 18Hz-23kHz, 20Hz-20kHz ±3dB. Output voltage per channel 5cm/sec groove velocity: 7.1mV. Separation: 25dB at 20Hz-10kHz, 15dB at 10Hz-20kHz. Tracking force: 1-2g. Stylus type: 0.2 x 0.7 mill nude mounted elliptical diamond.

Empire 66QE/E

Diamond stylus. FR: 18Hz-30kHz, 20Hz-20kHz ±2dB. Output voltage per channel 5cm/sec. Velocity: 4.2mV. Separation: 30dB at 10Hz-10kHz, 20dB at 10kHz-20kHz. Tracking force: 3/4-1 1/2g. Stylus type: 0.2 x 0.7 mill nude mounted elliptical diamond.

■ DYNAVECTOR

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

DV-10X

Moving coil cartridge, elliptical stylus. Playing weight: 1.5 ±0.3g. Compliance: 10 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 1.8mV. Rec. load: 47K. Features: high output moving coil cartridge, does not need transformer. Price: £59.35 (plus VAT).

DV20A Mk 2

Moving coil cartridge with elliptical stylus. Playing weight: 1.8g. Compliance 24 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 3.6mV 1K. Rec. load: 47K. Features: very high output, lightweight, suitable for many arms. Price: £86.73 (plus VAT).

DV100R

Moving coil cartridge with diamond line contact stylus. Playing weight: 1.5g ±0.3g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 20Hz-50kHz. Output: 0.2mV 1K. Recommended load: 47K. Features: totally new cantilever design made from square section synthetic ruby. Price: £99.00 (plus VAT).

DV100D

Moving coil cartridge with diamond line contact stylus. Playing weight: 1.5 ±0.3g. Compliance: 15 x 10⁻⁶cm/dyne. FR: 20Hz-70kHz. Output: 0.2mV 1K. Recommended load: 47K. Features: as 100R but cantilever is made from solid diamond. Price: £499.00 (plus VAT).

DV30B

Moving coil cartridge with line contact stylus. Playing weight: 1.5 ±0.3g. Compliance: 12 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 1.8mV 1K. Recommended load: 47K. Features: high output moving coil, straight Beryllium cantilever, integral headshell. Price: £144.00 (plus VAT).

DV30C

Moving coil cartridge with line contact stylus. Playing weight: 1.5 ±0.3g. Compliance: 10 x 10⁻⁶cm/dyne. FR: 20Hz-40kHz. Output: 0.18mV 1K. Recommended load: 47K. Features: Boron cantilever, integral headshell. Price: £159.00 (plus VAT).

DV20B Mk 2

Moving coil cartridge with elliptical stylus. Playing weight: 1.8g. Compliance 24 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 3.6mV 1K. Rec. load: 47K. Features: as 20A Mk 2 but with straight solid Beryllium cantilever. Price: £113.00 (plus VAT).

DV30A

Moving coil cartridge with line contact stylus. Playing weight: 1.5g ±0.3g. Compliance: 12 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 1.8mV 1K. Recommended load: 47K. Features: high output moving coil complete with its own headshell (SME fitting). Price: £113.00 (plus VAT).

DV6X*

Transformer with step up ratio: 1:20. Adaptable imp: 3-60 ohms. Distortion factor: below 0.01%. FR: 10Hz-30kHz. Recommended load: 47K. Features: designed specially for DV100R. Price: £74.00 (plus VAT).

DV6A

Transformer with step up ratio: 1:13. Adaptable imp: 40 ohms. Distortion factor: below 0.01%. FR: 10Hz-70kHz. Recommended load: 30-50K. Features: designed for DV100R and 30C. Price: £173.00 (plus VAT).

DV515 tonearm

No details available. Price: £250.00 (plus VAT).

EAGLE INTERNATIONAL

Precision Centre,
Heather Park Drive, Wembley HA0 1SU.
Tel: 01-902 8832.



Dynavector DV6X Step-up transformer

P750 X

Magnetic cartridge with Shibata stylus. Playing weight: 1.7 ±0.3g. Compliance: 18 x 10⁻⁶cm/dyne at 100Hz. FR: 20Hz-35kHz. Output: 4mV at 1,000Hz (50mm/sec). Features: tripole induced magnet system, pure elliptical diamond stylus fitted in its own headshell.

P750 E

Magnetic cartridge with S750E stylus. Playing weight: 2 ±0.5g. Compliance: 10 x 10⁻⁶cm/dyne at 100Hz. FR: 20Hz-30kHz. Output: 4mV at 1,000Hz (50mm/sec). Features: tripole induced magnetic system, deposited elliptical diamond stylus.

P450 S

Magnetic cartridge with S450S stylus. Playing weight: 2 ±0.5g. Compliance: 10 x 10⁻⁶cm/dyne at 100Hz. FR: 20Hz-30kHz. Output: 4mV at 1,000Hz (50mm/sec).

ELAC

Paul Spring Electronics Ltd,
6 Oasthouse Way, St Mary Cray,
Orpington, Kent.
Tel: Orpington(0698) 31341.

DN791

Radius of tip: 15µm. FR: 20Hz-20kHz. Tracking force: 25g. Weight: 6.5g. Rec. Terminal imp: 47K.

DN792

As above.

DN793E

Radius of tip: 6/18µm. FR: 20Hz-22kHz. Tracking force: 15g. Weight: 6.5g. Rec. Terminal imp: 47K.

DN793E

Radius of tip: 15µm. Other details as 793.

DN794E, DN794, DN795E, DN795

Details on application.

ELITE

Elite Electronics,
32 Cottimore Lane, Walton-on-Thames, Surrey.
Tel: Walton-on-Thames 46850.

EEl-500

Moving magnet parabolic cartridge. Playing weight: 1.3-2g, 1.5 optimum. Tip Mass: 0.4mg. Compliance: 15 x 10⁻⁶. FR: 10Hz-25kHz. Output: 3.5mV at 3.54cm/sec. Recommended load: 47K. Price: £45.00 (inc. VAT).

EEl-MC555*

Moving coil conical cartridge. Playing weight: 1.8-2.2g. Tip Mass: 0.38mg. Compliance: 8 x 10⁻⁶. FR: 10Hz-50kHz. Output: 0.1V at 3.54cm/sec. Recommended load: 100 ohms. Price: £98.00 (inc. VAT).

SM5000

Head amplifier for low-output moving-coil pickup cartridges. Input Imp: 100 ohms. Output impedance: 47K. Max input: 12mV. Gain: 31dB. FR: 25Hz-20kHz ±0.5dB, 7Hz-50kHz -30dB. THD: 0.05%. S/N: 71dB. Dimensions: 8½ x 4 x 2½in. Battery life: 1,000-1,500 hours. Price: £82.00 (inc. VAT).

Replacement and other styli

To suit various host cartridges featuring the Elite parabolic stylus, offering long stylus and record life and low surface noise. Also EEl 400 moving magnet cartridge (elliptical) £23.00. EEl

300H moving magnet (conical) £13.99 (inc. VAT).

EMPIRE SCIENTIFIC

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

EDR 9*

Cartridge with stylus 5000. Playing weight: 0.75-1.25g. Tip mass: 0.3mg. Compliance: 28cu. FR: 20Hz-35kHz ±1.75dB. Output: 4.5mV at 5cm/sec. Rec. load: 47K. Price: £99.00 (plus VAT).

600 LAC

Cartridge with LAC stylus. Playing weight: 5.3g. Tip mass: 0.6mg. Compliance: dynamic 20 x 10⁻⁶cm/dyne, static 28.5 x 10⁻⁶cm/dyne. FR: 20Hz-18kHz ±1.75dB. Output: 4.0mV at 1kHz at 3.54cm/sec. Price: on application.

500D

Cartridge with 0.2 x 0.7 mil hi-radial stylus. Playing weight: 5.3g. Tip mass: 0.6mg. Compliance: dynamic 20 x 10⁻⁶cm/dyne, static 28.5 x 10⁻⁶cm/dyne. FR: 20Hz-23kHz ±1.75dB. Output: 4.0mV at 1kHz at 3.54cm/sec. Price: on application.

400 TC

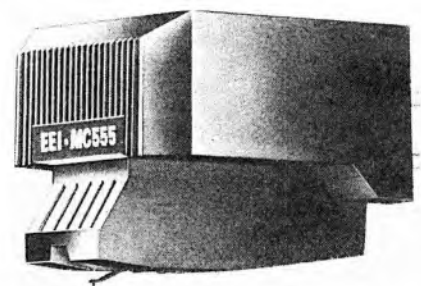
Cartridge with 0.2 x 0.7 mil bi-radial stylus. Playing weight: 5.3g. Tip mass: 0.6mg. Compliance: dynamic 20 x 10⁻⁶cm/dyne, static 23 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±2dB. Output: 3.8mV at 1kHz at 3.54cm/sec. Price: on application.

300 ME

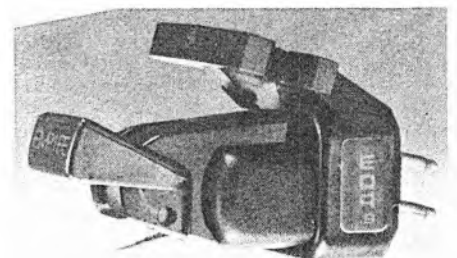
Cartridge with 0.2 x 0.7 mill bi-radial stylus. Playing weight: 5.3g. Tip mass: 0.7mg. Compliance: dynamic 17 x 10⁻⁶cm/dyne, static 20 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±3dB. Output: 4.5mV at 1kHz at 3.54cm/sec. Price: on application.

200E

Cartridge with 0.3 x 0.7 mil elliptical. Playing weight: 5.3g. Tip mass: 0.9mg. Compliance:



Elite Electronics EE1-MC555



Empire EDR 9

dynamic 14 x 10⁻⁶cm/dyne, static 19 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±3dB. Output: 5.5mV. at 1kHz at 3.54cm/sec. Price: on application.

100S

Cartridge with 0.7 mil spherical stylus. Playing weight: 5.3g. Tip mass: 1.0mg. Compliance: dynamic 10 x 10⁻⁶cm/dyne, static 15 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±3dB. Output: 5.0mV at 1kHz at 3.54cm/sec. Price: on application.

■ FIDELITY RESEARCH

Wilmex Ltd,
Compton House, New Malden, Surrey.
Tel: 01-949 2545.

FR1 Mk II *

Moving coil cartridge. Playing weight: 1.7g. Compliance: 10 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 0.1mV RMS 5cm/sec. Recommended load: 30 ohms. Price: £59.00 (plus VAT).

FR1 Mk III F

Moving coil cartridge. Playing weight: 2g. Compliance: 10 x 10⁻⁶cm/dyne. FR: 10Hz-40kHz. Output: 0.14mV RMS 5cm/sec. Recommended load: 10 ohms. Features: Line contact stylus. Price: £85.00 (plus VAT).

■ FORMULA 4

Mayware Ltd,
PO Box 58, Edgware, Middx HA8 9TS.
Tel: 01.958 9421.

Mk III Tone Arm *

Equally suitable for MC or MM cartridges any compliance. Viscous silicone damping, variable effective mass and bias compensation. Jewelled unipivot friction less than 5mg. Headshell is detachable for easy cartridge fitting but retains the advantages of a rigid fixed headshell arm. Accepts all cartridges 2g to 11g. Features: Geometry optimised for minimum distortion 12in. LP discs. (Stevenson Wireless World, May and June 1966). Stylus to pivot 229mm offset angle 23deg 31min. Single hole fixing. Adaptor plate for SME type cutout. Special adaptor for Thorens TD 160.

■ GOLDRING

Goldring Products Ltd,
Anglian Lane, Bury St. Edmunds,
Suffolk IP32 6SS.
Tel: Bury St. Edmunds (0284) 64011.



Fidelity Research FR1 Mk II

G900 Super E Mk II

Micro mass moving magnet cartridge. Stylus: 0.0007 x 0.0002. Playing weight: 0.75-1.5g. Tip mass: 0.32mg. Compliance: Lat 40 x 10⁻⁶cm/dyne ver 20 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±2dB. Output: at 5cm/sec, 1kHz 5mV RMS. Rec. load: 47K. Because of its extraordinary low mass, the G900 SE/2 tracking at less than 1g provides extremely low intermodulation distortion. Because of micro mass it offers very flat frequency response with excellent tone burst response. Price: £40.00 (plus VAT).

G900/E

Stereo magnetic cartridge with elliptical 0.0007 x 0.0003in. stylus. Playing weight: 1-2½g. Tip mass less than 1mg. Compliance: 25 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 6.5mV at 5cm/sec. Rec. load: 47K. Features: low mass only 4g stylus interchangeable with G900SE. Price: £26.00 (plus VAT).

G600

Stereo magnetic cartridge. Stylus: 0.0006in. Playing weight: 1½-3½g. Tip mass: less than 1mg. Compliance: 20 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz ±3dB. Output: 4mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £7.50 (plus VAT).

G800H

Stereo magnetic cartridge. Stylus: 0.0006in. Playing weight: 2½-3½g. Tip mass: 1.2mg. Compliance: 18 x 10⁻⁶cm/dyne. FR: 8mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £7.50 (plus VAT).

G800E

Stereo magnetic cartridge. Stylus: elliptical 0.0007 x 0.0003in. (18 x 8µm). Playing weight: ¼-1¼g. Tip mass: less than 1mg. Compliance: 30 x 10⁻⁶cm/dyne. FR: 10Hz-23kHz ±3dB. Output: 5mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £12.50 (plus VAT).

G800 Super E

Stereo magnetic cartridge. Stylus: elliptical 0.0007 x 0.0003in. (18 x 8µm). Playing weight: ½-1¼g. Tip mass: less than 1mg. Compliance: 35 x 10⁻⁶cm/dyne. FR: 10Hz-23kHz. Output: 4mV at 5cm/sec. 1kHz. Price: £17.40 (plus VAT).

G820

Stereo magnetic cartridge. Stylus: 0.0006in. Playing weight: 1.5-4g. Tip mass: 1mg. Compliance: 20 x 10⁻⁶cm/dyne. FR: 20Hz-20kHz. Output: 5mV at 5cm/sec. 1kHz. Rec. load: 47K. Separation: 1kHz 20dB. Price: £11.65 (plus VAT).



Formula 4 Mk III

G820/E

Stereo magnetic cartridge. Stylus: elliptical 0.0007 x 0.0003in. (18 x 8µm). Playing weight: ¾-2g. Tip mass: 1mg. Compliance: 25 x 10⁻⁶cm/dyne. FR: 10Hz-25kHz. Output: 5mV at 5cm/sec 1kHz. Rec. Load: 47K. Separation: 1kHz 20dB. Price: £16.50 (plus VAT).

G820/SE

Stereo magnetic cartridge. Stylus: elliptical 0.0007 x 0.0003in. (18 x 8µm). Playing weight: 0.6-1.75g. Tip mass: 0.9mg. Compliance: 35 x 10⁻⁶cm/dyne. FR: 10Hz-25kHz. Output: 4mV at 5cm/sec. Rec. load: 47K. Separation: at 1kHz 25dB. Price: £23.50 (plus VAT).

G850

Stereo magnetic cartridge. Stylus: spherical 0.0006in. Playing weight: 2½-4g. Tip Mass: 1.2mg. FR: 20Hz-18kHz. Output: 8mV at 5cm/sec RMS. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £5.85 (plus VAT).

G900/IGC *

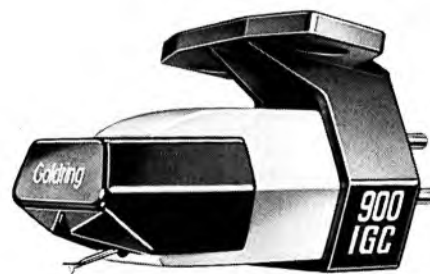
Micro Mass moving magnet with Van de Hul fine line stylus. Playing weight: 1.25g. Tip Mass: 0.32mg. Compliance: 40mm lateral, 20mm vertical. FR: 20Hz-20kHz ±2dB. Output: 4.5mV at 5cm/s. Recommended load: 47K. Features: computer-designed fine line stylus for optimum groove contact. Closest approach to original cutter shape to reduce distortion. Price: £60.00 (plus VAT).

G950

Moving magnet cartridge with 0.0006in. spherical stylus. Playing weight: 3g. Tip mass: 1.2mg. Compliance: 20mm/N lateral. FR: 20Hz-20kHz. Output: 6mV at 5cm/s. Recommended load: 47K. Features: rugged construction for use in wide range of pickup arms. Price: to be announced.

■ GRADO

Trasonic Imports (Acoustical) Ltd,
Brooks Court, Stamford, Lincs.



Goldring G900/IGC

FCE + 1

Cartridge with elliptical stylus. Playing weight: 1.25-2g. Compliance: 15scu. FR: 10Hz-50kHz. Output: 3mV. Features: Flux bridger. Price: £13.75 (plus VAT).

F3E +

Cartridge with elliptical stylus. Playing weight: 1-1.8g. Compliance: 15scu. FR: 10Hz-55kHz. Output: 3mV. Flux bridger. Price: £19.25 (plus VAT).

F1 +

Cartridge with elliptical stylus. Playing weight: 1-1.8g. Compliance: 15scu. FR: 10Hz-60kHz. Output: 3mV. Flux Bridger. Price: £41.25 (plus VAT).

G1 +

Cartridge with elliptical stylus. Playing weight: 1-1.8g. FR: 10Hz-60kHz. Output: 3mV. Flux bridger. Price: £72.50 (plus VAT).

F2+

Cartridge with elliptical stylus. Ultra low mass tip 0.0006in. x 0.0003in. Playing weight: 1-2g. Compliance: 15scu. FR: 10Hz-60kHz. Output: 3.5mV. Flux bridger. Price: £29.50 (plus VAT).

G2+*

Cartridge with twin-tip stylus. Playing weight: 1-1.8g. FR: 10Hz-60kHz. Output: 3.5mV. Flux bridger. Price: £115.00 (plus VAT).

Signature Series

Hand crafted Flux bridger cartridges. Further details on request.

Signature 1A. Price: £99.00 (plus VAT).
Signature 1B. Price: £159.00 (plus VAT).
Signature 11. Price: £279.00 (plus VAT).
Signature 111. Price: £412.00 (plus VAT).

G. F. C. HADCOCK

Audio Division,
The Old Vicarage,
Doveridge, Derby DE6 5NN.
Tel: Uttoxeter (088 93) 2452.

GH228*

Many improvements on previous models. The

new redesign single double decoupled main counterweight with lateral balance rider weights simplifies setting up and improves performance. The whole top arm assembly is detachable with a plug and socket and additional top arm assemblies are available separately thus making it possible to balance out complete with cartridge. Unipivot design for the finest cartridges available today and allows the ultimate performance to be achieved. The basic design is a very low mass arm maintaining maximum rigidity using compatible materials of the finest quality. Stainless steel precision ball bearing is the basis of the unipivot design for immeasurable friction and the headshell is a precision aluminium alloy casting resulting in maximum rigidity and strength, important for all cartridges. Whole top arm assembly complete with weight is removable, so that any cartridge can be set-up pre-balanced, with a single main weight and rider weight. Adjustment is simple and with the single main weight the arm will accept all cartridges up to 12g. Silicone fluid provided has been developed to provide the optimum damping required. Price: £68.00 (plus VAT).

GH 228 'E' Type

Basically the same as GH228 but having low capacitance phono cables with gold plated phono plugs, pulley wheel bias kit, 7 stainless steel bearing, damped arm tube. Price: £86.00 (plus VAT).

JVC

JVC (UK) Ltd,
Eldonwell Trading Estate,
Staples Corner, 6-8 Priestley Way,
London NW2 7AF.
Tel: 01-450 2621.

Z-2E

Moving magnet cartridge with elliptical diamond stylus. Playing weight: 5.5g. Compliance: 12×10^{-6} cm/dyne. FR: 10Hz-35kHz. Output: 4mV (1kHz. 50mm/s). Load: 47 ohms. Price: £43.50 (inc. VAT).

X-2*

Moving magnet cartridge with Shibata stylus Mark II diamond. Playing weight: 7.5g. Compliance: 12×10^{-6} cm/dyne (at 100Hz dynamic). FR: 10Hz-60kHz. Output: 3mV (1kHz, 50mm/s). Price: £84.00 (inc. VAT).

MC 2

Moving coil cartridge with elliptical stylus. Playing weight: 1.6g. Output: 0.2mV 1K 5cm/s. Features: printed micro coil. Price: £101.00 (inc. VAT).

MC 1

Moving coil cartridge with Shibata stylus. Playing weight: 1.5g. Tip mass: 0.2mg. Compliance: 8×10^{-6} cm/dyne. FR: 10Hz-50kHz. Output: 0.2mV 1K at 5cm/sec. Features:

printed micro coil direct coupled to stylus. Price: £190.50 (plus VAT).

LENTEK AUDIO LTD

Lentek Audio Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon, Cambs. PE17 4LF.
Tel: St. Ives 62225.

Entre 1*

Stylus elliptical 0.3 x 0.8m. Compliance: 10×10^{-6} cm/dyne. FR: 10Hz-50kHz. Channel balance: within 1dB at 1kHz. Output: 0.2mV at 5cm/sec 1kHz. Channel separation: 28dB at 1kHz. Tracking force: 1.8g + 0.3g. Total mass: 5.8g. Price: £87.50 (plus VAT).

MAYWARE

Mayware Ltd,
PO Box 48, Edgware, Middlesex.
Tel: 01-958 9421.

MC-2C*

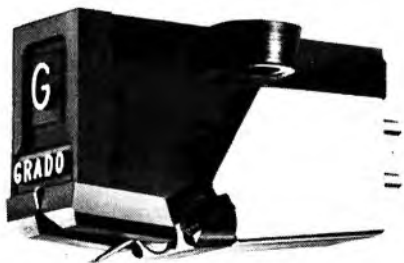
Moving Coil cartridge with energy absorbing top section for perfect tight coupling to headshell. Titanium cantilever with super-polished nude diamond conical stylus for natural sound and less record wear than an elliptical. Playing weight 1.8-2.2g. Frequency response 10-50,000Hz. Compliance 8×10^{-6} . Tip mass 0.38mg. Output 0.2mV. Imp: 3 ohms. Weight: 6.9g. Recommended load 47K. Mayware T-24 Universal MC transformer available.

MC-3L

Moving coil cartridge with super-polished nude diamond line contact stylus. Playing weight: 1.8-2.3g. Tip mass: 0.35mg. Compliance: 8×10^{-6} cm/dyne. FR: 10Hz-50kHz. Output: 2.5mV at 3.54cm/sec. Recommended load: 47-100K, 85 ohms. Features: high output, no step up device required. Energy absorbing body. Price: on application.

MICRO SEIKI

Harmon UK,
St. John's Road,
Tyler's Green, High Wycombe,
Bucks. HP10 8HR.
Tel: High Wycombe (049 481) 5331.



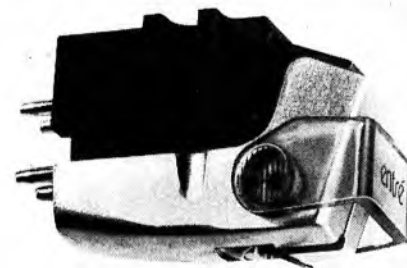
Grado G2 +



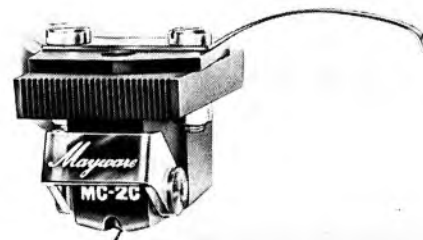
Hadcock GH 228



JVC X-2



Lentek Entre 1 cartridge



Mayware MC-2C

MA505

Tonearm with dynamic balance. Price: £114.67 (plus VAT).

MA505S

As above with silver wires. Price: £132.44 (plus VAT).

MA707

Dynamic balance tonearm with variable mass feature. Price: £96.89 (plus VAT).

LC80W

Low output moving coil cartridge with silver coils. Price: £87.56 (plus VAT).

■ **N. MIERS & CO LTD**

Piercing Hill, Theydon Bois, Epping, Essex CM16 7LE. Tel: 037-881 2611.

SX6M*

Stereo crystal cartridge. LP/78 diamond stylus. Playing weight: 4.6g. Output: 280mV. Price: £2.42 (plus VAT).

SX6H*

Stereo crystal cartridge. LP/78 diamond stylus. Playing weight: 7g. Output: 700mV. Price: £2.42 (plus VAT).

X5H

Monaural crystal compatible cartridge, sapphire stylus. Playing weight: 5.9g. Output: 1V. FR: 40Hz-10kHz. Price: £1.81 (plus VAT).

SC12M

Stereo ceramic cartridge. Output: 100mV. Stylus pressure: 2-6g. Sapphire or diamond stylus. Price: £3.02 (plus VAT).

SC12H

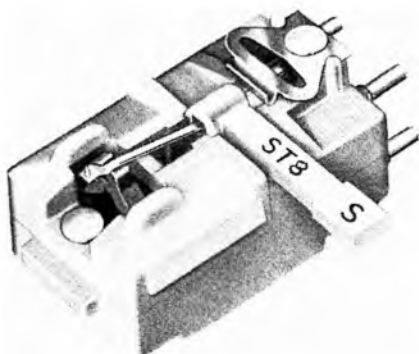
Stereo ceramic cartridge. Output: 170mV. Stylus pressure: 4-6g. Sapphire or diamond stylus. Price: £3.02 (plus VAT).

■ **MISSION**

Mission Electronics Ltd, PO Box 65, London SW7 1PP. Tel: 01-589 0048.

773

Medium output moving coil cartridge. Mass: 5.7g. Tracking force: 1.8g ±0.25g. Output voltage: 1.7mV. FR: 20Hz-20kHz ±1dB. 100Hz-50kHz ±0.25dB. Paroc stylus. Compliance: 25 x 10⁻⁶cm/dyne. 18° vertical tracking angle. Separation: 25dB at 100Hz, 40dB at 1kHz, 30dB at 10kHz. Loading Imp: 47K.



Miers SX6H and SX6M

Finish: black/red. Approx. Market Price: £157.00 (inc. VAT).

774 Pickup arm

Effective length: 229mm, effective mass: <5.5g. Acceptable cartridge mass range: 2-10g. Interchangeable armtube/headshell assembly. Mounting: SME-type format. Hydraulic damping via viscous fluid. Finish: black. Weight: 0.5g. Approx. Market Price: £127.00 (inc. VAT).

■ **KEITH MONKS**

Keith Monks (Audio) Ltd, 26-28 Reading Road South, Fleet, Aldershot, Hants. Tel: Fleet 20568/9.

M9BA Mk 3 (Improved)*

Pickup arm. 9in. arm length pivot to stylus. Designed for low mass ultra high compliance cartridges tracking at very low stylus pressures. Damped unipivot with mercury contact pins and no lead out wires. Bias correction and anti-skating built-in. Damped lift/lowering device. Effective mass: 6g. LF res: 10Hz for 5g cartridge. Friction lateral and vertical: 4mg approx. Torque: 25 to 35mg. 13Hz for 6g mass at 25cu. Mercury contact pin connection designed for low tracking cartridges. Price: £62.50 (plus VAT). Top arm £31.50 (plus VAT), spare counterweights for light, heavy and Decca London £7.00 (plus VAT).

■ **NAGAOKA**

J. Osawa & Co. (UK) Ltd, 10 Forge Court, Reading Road, Yateley, Camberley, Surrey. Tel: 0252 879121.

MP Cartridges

Series of moving permalloy cartridges: MP-10, MP-11, MP-15, MP-20, MP-30, MP-50. Also available with optional magnesium headshell. 20, 30, 50 models all feature Nagaoka boron cantilever system. Price: £14.00, £17.00, £33.00, £39.00, £49.00, £77.00.

OS Cartridges*

OS-100MP, OS-200MP, OS-300MP also available with optional headshell. Price: from £6.00 upwards.

Ultracraft AC 30

Tone arm now available for the first time in the UK. Price: £119.00.

■ **ORTOFON**

Harman UK, St. John's Road, Tyler's Green, High Wycombe, Bucks. HP10 8HR. Tel: High Wycombe (049 481) 5331

Moving Coil Cartridges

MC30 Fine-Line/Diamond £221.33. MC20 Mk II Fine-Line/Diamond £100.00. MC10 Elliptical/Diamond £45.78. SL20Q Bi-Elliptical/Diamond £88.44. SL20E Elliptical/Diamond £55.33. All plus VAT.

Moving Coil System

MC10/STM72 cost saving pack £64.44. (plus VAT).

Moving Coil Amplifier

MCA76 £113.04 (plus VAT).

Moving Coil Transformers

T30 £176.89. STM-72 £24.89. (plus VAT).

Ultra-Low Mass Magnetic Cartridges

Concorde 30 Integral Headshell/Cartridge Unit Fine-Line/Diamond £58.67. Concorde 20 Integral Headshell/Cartridge Unit Fine-Line/Diamond £43.56. LM30 Cartridge/Adaptor to fit universal headshell Fine-Line/Diamond £51.56. LM30H. As above, but high compliance version £51.56. LM20 Cartridge/Adaptor to fit universal headshell Fine-Line/Diamond £37.33. LM20H. As above, but high compliance version £37.33. SME30H £86.52.



Nagaoka OS 300 MP



Keith Monks M9BA Mk3 (Improved) tone arm

Magnetic Cartridges

D20FL super Fine-Line/Diamond £39.13.
M20E super Elliptical/Diamond £34.35.
VMS20E MKII Elliptical/Diamond £26.96.
F15E MKII Elliptical/Diamond £19.57. FF15E
MKII Elliptical/Diamond £13.91. FF10E
Elliptical/Diamond £9.13. All plus VAT.

Styli for Magnetic Cartridges

D20FL super for M20FL super £37.78. D20E
super for M20E super £30.67. D20E MKII for
VMS20E MKII £23.56. N15E MKII for F15E
MKII £13.33. NF15E MKII for FF15E MKII
£10.22. NF10E for FF10E £7.55. N15 MKII for
F15 MKII £11.11. D15E super for M15E super
£30.67. D15 super for M15 super £22.67. D20E
for VMS20E (MKI) £23.56. N15E for F15E
(MKI) £13.33. N15 for F15 (MKI) £11.11.
NF15E for FF15E (MKI) £10.22. All plus VAT.

AS212 MkII

Tonearm with anti-skating and cueing device.
Price (£70.67 plus VAT).

■ **PHILIPS**

Philips Electrical Ltd,
City House,
420 London Road, Croydon, Surrey.
Tel: 01-689 2166.

GP400 Mk2 Super M Cartridge

Type: stereo magnetic, 1/2in. fixing. Stylus;
15µm diamond. Compliance: ≥22mm/N lateral.
≥16mm/N vertical. Separation: ≥29dB.
Sensitivity: 1.3mV/cm/sec at 1kHz. Stylus
pressure: 1.5-3g. Weight: 6g.

GP401 Mk2 Super M Pickup Cartridge

Type: stereo magnetic 1/2in. fixing. Stylus: 7 x
18µm diamond (elliptical). Compliance:
≥20mm/N lateral, ≥16mm/N vertical.
Separation ≥29dB. Sensitivity: 1.3mV/cm/sec
at 1kHz. Stylus pressure: 1.5-2.5g. Weight: 7g.

GP412 Mk2 Super M pickup Cartridge

Type: stereo magnetic 1/2in. fixing. Stylus: 7 x
18µm diamond (elliptical). Compliance:
≥30mm/N lateral, ≥20mm/N vertical.
Separation: ≥30dB at 1kHz. Sensitivity:
1.5mV/cm/sec at 1kHz. Stylus pressure: 0.75-
1.5g. Weight: 7g.

GP422 Mk2 Super M pickup Cartridge

Type: stereo magnetic 1/2in. fixing. Stylus: 7 x
18µm diamond profiled for superconic tracking.
Compliance: 32 x 10⁻⁶cm/dyne. Separation:
≥30dB at 1kHz. Sensitivity: 1.1mV/cm/sec at
1kHz. Stylus pressure: 0.75-1.5g. Weight: 6.9g.

■ **PICKERING**

Sound Source, Station Approach,
Rickmansworth, Herts.
Tel: Rickmansworth (092 37) 75242

Quadraredral (CD4) Series

XUV/4500A £99.00; XSV/3000 £69.00;
XSV/4000 £92.50; XSV/5000 £132.00;
XSV/5000U £148.00.

XV15 625E

Shank elliptical cartridge. Mass: 6g. Test
tracking force: 1.25g. Sensitivity: 1mV/cm/sec.
FR: 2;Hz-20kHz ±2.5dB, 100Hz-50kHz
±1.5dB. Price: £29.50.

XV-15 DCE Series

XV-15/1200E £54.50; XV-15/750E £45.00;
XV-15/400E £26.00; XV-15/140E £20.50; XV-
15/350 £19.50; XV-15/150 £18.25; XV-15/100
£15.00; 625DJ £29.50.

V15 Micro Series

IV AME £22.50; IV AM £17.50; IV AT £15.00;
IV ACE £15.00; AC £12.50.

P Series

P/ATE £14.00; P/AT £10.50; P/AC £9.00;
S/E1 £16.50. All above plus VAT.

XSV 4000

Moving magnet cartridge with D4000 diamond
stylus. Playing weight: 0.7-1.25g. FR: 10Hz-
40Hz. Output: 4.9mV at 5.5cm/sec.
Recommended load: 47K. Price: £92.00 (plus
VAT).

XSV 5000

Moving magnet cartridge with diamond D5000
stylus. Playing weight: 0.5-1.5g. FR: 10Hz-
50kHz. Output: 4.7mV at 5.5cm/sec.
Recommended load: 47K. Price: £132.00 (plus
VAT).

XSV 5000 U

Moving magnet cartridge with choice of D5000,
D4541 and D4543 Styli. Designed for the
audiophile who wants to enjoy HiFi
reproduction of all available analogue records
from Shellac 78 rpm, through first mono LP's to
latest Direct Cut and PCM records.
XSV/5000U triangular box contains the car-
tridge with its Stereohedron stylus, a Pickering
78 rpm stylus, mono LP stylus, plus screwdriver
and mounting hardware. Price: £148.00 (plus
VAT).

■ **SATIN**

J. Osawa and Co (UK) Ltd,
10 Forge Court, Reading Road,
Yateley, Camberley, Surrey GU17 7RX.
Tel: Yateley (0252) 879121

M-1172E

Moving coil cartridge with elliptical diamond
stylus. Tracking force: 1-2g. Compliance: 12 x
16⁻⁶cm/dyne. FR: 20Hz-22kHz. Output: 3mV
±2dB. Load impedance: 40 ohms. Price: £55.00
(plus VAT).

■ **SEAC**

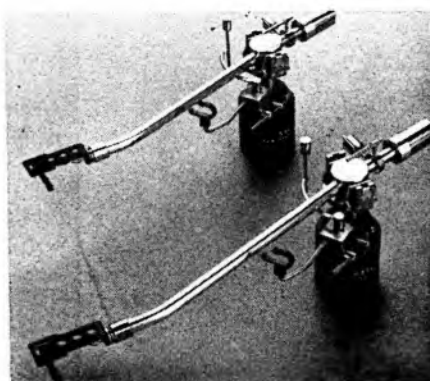
Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

WE-308 L *

Tone arm with double knife edge bearing,
automatic tracking force. Length overall:
367.5mm. Effective length: 270mm. Price:
£108.00 (plus VAT).

WE-308

As above but with overall length: 329mm and
effective length 240mm. Price: £99.50.



Seac WE 308L

ULS-20

Two Ultimate headshells in box. Price: £16.00
(plus VAT).

Other Accessories

ULS-2 Ultimate headshell £7.00; W-2 twin
counterweight for WE308N £18.25; ditto for
WE-308L £18.25. Model No. W-2L. AS-500E
arm stabilizer £13.50; S-1 arm bracket £39.00
(all plus VAT).

WE-308 SX tone arm

New concealed double knife-edged bearing
system, gold plated pin connectors, low
capacitance, gold plated phono cord supplied.
Overall length: 329mm, effective length
240mm, overhang 5mm. Price: £265.00 (plus
VAT).

■ **SHURE**

Shure Electronics Ltd,
Ecclestone Road, Maidstone ME15 6AU.
Tel: Maidstone (0622) 59881.

M3D

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.7 thou diamond.
Playing weight: 3-6g. Compliance: 4 x
10⁻⁶cm/dyne. FR: 20Hz-15kHz. Separation:
20dB at 1kHz. Output: 1mV. Load impedance:
47K. Price: £7.50 (plus VAT).

M44C

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.7 thou diamond (1 thou
and 3 thou styli available). Playing weight: 3-
5g. Compliance: 7.5 x 10⁻⁶cm/dyne. FR: 20Hz-
20kHz. Separation: 20dB at 1kHz. Output:
1.8mV. Load impedance: 47K. Price: £10.50
(plus VAT).

M44E

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.7 x 0.4 thou bi-radial
diamond (3 thou stylus available). Playing
weight: 1 3/4-4g. Compliance: 15 x 10⁻⁶cm/dyne.
FR: 20Hz-20kHz. Separation: >20dB at 1kHz.
Output: 1.8mV. Rec load: 47K. Price: £11.10
(plus VAT).

M44G

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.6 thou diamond (1 thou
and 3 thou styli available). Playing weight: 3/4-
1 1/2g. Compliance: 25 x 10⁻⁶cm/dyne. FR:
20Hz-20kHz. Separation: 25dB at 1kHz.
Output: 1.4mV. Load impedance: 47K. Price:
£10.50 (plus VAT).

M44-7

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.7 thou diamond (1 thou
and 3 thou styli available). Playing weight: 1 1/2-
3g. Compliance: 20 x 10⁻⁶cm/dyne. FR: 20Hz-
20kHz. Separation: 20dB at 1kHz. Output:
2.2mV. Load impedance: 47K. Price: £10.50
(plus VAT).

M55E

Stereo Dynetic cartridge. Moving magnet. 1/2in.
fixing centres. Stylus: 0.7 x 0.2 thou bi-radial
diamond (3 thou stylus available). Playing
weight: 3/4-2g. Compliance: 15 x 10⁻⁶cm/dyne.
Separation: 22dB at 1kHz. Output: 1.3mV.
Load impedance: 47K. Price: £12.60 (plus
VAT).

M70B and M70EJ

Stereo Dynetic cartridge with spherical and bi-
radial elliptical stylus tips. Playing weight: 1.5-
3g. Trackability: 2g 19/400Hz, 26/1kHz,



SERIES III + COMPATIBILITY

Series III and IIIS precision pick-up arms are suitable for all cartridges having $\frac{1}{2}$ " fixing centres, weighing not more than 12 grams and requiring a tracking force not higher than 2.5 grams. They are adaptable to suit the mass and compliance of the cartridge, which may employ a moving coil, moving iron, moving magnet or any other generating principle.

Series III arms are true low mass designs with headroom to increase effective mass as desired whereas with high mass arms reduction is generally impracticable.

We shall be pleased to send you information sheet No. 24 which tells you how to adjust effective mass to suit your cartridge. It could make all the difference to your listening.

SME

*The best pick-up arm
in the world*

Write to SME Limited,
Steyning, Sussex, BN4 3GY,
England

12/10kHz. FR: 20Hz-20kHz. Output: 1.2mV at 1kHz. Recommended load: 47K. Price: £5.00 for M70B and £7.80 for M70EJ.

M75B Type 2

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus: 0.6 thou diamond (3 thou stylus available). Playing weight: 1 1/2-3g. Trackability (see note at end) at 2g. in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 10kHz 20cm/sec. FR: 20Hz-20kHz. Separation: >20dB at 1kHz. Output: 1mV. Rec load: 47K per channel. Price: £15.00 (plus VAT).

M75ED Type 2

Stereo Dynetic cartridge. Moving magnet. 1/2in. centres. Stylus: 0.7 x 0.2 thou bi-radial diamond. Playing weight: 1/4-1 1/4g. Trackability (see note at end) at 1g in SME 3009 arm: 400Hz 22cm/sec, 1kHz 33cm/sec. 5kHz 20cm/sec, 10kHz 19cm/sec. FR: 20Hz-20kHz. Separation at 1kHz: 25dB. Output: 1mV. Rec. load: 47K per channel. Price: £21.30.

M75G Type 2

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus: 0.6 thou conical diamond (3 thou stylus available). Playing weight: 1/4-1 1/4g. Trackability (see note at end) at 1g in SME 3009 arm: 400Hz 20cm/sec, 1kHz 28cm/sec, 10kHz 18cm/sec. FR: 20Hz-20kHz. Separation: >25dB at 1kHz. Output: 1mV. Rec. load: 47K per channel. Price: £16.80 (plus VAT).

M75EJ Type 2

Stereo Dynetic cartridge. Stylus: 0.7 x 0.4 thou bi-radial diamond. Playing weight: 1 1/2-3g. Trackability at 2g in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 10kHz 20cm/sec. Output: 1mV. Separation: 20dB at 1kHz. Price: £18.30 (plus VAT).

M95HE

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus hyperelliptical nude diamond (2.5 thou spherical 78 rpm tip also available). Playing weight: 1/4-1 1/4g. Trackability (see note at end) at 1g in SME 3009 arm: 400Hz 24cm/sec, 1kHz 33cm/sec, 5kHz 28cm/sec, 10kHz 19cm/sec. FR: 20Hz-20kHz. Separation: 25dB minimum at 1kHz. Output: 0.98mV per channel at 1kHz, 1cm/sec peak recorded velocity, Rec load: 47K per channel. Price: £30.00 (plus VAT).

M95ED

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus 0.7 x 0.2 thou bi-radial diamond (2.5 thou spherical 78 rpm tip also available). Playing weight: 1/4-1 1/4g. Trackability (see note at end) at 1g in SME 3009 arm: 400Hz 24cm/sec, 1kHz 33cm/sec, 5kHz 28cm/sec, 10kHz 19cm/sec. FR: 20Hz-20kHz. Separation 25dB minimum at 1kHz. Output: 0.98mV per channel at 1kHz, 1cm/sec peak recorded velocity. Rec load: 47K per channel. Price: £28.50 (plus VAT).

M95EJ

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus 0.7 x 0.4 thou bi-radial diamond. (2.5 thou spherical 78 rpm tip also available). Playing weight: 1 1/2-3g. Trackability (see note at end) at 2g in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 5kHz 30cm/sec, 10kHz 20cm/sec. FR: 20Hz-20kHz. Separation: 20dB minimum at 1kHz. Output: 0.98mV per channel at 1kHz. Rec load: 47K per channel. Price: £19.50 (plus VAT).

M24H

Stereo and discrete 4-channel cartridge with Hyperbolic diamond tip. Playing weight: 1-1 1/4g. Tip mass: 0.39g. Trackability: 400Hz 20cm/sec, 1,000Hz 20cm/sec, 5,000Hz 47cm/sec, 10,000Hz 50cm/sec. FR: 20Hz-50kHz. Output: 0.6mV at 1kHz, 1cm/sec. Recommended load: stereo: 20-100K ohms in parallel with 100-250 pF. Discrete 4-channel: 100K in parallel with 100 pF. Price: £41.40 (plus VAT).

V15 Type III

Stereo Dynetic cartridge. Moving magnet. 1/2in. fixing centres. Stylus: 0.7 x 0.2 thou bi-radial diamond (0.6 thous and 2.5 x 0.5 thou tips also available). Playing weight: 1/4-1 1/4g. Trackability (see note at end) at 1g in SME 3009 arm: 400Hz 26cm/sec, 1kHz 38cm/sec, 5kHz 35cm/sec, 10kHz 26cm/sec. FR: 10Hz-25kHz. Separation: >25dB at 1kHz >15dB at 10kHz. Output: 0.7mV at 1kHz 1cm/sec. Rec. load: 47K. Price: £59.40 (plus VAT).

V15 Type IV*

Stereo Dynetic cartridge with hyper elliptical nude diamond stylus. Playing weight: 1/4-1 1/4g. FR: 10Hz-25kHz. Trackability at 1g in SME pickup arm: 400Hz 29cm/sec. 1kHz 42cm/sec. 5kHz 47cm/sec. 10kHz 37cm/sec. Output: 0.8mV at 1cm/sec, 1kHz. Recommended load: 47K. Built-in dynamic stabiliser and electrostatic neutraliser. Price: £79.20 (plus VAT).

V15 III-HE

Stereo dynetic moving magnet cartridge with hyperelliptical nude diamond stylus. Playing weight: 1/4-1 1/4g. Trackability as V15 Type III. FR: 10Hz-25kHz. Output: 0.7mV at 1cm/sec. Recommended load: 47K. Features: 1/2in. fixing centres. Price: £66.20 (plus VAT).

M97HE

Stereo dynetic moving magnet cartridge with hyperelliptical nude diamond tip. Playing weight: 1/4-1 1/4g. FR: 20Hz-20kHz. Output: 0.8mV at 1cm/sec. Recommended load: 47K. Features: built-in dynamic stabiliser and electrostatic neutraliser. "Side guard" stylus protection. 1/2in. fixing centres. Price: £49.80 (plus VAT).

M97 ED

Stereo dynetic moving magnet cartridge with nude bi-radial diamond 0.7 x 0.2 thou stylus. Playing weights: 1/4-1 1/4g. FR: 20Hz-20kHz. Output: 0.8mV at 1cm/sec. Recommended load: 47K. Features: as M97HE. Price: £44.40 (plus VAT).

M97GD

Stereo dynetic moving magnet cartridge with nude spherical diamond stylus. Playing weight: 1/4-1 1/4g. FR: 20Hz-20kHz. Output: 0.8mV at 1cm/sec. Recommended load: 47K. Features: as M97 HE. Price: £33.60 (plus VAT).



Shure V15 type IV

M97EJ

Stereo dynetic moving magnet cartridge with bi-radial 0.4 x 0.7 thou stylus. Playing weight: 1 1/2-3g. FR: 20Hz-20kHz. Output: 0.8mV at 1cm/sec. Recommended load: 47K. Trackability: 400Hz 30cm/sec; 1,000Hz 41cm/sec; 5,000Hz 46cm/sec; 10,000Hz 34cm/sec. Features: As M97 HE. Price: £33.60 (plus VAT).

M97B

Stereo dynetic moving magnet cartridge with spherical stylus 0.6 thou. Playing weight: 1 1/2-3g. FR: 20Hz-20kHz. Outputs: 0.8mV at 1cm/sec. Recommended load: 47K. Features: As M97HE. Price: £29.40 (plus VAT).

NOTE

Trackability is a term introduced by Shure to give a measure of the total performance of a cartridge. It takes into account the mechanical design parameters of tip mass, inertia, compliances throughout the system, tracking pressure, recorded velocity, etc. Explanatory leaflet available on request.

SIGNET

Audio Technica Ltd, Hunslet Trading Estate, Low Road, Leeds LS10 1BL. Tel: 0532 771441.

XK50

Low mass tonearm with dynamic tracking system and silicone damping. Price: £119.95 (inc. VAT). Spare plug-in integral headshell and arm pipe. Price: £29.44.

Dual moving micro-coil cartridges

ML111E £92.70, MK112E £112.71.

Dual magnet cartridges

TK3E £19.99, TK3E/G £29.48, TK5E £33.95, TK7E £73.28, TK7SU £74.81, TK9E £189.95.

SME

SME Ltd, Mill Road, Steyning, Sussex BN4 3GY. Tel: Steyning (0903) 814321.

Model 3009

Series II Improved precision pickup arm. Non-detachable shell. Pivot to stylus: 9in. nominal. Low-friction pivots. Vertical axis: high precision fully protected ball races. Horizontal axis: knife edges. Less than 0.02g applied at the stylus will deflect the arm in either plane. Low inertia: Tracking force: 0-1.5g applied precisely without the use of a gauge. Lever operated hydraulically damped lowering and raising control. Shell accepts all cartridges with 1/2in. (12.7mm) fixed centres, weighing 4-9g. 4ft. (1.22m) audio lead, low capacity for magnetic cartridges. SME phono plugs are standard, DIN 5-pole supplied on request. Camera finish in satin chrome, gun black anodised alloy and polished stainless steel. Complete with mounting template, alignment protractor, shell hardware, fixing screws and fully illustrated instruction book. Price: £71.75 (plus VAT).

Model 3009/S2

Series II Improved precision pickup arm. Detachable shell. Other details as above. Price: £78.65 (plus VAT).

Series III*

Pickup arm with unique balance system enables cartridges weighing 0.12g to be operated under conditions of minimum inertia. Integral

carrying arm replaces conventional tone arm and shell and is interchangeable for multi-cartridge use. Features: low friction pivots, vertical axis. Tracking force: up to 2.5g. All electrical contacts heavily gold-plated. Price: £130.95 (plus VAT).

■ SONOTONE

Vernitron Ltd,
Thornhill, Southampton,
Hants SO9 5QF.
Tel: Southampton (0703) 444811.

V300

Stereo magnetic cartridge. Tracking weight: 2-2.5g. FR: 20Hz-20kHz. Output: 2.4mV/cm/sec. Separation: better than 20dB at 1kHz. Channel Diff: less than 2dB. Inductance: 200mH per channel. Stylus: 0.0006in. spherical diamond.

V300E

As above but with elliptical stylus 0.0007in. x 0.0004in. diamond.

V100

As V300 but with different stylus.

V101

As V100 but tracking weight 2-4g.

General Features

V100 cartridges available with stylus suitable for 78rpm records.

Full range of Sonotone ceramic cartridges, mono and stereo, to suit most requirements is available.

■ SONUS

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet (093 23) 51051.

Gold Series II Blue Label

Magnetic cartridge with Pathemax stylus. Playing weight: 0.75-1.25g. Compliance: 50cm/dyne x 10⁻⁶. FR: ±6dB up to 45kHz. Output: 0.8mV ±2dB (4mV at 5cm/sec). Recommended load: 4nf maximum. Price: £77.00 (plus VAT). Calibrated versions: £92.99 (plus VAT).

Gold Series II Red Label

Magnetic cartridge with bi-radial stylus. Playing weight: 0.75-1.25g. FR: ±3dB up to 20kHz. Other details as above. Price: £60.50 (plus VAT). Calibrated versions: £85.90 (plus VAT).

Gold Series II Green Label

Magnetic cartridge with spherical stylus. Other details as Blue Label. FR: ±3dB up to 20kHz. Price: £50.60 (plus VAT). Calibrated version: £78.95 (plus VAT).

Silver Series II Silver P

Magnetic cartridge with Pathemax stylus. Playing weight: 1-1.5g. Compliances: 40cm/dyne x 10⁻⁶. FR: up to 45kHz ±10dB. Output: 1mV ±2dB (5mV at 5cm/sec).



SME Series III

Recommended load: 47K. Price: £41.80 (plus VAT).

Silver Series II Silver E

Magnetic cartridge with Bi-radial stylus. FR: ±3dB 20Hz-20kHz. Other details as Silver P. Price: £39.60 (plus VAT).

Black Series II Black A

Magnetic cartridge with Bi-radial stylus. Playing weight: 1.25-1.75g. Compliance: 30cm/dyne x 10⁻⁶. FR: 20Hz-20kHz ±2dB. Output: 1mV ±2dB (5mV at 5cm/sec.). Recommended load: 47K. Price: £29.00 (plus VAT).

Black Series II Black C

Magnetic cartridge with spherical stylus. Playing weight: 1.5-2g. Compliance: 25cm/dyne x 10⁻⁶. Other details as Black A. Price: £24.99 (plus VAT).

Dimension 5

Magnetic cartridge with Lamba stylus. Weight: 1-1.5g. Compliance: 50 cm/dyne 10⁻⁶. FR: 10Hz-20kHz ±1dB. Output: 0.8mV/cm/sec. Price: £135.00 (plus VAT).

■ SONY (UK) LTD

Consumer Information, Sony Showroom,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

Cartridges

VL 32 G Cartridge for PS1350/ PS2350/ PS1700/ PS3300/ PS212/ PS11/ PS22/ HMK55/ HMK77.

Stylii

ND136G Stylus for HMK11, 33. ND133G Stylus for HMP40/HMK70/HMK30. ND134G Stylus for PS1350 / PS2350 / PS11 / PS22/ HMK 55 / HMK77 / PS1700 / PS3300. ND100G ND15G Stylus for PST1, PST2 Stylus for EX1K, EX2K.

XL 15

Magnetic cartridge with conical diamond 0.6 mil stylus. Playing weight: 1.2-2.5g (1.7g rec.). Compliance: 15 x 10⁻⁶cm/dyne. FR: 10Hz-30,000Hz. Output: 4mV. Rec. load: 50K-100K. Features: specially heated cantilever for rigidity.

XL 25

Magnetic cartridge with elliptical diamond 0.3 x 0.8 mil stylus. Playing weight: 1-2g (1.5 rec.). Compliance: 15 x 10⁻⁶cm/dyne. FR: 10-30,000Hz. Output: 4mV. Rec. load: 50K-100K. Features: specially heat treated tapered cantilever.

XL 35

Magnetic cartridge with elliptical 0.3 x 0.8 mil stylus. Playing weight: 1-2g (1.5 rec.). Compliance: 15 x 10⁻⁶cm/dyne. FR: 10Hz-35,000Hz. Output: 3mV. Rec. load: 50K-100K. Features: carbon-clad cantilever, Alnico magnet.

XL 45

Magnetic cartridge with line contact type nude diamond. Playing weight: 1-2g (1.5 rec.). Compliance: 20 x 10⁻⁶cm/dyne. FR: 10-45,000Hz. Output: 3mV. Rec. load: 50K-100K. Features: carbon-clad cantilever, samarium cobalt ring magnet.

XL 55*

Moving coil cartridge with 0.3 x 0.8 mil solid diamond stylus. Playing weight: 1-2.2g (rec.). FR: 10-50,000Hz. Output: 0.2mV. Rec. load: 40 ohms. Features: HA 55 head amplifier required.

HA 55 Head Amplifier

For XL 55 above.

■ STANTON

Wilmex Ltd,
Compton House,
New Malden, Surrey KT3 4DE.
Tel: 01-949 2545.

500A

Magnetic cartridge with D5107A stylus. Playing weight: 2-5g. FR: 20Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £14.75 (plus VAT).

500AL

Magnetic cartridge with D5107AL stylus. Playing weight: 3-7g. FR: 20Hz-17kHz. Output: 1mV. Recommended load: 47K. Specially designed for disco and industrial use. Price: £14.75 (plus VAT).

500E

Magnetic cartridge with D5100E stylus. Playing weight: 2-5g. FR: 20Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £17.00 (plus VAT).

500EE

Magnetic cartridge with D5100EE stylus. Playing weight: 1-2g. FR: 10Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £19.00 (plus VAT).

681EEE*

Magnetic cartridge with D6800EEE stylus. Playing weight: 0.75-1.5g. FR: 12Hz-22kHz. Output: 0.7mV. Rec. load: 47K. Price: £46.26 (plus VAT).

881S

Magnetic cartridge with D81 stylus. Playing weight: ¼-1¼g. High compliance. FR: 10Hz-20kHz. Output: 4.5mV/5cm/sec. Recom-

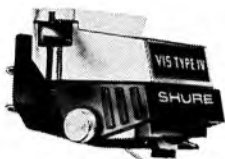


Sony XL-55



Stanton 681 EEE

fact: there's a Shure cartridge that's correct for your system—and your cheque-book:



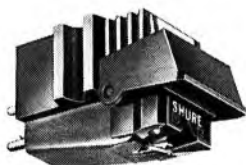
V15 Type IV—The perfectionist's pickup—overcomes such ever-present problems as warp, static electricity, and dust. Ultra-flat response. Reduced distortion. Unprecedented trackability. $\frac{3}{4}$ to $1\frac{1}{4}$ grams tracking. Premium-priced.



M97HE—The top model from an entire new line of Shure pickup cartridges, each with the exclusive Dynamic Stabilizer and the unique SIDE-GUARD stylus protection system, and available in a range of stylus tips, tracking forces, and prices. The M97HE features the distortion-reducing Hyperelliptical stylus. $\frac{3}{4}$ to $1\frac{1}{2}$ grams tracking.



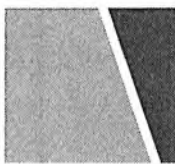
M95HE—New mid-priced cartridge with distortion-reducing Hyperelliptical stylus. Flat response. $\frac{3}{4}$ to $1\frac{1}{2}$ grams tracking.



M75ED Type 2—Deluxe cartridge with a nude-mounted Biradial (Elliptical) stylus for outstanding high frequency trackability. $\frac{3}{4}$ to $1\frac{1}{2}$ grams tracking. Overall performance previously unavailable at this price level.



M70 Series—Modestly priced cartridges with truly noteworthy performance. $1\frac{1}{2}$ to 3 grams tracking. Biradial or Spherical styli.



**fact:
the pickup
cartridge
is the
heart of
hi-fi...**



The hi-fi pickup cartridge functions as the *source of sound* (the point at which the recording is linked with the balance of the hi-fi system)—therefore, its role in high fidelity is absolutely critical. Just as the camera can be no better than its lens, not even the finest hi-fi system in the world can transcend the limitations of an inferior cartridge. The cartridge represents a relatively modest investment which can audibly upgrade the sound of your entire record playback system.

Consult with your nearby Shure dealer who will help you select the Shure pickup cartridge that is correct for your system and your cheque-book. We especially recommend that you audition the Shure V15 Type IV. Discriminating critics throughout the world praise this cartridge as the new standard for faithful sound re-creation. It overcomes such ever-present problems as dust, static electricity, "hot" signals, and record warp that cause "clicks" or "pops," and distorted record reproduction. May we send you our brochure?



Shure Electronics Limited, Ecclestone Road, Maidstone ME15 6AU
Telephone: Maidstone (0622) 59881

mended load: 47K. Stereohedron stylus for low record wear. Price: £83.25 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd,
107-109 Whitby Road,
Slough, Berks SL1 3DR.
Tel: Slough (0753) 34522.

EPC-100C

Moving magnet cartridge with elliptical stylus. Playing weight: 1.25g. Compliance: 12×10^{-6} cm/dyne. FR: 10Hz-50kHz. Output: 1.5mV. Recommended load: 10 ohms. Mounted in own headshell. Price: £186.62 (plus VAT).

EPC-300MC

Moving coil cartridge with elliptical stylus. Playing weight: 2g. Compliance: 8×10^{-6} cm/dyne. FR: 10Hz-50kHz. Output: 0.1mV. Mounted in own headshell. Price: £50.62 (plus VAT).

■ **TENOREL**

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

T2001SD

Magnetic cartridge with Shibata diamond stylus. Playing weight: 1.2-5g. Tip mass: 0.75mg. Compliance: 25×10^{-6} cm/dyne. FR: 15Hz-45kHz. Output: 5.5mV 1K. Recommended load: 47K. Price: £17.40 (plus VAT).

T2002D/HS

Magnetic cartridge with diamond stylus. Playing weight: 1.5-3g. Tip mass: 1mg. Compliance: 20×10^{-6} cm/dyne. FR: 15Hz-15kHz. Output: 5.5mV 1K. Recommended load: 47K. Features: complete with universal fitting headshell. Price: £7.17 (plus VAT).

T2001D

Magnetic cartridge with diamond stylus. Playing weight: 1.5-3g. Tip mass: 1mg. Compliance: 20×10^{-6} cm/dyne. FR: 15Hz-25kHz. Output: 5.5mV 1K. Recommended load: 47K. Price: £4.55 (plus VAT).

T2001ED

Magnetic cartridge with elliptical diamond stylus. Playing weight: 1.2-5g. Tip mass: 0.75mg. Compliance: 25×10^{-6} cm/dyne. FR: 15Hz-30kHz. Output: 5.5mV 1K. Recommended load: 47K. Price: £9.10 (plus VAT).

■ **ULTIMO**

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

20C

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.5 ± 0.3 g. Compliance: 10×10^{-6} cm/dyne. FR: 20-40,000Hz ± 3 dB. Output: 0.18mV at 1kHz 5cm/sec. Recommended load: 47K. Features: low output, moving coil cartridge requires transformer model DU6A. Price: approx. £120.00 (plus VAT).

10X*

Moving coil cartridge with elliptical stylus. Playing weight: 1.5 ± 0.3 g. Compliance: 10×10^{-6} cm/dyne. FR: 20-20,000Hz ± 2 dB. Output: 1.8mV. at 1kHz 5cm/sec. Recommended load: 47K. Features: high output. Price: approx. £59.25 (plus VAT).

20A

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.5 ± 0.3 g. Compliance:

8.17×10^{-6} cm/dyne. FR: 20-30,000Hz ± 2 dB, 50kHz $-3 + 2$ dB. Output: 2mV at 1kHz, 5cm/sec. Recommended load: 47K. Features: high output, moving coil does not need preamp. Price: £82.50 (plus VAT).

20B

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.5 ± 0.3 g. Compliance: 8.17×10^{-6} cm/dyne. FR: 20-30,000Hz ± 2 dB, 50kHz $-3 + 2$ dB. Output: 2mV at 1kHz, 5cm/sec. Recommended load: 47K. Features: beryllium cantilever suitable for CD4. Price: £59.25 (plus VAT).

10A

Moving coil cartridge for stereo or DC4 with conical stylus. Weight: 9.6g. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-40kHz. Output: 2mV at 1kHz 5cm/sec. Price: £69.00 (plus VAT).

DV30A/30B

Moving coil cartridge with Shibata type 3 stylus. Playing weight: 1.5g. Compliance: 12×10^{-6} cm/sec. Recommended load: 47K. Integral headshell SME type fitting, high output. Price: 30A £125.00 (plus VAT); 30B £150.00 (plus VAT).

DV30C

Moving coil cartridge for stereo or CD4 with weight: 1.5g. Compliance: 12×10^{-6} cm/sec. Recommended load: 47K. Price: £165.00 (plus VAT).

■ **ULTRACRAFT**

J. Osawa & Co. (UK) Ltd,
10 Forge Court, Reading Road,
Yateley, Camberley, Surrey.
Tel: Yateley (0252) 879121.

GU177RX*

AC 30 tone arm. Viscous damped, single point support. Overall length: 333mm, effective length: 237mm, overhang: 15mm. Tracking error: 0. Stylus-force adjustment: 0-3g. Usable cartridge weight: 5.5-15g. Anti-skate com-

pensation, cue/pause control. Price: £104.00 (plus VAT).

■ **WESTRAK**

Howland-West,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293.

501E

Moving coil cartridge with elliptical stylus. Playing weight: 1.2-2.4g. Tip mass: 0.3 x 0.8mg. Compliance: 9×10^{-6} cm/dyne. FR: 18Hz-22kHz ± 2 dB. Output: 3.5mV. Recommended load: 47K. Features: high output, no transformer or preamp required, ultra lightweight. Price: £80.00 (plus VAT).

501PH

Moving coil cartridge with parabolic stylus. Playing weight: 1.2-2.4g. Tip mass: 0.3 x 0.7mg. Other details as 501E. Features: uses nude diamond. Price: £95.00 (plus VAT).

C101/C

Moving magnet cartridge with conical stylus. Playing weight: 1-2.5g. Tip mass: 0.5g. Compliance: 15×10^{-6} cm/dyne. FR: 20Hz-25kHz. Output: 5mV. Recommended load: 47-100K. Features: extended frequency response. Cantilevers manufactured from special alloy for efficient transmission, good shielding. Price: £8.50 (plus VAT).

C101/SH

Moving magnet cartridge with Shibata stylus. Playing weight: 1-2g. Compliance: 20×10^{-6} cm/dyne. FR: 15Hz-40kHz. Output: 3mV. Recommended load: 47-100K. Features: as C101/C. Price: £18.00 (plus VAT).

■ **YAMAHA**

Natural Sound Systems,
10 Byron Road, Wealdstone, Harrow,
Middlesex.
Tel: 01-863 8622.

MC-IS*

Moving coil cartridge with special contour 8 x 40 Micron ellipse stylus. Playing weight: 1.8g. FR: 10Hz-20kHz. Output: 0.2mV. Features: Beryllium cantilever, twin dual coreless IC coils. No rec. retail price.

MC-1X*

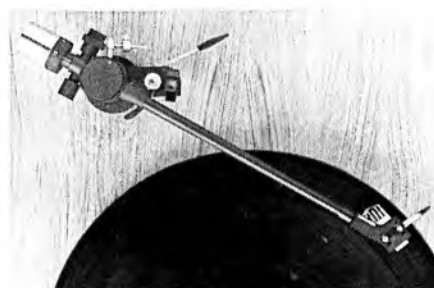
Moving coil cartridge with special contour 8 x 40 micron ellipse stylus. Playing weight: 1.8g. FR: 10Hz-20kHz. Output: 0.2mV. Features: integrated headshell SME fitting, Beryllium cantilever, Twin dual coreless IC coils. No rec. retail price.

C101/E

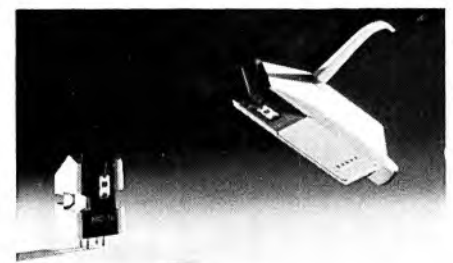
Moving magnet with elliptical stylus. Playing weight: 1-2g. Tip mass: 0.2 x 0.8mg. Compliance: 18×10^{-6} cm/dyne. FR: 15Hz-25kHz. Output: 4mV. Recommended load: 47-100K. Features: as C101/C. Price: £12.50 (plus VAT).



Ultimo 10X



Ultracraft AC30 tone arm



Yamaha cartridges

...and now No.3!

This third book in Wireless World's popular series will be welcomed by all concerned with designing, using and understanding electronic circuits. It comprises information previously included in the third ten sets of Wireless World's highly successful Circards — regularly published cards giving selected and tested circuits, descriptions of circuit operation, component values and ranges, circuit limitations, modifications, performance data and graphs. The book follows on from Circuit Designs Nos. 1 and 2. It is magazine size in hard cover and contains ten sets of Circards plus additional information and an explanatory introduction. Like its predecessors, it may soon be difficult to obtain, so you are advised to order your copy without delay.

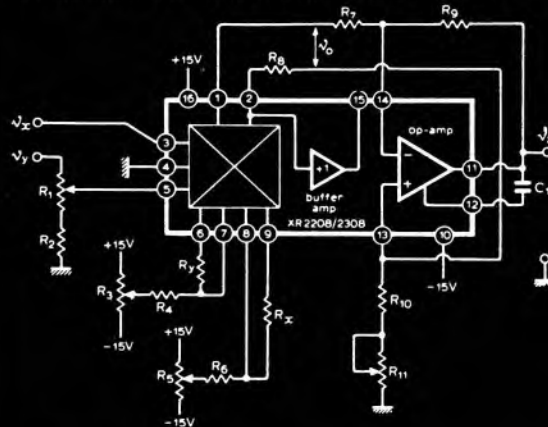
- Voltage to frequency converters.
- Amplitude modulators.
- Reference Circuits.
- Voltage regulators.
- RC oscillators — part 1.
- RC oscillators — part 2.
- C.M.O.S. — part 1.
- C.M.O.S. — part 2.
- Analogue multipliers.
- R.m.s./log./power law circuits.

circuit designs

3

Collected Circards

PWilliams/JCarruthers/JHEvans/JKinsler



A WIRELESS WORLD PUBLICATION

A book from

wireless world

General sales Dept, IPC Business Press Ltd,
Room 205, Quadrant House, The Quadrant, Sutton, Surrey SU12 5AS

ORDER FORM

To: General Sales Department,
IPC Business Press Limited, Room 205, Quadrant
House, The Quadrant, Sutton, Surrey SU12 5AS

Please send me.....copy/copies of
Circuit Designs—Number 3 at £14.50
each inclusive. I enclose remittance value £.....
(cheques payable to IPC Business Press Ltd.)

NAME.....
(please print)
ADDRESS.....

Company registered in England and a subsidiary of Reed International Ltd. Registered
No. 151537. Registered office: Surrey House, 1 Throwley Way, Sutton, Surrey.

Racking and Stacking Systems

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane, London NW2 2DP.
Tel: 01-450 2011.

PS Series

Designed for stacking. Comprises PS 200T digital quartz synthesiser tuner at £498.00; PS 1230M DC power amplifier with output of 130W per channel at £547.00; PS 200M DC power amplifier with output of 220W per channel at £690.00; PS 200C pre-amplifier at £323.00.

PRO 100

Comprises AM2250, AT2250L, CS703D, AP100C, SR1200, RMH100. Price: £537.75 (inc. VAT).

PRO 200

Comprises AM2350, AT2250L, GXL704D, AP206C, SR1300, RMH100. Price: £655.50 (inc. VAT).

PRO 300

Comprises AM2450, AT2450L, GXC706D, SR1400, RMH300. Price: £796.50 (inc. VAT).

PRO 400

Comprises AM2650, AT2450L, GXC725D, RMH400, excluding speakers. Price: £895.00 (inc. VAT).

PRO 635

Comprises GX635D-dc635/RMH400. Price: £745.00 (inc. VAT).

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.

SR301

Turntable, amplifier, tuner, cassette. Record and cassette storage.

SR302

Turntable, receiver, cassette. Record and cassette storage.



Amstrad TS-40

TS-40 *

Rack system comprising BSR P204 record deck, amplifier with output of 12W per channel, tuner covering FM/LM wavebands, tape deck, Speakers with two drive units measuring 27 x 20 x 49. Teak finish.

■ AUDIOLOGIC

Network Marketing Ltd,
Middlesex House, 29-45 High Street,
Edgware, Middlesex.
Tel: 01-952 6225/6.

Audiologic

System comprising LX52/62 tuner amp, TCD 25 cassette deck (vertical build with Dolby, VU meters, LED indicators), MX650 speakers (three-way air suspension type. Drivers: 4in. bass woofer, 2½in. mid, 1in. tweeter, handling 45W). Price including rack: £299.00 (inc. VAT).

■ EAGLE

Eagle International,
Precision Centre, Heather Park Drive,
Wembley HA0 1SU.
Tel: 01-902 8832.

X-2 Hi-Fi System *

Rack system comprising A7400 amplifier with output of 50W per channel, D700 record deck, C7800 Dolby cassette deck, T7400 tuner, L7500 speakers and console rack.

■ FERGUSON

Thorn Consumer Electronics Ltd,
284 Southbury Road, Enfield, Middlesex.
Tel: 01-363 5353

3955 Hi-Fi system 20

Racking system comprising record deck, tuner amp, cassette, speakers. Output of 15W per channel, Dolby "B" noise reduction system, 3-position tape switching, magnetic cartridge, belt drive. Price: £310.00 (plus VAT).

3963 Hi-Fi System 35 *

Rack system comprising 3960 cassette deck, 3964 record player, 3959 tuner, 3958 tuner, 3958 amplifier, 39627 speakers optional. Output of 25W per channel. Dolby "B" noise reduction unit, electronic control, belt drive record deck. Metal tape switching, illuminated strobe. Price: £540.00 (plus VAT).

3948 Hi-Fi System 30

Rack comprising 3943 amplifier, 3944 tuner, 3945 cassette deck, 3947 speakers. Mini Hi-Fi



Eagle X-2 System

system with output of 25W per channel. 3 wave-band tuner. Dolby noise reduction system. Speakers contain 6in. bass/mid and 1½in. dome tweeter. Price: £300.00 (plus VAT).

■ FIDELITY

Fidelity Radio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

Series 350 *

System comprising 350A amplifier, 350T tuner, 350C cassette deck, 350P record player, 350S speakers, 350R rack. Units interconnect and only one mains lead is necessary. BEAB approved and all components to DIN 45/500 standard. Speakers included. Price: on application.

■ GEC

GEC (Radio and Television) Ltd,
Langley Park, Slough, Bucks.
Tel: Slough (0753) 22201.

A3000

Compact system comprising stereo amplifier with output of 45W per channel into 4 ohms. THD: <0.05%. FR: 20Hz-50kHz. Tuner covers VHF, L.M wave bands. Cassette deck with Dolby noise reduction system. W and F: 0.15%. Turntable unit with speeds of 33⅓ and 45 rpm. Direct Drive, DC brushless servo motor. W and F: 0.04% Rumble: -65dB. Statically balanced tubular "S" shaped arm, damped cue, anti-skate device, etc. Loudspeaker system with drive units: 205mm bass and 25mm high frequency. Power Handling 40W, Imp: 4 ohms, FR: 35Hz-23kHz.



Ferguson Hi-Fi System 35



Fidelity Series 350

■ **GRUNDIG**

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

CS400

System comprises PS2000 turntable with optional assembly of other Grundig equipment.

■ **HITACHI**

Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes, Middlesex.
Tel: 01-848 8787.

SDT 1000

Music Centre with Hitachi record deck. Output of 20W per channel. FR: 30Hz-20kHz. Radio tuner covers FM,L,M,S with five pre-set FM buttons. Dolby noise reduction unit. Tape deck covers normal, FeCr and CrO₂ tapes. Speakers measure 47 x 26.5 x 27cm. Main unit measures 44.2 x 38.3 x 34.4cm. Finish: silver. Features: A self-assembly rack in simulated teak is available as optional extra. Price: £309.00 (inc. VAT). Console extra £54.95.

SDT 2000

As above but with output of 25W per channel. Price: to be announced.

ACT 01

Bookcase stereo Hi-Fi set-up. Record deck not provided but provision is made for any Hitachi deck to be plugged in. Amplifier output of 25W per channel. Radio tuner covers FM,L,M. Dolby noise reduction unit. Dimensions: 14.6 x 16 x 29cm. Dimensions: 23 x 16 x 7.4cm. for the tuner and amplifier each. Cassette deck measures 23 x 16 x 14.6cm. Features: finished in silver grey. Price: £379.00 (inc. VAT).

■ **HMV**

Intersound Electronics Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

Series 4000*

Compact rack finished in walnut-effect with all components inter-connected. Comprises 4000A amplifier, 4000T tuner, 4000C cassette deck, 4000P record player, 4000S speakers and 4000R rack. All components to DIN specification. Price: £473.91 (plus VAT).

■ **ITT**

ITT Consumer Products (UK) Ltd,
Chester Hall Lane, Basildon, Essex.
Tel: Basildon 3040.

Hi-Fi 80 Music System*

Made up of record players 8011 or 8012; receivers 8031, 8032 or 8033; cassette decks 8021; Hi-Fi 80 rack, and choice of speakers. Rack also serves as a storage unit for records and cassettes or can be fitted with wood-veneered side-panels in the more traditional arrangement on a shelf or room-divider.

■ **JVC**

JVC (UK) Ltd,
Eldonwell Trading Estate, Staples Corner,
6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

LX 3000 System A*

Rack comprising P3030 pre-amp, M3030 power amp, T3030 tuner, KD 95 cassette deck, QL10 turntable. Speakers not included in price. Features: digital readout for turntable speed and for tuning indication on T3030. Price: £3,500 (plus VAT).

G444

Comprising JA-S44 amplifier, T-40P tuner, QL-A5 turntable, KD-A5 metal tape compatible cassette deck, in rack with remote control unit.

G225

Comprising JA-S22 amplifier, T-VSL tuner, SEA-50 graphic equaliser, L-A55 turntable, KD-A3 metal tape compatible cassette deck all in audio rack with castors.



ITT Hi-Fi 80

G505

Comprising: A-S5 amplifier, T-VSL tuner, L-A55 turntable, KD-A2 cassette deck in audio rack with castors. Other combinations available on request.

■ **MARANTZ**

Marantz Audio UK Ltd,
193 London Road, Staines, Middlesex.
Tel: Staines 50132.

MR 500

Upright rack in black finish to fit three components, with record rack at base.

MR 504*

Similar to MR 500 but with glass door on record compartment and real wood veneer.

MR 505

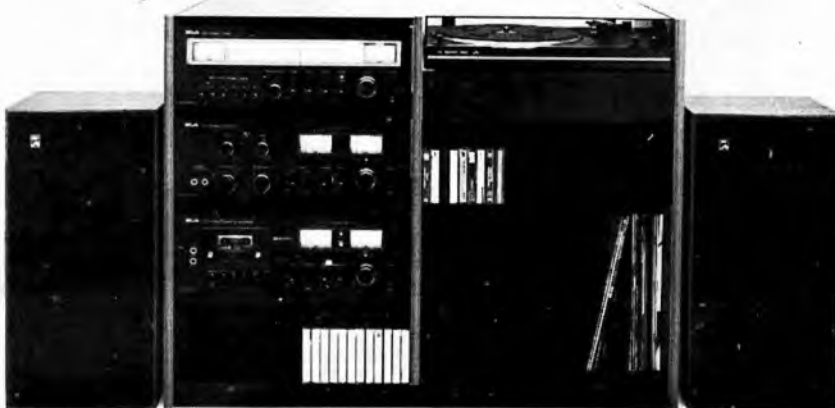
Similar to MR 500 but with full length glass door and real wood veneer.

RM3100

Professional steel rack with 19in. mounting. Fits all Marantz components with optional RHA1 and RHA2 handles.



JVC Rack



HMV Series 4000



Marantz MR504

■ **MITSUBISHI**

Mitsubishi: Electric (UK) Ltd.
Oterspool Way, Watford, Herts WD2 8LD.
Tel: Watford 40566.

System 1

2 x 25W system. DP-630 direct drive deck, DA-R430 FM/LW/MW receiver, D1-530 metal tape cassette deck with Dolby NR. Retail price: £361.00 (inc. VAT). Cabinet extra.

System 2

2 x 30W system. DP-630 direct drive deck, DA-U530 amplifier, DA-F630 AM/FM tuner, D1-530 metal tape cassette deck with Dolby NR. Retail price: £427.00 (inc. VAT). Cabinet extra.

System 3

2 x 50W system. DP-630 direct drive deck, DA-U630 amplifier, DA-F630 AM/FM tuner, D1-530 metal tape cassette deck with Dolby NR. Retail price: £460.00 (inc. VAT). Cabinet extra.

System 4*

2 x 50W miniature system. M-A04 2 x 50W power amplifier. THD 0.02%. LED power output indicators, speaker switching, protection circuitry. M-P04 control amplifier with built-in head amplifier for moving coil cartridges, two phono inputs (front panel switchover) tape duplication and monitoring, subsonic filter, loudness compensation, illuminated programme selector switches. M-T04 metal tape cassette deck with Dolby NR, soft-touch full-logic switching, LED peak level indicators, damped cassette housing. M-F04 AM/FM tuner with touch-sensor tuning, interstation muting, LED signal strength indication and tuning scale illumination which changes from white to green when a station is correctly tuned. Dimensions when stacked vertically: 27 x 27 x 42.4cm (W x D x H). Retail price: £498.00 (inc. VAT).

■ **OPTONICA**

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane, Manchester M10 8HL.
Tel: 061-205 7321.

1616*

Comprising SM1616 amplifier, R2727 turntable, ST1616 tuner, RT1616 cassette deck housed in cabinet measuring 78 x 40.6 x 108cm.



Mitsubishi System 4

■ **PIONEER**

Pioneer Hi-Fi (GB) Ltd,
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: 0753 652222.

X 300

The rack comprises: PL100 turntable with belt drive and auto return, TX410L tuner with FM, AM, LW, SA410 amplifier (20W RMS), CI200 cassette deck with metal tape facility, CB3 rack designed for component systems. Optional recommended speaker system CS343 (max input 30W). Optional digital tuner DT500 allows unattended operation. CB3: rack specially designed for component systems. Finish: black with glass door and four castors.

X500

The rack comprises: PL200 turntable with direct drive and semi-automatic, TX410L tuner with FM, AM, LW, SA510 amplifier (30W RMS), CI300 cassette deck with metal tape facility, CB7 or CB9 racks. Optional recommended speakers CS444, bass reflex two-way speaker system, input 30W. Optional DT500 slimline timer unit, allows unattended operation. Features: adjustable shelf and external headphone socket. Finish: black with glass door.

X 700*

The rack comprises: PL300 turntable with quartz and semi-automatic, TX710L tuner with digital display and 7 pre-sets, SA610 amplifier (45W), CT300 cassette deck with metal tape facility. Optional CB7 or CB9 racks. Recommended optional speakers CS545, bass reflex 3-way speaker system, input 60W. Optional DT500 slimline digital timer allows unattended operation. Features: see X 500.



Optonica 1616



Pioneer X700 rack

X 900

The rack comprises: PL400 turntable with quartz and full automatic, TX710L tuner with digital display and 7 pre-sets, SA710 amplifier (65W), CT400 cassette decks with metal tape facility. Optional racks CB7 or CB9. Optional recommended speakers CS646 with bass reflex 3-way speaker system. Optional DT500 slimline digital timer allows unattended operation. Features: same as X 500 and X 700.

Mini Hi-Fi System

The rack comprises: SA3000 amplifier (40W per channel), PL3000 turntable with direct drive fully automatic, CTM3000 cassette deck with metal tape facility, TX3000 timer (glide tuning system for AM/FM). Optional rack B3000 audio rack for flexible layout. Recommended optional speakers SX3 11E with normal input 25W, infinite baffle.

■ **PYE**

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (02205) 2781.

HF3035*

Rack comprising SX5685 turntable, SX6194 tuner, SX6393 amplifier, SR3170 cassette deck. SX6483 speakers included. Going Price: £475.00.

HF3045

Rack comprising SX5777 turntable, SX6194 tuner, SX6374 amplifier, SR3390 cassette deck. SX6484 speakers included. Going Price: £599.00.

HF2025

Rack comprising SX5674 turntable, SX6692 receiver, SR3170 cassette deck and SX6483 speakers. Going Price: £399.00.

FH2035

Rack comprising SX5685 turntable, SX6693, receiver, SR3170, cassette deck and SX6483 speakers. Going Price: £425.00.

■ **ROTEL**

Rotel Hi-Fi,
2 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: 0908 317707.

300

Rack comprises RP300 record player, RA350 amplifier, RT300 tuner, RD300 cassette deck. Alternatives could be RA300 lower power alternative to RA350, RX300 receiver. Price: on application.



Pye System HF 3035

1000 Series

Made up from any of the following: RT1000 amplifier, RA1000 integrated amplifier, RC1000 pre-amp, RT1000 tuner, RD1000 tape deck, RD25FD tape deck, RP1000 record deck. Price: on application.

■ **SANSUI**

Sansui Audio Europe NV,
Unit 10A, Lyon Industrial Estate,
Rockware Avenue, Greenford, Middlesex.
Tel: 01-575 1133.

System "B"

Comprising AU217 11, TU217, SC1330, SR222 Mk 11, SC37 cartridge, GX5 rack, RX100 accessory drawer. Optional speakers. Price: £440.50 (plus VAT).

System "D"

Comprising AU317 Mk 11, TU217, SC1330, SC37 cartridge, SR222 Mk 11, GX5 rack, RX100 accessory drawer. Optional speakers. Price: £485.00 (plus VAT).

■ **SCHNEIDER**

Wren Electronics Ltd,
1-4 Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

Team 6070RC *

System comprising 6070A amplifier, 6070T tuner, 6070C cassette deck, Dual 491 DD turntable. Speakers are not included. Features: 29 functions on remote control. Radio tuner covers FM, L, M, S. Choice of racks 1, 2 or 3. Optional extras include 6070LS speakers, 6070E graphic equaliser. Price: approx £913.00 (plus VAT).

Team 200

System comprising receiver, front loading cassette deck, record player, rack, and speakers. Amplifier output 22W per channel. Radio tuner covers: FM, L, M. Price: approx £348.00 (plus VAT).

Team 300

As 200 but with output of 44W per channel and with 7 FM pre-sets. Price: approx £400.00 (plus VAT).

■ **SCOTT**

Clement Electronics Ltd,
Unit 8, Road 3, Winsford Industrial Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57131.

System One

Comprising PS97XV turntable, 430A integrated amplifier, 530TL tuner, 671D cassette deck, S.186B speakers all housed in UCI cabinet.



Schneider Team 6070RC

System Two

Comprising PS17A turntable, 410A integrated amplifier, 510TL tuner, 610D cassette deck housed in UCI cabinet.

System Three

PS17A turntable, 610D cassette deck, 330RL receiver, housed in UCI cabinet.

System Four *

Comprising PS97XV turntable, 480A integrated amplifier, 570TL tuner, 671DM cassette deck, 830Z audio analyzer housed in Pro Mark 3 Rack.

■ **STEREOSOUND**

Stereosound Productions Ltd,
Capital Works, 12-14 Wakefield Road,
Brighouse, Yorkshire HD6 1PQ
Tel: Brighouse (0484) 714355/7.

601 GDU*

Vertical rack system comprising BSR P200 belt driven record deck; radio tuner covering FM, L, M; Amplifier with output of 15W per channel; tape deck with Dolby noise reduction system; two floor standing speakers of 8 ohms impedance each containing 200mm bass and 100mm tweeter.

601 KD9

Horizontal rack system otherwise as above.

■ **TEAC**

Harman UK, St. John's Road,
Tyler's Green, High Wycombe HP10 8HR.
Tel: Penn (049 481) 5331.

Libero 3000

Suitable for average listening room, economy system. Comprises BX-300, TX-300, CX-210, PX-300, SX-300, LX-300.

Libero 5000

Low-distortion component system comprising BX-500, TX-300, CX-270, PX-500, SX-500, LX-350.



Scott System Four

Libero 7000

Super low distortion component system. Top performance SX-700 three-way floor speakers with LX-500/600 modular component rack. Components: BX-500, TX-500, CX-270, PX-500, SX-700, LX-500/600.

■ **TECHNICS**

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough SL1 3DR.
Tel: Slough 34522.

Concise Component Series

Compact high quality matching components. Initially comprising SE-601 stereo DC power amp, SU-C01 stereo pre-amp, ST-C01 FM/AM stereo tuner.

SU-C03/ST-C03

Mini-stacking components comprising SU-C03 stereo integrated DC amplifier with output of 40W per channel into 8 ohms. FR: 20Hz-20kHz. THD: 0.03%. ST-C03 Quartz synthesiser FM/AM stereo tuner with pre-sets for 8 FM and 8 AM stations. Digital readout display, 5 LED signal strength indicator, LED FM tuning indicator, high sensitivity, back to back type variable capacitors, SAW filters in IF stage. Dimensions of each unit: 29.7 x 49 x 24.4cm.

La mini serie System

Comprising SL-10 turntable, SU-C01 pre-amplifier, SE-C01 stereo DC power amplifier, ST-C01 FM/AM stereo tuner, RS-M02 front-loading mini cassette deck with direct drive motor, SB-F3 2-way linear phase speaker system. All in SH-505 cabinet and steel stand.

Silver Slim Line System

Comprising SL-1700 Mk2 quartz-locked control direct-drive turntable, SE-9021 stereo DC power amplifier, SU-9011 stereo pre-amplifier, ST-9031 FM/AM stereo tuner, RS-M45 vertical hold direct-drive cassette deck with FL indicators, SB-R4 linear phase three-way speaker system, SH-505 Cabinet and steel stand. Price: on application.

System 80's *

Comprising SL-Q33 quartz-locked DD fully-automatic turntable, SE-A808 stereo power amplifier, ST-K808 micro-computer quartz-synthesiser FM/AM tuner/pre-amplifier. Price: £999.95 (inc. VAT).



Stereosound 601 GDU

SH-R808

Infra-red remote control unit, RS-M45 vertical hold direct-drive cassette deck with FL meters, SB-R3 linear phase three-way speaker system, SH-546 cabinet.

■ **TELETON**

Teleton Electro (UK) Co Ltd, Somerton Works, Prince Avenue, Westcliffe-on-Sea, Essex. Tel: Southend 337681.

TEC330LS

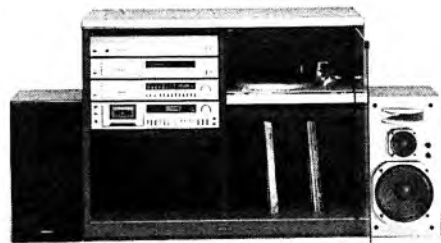
Rack comprising A3303 amplifier, T330S tuner, C330S cassette deck, TRP200S record deck, T121 12in. mono TV all in HFC330LS cabinet. LS33 two-way speakers. Features: Output 20W per channel, Dolby noise reduction system, belt drive record deck, tape storage drawer in cabinet. Price: £374.00 (plus VAT).

TEC330*

Rack comprising A330B amplifier, T330B tuner, C330B cassette deck, TDP200W record deck, T121 12in. mono TV all in HFC330 cabinet. LS33P two-way speakers. Features: output 20W per channel, Dolby noise reduction system, belt drive record deck, record storage space and tape storage drawer in cabinet. Price: £400.00 (plus VAT).

■ **TENSAI**

Wren Electronics Ltd, 1-4 Dawson Road, Mount Farm Estate, Milton Keynes, Bucks. Tel: Milton Keynes (0908) 71611.



Technics System 80's



Teleton TEC 330

T20

System comprising TFL808 cassette deck, TD861B turntable, T59040 speakers, TR1030 receiver, STC2 cabinet. Speakers included. Approx price: £348.00 (plus VAT).

T40

As T20 but real walnut veneer cabinet mounted on easy-glide castors, twin smoked glass doors. Receiver system output 25W per channel, belt drive turntable, Dolby noise reduction system. Approx price: £374.00 (plus VAT).

T70

System comprising TFL807 cassette deck, TA2350 amp, TT3345 tuner, TD50Q turntable, TS9075 speakers, WR100 rack (or WR200). Speakers included. Features: output of 55W per channel, electronic cassette deck, quartz-locked DD turntable, three-way speakers. Approx price: £521.00 (plus VAT).

T60

System comprising TD530 turntable, TP2200 pre-amp, TM2250 amp, TT3245 tuner, TS9035 speakers, TFL806 cassette deck, WR100 or 200 rack. Speakers included. Features: direct drive turntable, slimline pre and power amps, output 50W per channel. Approx price: £452.00 (plus VAT).

T30*

Rack comprises TFL806C cassette deck, TA2330 amplifier, TT3345 tuner, TD861 turntable, T59040 speakers, WR100 or 200 rack. Speakers included. Features: output of 30W in amplifier, belt drive turntable, three-way speakers. Approx price: £374.00 (plus VAT).

T50*

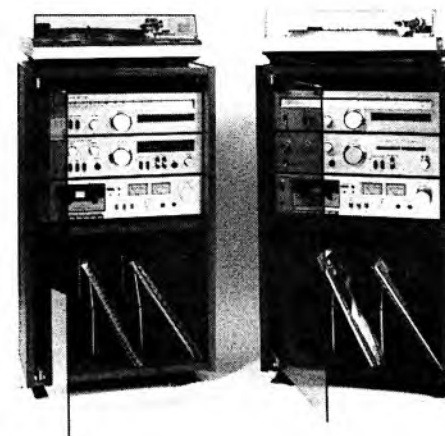
System comprising TFL806C cassette deck, TA2350 amplifier, TT3345 tuner, TD530Q turntable, TS9055 speakers, WR100 or 200 rack. Speakers included. Feature: output of 50W per channel, direct drive turntable, three-way speakers. Approx price: £435.00 (plus VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd, Toshiba House, Frimley Road, Frimley, Camberley, Surrey. Tel: Camberley (0276) 62222.

225H System*

Comprising SRF225 turntable, SB225 integrated amplifier, ST225 tuner, PC-230D Dolby cassette deck with AR-225 audio rack.



Tensai Systems T30 (right and T50 (left)

SS-225 speakers included. Features: horizontal format rack with glass-fronted record storage and tape storage drawer. Price: £488.89 (plus VAT).

225V System

Comprising components as above in AR-4V rack. Features: vertical format rack with optional glass door. Price: £477.33 (plus VAT).

230 System

Comprising SR-A230 turntable, SB-230 amplifier, ST-230 tuner, PC-230 Dolby cassette deck in AR-4V audio rack. SS-230 speakers included. Features: vertical format rack with optional glass door. Price: £444.00 (plus VAT).

335 System Mk II

Comprising SR-F325 turntable, SC-335 power amplifier, SY-335 pre-amp, ST-335 tuner, PC-335 Dolby cassette deck, AR-4V audio rack. Speakers are not included. Vertical format rack with optional glass door. Price: £472.89 (plus VAT).

335 System

Comprising SR-F325 turntable, SC-335 power amplifier, SY-335 pre-amp, ST-335 tuner, PC-335 Dolby cassette deck. Speakers not included. Output: 38W x 2. Features: mic mixing, power meters. Price: £475.00 (plus VAT).

445 System

The rack comprises SB-445 amplifier, ST-445 tuner, PC-445 cassette deck with Dolby, SR-F440 turntable. Speakers are not included. Output: 40W x 2. Features: LED power meters, LED recording level meters, metal tape facility. Price: £553.91 (plus VAT).

■ **UHER**

Uher Ltd, 24 Market Place, Falloden Way, London NW11. Tel: 01-455 1771/01-458 8491.



Toshiba 225H



Uher Mini System

Hi-Fi Tower

Comprising tuner, amplifier, cassette deck in rack with cassette and record storage space.

Mini System*

Rack comprising EG740 digital tuner, VG840 pre-amplifier, Z140 power amplifier with power supply, or Z141 power supply without amp, CR240 cassette deck. Size: 23.5 x 6 x 21.5cm or with Z140 23.5 x 12 x 19cm. Speakers not included. Features: VG840 has full controls with speaker switching, tape copying and mic mixing. EG740 digital tuner takes FM/AM with 7 FM presets, memory multipath, tuning indication. Z140 output 60W per channel slave amplifier. Price: £450.00 (plus VAT).

■ **VAN DER MOLEN**

Van Der Molen,
101 Hainault Road, Romford, Essex RM5 3HF.
Tel: Romford 22018.

80D

Comprises three band tuner amplifier with output of 70W. Pre-programmable 12 hour LED digital clock. Cassette recorder with Dolby noise reduction system, twin peak recording meters, auto shut off and damped eject mechanism. Belt driven turntable with magnetic cartridge and "S" shaped arm. Two way speakers with 165mm bass driver and 50mm tweeter. Handles 30W. Finish: teak effect. Price: approx £305.00.

■ **WYE**

Wye Audio Products Ltd,
27 Station Road, Brimington,
Chesterfield S43 1JJ.
Tel: Chesterfield (0246) 70297.

S501

Hi-Fi System comprising SA501 amplifier with output of 20W per channel into 8 ohms. FR: 35Hz-20kHz; Tuner ST501 with FM,L,M. Stereo cassette SC501 with Dolby noise reduction system. W and F: 0.15%. SDS01 record deck, BSR P200 belt drive, semi-auto single player with magnetic cartridge and diamond stylus. SS501 speakers with 1in. and 3in. drive units, crossover unit 5000Hz, power handling 30W, Imp: 8 ohms. Speakers



York Mini Stack

measure: 50 x 28.5 x 20.9cm. Price: on application.

■ **YAMAHA**

Natural Sound Systems Ltd,
10 Byron Road, Wealdstone,
Harrow, Middlesex HA3 7TL.
Tel: 01-863 8622.

600 System

Comprising N410 pre-amp, N420 power-amp, N430 FM tuner. Price: £843.60 (plus VAT).

400 System

Comprising N410 pre-amp, N430 FM tuner. Price: £710.40 (plus VAT).

■ **YORK**

Sulkin (UK) Ltd,
73 Grosvenor Street, London W1.
Tel: 01-629 8368.

Mini stack

Miniature stereo separates system comprising radio tuner, amplifier, cassette deck designed to stack horizontally or vertically. When stacked the three units measure 8¼ x 11 x 8¼in. Unit provides 15W output per channel and features LED readout for tuning, frequency, and recording levels. Price: on application.

RADIO TUNERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AIWA

Aiwa Sales and Service (UK) Ltd,
30-32 Concord Road,
Westwood Park Trading Estate,
London W3 0TH.
Tel: 01-993 1672.

AT 9700*

Tuning range: 87.5-108MHz FM and 525-1605kHz AM. Variable tuning with no presets. AFC. Sensitivity (mono) 1.6µV (50dB quieting). Sensitivity (stereo) 16µV (50dB quieting). Signal strength/tuning meter. S/N ratio (stereo); 78dB (IHF-75kHz deviation). Variable output. Aerial input impedance: 75 ohms/300 ohms. Dimensions: 44.8 x 37.6 x 15.6cm. Mains voltage tapping: 120/240V. Typical market price: £235.00.

AT 9300

Tuning range 87.5-108MHz FM and 525-1605kHz AM. Signal strength and tuning meters. S/N ratio: 68dB. Fixed output. Aerial input impedance: 300 ohms balanced, 75 ohms unbalanced. Dimensions: 42 x 35 x 15cm. Mains voltage tappings: 240V. Typical market price: £84.00.

■ AKAI

Akai (UK) Ltd, 82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

AT2250L

AM/FM tuner. Sensitivity: 1.9µV. S/N ratio: >70dB. Input imp: 300 ohms balanced, 75 unbalanced. Capture ratio: 1.3dB. Features: phase locked loop MPX, IC circuitry. Price: £95.00 (inc. VAT).

AT 2450

AM/FM tuner. Sensitivity: 1.7µV. S/N ratio: >75dB. Input imp: 300 ohms balanced, 75 unbalanced. Capture ratio: 1.2dB. Features: variable FM mute control, signal strength meter. Price: £156.00 (inc. VAT). Long Wave version £161.00.

AT 2650

AM/FM tuner. Sensitivity: 1.6µV. S/N ratio: >75dB. Input imp: 300 ohms balanced, 75 unbalanced. Capture ratio: 1.2dB. Features: noise cancel facility, variable FM muting, variable output control. Price: £179.00 (inc. VAT).

ATS08

Digital quartz synthesiser. Sensitivity: 0.9µV. S/N ratio: >75dB. Capture ratio: 1.0dB. Features: 10 channel AM/FM presets with memory, auto tuning, stereo only auto scanning. Price: £395.00 (inc. VAT).

■ ALBA

Alba Radio & Television Ltd,
Bull Lane, Edmonton, London N18 1RA.
Tel: 01-803 4451.

3000

FM/AM tuner with range of 87.5-108 MHz, 515-1620 kHz, 150-350 kHz. Variable tuning plus 5 presets on FM. AFC, Signal strength

meter. S/N ratio (stereo): 60dB. Fixed output. Aerial input impedance: 75 ohms. Dimensions: 42 x 25 x 7cm.

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.

EX 404*

FM/AM tuner covering 88-108MHz, 525-1600kHz, 150-270kHz. Variable tuning. AFC. Sensitivity (mono): 1.8µV. LED indicators. S/N ratio (stereo): 55dB. Output: 0-75mV variable. Aerial input impedance: 75 ohms FM. Dimensions: 42 x 25 x 10cm. Mains: 240V AC.

T202

AM/FM tuner covering 88-108MHz, 525-1650kHz, 150-270kHz. Synthesised autosearch



Aiwa AT 9700



Amstrad EX 404



A & R T21



Armstrong 623



Cambridge Audio T55

and 8 memory presets, sample search. Sensitivity (mono): 0.8µV. Sensitivity (stereo): 20µV. LED indicators. S/N ratio (stereo): 68dB. Output: 500mV fixed. Aerial input impedance: 75 ohms FM. Dimensions: 30 x 25.3 x 6.4cm. Mains: 240V AC.

■ A & R

Amplification and Recording (Cambridge) Ltd,
French's Mill, French's Road,
Cambridge CB4 3NP.
Tel: Cambridge (0223) 354507.

T21*

Designed to match A60 amplifier range. Tuning range: 87.5-108MHz FM only. Variable tuning and 5 presets. Tuning scale: electronic LED pointer using 21 LEDs at 1MHz centres. AFC. Signal strength meter. Sensitivity: better than 2µV at 75 ohms (IHF). Ultimate S/N ratio: better than 68dB. Capture ratio: 1.5dB. Selectivity: 60dB at ±400kHz. Output: 1V max from 1K, variable down to 10mV. Aerial input impedance: 75 ohms and 300 ohms nominal. Dimensions: 45 x 24 x 6cm. Mains supply: 220-240V standard, 110-120V on request. Price: teak or walnut £150.00 (plus VAT), black £155.00 (plus VAT), rosewood £160.00 (plus VAT).

■ ARMSTRONG AUDIO LTD

Wartlers Road, London N7 0RZ.
Tel: 01-607 3213.

623 (AM-FM)*

Tuning range: FM: 87.5-108MHz. AM: 145-1625kHz. Variable and three presets on FM and three presets on AM. AFC. Sensitivity: 1.5µV. Image frequency rejection: 50dB. IF rejection: 100dB. Signal strength and tuning meters. Capture ratio: 1.75dB. Selectivity: 56dB. S/N ratio: 65dB mono. Fixed output. High: 0dB (0.775V) 600 ohms. Low: 100mV. Aerial input imp: 75-80 ohms and 240-300 ohms. Dimensions: 31.2 x 28.5 x 8.2cm. Mains: 105-135 and 215-250V. Price: £171.73 (inc. VAT).

624 (FM)

FM only, otherwise similar to 623 (AM-FM). Price: £132.89 (inc. VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet (093 23) 51051.

T55*

FM stereo tuner with range 88-108MHz. Variable tuning. AFC. Sensitivity: 1.4µV. Two indicator lamps for tuning. S/N mono: 65dB. Output: 1V max from 5K source (variable). Aerial input imp: 75 ohms co-ax or 300 ohms balanced. Dimensions: 41.9 x 24.4 x 5.1cm. Mains voltage tapping: 110/120/220/240V. Price: £175.00 (plus VAT).

■ **DENON**

Eumig (UK) Ltd,
14 Priestley Way, London NW2 7TN.
Tel: 01-450 8070.

TU-850*

Tuning frequency: 88-108MHz. Sensitivity: 1.7µV. Selectivity: 65dB. S/N ratio: 84dB. Power source: 120V, 220/240V. Dimensions: 43.4 x 16.4 x 40cm. Typical market price: £275.00.

TU-300

FM tuner. Tuning frequency: 88-108MHz. Sensitivity: 1.8µV. Selectivity: 79dB. S/N ratio: 75dB. Power source: 240V. Dimensions: 43 x 14.6 x 30.3cm. Typical market price: £190.00.

TU-200

AM/FM tuner. Tuning frequency: 88-108MHz. Sensitivity: 1.9µV. Selectivity: wide 30dB, 80dB narrow. S/N ratio: 75dB. Power source: 240V. Dimensions: 43 x 14.5 x 30.3cm. Typical Market Price: £150.00.

S 73380

FM/AM tuner with range 88-108MHz, 525-1605kHz. Variable tuning. AFC. Sensitivity: 1.8µV (10.3dB) FM, 300µV AM. S/N ratio (stereo): 70dB. Fixed output. Dimensions: 40 x 26.1 x 14.4cm. Mains voltage tappings: 240V. Price: £120.00 (plus VAT).

TU 530

FM/AM tuner with range: 88-108MHz, 525-1605kHz. Variable tuning. AFC. Sensitivity: 1.7µV (9-8dB) FM, 300µV AM. S/N ratio: 79dB. Fixed output. Dimensions: 43.4 x 36.4 x 9.9cm. Mains (voltage tappings): 240V. Price: approx £175.00 (plus VAT).

■ **DUAL**

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St Peter, Bucks. SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

CT 1740*

FM/AM tuner covering FM, L, M, S. Synthesiser with 6 preset controls, 2 speed tuning. Sensitivity (mono): 0.5µV. Sensitivity (stereo): 0.8µV. LED meters. S/N ratio (stereo): 63dB. Aerial input impedance: 75-300 ohms. Dimensions: 44 x 15 x 36.5cm. Mains: 240V.

CT 1540 RC

Variable tuner with 7 electronic presets all infra-red remote control facility. AFC. Sensitivity (mono): <1.2µV. Sensitivity (stereo) <3µV. LED display. S/N ratio (stereo): >60dB. Aerial input impedance: 75/300 ohms. Dimensions: 44 x 15 x 38.4cm. Mains: 240V.

CT1140

Manual tuner plus 5 push button presets. AFC. Sensitivity (mono): <1µV. Sensitivity (stereo): <3µV. Easy to read meters for signal strength and centre tuning. S/N ratio (stereo): >54dB. Aerial input impedance: 75/300 ohms. Dimensions: 44 x 11.5 x 36cm. Mains: 240V.

■ **EAGLE**

Eagle international,
Precision Centre, Heather Park Drive,
Wembley HA10 1SU.
Tel: 01-902 8832.

T 8500

FM/AM tuner covering FM, L, M. Sensitivity (mono): 1.9µV for 30dB quieting. Signal and centre-tuning LED meter. S/N ratio (stereo): 60dB. Fixed output. Aerial input imp: 75 ohms or 300 ohms. Dimensions: 44 x 34.5 x 13cm. Mains: 240V.

■ **FIDELITY**

Fidelity Radio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

350T

FM/AM tuner covering bands 150-270kHz, 525-1625kHz, 5.9-8.0 MHz, 87.5-108MHz. Variable tuning plus six non-designated presets for use on any waveband. AFC. Sensitivity (mono): 400µV. Sensitivity (stereo): 1.5µV. Tuning meter and preset indication meter. S/N ratio: 68dB. Variable output. Aerial input impedance: 300 ohms. Dimensions: 45 x 28 x 15.5cm.

■ **GRUNDIG**

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

T1000

FM/MW/LW tuner. Variable tuning plus 7 FM presets. AFC. Sensitivity (mono): 0.9µV, (stereo) 40µV. LED signal/tuning. S/N ratio: 55dB stereo. Fixed output. Aerial input impedance: 75 or 300 ohms. Dimensions: 45 x 33 x 11cm. Mains voltage tappings: 240V. Price: £92.00 (plus VAT).

T5000

FM/MW/LW tuner. Variable tuning plus 30 all-band presets. AFC. Sensitivity (mono): 0.5µV, (stereo): 20µV. LED signal strength plus LED tuning. S/N ratio: 68dB stereo. Variable

output. Aerial input imp: 75 or 300 ohms. Dimensions: 45 x 33 x 11cm. Mains voltage tappings: 240V. Price: £270.00 (plus VAT).

MT100

FM tuner. Variable tuning plus 7 presets. AFC. Sensitivity (mono): 0.85µV, (stereo): 37µV. LED signal and tuning. S/N ratio: 78dB stereo. Fixed and variable output. Aerial input impedance: 75 ohms or 300 ohms. Dimensions: 27 x 22 x 6cm. Mains voltage tappings: 240V. Price: £130.00 (plus VAT).

■ **HARMAN/KARDON**

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (049 481) 5331.

hk710 Analog tuner

Tuning range: VHF/MW. Useable sensitivity: 1.9mV (IHF). AM sensitivity: 250mV. S/N ratio: 75dB stereo, 77dB mono. Output: 780mV. Dimensions: 38.5 x 32 x 7.25cm.

hk715 Digital tuner

Tuning range: VHF/MW. Sensitivity: 1.7mV (IHF). AM sensitivity: 200mV. S/N ratio: 77dB stereo, 79dB mono. AM S/N ratio: 60dB. Output: 780mV. Dimensions: 38.5 x 32 x 7.25cm.

■ **HARRISON-CHAPMAN**

Gimar Ltd,
95 Grays Inn Road, London WC1.
Tel: 01-405 9665.

ST200*

FM/AM tuner to complement the S200 amplifier. Range: 88-108MHz. Push button tuning. Sensitivity mono: 15µV. Sensitivity stereo: 1.0µV for 25dB quieting. S/N: 50dB. S/N mono: 70dB. Dimensions: 42.8 x 24 x 8.5cm. Price: £223.43 (plus VAT).

■ **HITACHI**

Hitachi Sales (UK) Ltd,
Station Road, Hayes UB3 4DR.
Tel: 01-848 8787.

FT 3400L

AM/FM stereo tuner covering FM, L, M bands. Slimline styling. Tri-state tuning. Price: £82.90 (plus VAT).

FT 4400

AM/FM stereo tuner, digital quartz synthesised. Coverage: FM, M wavebands. Slimline styling. Price: £127.00 (plus VAT).

■ **HMV**

Intersound Electronics Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

4000T

FM/AM tuner with range 150-270kHz, 525-1625kHz, 87.5-108MHz, 5.9-8.0MHz. Variable tuning and six non-designated presets for use on any waveband. AFC and FM mute. Sensitivity (mono): 400µV. Sensitivity (stereo): 1.5µV. Tuning meter and preset indication meter. S/N ratio (stereo): 68dB. Variable output. Aerial input impedance: 300 ohms. Dimensions: 45 x 28 x 15.5cm. Price: £96.52 (plus VAT).

■ **ITT**

ITT Consumer Products Ltd,
Chester Hall Lane, Basildon, Essex.
Tel: Basildon 3040.



Denon TU-850



Dual CT 1740



Harrison-Chapman ST200

HIFI 8065

FM section: Tuning range: 87.5-108MHz. Variable tuning with seven presets. Sensitivity (mono): 26dB S/N, 40kHz 5.3dBfW; 26dB S/N, 40kHz, 75 ohms 0.5 μ V; 50dB S/N, 75kHz 3.3dBfW; 20dB S/N, 75kHz, 75 ohms 0.4 μ V. Sensitivity (stereo): 46dB S/N, 40kHz 36dBfW; 46dB S/N, 40kHz, 75 ohms 17 μ V; 50dB S/N, 75kHz 36dBfW; 50dB S/N, 75kHz, 75 ohms 17 μ V. S/N ratio: 66dB (stereo unweighted), 64dB (stereo weighted). Output (variable): 0-700mV. AM section: Tuning range: 145-350kHz, 510-1620kHz, 5.8-16MHz. Sensitivity (6dB S/N, 30% mod): 10 μ V (LW), 3 μ V (MW), 6 μ V (SW); (26dB S/N, 30% mod): 100 μ V (LW), 30 μ V (MW), 60 μ V (SW). Dimensions: 48 x 35 x 10.5cm. Finish: champagne.

JVC

JVC (UK) Ltd,
Eldon Trading Estate, Staples Corner,
6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

TV 5

FM/AM tuner with range 88-108MHz. Variable tuning. Sensitivity (stereo): 0.9 μ V. Signal strength and tuning meters, both LED. S/N ratio (stereo): 70dB. Dimensions: 42 x 29.5 x 10.8cm. Mains voltage tappings: 240V. Price: £118.00 (inc. VAT).

T-40P-R

FM/AM stereo quartz synthesiser tuner. FM sensitivity: 1.6 μ V/75 ohms. S/N ratio (stereo): 65dB. Distortion: 0.3%. Separation: 45dB (1kHz). Dimensions: 42 x 10.9 x 29.5cm. Price: £205.00 (inc. VAT).

T-V3L

FM/AM stereo tuner. Sensitivity: 1.2 μ V/75 ohms. S/N ratio (stereo): 65dB. Distortion: 0.45%. Separation: 40dB (1kHz). Dimensions: 42 x 8.9 x 30.6cm. Price: £89.50 (inc. VAT).

JT-V77

FM/AM stereo tuner. Sensitivity: 1.2 μ V/75 ohms. Sensitivity (stereo): 38 μ V. S/N ratio (stereo): 72dB. Distortion: 0.1%. Dimensions: 45 x 15.8 x 34.2cm. Price: 244.00 (inc. VAT).

T-M1

Micro FM stereo tuner. Sensitivity: 0.9 μ V/75 ohms. S/N ratio (stereo): 72dB. Dimensions: 23 x 9.3 x 26.9cm. Price: £305.50 (inc. VAT).

T-3030

FM digital frequency synthesiser stereo tuner. Range: 87.6-108MHz. Sensitivity: 1.0 μ V. S/N ratio 19 μ V. Separation: 50dB. Dimensions: 42 x 6.1 x 34.8cm. Price: £465.00 (inc. VAT).

LUXMAN

Howland-West,
3/4 Eden Grove, London N7 8EQ.
Tel: 01-609 0293.

T2

Solid state AM/FM tuner. Tuning range: 87.5-108MHz FM. Variable tuning. Sensitivity (stereo): 1.9 μ V. Signal strength, centre indicator, S/N ratio: 75dB. Output: 1V. Aerial input impedance: 75-300 ohms. Dimensions: 43.8 x 33.1 x 8.4cm. Mains voltage tappings: 220-240V. Price: £150.00 (plus VAT).

T4

Accutouch closed logo locked AM/FM tuner. Tuning range: 87.5-108MHz. Variable tuning. Sensitivity (stereo): 1.8 μ V. Signal strength,

centre indicator. S/N ratio (stereo): 75dB. Output: 1V. Aerial input impedance: 75-300 ohms. Dimensions: 43.8 x 33.1 x 8.4cm. Mains voltage tappings: 220-240V. Price: £220.00 (plus VAT).

T14*

FM tuner with range 87.5-108MHz. Digital synthesiser presets for memory storage, 12 preset push buttons. Sensitivity (stereo): 1.8 μ V. Signal strength indicators, digital frequency indicator. S/N ratio: 72dB. Output: 0-1V. Aerial input impedance: 75-300 ohms. Dimensions: 43.8 x 35 x 78cm. Mains: 220-240V. Price: £310.00 (plus VAT).

MARANTZ

Audio (UK) Ltd,
Debmarc House,
203 London Road, Staines, Middlesex.
Tel: Staines (0784) 50732.

2110L

AM/FM stereo tuner with range 87.5-108MHz, 525-1605kHz, 150-350kHz. Sensitivity (mono): 0.8 μ V. Sensitivity (stereo): 22.5 μ V. Oscilloscope showing signal strength, centre tuning, multipath and audio signal. S/N ratio (stereo): 64dB. Output: fixed. Aerial input impedance: 300/75 ohms. Dimensions: 41.6 x 30 x 14.6cm. Mains voltage tappings: 240-110V. Price: £173.00 (plus VAT).

2130*

AM/FM stereophonic tuner. Tuning range: 87.5-108MHz, 525-1605kHz. Variable tuning. Quartz locked AFC. Sensitivity (mono): 0.7 μ V.

**Luxman T14****Marantz 2130****Marantz ST600****Mitsubishi DA-F630**

Sensitivity (stereo): 1.9 μ V. Oscilloscope showing signal strength, centre tuning, multipath and audio signal. S/N ratio (stereo): 72dB. Variable output. Aerial input impedance: 300/75 ohms. Dimensions: 41.6 x 30 x 14.6cm. Mains voltage tappings: 240/110V. Price: £311.00 (plus VAT).

ST300L

AM/FM stereo tuner with range: 87.5-108MHz, 150-350kHz, 525-1605kHz. Variable tuning. Sensitivity (mono): 0.9 μ V. Sensitivity (stereo): 24 μ V. Signal strength and tuning meters. S/N ratio (stereo): 65dB. Fixed output. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 41.6 x 24.3 x 14.6cm. Mains voltage tappings: 240V. Price: £94.00 (plus VAT).

ST400

As above except stereo sensitivity is 23 μ V. Features: digital frequency readout. Price: £129.00 (plus VAT).

ST500

FM stereo tuner with range: 87.5-108MHz. Quartz synthesised tuning with 14 presets. Sensitivity (mono): 0.85 μ V. Sensitivity (stereo): 23 μ V. LED bar meter showing signal strength and multipath. S/N ratio (stereo): 72dB. Fixed output. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 41.6 x 29.8 x 7.6cm. Mains voltage tappings: 240/110V. Price: £152.00 (plus VAT).

ST600*

FM stereo tuner with range: 87.5-108MHz. Variable tuning. Sensitivity (mono): 0.8 μ V. Sensitivity (stereo): 22.5 μ V. Oscilloscope showing signal strength, tuning, multipath and audio display. S/N ratio (stereo): 65dB. Fixed output. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 41.6 x 30.1 x 14.6cm. Mains voltage tappings: 240/110V. Price: £216.00 (plus VAT).

MERIDIAN

Boothroyd Stuart Ltd,
13 Clifton Road, Huntingdon, Cambs.
Tel: (0480) 57339.

104

FM tuner designed to match 101 pre-amplifier. Six preset stations and one standby. Rotary controls. Radio circuit combines dual gate MOSFET input stage with double balanced mixer for low intermodulation, linear phase IF and stereo decoder with pilot tone cancel circuitry. Range: 87.5-102MHz. Sensitivity: <1 μ V useable. Distortion: <0.1% mono, <0.2% stereo. S/N ratio: better than 67dB. FR: 15Hz-15kHz \pm 0.5dB. Price: £225.00 (inc. VAT).

MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts. WD2 8LD.
Tel: Watford 40566.

DA-F630*

Tuning range 87.5-108MHz. Sensitivity (40kHz Dev. S/N=46dB) 32 μ V. S/N ratio: 70dB. Muting circuit on FM. Tuning scale illumination changes from white to orange when a mono station is correctly tuned and from white to green for a stereo station. Dimensions: 42.4 x 25 x 14cm (W x D x H). Price: £97.00 (inc. VAT).

OPTONICA

Sharp Electronics (UK) Ltd,
107 Hulme Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

ST3636C

FM tuner with range 87.6-108MHz. Variable tuning. Auto lock. Sensitivity mono: 1.4µV. Signal strength and tuning meter. S/N ratio (stereo): 60dB. Output: 0.35V fixed 0.55V variable. Aerial input impedance: 300 ohms/75 ohms. Dimensions: 44 x 37 x 14cm.

ST5100C

FM tuner with range 87.6-108MHz. Variable tuning. AFC. Sensitivity (mono): 1.6µV. Signal strength and tuning meters. S/N ratio (stereo): 62dB. Output: 0.4V fixed. Aerial input impedance: 300 ohms/75 ohms. Dimensions: 43 x 39 x 7.5cm.

ST7100N

FM tuner with range 87.6-108MHz. Variable tuning and digital readout. Auto lock. Sensitivity (mono): 1.4µV. Signal strength meter and tuning meter. S/N ratio (stereo): 62dB. Output: 0.4V fixed, 0.6V variable. Aerial input impedance: 300 ohms/75 ohms. Dimensions: 43 x 39 x 7.5cm.

ST9100N

FM tuner with range 87.6-108MHz. Auto scan, manual preset and memory. Digital synth. Sensitivity (mono): 1.4µV. Aerial input impedance: 300 ohms/75 ohms. Dimensions: 43 x 39 x 7.5cm.

ST1515

Large flywheel tuning with FM, M. Sensitivity (mono): 40µV. Sensitivity (stereo): 1.6µV. S/N ratio (stereo): 62dB DIN. Output: FM 0.25V fixed, AM 0.2V fixed. Dimensions: 40.8 x 27.5 x 14.4cm. Mains (voltage tappings): AC 110/220/240V. 50/60Hz. Price: approx. £99.90 (inc. VAT).

PHILIPS

Philips Electrical Ltd,
City House, 420 London Road,
Croydon, Surrey.
Tel: 01-689 2166.

AH 170

AM/FM stereo tuner. Tuning range: 520-1605kHz, 150-255kHz, 87.5-108MHz. Manual tuning. AFC. Sensitivity (mono): 1.7µV for 26dB sig/noise. Sensitivity (stereo): 80µV for 46dB sig/noise. Signal strength meter. Output: 370mV into 5K fixed. Aerial input impedance: 300 ohms. Dimensions: 48.2 x 28 x 7.8cm. Mains voltage tappings: 240V. Price: £100.26 (plus VAT).

AH 180

Digital synthesiser with range 87.5-108MHz, 531-1605kHz. Pushbutton up/down key-in facility, search tuning, 12 presets. Sensitivity (mono): 0.9µV. 5 LED meters. S/N ratio: 70dB. Variable output. Aerial input impedance: 300 ohms balanced, 75 ohms co-axial. Dimensions: 48 x 39 x 7cm. Mains: 240V. Price: £434.17 (plus VAT).

AH 103

FM/AM tuner with range 87.5-108MHz, 150-345kHz, 520-1605kHz. Variable tuning with 5 presets on FM. Switchable AFC. Sensitivity (mono): 0.9µV. Signal strength/tuning meter. S/N ratio (stereo): 70dB. Variable output. Aerial input impedance: 70 ohms co-axial. Dimensions: 45 x 37 x 10cm. Mains: 240V. Price: £135.55 (plus VAT).

AH 102

FM/AM tuner with range: 87.5-108MHz, 150-255kHz, 520-1605kHz. Variable tuning.

Switchable AFC. sensitivity (mono): 1.5µV. Signal strength/tuning meters. Fixed output. Aerial input impedance: 300 ohms balanced, 75 ohms co-axial. Dimensions: 45 x 34 x 10cm. Mains: 240V. Price: on application.

PIONEER

Pioneer HiFi (GB) Ltd,
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: 0753 652222.

TX 410L

Tuning range: 88-108MHz. FM, AM, LW with variable tuning. Sensitivity: FM 11.2dBf (mono), FM 1.9mV (stereo). Tuning meter. S/N ratio: 72dB. Fixed output. Impedance: 75 ohms. Dimensions: 42 x 9.4 x 27.5cm. Mains: 220/240V.

TX 710L*

Tuning range: 88-108MHz. FM, AM, LW with 7 station presets. Sensitivity: FM 10.8dBf (mono), FM 1.9mV (stereo). Tuning meter. S/N ratio: 75dB. Fixed output. Impedance: 75 ohms. Dimensions: 42 x 9.4 x 27.5cm. Mains: 220/240V.

TX 7800

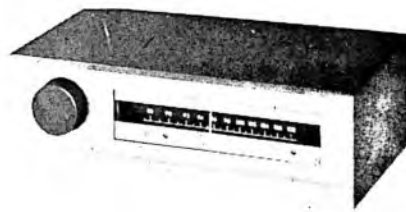
AM/FM stereo tuner. Tuning range: 88-108MHz, 55-1600kHz. Variable tuning. Sensitivity (mono): FM 1.6µV, AM 1.5µV, 15mV. Servo-lock touch sensor signal and tuning meters. S/N ratio (stereo): 70dB. Output: variable. Aerial input impedance: 75



Pioneer TX 710L



Pye SX 6194



Quad FM3



Revox B760

ohms, 300 ohms. Dimensions: 42 x 39 x 15cm. Mains: 220/240V. Typical Market Price: £168.90.

TX 9800

AM/FM stereo tuner. Tuning range: 88-108MHz, 55-1600kHz. Variable tuning. Sensitivity (mono): FM 1.5µV, AM 1.5µV, 15mV. Quartz-lock stereo tuning, signal and tuning meters. S/N ratio (stereo): 80dB. Output: variable. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 42 x 39 x 15cm. Mains: 220/240V. Typical Market Price: £224.90.

TXD 1000

FM/AM tuner. Auto tuning, six station memory for both FM and AM. Manual override. Sensitivity (mono): FM 1.9µV, AM 0.3µV. Digital readout. S/N ratio (stereo): 75dB. Output: variable. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 42 x 36.5 x 9.8cm. Mains: 220/240V.

PYE

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

6194*

FM/AM tuner with range 87.5-108MHz, 150-345kHz, 520-1605kHz. Flywheel tuning. Switchable AFC. Sensitivity (mono): 0.9µV to IHF, 3.5µV for 50dB quieting. Sensitivity (stereo): 0.9µV. Separate illuminated signal strength and FM centre tuning meters. S/N ratio (stereo): 75dB. Variable output. Aerial input impedance: 75 ohms co-axial and 300 ohms balanced. Dimensions: 42 x 10.5 x 31.2cm. Mains: 240V. Typical Market Price: £89.00.

QUAD

The Acoustical Manufacturing Co Ltd,
St. Peters Road, Huntingdon PE18 7DB.
Tel: Huntingdon (0480) 52561.

Quad FM3*

Stereo FM tuner. Range: 88-108MHz. Variable tuning. High stability tuned stages maintain accuracy without AFC. Sensitivity: 2µV for full limiting. Aerial input: 75 ohms co-axial and 300 ohms balanced. Output: 100mV per channel for 30% modulation. Stereo decoder fitted. Image rejection: 56dB. IF rejection: 80dB. Capture ratio: 3dB. FR: 20Hz-15kHz ±1dB. Separation: 40dB at 1kHz. Distortion: 1kHz at 40kHz deviation, 0.3%. Recommended load: greater than 50K. De-emphasis: 50µsec or 75µsec as required. Mains: 100-125V 200-250V 50-60Hz. Dual gate MOSFET input stage. Integrated circuits (ICs) in IF and decoder. Ceramic filters in IF chain. Output via 5-pin DIN connector. Size: 26 x 16.5 x 9.2cm. Price: £126.00 (inc. VAT).

REVOX

F. W. O. Bauch Ltd,
49 Theobald Street, Borehamwood,
Herts. WD6 4RZ.
Tel: 01-953 0091.

Model A76

Stereo tuner, VHF only: 87.5-108MHz, variable tuning. Two tuning meters. Sensitivity: 1µV mono (IHF) 10µV stereo (IHF). Aerial: 60-240ohms. VHF distortion: 0.2% at 1kHz, 40kHz deviation mono or stereo. Output: 1V adjustable. Mains: 110-250V. 50-60Hz AC. Price: £353.00 (plus VAT).

B 760*

Variable tuning or pushbutton, 15 user-programmable stations, tuning range: 87-107.975MHz. Tuning by quartz-referenced digital synthesiser. Sensitivity (mono): 2µV for S/N ratio of 46dB. Signal strength and tuning meter. S/N ratio (stereo): 75dB (input of 1mV, 75 ohms). Output: 1.16V fixed or variable (separate output sockets). Aerial input imp: 60-75 ohms co-axial, 240-300 ohms balanced. Dimensions: 45.2 x 34.8 x 15.1cm. Mains: 100, 120, 140, 200, 220, 240V 50/60Hz. Price: £675.00 (plus VAT).

■ **ROGERS**

Swisstone Electronics Ltd,
4-14 Barmeston Road, Catford,
London SE6 3BN.
Tel: 01-697 8511.

T75 Series II*

Stereo tuner. Range: 88-108MHz Sensitivity: 1.0µV. Capture ratio: 1.5dB. IF rejection: 80dB. Signal strength and tuning meter. Nominal output (30% modulation): 200mV, 20-15,000Hz. S/N ratio: mono 70dB, stereo 65dB. Price: £135.00 (plus VAT).

■ **ROTEL**

Rotel HiFi Ltd,
2-4 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 317707.

RT 1000*

FM/AM tuner with variable tuning. Sensitivity (mono): 1.9µV. S/N ratio: 70dB. Fixed output. Aerial input impedance: 300/75 ohms. Dimensions: 43 x 29 x 9.8cm. Typical Market Price: £89.00.

RT 2000

FM/AM tuner with variable tuning. AFC. Sensitivity (mono): 1.7µV. Signal strength/tuning meter. S/N ratio (stereo): 65dB. Fixed output. Aerial input impedance: 300/75 ohms. Dimensions: 48.2 x 32.8 x 14.3cm. Mains: 240V. Price: on application.

RT 2100

FM tuner with variable tuning. AFC. Sensitivity (mono): 1.6µV. Signal strength/tuning meter. S/N ratio (stereo): 65dB. Fixed output. Aerial input impedance: 300/75 ohms. Dimensions: 48.2 x 32.8 x 14.3cm. Mains: 240V. Price on application.

■ **SANSUI**

Sansui Audio Europe NV,
Lyon Industrial Estate, Rockware Avenue,
Greenford, Middlesex.
Tel: 01-575 1133.

TU 719

AM/FM tuner. Tuning range: 88-108MHz, 530-1600kHz. Variable tuning. AFC. Sensitivity (mono): 13dBf, (stereo): 35dBf. Signal strength/tuning meter. S/N ratio (stereo): 76dB. Variable output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43 x 40.5 x 16.8cm. Mains voltage tappings: 240V.

TU 317

FM/AM tuner. Tuning range: 88-108MHz, 530-1600kHz. Variable tuning. AFC. Sensitivity (mono): 10.3dBf (stereo): 19dBf. Signal strength, tuning meter. S/N ratio (stereo): 73dB. Output: fixed. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43 x 31 x 11cm. Mains voltage tappings: 240V. Typical Market Price: £110.00.

TU 217

As above except: Sensitivity (mono): 10.5dBf (stereo): 20dBf. S/N ratio (stereo): 72dB. Typical Market Price: £99.90.

TU 919

FM/AM tuner. Tuning range: 88-108MHz, 530-1600kHz. Variable tuning. AFC. Sensitivity (mono): 9dBf FM, 47dBm AM, (stereo): 15dBf. Signal strength/tuning meter. S/N ratio: 80dB at 80dBf, 76dB at 65dBf (stereo). Variable output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43 x 40.2 x 16.8cm. Mains voltage tappings: 240V. Price: £278.60 (plus VAT).

TU X1

FM/AM tuner. Tuning range: 88-108MHz, 530-1600kHz. Variable tuning. AFC. Sensitivity (mono): 8.6dBf FM, 50dBm AM, (stereo): 14.5dBf. Signal strength/tuning meter. S/N ratio (stereo): 83dB at 85dBf, 80dB at 65dBf. Variable output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 48 x 45 x 19.7cm. Mains voltage tappings: 240V. Price: £404.00 (plus VAT).

T60/T60L

Tuning range: 88-108MHz, 530-1600kHz, 150-350kHz (T60L only). Variable tuning. AFC. Sensitivity (mono): 10.8dBf FM, 50dBm AM. LED signal strength/tuning meter. S/N ratio (mono): 72dB. Fixed output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43 x 25.1 x 14.7cm. Mains voltage tappings: 240V. Price: £65.80 (plus VAT).

T80

Tuning range: 88-108MHz, 530-1600kHz. Variable tuning. AFC. Sensitivity (mono): 10.8dBf FM, 50dBm AM. LED signal strength/tuning meter with frequency readout. S/N ratio (mono): 72dB. Fixed output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43 x 25.1 x 14.7cm. Mains voltage tappings: 240V. Price: £95.65 (plus VAT).



Rogers T75



Rotel RT 1000



Sugden T48

■ **SCOTT**

Clement Electronics Ltd,
Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57165.

570TL

Stereo FM/AM tuner. Range: 87.5-108MHz, 515-1620kHz. Variable tuning. Sensitivity (mono): 250µV. Sensitivity (stereo): 1.8µV. Signal strength and centre channel tuning meters. S/N ratio (stereo): 70dB. Dimensions: 14 x 43 x 35cm.

530TL

Stereo FM/AM tuner. Range: 87.5-108MHz, 515-1620kHz. Variable tuning. Sensitivity (mono): 250µV. Sensitivity (stereo): 1.9µV. Signal strength and centre channel tuning meters. S/N ratio (stereo): 67dB. Dimensions: 14 x 43 x 35cm.

510TL

Stereo FM/AM tuner. Range: 87.5-108MHz, 515-1620kHz. Variable tuning. Sensitivity (mono): 250µV. Sensitivity (stereo): 2µV. Two meters for signal strength readout and FM centre tuning. S/N ratio (stereo): 65dB. Dimensions: 14 x 43 x 21.7cm.

■ **SONY (UK) LTD**

Consumer Information, Sony Showroom,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

STA 7B

Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Digital tuning quartz locked. Sensitivity (mono): (50dB quieting) 2.8µV IHF, 14.2dB. Sensitivity (stereo): (50dB quieting) 30µV IHF, 34.8dBf. Signal strength and tuning meters. S/N ratio: 75dB. Output: fixed 750mV 2K; variable 0-1.5V, 450 ohms. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions: 43 x 44 x 17cm. Mains: 240V, 50Hz. No rec. retail price.

■ **I. E. SUGDEN & CO LTD.**

Carr Street, Cleckheaton,
Yorks. BD19 5LA.
Tel: Cleckheaton(0274) 872501.

R51

FM stereo tuner. Tuning range: 88-108MHz. Six push buttons plus AFC, noise filter, stereo threshold control, variable de-emphasis. Sensitivity mono 2.0µV. Other specs as for T48 below. Aerial input: 75 ohms co-axial and 300 ohms balanced. Dimensions: 28 x 10 x 17cm. Mains: 110/120V, 220/240V. Price: £140.00 (plus VAT).

T48*

Tuning range: 88-108MHz. Six push buttons. AFC. Sensitivity mono: 2.0µV. Sensitivity stereo: 6.0µV. Image frequency rejection: 70dB. IF rejection: 80dB. Capture ratio: 2.5dB. Selectivity: 40dB. S/N mono: 70dB. S/N ratio stereo: 66dB. Fixed output: 0.5V. Aerial input imp: 75 and 300 ohms. Dimensions: 16 x 28 x 13cm. Mains: 110-120, 220-230, 240V. Price: £120.00 (plus VAT).

■ **TANDBERG**

Tandberg (UK) Ltd,
81 Kirkstall Road, Leeds LS3 1HR.
Tel: Leeds (0532) 35111.

TPT 3001

Programmable tuner incorporating 8 FM

presets, digital display, direct reading meters for signal strength and centre tune, auto noise cancelling circuit, three position selectivity adjustment, continuously variable muting threshold adjustment and output level control. Price: £566.09 (plus VAT).

■ **TEAC**

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks HP10 8HR.
Tel: High Wycombe(049481) 5331.

TX-500

FM tuner section: tuning range: 88-108MHz. Useable sensitivity: new IHF, mono 11.5dBf. S/N ratio: at 65dBf, mono 72dB, stereo 65dB. Harmonic distortion: at 65dBf, mono 0.06%, stereo 0.1%. FR: 30Hz-15kHz ±0.5dB. AM tuner section: useable sensitivity: 15µV. THD: 1000kHz, 1.0%. Power requirements: 100/117/220/240V AC, 50/60Hz. Power consumption: 9W. Dimensions: 41 x 29.6 x 14cm. Price: £112.17 (plus VAT).

TX-300

FM tuner section: Tuning range: 88-108MHz. Useable sensitivity: new IHF, mono 11.5dBf. S/N ratio: at 65dBf, mono 72dB, stereo 60dB. Harmonic distortion: at 65dBf, mono 0.2%, stereo 0.2%. FR: 30Hz-15kHz ±1.0dB. AM tuner section: useable sensitivity: 15µV. THD: 1kHz, 1.0%. Power requirements: 100/117/220/240V. AC, 50/60Hz. Power consumption: 9W. Dimensions: 41 x 29.6 x 14cm. Price: £86.09 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough, Berks. SL1 3DR.
Tel: Slough(0753) 34522.

ST-C01

FM/AM stereo tuner. Variable tuning. Range: 88-108MHz. Sensitivity: 1.9µV, 1.2µV for 30dB, 1.7µV, 1.1µV for 26dB, 1.5µV, 0.9µV for 20dB. Sensitivity (stereo): 20µV. S/N ratio (stereo): 63dB. Dimensions: 29.7 x 4.9 x 25.5cm. Price: on application.

ST-9030

FM stereo tuner. Range: 88-108MHz. Sensitivity: 1.2µV at 30dB, 1.1µV at 26dB, 1.0µV at 20dB. Dimensions: 45 x 9.2 x 37cm. Price: on application.

ST-9038

Quartz synthesiser FM stereo tuner. Range: 87.6-107.9MHz. Sensitivity: 1.2µV at 30dB, 1.1µV at 26dB, 1.0µV at 20dB. Dimensions: 45 x 5.3 x 28.5cm. Price: on application.

ST-Z1L

FM/AM stereo tuner designed to match SU-Z1 and SU-Z2 integrated amplifiers in appearance and performance. Range: 525-1605kHz, 145-350kHz plus FM. Sensitivity (mono): 30µV. Sensitivity (stereo): 1.2µV-2µV. Dimensions: 41 x 14.2 x 22.3cm. Mains: 110/120/220/240V.

ST33

AM/FM tuner with digital operation. Quartz. S/N ratio: 65dB. Fixed output. Aerial input impedance: 300/75 ohms. Dimensions: 43 x 24 x 5.3cm. Mains voltage tappings: 220/240V.

ST37

FM/AM tuner similar to above. AFC, LED indicator.

■ **TELETON**

Teleton Electro (UK) Ltd,
Somerton Works, Price Avenue,
Westcliff-on-Sea, Essex.
Tel: Southend(0702) 337681.

T 500

AM/FM tuner. Range: 87.4-104.5MHz, 510-1630kHz, 145-355kHz. Variable tuning. Switchable AFC. Sensitivity (mono): FM 2µV for 26dB, 200µV for 26dB, 300µV for 26dB. Signal strength, tuning meter. S/N ratio (stereo): 53dB. Output: variable. Aerial input impedance: 300 ohms balanced. Dimensions: 28 x 20 x 51.7cm. Mains voltage tappings: 240V.

■ **TENSAI**

Wren Electronics Ltd,
Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes(0908) 71611.

TT3245

FM/AM tuner. Variable tuning. AFC. Sensitivity (mono): 0.9µV. Sensitivity (stereo): 20µV. LED signal strength and LED centre tuning meters. S/N ratio (stereo): 62dB. Fixed output. Aerial input impedance: 75 ohms. Dimensions: 43 x 25 x 10.5cm. Mains: 240V. Approx. price: £70.00.

TT3345

FM/AM tuner. Variable tuning. AFC. Sensitivity (mono): 0.2µV. Sensitivity (stereo): 46µV. LED signal strength and LED centre tuning meters. S/N ratio (stereo): 60dB. Fixed output. Aerial input impedance: 75 ohms. Dimensions: 43 x 25 x 8cm. Mains: 240V. Approx. price: £70.00.

■ **TOSHIBA**

Toshiba (UK) Ltd,
Toshiba House,
Frimley Road, Frimley, Camberley,
Surrey GU16 5JJ.
Tel: Camberley 62222.

ST-230*

FM/AM tuner. Range: 88-108MHz. Sensitivity: 1.9µV. S/N ratio (stereo): 68dB. Signal strength, tuning meter. Dimensions: 42 x 14.6 x 25.7cm. Price: £88.44(plus VAT).

■ **TRIO**

Distributors: B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

KT 615

AM/FM stereo tuner. Range: 88-108MHz. 535-

1600kHz. Variable tuning. Sensitivity (mono): 0.9µV. Sensitivity (stereo): 25µV. Signal strength, tuning meter. S/N ratio (stereo): 78dB. Output: fixed. Aerial input impedance: 75 ohms unbalanced, 300 ohms balanced. Dimensions: 44 x 40.2 x 15.3cm. Mains voltage tappings: 240V. Price: £144.16 (plus VAT).

KT 413

As above but push button tuning up to five stations for each FM and AM. Auto-scan. Signal LED indicator only. S/N ratio (stereo): 72dB. Dimensions: 40 x 28 x 13.9cm. Price: £128.10 (plus VAT).

KT 917

FM tuner. Range: 88-108MHz. Variable tuning. Sensitivity (mono): 0.75µV. Sensitivity (stereo): 25µV. Signal strength, tuning/meter. S/N ratio (stereo): 84dB. Output: variable. Aerial input impedance: 75 ohms unbalanced, 300 ohms balanced. Dimensions: 46 x 46.3 x 16.1cm. Mains voltage tappings: 240V. Price: £639.81 (plus VAT).

KT 815

AM/FM tuner. Variable tuning. Range: 88-108MHz, 535-1600kHz. Sensitivity (mono): 0.8µV. Sensitivity (stereo): 25µV. Signal strength, tuning meter. S/N ratio (stereo): 80dB. Output: variable. Aerial input impedance: 75 ohms unbalanced, 300 ohms balanced. Dimensions: 44 x 40.2 x 15.3cm. Mains voltage tappings: 240V. Price: £246.22 (plus VAT).

LO 7 TII

FM tuner with range 88-108MHz. Variable tuning. Sensitivity (mono): 1.5µV. Sensitivity (stereo): 56µV. Signal strength, tuning meter. S/N ratio (stereo): 80dB. Output: fixed. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 48 x 34.2 x 10cm. Mains voltage tappings: 240V. Price: £456.52 (plus VAT).

L-OIT*

FM tuner with range 88-108MHz. Variable tuning. Sensitivity (mono): 0.6µV. Sensitivity (stereo): 22µV. Signal strength/tuning meter. S/N ratio (stereo): 80dB. Fixed output. Aerial input impedance: 75 ohms. Dimensions: 44 x 45.2 x 13.6cm. Mains: 120/220/240V. Price: £480.54 (plus VAT).

KT 500

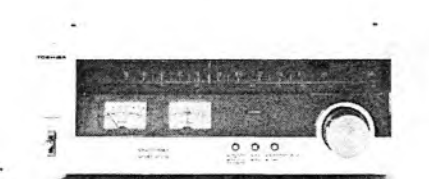
FM/AM tuner with range 88-108MHz, 535-1600kHz. Variable tuning plus six AM and six FM presets. Sensitivity (mono): 0.9µV. Sensitivity (stereo): 30µV. Signal strength/tuning meter. S/N ratio (stereo): 66dB. Fixed output. Aerial input impedance: 75, 300 ohms. Dimensions: 44 x 28.8 x 13.3cm. Mains: 120/220/240V. Price: £137.25 (plus VAT).

KT 80

FM tuner with range 88-108MHz. Variable tuning. Sensitivity (mono): 0.6µV. Sensitivity (stereo): 25µV. Signal strength meter, LED display. S/N ratio (stereo): 80dB. Fixed output. Aerial input impedance: 75, 300 ohms. Dimensions: 44 x 33.3 x 7.8cm. Mains: 220-240V. Price: £118.94 (plus VAT).

KT 60L

FM/AM tuner with range 88-108MHz, 535-1600kHz, 150-350kHz. Variable tuning. Sensitivity (mono): 0.9µV. Sensitivity (stereo): 25µV. Signal strength/tuning meters, LED display. S/N ratio (stereo): 74dB. Fixed output. Aerial input impedance: 75, 300 ohms. Dimensions: 44 x 34.1 x 7.8cm. Mains: 120/220-240V. Price: £82.33 (plus VAT).



Toshiba ST-230



Trio L-01T

continued on page 138

RECEIVERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AIWA

Aiwa Sales and Service (UK) Ltd,
30 and 32 Concord Road,
Westwood Park Trading Estate,
London W3 0TH.
Tel: 01-993 1672.

AX 7800*

AM/FM receiver with amplifier output of 60W per channel into 8 ohms. Damping Factor: 20. Tuner covers FM, L, M. Sensitivity (FM): mono 1.4µV (S/N: 26dB/300 ohms). Sensitivity (AM): 300µV/M. Pushbutton controls and ten presets. Dimensions: 50 x 44 x 12cm. Finish: Brushed aluminium face panel. Typical Market Price: £250.00.

AX 7700

As above but output of 40W per channel. Typical Market Price: £150.00.

AX 7300

As 7800 but output of 25W. Damping Factor: 30. Price: £125.00.

AXS 50

AM/FM receiver with amplifier output of 20W per channel. Damping Factor: 30. Radio covers FM, L, M. Sensitivity: (FM): 4µV (50dB quieting). Sensitivity: (AM): 42µV. Variable tuning with ten presets. Dimensions: 25 x 28 x 7cm. Finish: brushed aluminium. Price: on application.

■ AKAI

Akai (UK) Ltd,
82-105 Cricklewood Lane, London NW2 2DP.
Tel: 01-450 2011.

AA1125

AM/FM receiver with output of 25W per channel. FR: 15Hz-40kHz. FM sensitivity: 1.9µV. FM range: 88-108, AM 520-1605. Input: phono, aux, tape. Dimensions: 48 x 12.3 x 26.8cm. Features: loudness control, 2-way tape monitor facility, 2-way speaker select. Price: £150.00 (inc. VAT).



Aiwa AX 7800



Akai AA1135

AA1135*

AM/FM receiver with output of 35W per channel. FR: 6Hz-50kHz. FM sensitivity: 1.8µV. FM range: 88-108, AM range: 520-1605. Inputs: phono, aux, tape. Dimensions: 48 x 15.5 x 34.5cm. Features: FM mute, 2-way tape monitor, two way dubbing, loudness control. Price: £180.00 (inc. VAT).

AA1150

AM/FM receiver with output of 50W per channel. FR: 6Hz-50kHz. FM sensitivity: 1.7µV. FM range: 88-108, AM range: 520-1605. Inputs: phono, aux, tape. Dimensions: 48 x 15.5 x 34.5cm. Features: variable FM mute, signal strength meter, tuning meter. Price: £245.00 (inc. VAT).

AA1175

AM/FM receiver with output of 75W per channel. FR: 6Hz-50kHz. FM sensitivity: 1.7µV. FM range: 88-108, AM range: 520-1605. Inputs: phono, aux, tape. Dimensions: 48 x 16.5 x 44cm. Features: bass, mid and treble controls, high and low filters, variable FM mute. Price: £412.00 (inc. VAT).

AA1200

AM/FM receiver with output of 120W per channel. FR: 6Hz-50kHz. FM sensitivity: 1.7µV. FM range: 88-108, AM range: 520-1605. Inputs: phono, aux, tape. Dimensions: 48 x 16.5 x 44cm. Features: twin power meters, bass, mid and treble controls, two-way tape monitor with two way dubbing. Price: £525.00 (inc. VAT).

■ ALBA (ELECTRONICS)

Bull Lane, Edmonton, London N18 1SD.
Tel: 01-803 4451.

2125

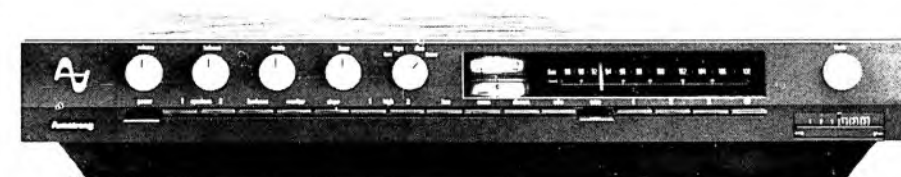
FM receiver with amplifier. Output: 28W. FR: 20Hz-20kHz. Inputs: DIN, phono, tape x 2. Controls: volume, treble, bass, balanced, speaker switching. Sensitivity: 1µV 75 ohms. Waveband coverage: 87.5-108MHz. Variable tuning. Dimensions: 43.6 x 27.8 x 13cm. Finish: teak with matt silver front.

2150

FM receiver with amplifier. Output: 50W. FR: 20Hz-20kHz. Inputs: DIN, phono, tape x 2. Controls: volume, loudness, treble, bass, balance, speaker switching. Tuner sensitivity: 1µV 75 ohms. Waveband coverage: 87.5-108MHz. Variable tuning. Dimensions: 43.6 x 27.8 x 13cm. Finish: teak with matt silver front.

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.



Amstrad 626

5050*

Receiver with power output: 25W. FR: 15Hz-30kHz. Damping factor: 72. Inputs: phono, aux, tape monitor. Controls: bass, middle, treble, balance, volume, panorama, loudness. Tuner sensitivity FM: 1.8µV. Wavebands coverage: FM, L, M. Variable tuning. Dimensions: 66 x 36 x 11cm. Price: approx. £117.40 (plus VAT).

■ ARMSTRONG AUDIO LTD

Walters Road, London N7 0R7.
Tel: 01-607 3213.

625

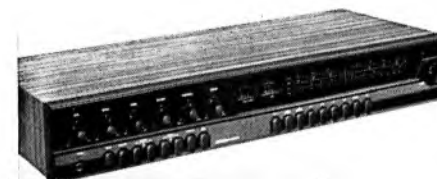
Receiver with power output: 40W into 8 ohms. THD: 0.08% at rated output. FR: 20-20,000Hz. Power bandwidth: 25-45,000Hz. Damping factor: better than 50. Inputs: Disc (2), tape-aux. Tape output (DIN): 0-250mV. Tuner sensitivity FM: 1.5µV IHF. Capture ratio: 1.75dB. Image rejection FM: 50dB. IF rejection FM: 100dB. Stereo separation: 40dB at 1kHz. Pilot tone rejection: 65dB. Pilot harmonic rejection: 65dB. THD stereo: <0.2%. Waveband coverage: 87.5-108MHz. Dimensions: 50 x 28.5 x 8.2cm. Teak or rosewood finish. Variable tuning and 6 presets. Price: £242.27 (inc. VAT).

626*

AM-FM versions of 625 with similar specifications. 3 AM and 3 FM presets and variable tuning. Price: £279.07 (inc. VAT).

■ AUDIO PRO

Audio Pro (Hi-Fi) Ltd,
Brook House, Crewe Road, Wheelock,
Sandbach, Cheshire.
Tel: Sandbach (093 67) 7520.



Amstrad 5050



Audio Pro TA 150

TA 150*

Microprocessor controlled receiver with output: 85W. FR: 10Hz-150kHz. Damping factor: >60 at 8 ohms. Wavebands: 87.5-108MHz. Sensitivity: <1.4µV, 75 ohms DIN at 40kHz deviation and 30dB S/N. AM range: 520-1640kHz. Dimensions: 49.5 x 26 x 11.5cm. Finish: black. Price: on application.

BEOMASTER

Bang & Olufsen (UK) Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

Beomaster 190-2

Stereo FM receiver featuring low profile look with touch operation of programme selection and volume control. Amplifier: Power: 2 x 30W per channel. THD: less than 0.13%. Damping factor: better than 70 into 4 ohms. Inputs: sockets for magnetic pickup and tape recorder. FR: 20Hz-40kHz ±1.5dB. Features: three position pre-set level for volume control and visual indication of volume level, programme source, tone controls, tuning balance, stereo/mono and standby. Finish: matt black and anodised aluminium with side panels in teak or rosewood. Oak and white finishes to special order. Dimensions: 62 x 25 x 6cm. Price: £286.00 (inc. VAT).

Beomaster 240-2

Same as 190-2 but with cordless remote control commander. Price: £354.00 (inc. VAT).

2200

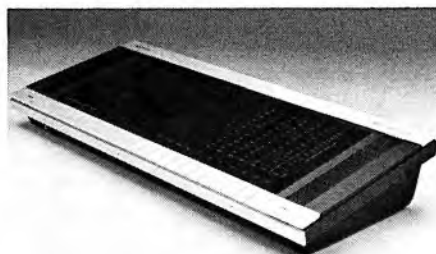
Amplifier output: 2 x 40W. FR: 20Hz-20kHz. Damping factor: >30. Inputs: phono, tape. Controls: volume, bass, balance, treble. Tuner sensitivity FM: <20µV. AM sensitivity: <100µV. Variable tuning and 5 FM presets. Wavebands: FM, L, M. Dimensions: 66 x 35 x 13.6cm. Teak or rosewood finish. Price: £333.00 (inc. VAT).

4400

Amplifier output: 2 x 75W. FR: 20Hz-35kHz ±1.5dB. Damping factor: >65dB. Inputs: tape 1, tape 2. Controls: linear switch, hi filter, lo-filter, ambio-switch. Sensitivity FM: <20µV. Variable tuning and 6 presets. Waveband coverage: 87.5-108MHz. AFC. Dimensions: 57.5 x 28 x 9.5cm. Teak or rosewood finish. Price: £444.00 (inc. VAT).

Beomaster 1700*

AM/FM stereo receiver. Amplifier section has power output of 2 x 30W into 4 ohms or 2 x 20W into 8 ohms. FR: 20Hz-30kHz ±1.5dB. Damping factor: >24. Inputs: magnetic pickup tape. Controls: balance, volume, bass, treble off, phono, tape. Tuner section covering FM, L, M. Sensitivity stereo: 46dB-25µV/75 ohms. Sensitivity mono: 20dB-<100µV (M) and 20dB-<80µV (L). Five preset FM bands and 1 preset AM band. Dimensions: 60 x 24 x 10cm. Finish: teak, rosewood, or oak to special order. Price: £198.00 (plus VAT).

**Beomaster 1700****BOSE**

Bose (UK) Ltd,
Trinity Trading Estate, Milton Regis,
Sittingbourne, Kent ME10 2PD.
Tel: Sittingbourne 75341/2.

Spatial Control Receiver

Spatial Control Receiver with output of 100W per channel. Built-in equalisation for 901 TV speakers. Four power amplifiers can be used in many configurations. Slide control balances sound between different rear panels of the 901 speakers, room compensation controls. FR: 20Hz-20kHz. Sensitivity (FM): 19µV mono, 3.3µV stereo. Sensitivity (AM): 250µV. Dimensions: 20½ x 6½ x 16½in. Price: £546.25 (inc. VAT).

550

AM/FM receiver with output of 40W per channel. Built-in 901 IV speaker equalisation, source and room compensation controls. FR: 20Hz-20kHz. Inputs: phono 2.75mV. Sensitivity (FM): 2.75µV. Sensitivity (AM): 50µV. Dimensions: 18¼ x 5¼ x 12¼in. Price: £224.25 (inc. VAT).

EAGLE INTERNATIONAL

Precision Centre, Heather Park Drive,
Wembley HA0 1SU, Middlesex.
Tel: 01-902 8832.

R7200

Amplifier output: 30W. Controls: volume, balance, bass, treble, speakers, input, tuning, loudness, muting, mono-stereo, tape monitor, de-emphasis 25/50 (rear). Tuner covering: FM/AM with variable tuning. Dimensions: 45.6 x 32 x 31cm. Finish: brushed metal/wood finish sleeve.

GRUNDIG

Grundig (Great Britain) Ltd,
Hi-Fi Division, Newlands Park,
London SE26 5NQ.
Tel: 01-659 2468.

R100

Receiver with power output of 35W per channel into 4 ohms. FR: 20Hz-20kHz-3dB. Damping factor: 18. Inputs: phono, two tape. Controls: bass, treble, contour, muting, AFC, LS1, LS2. Sensitivity (FM): 0.9µV. Sensitivity (AM): 12-14µV. 7 presets on FM. Dimensions: 45 x 33 x 11cm. Finish: silver.

R3000

Receiver with output of 50W per channel into 4 ohms. FR: 25Hz-75kHz-3dB. Damping factor: 36. Inputs: phono, two tape, monitor. Controls: bass, middle, treble, contour, muting, AFC, speaker 1, speaker 2. Sensitivity (FM): 0.55µV. Sensitivity (AM): 12-15µV. Waveband coverage: FM, L, M. Digital display, 7 presets. Dimensions: 45 x 38 x 11cm. Finish: silver.

MR100

Mini receiver with amplifier output of 25W into 4 ohms. FR: 10Hz-50kHz. Damping factor: 30. Inputs: phono, tape. Controls: bass, treble, contour. Sensitivity (FM): 0.8µV. Waveband coverage: FM, L, M. Dimensions: 27 x 24 x 2cm. Finish: silver.

HARMAN KARDON

Tannoy,
St. Johns Road, Tylers Green,
High Wycombe, Bucks. HP10 8HR.
Tel: Penn (049 481) 5221.

340

AM/FM stereo receiver. Amplifier output: 20W per channel into 8 ohms. THD: 0.08%. FR: 3Hz-100kHz. Damping factor: more than 30. Inputs: phono 47K. Dimensions: 40.4 x 12.5 x 31.1cm. Price: £212.44 (plus VAT).

450

AM/FM stereo receiver with output: 20 + 20W into 8 ohms. THD: 0.04%. FR: 3Hz-140kHz. Inputs phono: 47K. Dimensions: 42.6 x 14 x 32.4cm. Price: £265.87 (plus VAT).

560

AM/FM stereo receiver with output of 40 + 40W into 8 ohms. THD: 0.03%. Damping factor: more than 30 at 8 ohms. Inputs: phono 47K. Dimensions: 42.6 x 14 x 32.4cm. Price: £310.22 (plus VAT).

670

AM/FM stereo receiver with output power 60 + 60W. FR: 3Hz-140kHz. Damping factor: more than 30. Inputs: phono 47K. Dimensions: 47.6 x 15.9 x 36cm. Price: £443.56 (plus VAT).

HITACHI SALES (UK) LTD

Hitachi House, Station Road,
Hayes, UB3 4DR.
Tel: 01-848 8787.

SR 2010L*

FM/AM stereo receiver with output of 16W per channel. Price: £99.00 (plus VAT).

SR 4010

FM/AM stereo receiver with output of 25W per channel. THD: 0.05%. Price: £125.00 (plus VAT).

HTA 7000

FM/AM stereo receiver with output of 50W per channel. THD: 0.03%. Super linear amplifier, digital quartz, synthesised tuner. Presets. Price: £239.00 (plus VAT).

ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane,
Basildon, Essex SS14 3BW.
Tel: Basildon (0268) 3040.

8033

Receiver with output: 60W ±1dB into 4 ohms. FR: 20Hz-20kHz ±0.5dB. Damping factor: 30. Inputs: magnetic, tape, aux. Dimensions: 48 x 35 x 14cm. Price: £329.00 (inc. VAT).

8031

Receiver with output 22W into 4 ohms. FR: 20Hz-20kHz ±0.5dB. Damping factor: 10. Inputs: magnetic, tape, aux. Dimensions: 48 x 35 x 14cm. Price: £178.00 (inc. VAT).

8032

Receiver with output: 40W into 4 ohms. FR: 20Hz-20kHz ±0.5dB. Damping factor: 30.

**Hitachi SR 2010L**

Inputs: magnetic, tape, aux. Dimensions: 48 x 35 x 14cm. Price: £277.00 (inc. VAT).

■ JVC

JVC (UK) Ltd,
Eldonwell Trading Estate,
Staples Corner, 6-8 Priestley Way,
London NW2 7AF.
Tel: 01-450 2621.

JR-S61W

FM/AM stereo receiver with output of 18W per channel into 8 ohms. FR: 20Hz-20kHz. Damping factor: 40. Inputs: phono, aux/tape play. Sensitivity FM: 2.2µV. Sensitivity AM: 300µV, 500µV. Waveband coverage: FM, L, M. Variable tuning. Dimensions: 14.9 x 44.4 x 34.8cm. Price: £142.00 (inc. VAT).

Integrated Receivers

JR-S501 £589.00; JR-S401 £481.00; JR-S301 £347.00; JR-S201L £295.00, details on request.

■ LUXMAN

Howland-West,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293.

R2040

Receiver with amplifier output of 42W per channel. FR: 15Hz-40kHz-1dB. Inputs: phono, aux, monitor. Controls: power switch, high balance, subsonic filters, tone control, loudness control, tape monitor, tape dubbing, speaker switch, bass/treble, mono. FM/AM tuner with variable tuning and digital readout. Sensitivity (FM): 1.9µV, Sensitivity (AM): 250µV. Dimensions: 50 x 33 x 11.5cm. Finish: black and silver. Price: £240.00 (plus VAT).

R2050*

Receiver with amplifier output of 55W per channel. FR: 15Hz-40kHz-1dB. Inputs: phono, aux, monitor. Controls: as R2040. FM/AM tuner with digital synthesiser. Sensitivity (FM): 1.8µV. Sensitivity (AM): 20µV. Dimensions: 43.8 x 40.5 x 10.8cm. Finish: black, silver. Price: £345.00 (plus VAT).

■ MARANTZ

Audio UK Ltd,
Debmars House, 193 London Road,
Staines, Middlesex.
Tel: Staines (0784) 50132.

2285B

Power output: 110W. Similar to 2265B except: output 110W. MPX noise filter, multipath indicator. Sensitivity FM 1.3µV. Price: £346.00 (plus VAT).

2330B

Receiver with amplifier. Output: 143W per channel. FR: 10Hz-60kHz. Damping factor: 45. "Gyro" touch tuning. Controls: bass, mid, treble with variable turnover. MPX noise filter, multipath indicator, plus facilities of 2226B. Tuner sensitivity FM: 1.3µV. Sensitivity AM: 20µV. Waveband coverage: FM, M. Variable

tuning. Dimensions: 49 x 38.6 x 14.6cm. Finish: aluminium fascia with black case. Price: £425.00 (plus VAT).

2385

Output: 200W. FR: 10Hz-60kHz. Damping factor: 40. Tuner sensitivity AM 15µV. Other details as 2330B. Price: £607.00 (plus VAT).

2500

Receiver with output: 300W per channel. FR: 10Hz-60kHz. Damping factor: 40. Controls: oscilloscope tuning display and facilities of 2285B. Tuner sensitivity FM: 1.2µV. Sensitivity AM: 15µV. Waveband coverage: FM, M. Variable tuning. Dimensions: 49 x 43.8 x 17.7cm. Finish: aluminium fascia with black case. Price: £1,233.00 (plus VAT).

2600

Similar to 2500 except: Output: 340W. Price: £1,390.00 (plus VAT).

SR1000L

AM/FM receiver. Amplifier section power output 20W per channel. FR: 18Hz-35kHz. Damping factor: 50. Inputs: PU/aux/tape. Controls: bass, treble, low filter, loudness muting, power output meters. Tuner covers FM, L, M. Sensitivity FM: 0.9µV. Sensitivity AM: 20µV. Variable tuning. Dimensions: 46.6 x 32.3 x 14cm. Finish: silver fascia, wooden surround. Price: £112.00 (plus VAT).

SR2000L

AM/FM receiver. Amplifier section power output 30W per channel. FR: 15Hz-35kHz. Damping factor: 55. Inputs: PU/aux/tape. Controls: as SR1000L plus mid range control. All other details as above. Price: £139.00 (plus VAT).

SR4000L*

AM/FM receiver with amplifier section power output 50W per channel. FR: 10Hz-40kHz. Damping factor: 60. Inputs: phono/aux/tape x 2. Controls: bass, treble, low filter, loudness muting, tape copy. LED peak power output indicator. Tuner covers FM, L, M. Sensitivity FM: 0.8µV. Sensitivity AM: 0.15µV. Variable tuning. Dimensions: 46.6 x 35.3 x 14cm. Finish: silver fascia, wooden surround. Price: £190.00 (plus VAT).

SR6000

AM/FM receiver. As SR4000L except Damping factor: 65, and there is an additional control: rec. mode selector Hi-filter. Price: £260.00 (plus VAT).

■ MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts. WD2 8LD.
Tel: Watford 40566.

DA-R430*

Amplifier with output 2 x 25W into 8 ohms.

FR: 20Hz-20kHz. Damping factor: 25. THD: 0.1%. Tuner stereo sensitivity (40kHz Dev. S/N = 46dB), 32µV. Colour coded scale illumination for mono and stereo stations. Touch sensitive tuning system. Dimensions: 42.4 x 25.4 x 14cm. Retail price: £135.00 (inc. VAT).

■ NAKAMICHI

Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.

N530

FM receiver. Amplifier section output 50W per channel into 8 ohms. FR: 5Hz-50kHz +0dB -3dB. Damping factor: better than 80. Inputs: phono, aux, tape. Controls: auto scan tuning, 4 preset FM buttons. Tuner section receives FM only. Sensitivity FM: 2.4µV. Variable and preset tuning. Dimensions: 50 x 13 x 35cm. Price: £440.00 (plus VAT).

N730*

FM receiver. Amplifier section output 100W per channel into 8 ohms. FR: 10Hz-30kHz ±0.3dB. Damping factor: better than 100. Inputs: phono, aux, tape 1, tape 2. Controls: auto scan tuning, and touch sensitive major controls. Tuner section receives FM only. Sensitivity FM: 2.2µV. Variable and preset tuning. Dimensions: 50 x 9 x 37cm. Price: £800.00 (plus VAT).

■ OPTONICA

Sharp Electronics (UK) Ltd,
107 Hulme Lane, Manchester M10 8HL.
Tel: 061-205 7321.

SA2121C*

Receiver with amplifier power output 30W per channel. Damping factor: 20. Inputs: phono 2.5mV 50K, tape x 2 150mV 50K, aux 150mV 50K. Controls: volume, bass, treble, balance, mute (audio), low cut, stereo/mono, loudness, tape dub, select, wavebands. Tuner sensitivity FM: 1.8µV. Sensitivity AM: 400µV. Wavebands: FM, L, M. Variable tuning. Dimensions: 55 x 39 x 14cm.



Mitsubishi DA-R430



Nakamichi N730



Optonica SA2121C



Luxman R2050



Marantz SR4000L

SA3131C

RMS power output 40W per channel. Damping factor: 20. All other details as SA2121C.

SA510/N

Receiver with amplifier output 30W per channel. FR: 10Hz-55kHz pre-amp. Damping factor: 40. Inputs: phono 2.5mV 47K, aux 150mV 47K, tape (2) 150mV 47K. Controls: volume, bass, treble, balance, tone, select, tape, loudness. Tuner sensitivity FM: 5.6µV. Sensitivity AM: 450µV. Waveband coverage: FM, AM. Variable tuning. LED tuning and signal strength indicators. Dimensions: 44 x 29 x 14cm. Finish: wood.

PHILIPS ELECTRICAL LTD

City House, 420 London Road, Croydon, Surrey. Tel: 01-689 2166.

AH603

Receiver with amplifier output of 30W per channel. FR: 20Hz-10kHz ±1.5dB. Damping factor: 40. Inputs: phono, tape (1), tape (2). Controls: volume, loudness, balance, mono, bass, high filter, treble. Tuner covers FM, L, M with 5 presets on FM. Sensitivity (FM): 0.9µV. Sensitivity (AM): 90µV. Dimensions: 48 x 35 x 10cm. Finish: dark brown front panel. Price: on application.

AH604

As AH603 but with output of 45W per channel and silver front panel. Dimensions: 45 x 36 x 10cm. Price: £204.00 (plus VAT).

AH 606

Receiver with amplifier output of 60W per channel. FR: 20Hz-20kHz ±1.5dB. Inputs: phono, tape (1), tape (2). Controls: volume, loudness, audio mute, balance, high filter, low filter, bass, treble, mono. Tuner covers FM/AM with 5 presets on FM. Sensitivity (FM): 0.9µV. Sensitivity (AM): 90µV. Dimensions: 48 x 38 x 10cm. Finish: dark brown front panel. Price: on application.

AH 799

Receiver with amplifier output of 40W per channel. Details as AH 606 except that FM sensitivity is 1µV. Dimensions: 48 x 34 x 15cm. Finish: silver front panel. Price: £298.29 (plus VAT).

AH 601

Receiver with amplifier output of 20W per channel. FR: 25Hz-20kHz ±1.5dB. Damping factor: 50. Inputs: phono, tape (1), tape (2). Controls: volume, loudness, balance, high filter, bass, treble, source selector. FM/AM tuner. Sensitivity (FM): 1.5µV. Sensitivity (AM): 100µV. Dimensions: 45 x 33 x 10cm. Finish: silver front panel. Price: on application.

AH 602

Receiver with amplifier output of 20W per channel. FR: 20Hz-20kHz ±1.5dB. Damping factor: 40. Inputs: phono, tape (1), tape (2). Controls: volume, loudness, balance, mono, bass, treble. FM/AM tuner with 5 presets on FM. Sensitivity (FM): 0.9µV. Sensitivity (AM): 90µV. Dimensions: 45 x 36 x 10cm. Finish: silver front panel. Price: £170.91 (plus VAT).

AH 798

Receiver with infra-red remote control. Output: 40W per channel. FR: 20Hz-20kHz ±1dB. Damping factor: 40. Inputs: phono, tape (A), tape (B). Controls: volume, loudness, mono, balance, high filter, clock, bass, treble, low

filter, audio mute. FM/AM tuner with 9 presets for FM/AM. Digital synthesiser. Sensitivity (FM): 1µV. Sensitivity (AM): 90µV. Dimensions: 48 x 34 x 15cm. Finish: silver front panel.

PIONEER

Pioneer Hi-Fi (GB) Ltd, Pioneer House, The Ridgeway, Iver, Bucks. Tel: 0753 652222.

SX 600L

Amplifier: Output: 20W. Controls: bass, treble, balance, FM muting, loudness, tape monitor, FLT power meters. Tuner: Sensitivity: 2.2µV (FM), 270µV (AM). Wavebands: FM, AM, LW. Five-station pre-set feather-touch sensor, press button and manual, voltage sync. Dimensions: 42 x 8.8 x 35.7cm. Finish: black steel top and side panels, brushed aluminium front. Price: on application.

SX 700L

Amplifier: Output: 40W. Controls: bass, treble, balance, FM muting, loudness, tape monitor, FLT power meters. Tuner: Sensitivity: 2.2µV (FM), 270µV (AM). Wavebands: FM, AM, LW. Seven-station pre-set feather-touch sensor. Push button and manual, voltage sync. Dimensions: 42 x 88 x 35.7cm. Finish: black steel top and side panels, brushed aluminium front panel. Price: on application.

SX-D 5000

Quartz synthesised receiver. Amplifier: Output: 80W. 1 phono, 1 aux, 1 adaptor, 2 tape and duplicate. Controls: bass, treble, balance, FM muting, loudness, low filter, muting, tape monitor, speakers A x B. Tuner: Sensitivity: 1.9µV (FM), 150µV (AM). Wavebands: FM, AM. Six pre-set FM/AM, feather-touch auto search and manual select, up and down. Dimensions: 52 x 19.4 x 47cm. Finish: grey steel top and side panels, brushed aluminium front. Price: on application.

PYE

Pye Ltd, 137 Ditton Walk, Cambridge CB5 8QD. Tel: Teversham (022 05) 2781.

SX 6692

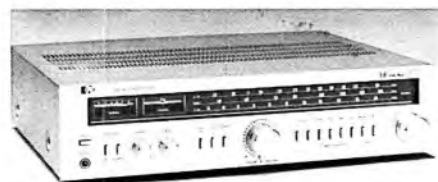
Receiver with output of 20W per channel. FR: 20Hz-20kHz +0.5db, -1.5dB. Inputs: phono, tape (1), tape (2). Controls: bass, treble, balance, tuning, switchable mono/stereo and contour controls, rotary clickstop volume. FM/AM tuner with variable tuning. Sensitivity (FM): 0.9µV. Sensitivity (AM): 120µV. Dimensions: 42 x 31.2 x 10.5cm. Finish: metal, aluminium front. Going price: £109.00.

SX 6693*

As SX 6692 but with output of 30W and controls for A/B speakers, high filter, FM mute and AFC. Going price: £129.00.

REVOX

F. W. O. Bauch Ltd, 49 Theobald Street, Borehamwood, Herts. WD6 4RZ. Tel: 01-953 0091.



Pye SX 6693

B 780

Micro-computer controlled FM receiver with output of 75W per channel into 8 ohms. FR: 20Hz-20kHz +0-0.7dB. Damping factor: better than 100. Inputs: tape 1, 2, phono, auxiliary. Controls: volume, balance, bass, mid, treble, filters, loudness, level -20dB. Variable tuning with 18 preset stations. Sensitivity (FM): 0.7µV. Waveband coverage: 97.5-108MHz. Dimensions: 45.2 x 42 x 15.1cm. Price: £900.00 (plus VAT).

ROTEL

Rotel Hi-Fi Ltd, 2-4 Erica Road, Stacey Bushes, Milton Keynes, Bucks. Tel: Milton Keynes (0908) 317707.

RX304/404/504/604/300/1000*

Range of receivers with outputs from 20-50W. Details not available at time of going to press.

SAE TWO

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey KT14 7JH. Tel: Byfleet (093 23) 51051.

R-12

AM/FM receiver. Amplifier section power output: 120W per channel. FR: 10Hz-60kHz. Damping factor: >40. Inputs: MC, RIAA phono, aux, tape, external processor, tuner. Sensitivity: 4µV, 17.3dB, 15µV. Variable tuning. Dimensions: 55.9 x 45.7 x 16.5cm. Price: on application.

R-18

As above, with output of 180W per channel.

R-6

AM/FM receiver. Amplifier section power output: 60W per channel. FR: 10Hz-60kHz. Damping factor: >40. Inputs: RIAA, phono, aux, tape, external processor. Controls: volume, balance, bass, mid, treble. Tuner sensitivity: 4µV, 17dB, 20µV. Variable tuning. Dimensions: 46.4 x 44.8 x 14.7cm. Price: on application.

R-9

As above.

SANSUI

Sansui Audio Europe NV, Unit 10A, Lyon Industrial Estate, Rockware Avenue, Greenford, Middlesex. Tel: 01-575 1133.

TA500

Amplifier output: 50W. FR: DC -70kHz +1-3dB. Damping factor: 50. Inputs: phono 2.5mV 47K, tape 150mV 47K, aux 150mV 47K. Controls: dual volume, treble/bass, speakers, loudness. Tuner sensitivity: 19dBf (FM), 300 V/M (AM). Waveband coverage: 88-108MHz. Variable tuning. Dimensions: 43 x 39.9 x 16.8cm. Finish: black. Rack mountable.

TA300

As 500 except output: 30W. FR: 10Hz-50kHz +1-3dB. Damping factor: 40.



Rotel 1000

R30L

Amplifier output: 25W. FR: 10Hz-50kHz +1-3dB. Inputs: tape, aux, phono. Controls: treble, bass, loudness, A + B speakers, mono/stereo. Tuner sensitivity: 12dBf (FM), 50dBm (AM). Waveband coverage: 88-108MHz FM, 530-1,600kHz MW, 150-350kHz LW. Variable tuning. Dimensions: 43 x 25.2 x 14.7cm. Finish: silver. Price: £86.95 (plus VAT).

R50

Amplifier output: 45W. FR: 10Hz-50kHz +1-3dB. Inputs: tape, aux, phono. Controls: 2 tapes in/outputs, treble, bass, loudness, A + B speakers, mono/stereo, hi-filter. Tuner sensitivity: 12dBf (FM), 50dBm (AM). Waveband coverage: 88-108MHz FM, 530-1,600kHz MW, 150-350kHz LW. Variable tuning. Dimensions: 43 x 25.2 x 14.7cm. Finish: silver. Price: £111.13 (plus VAT).

R70

Amplifier output: 65W. FR: 10Hz-50kHz +1-3dB. Inputs: tape, aux, phono. Controls: 2 tapes in/outputs, treble, bass, loudness, A + B speakers, mono/stereo, hi-filter. Tuner sensitivity: 12dBf (FM), 50dBm (AM). Waveband coverage: 88-108MHz FM, 530-1,600kHz MW, 150-350kHz LW. Variable tuning. Dimensions: 43 x 25.2 x 14.7cm. Finish: silver. Price: £139.13 (plus VAT).

■ **SCOTT**

Clement Electronics Ltd,
Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford(06065) 57131.

390R

AM/FM stereo receiver with output of 120W per channel. FR: 20Hz-20kHz. Damping factor: >100. Inputs: phono (1) 2.5mV, phono (2) 2.5mV, others 150mV. Sensitivity (FM): 1.7µV. Sensitivity (AM): 150µV. Wavebands: FM, M. Variable tuning. Dimensions: 17.2 x 58 x 45cm.

380R

AM/FM stereo receiver with output of 85W per channel. FR: 20Hz-20kHz. Damping factor: >100. Inputs: phono (1) 2.5mV, phono (2) 2.5mV, others 150mV. Sensitivity (FM): 1.7µV. Sensitivity (AM): 150µV. Wavebands: FM, M. Variable tuning. Dimensions: 15.8 x 53 x 35cm.

370R*

AM/FM stereo receiver with output of 60W per channel. FR: 20Hz-20kHz. Damping factor: >60. Inputs: phono 2.5mV, others 150mV. Sensitivity (FM): 1.8µV. Sensitivity (AM): 250µV. Wavebands: FM, M. Variable tuning. Dimensions: 15.8 x 53 x 35cm.

350RL

AM/FM stereo receiver with output of 40W per channel. Other details as 370R except 350RL also receives LW. Dimensions: 14 x 45.4 x 39cm.



Scott 370R

330RL

AM/FM stereo receiver with output of 25W per channel. FR: 20Hz-20kHz. Damping factor: >50. Inputs: phono 2.5mV, others 150mV. Sensitivity (FM): 1.9µV. Sensitivity (AM): 250µV. Wavebands: FM, L, M. Variable tuning. Dimensions: 14 x 43 x 28cm.

■ **TANDBERG (UK) LTD**

Farnell House, 81 Kirkstall Road,
Leeds LS3 1HR.
Tel: Leeds 35111.

TR 2080*

Amplifier power output: 80W per channel. FR: 6-80,000Hz. Inputs: tape (2), phono. Loudness compensation button. Controls: on/off, power, 2 tape, loudness. Tuner sensitivity FM: 0.8µV. Sensitivity AM: 25µV. Capture ratio: 0.9dB. Image rejection FM: 70dB. Waveband coverage: 87.5-108MHz. Dimensions: 51 x 15.3 x 35.3cm. Black or rosewood finish. Price: £477.39 (plus VAT).

TR 2060L

Amplifier power output: 55W. FR: 7Hz-80kHz, 10Hz-20kHz. Inputs: 2 x tape, 2 x phono. Controls: 2 x tape monitor buttons, volume, bass, treble, balance, speakers, tape, copy, loudness, high and low filters, muting. Tuner sensitivity FM: 20µV (40µV). Sensitivity AM: 25µV. Waveband coverage: 87.5-108MHz. Variable tuning. Dimensions: 20 x 14 x 6in. Black or rosewood finish. Price: £312.00 (plus VAT).

2045

FM tuner/amp, pre-amp control centre. Output: 40W into 8 ohms. FR: 8Hz-50kHz. Damping factor: 50. Inputs: tape 1, tape 2, phono. Five preset pushbuttons on FM. Dimensions: 51.5 x 14.3 x 32cm. Price: £260.00 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough, Berks SL1 3DR.
Tel: Slough(0753) 34522.

SA500

Receiver with amplifier output: 60W per channel. FR: 20Hz-20kHz. THD: 0.04%. Damping factor: 16. Inputs: phono 2.5mV 47K, aux 140mV 33K, tape 1 180mV 39K, tape 2 150mV 33 K. Tuner wavebands: 88-108MHz, 525-1605kHz. Sensitivity FM: 1.9µV. Sensitivity AM: 30µV. Variable tuning. Dimensions: 45 x 14.9 x 32.9cm. Price: £349.95 (inc. VAT).



Technics SA-303L



Tandberg 2080

SA-600

Similar to SA-400 except output 80W. Damping factor: 25. Price: £399.95 (inc. VAT).

SA-700L

Similar to SA-600 except output 110W per channel. Price: £524.95 (inc. VAT).

SA-303L*

FM/AM stereo receiver with output of 40W per channel into 8 ohms. FR: 20Hz-20kHz. Sensitivity (FM): 1.9µV. Sensitivity (AM): 30µV. Variable tuning. Dimensions: 43 x 14.2 x 29.1cm. Price: £170.00 (plus VAT).

SA-202L

FM/AM stereo receiver with output of 30W per channel into 8 ohms. FR: 30Hz-20kHz. Sensitivity (FM): 1.9µV. Sensitivity (AM): 30µV. Variable tuning. Dimensions: 43 x 14.2 x 29.1cm. Price: £145.00 (plus VAT).

SA-101L

FM/AM stereo receiver with output of 18W per channel into 8 ohms. FR: 40Hz-20kHz. Sensitivity (FM): 1.9µV. Sensitivity (AM): 300µV. Variable tuning. Dimensions: 41 x 12.7 x 29cm.

■ **TELETON**

Teleton Electro (UK) Co. Ltd,
Somerton Works, Prince Avenue,
Westcliff-on-Sea, Essex.
Tel: Southend(0702) 337681.

TA 500

Receiver with power output: 20W. FR: 30Hz-20kHz. Damping factor: 10. Inputs: phono, aux. Controls: volume, balance, treble, bass, Hi-cut switch, loudness switch, mode switch, speaker switch. Tuner sensitivity: FM: 2.5µV. Sensitivity AM: 300µV., 200µV. Waveband coverage: FM, L, M. Variable tuning. Dimensions: 42 x 3.8 x 12.9cm.

■ **TENSAI**

Wren Electronics Ltd,
Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes(0908) 71611.

TR 1030*

Receiver with power output: 2 x 27W. FR: 10Hz-40kHz. Damping factor: 50. Controls, tone, volume, balance, loudness, tape dubbing, low filter, mode, A/B speaker mute. Tuner sensitivity FM: 1.6µV. Sensitivity AM: 300µV. Waveband coverage: FM, L, M. Dimensions: 49 x 13.2 x 33cm. Finish: brushed aluminium. Typical Market Price: £104.00.

TR 1045

Receiver with output: 2 x 48W. FR: 10Hz-50kHz. Damping factor: 80. Controls: 2 x tone, volume, balance, mic. level, 2 tape dubbing, high-low filter, mute. A/B speaker. Typical Market Price: £113.00.

■ **TOSHIBA (UK) LTD**

Toshiba House, Great South West Road,
Feltham, Middlesex.
Tel: 01-751 1281.



Tensai TR 1030

SA-750

Receiver with output: 50W x 2 into 8 ohms. FR: 20Hz-20kHz. Damping factor: 50. Inputs: phono, aux, tape 1 and 2. Controls: bass, treble, balance, tape duplicate, two filters, stereo, mono, loudness. Tuner sensitivity FM: 1.8 μ V. Sensitivity AM: 300 μ V. FM/AM coverage with variable tuning. Dimensions: 48 x 40 x 14.5cm. Simulated wood cabinet. Price: £240.00 (plus VAT).

SA-735

Receiver with output: 35W per channel into 8 ohms. FR: 20Hz-20kHz. THD: 0.3%. Inputs: phono 2.5mV 47K, aux 150mV 47K, tape 150mV 47K. Sensitivity FM: 10.8dBf. Sensitivity AM: 30 μ V or 300 μ V with ferrite antenna. Wavebands: FM, M. Dimensions: 45 x 14.5 x 40cm. Price: £168.44 (plus VAT).

SA-7100*

Receiver with output: 2 x 100W. FR: 20Hz-20kHz. Inputs: phono (2), aux, tape. THD: 0.2%. Tuner sensitivity: 1.8 μ V. Selectivity: 80dB. Wavebands: FM, M. Dimensions: 55 x 19 x 46cm. Price: £328.44 (plus VAT).

TRIO

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

YAMAHA

Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.

CR 440

AM/FM receiver. Amplifier section: 30W per channel. FR: 20Hz-20kHz. Damping factor: 40. Inputs: phono, aux, tape. Controls: record out selector, variable loudness, bass, treble, two headphones. Tuner covers FM/AM. Sensitivity FM: 1.8 μ V. Sensitivity AM: 15 μ V. Variable tuning. Dimensions: 45.3 x 16.2 x 32.7cm. Finish: American walnut. No rec. retail price.

CR 240

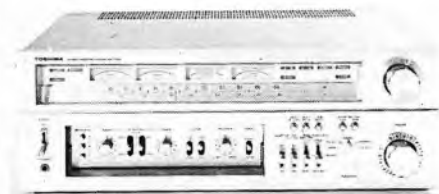
AM/FM receiver. Amplifier section 20W per channel. FR: 20Hz-20kHz. Damping factor: 40. Inputs: phono, aux, tape. Controls: variable loudness, bass, treble, two pairs speakers. Tuner covers FM/AM. Sensitivity FM: 1.8 μ V. Sensitivity AM: 15 μ V. Variable tuning. Dimensions: 43.5 x 13.4 x 29.7cm. Metal finish. No rec. retail price.

CR 840

AM/FM receiver. Amplifier output 60W per channel. FR: 5Hz-100kHz. Damping factor: 40. Inputs: phono, aux, two tape. Controls: record out selector, variable loudness, bass, presence and treble, two headphones. FM/AM tuner. Sensitivity FM: 1.2 μ V. Sensitivity AM: 15 μ V. Variable tuning. Dimensions: 49 x 15 x 38.5cm. Finish: walnut. No rec. retail price.

CR 640*

FM/AM receiver. Amplifier section output



Toshiba SA 7100

40W per channel. FR: 50Hz-100kHz. Damping factor: 40. Inputs: phono, aux, two tape. Tuner covers FM/AM. Sensitivity FM: 1.2 μ V. Sensitivity AM: 15 μ V. Variable tuning. Dimensions: 49 x 15.1 x 38.5cm. Finish: walnut. No rec. retail price.

CR 2040

FM/AM receiver. Amplifier section with power output of 120W per channel. FR: 5Hz-100kHz. Damping factor: 40. Inputs: phono, mic, aux, two tape. Controls: phono selector, variable loudness, variable turnover on bass, presence, treble, two headphones. Tuner covers FM/AM. Sensitivity FM: 1.2 μ V. Sensitivity AM: 15 μ V. Variable tuning. Dimensions: 56 x 15.1 x 40.7cm. Finish: walnut. No rec. retail price.

CR 1040

FM/AM receiver. Details as CR 2040 except amplifier power output: 8W.



Yamaha CR 640

RADIO TUNERS

continued from page 132

WYE

Wye Audio Products Ltd,
27 Station Road, Brimington,
Chesterfield S43 1JJ.
Tel: Chesterfield(0264) 70297.

ST 501

FM/AM tuner with range: 88-108MHz, 150-280kHz, 525-1650kHz. S/N ratio (stereo): 50dB. Dimensions: 38 x 15 x 26.5cm. Price: on application.

YAMAHA

Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.

T2

FM stereo tuner with range: 88-108MHz. Digital and variable tuning. Switchable AFC. Sensitivity (mono): 1.2 μ V. Sensitivity (stereo):

28 μ V. Signal strength and tuning meters. S/N ratio (stereo): 85dB. Variable output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43.5 x 7 x 34cm. Mains voltage tappings: 240V. Price: on application.

T550

FM stereo tuner with range: 88-108MHz. Variable tuning. Automatic AFC. Sensitivity (mono): 1.2 μ V. Sensitivity (stereo): 40 μ V. Signal strength and tuning meters. S/N ratio (stereo): 80dB. Fixed output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43.5 x 9 x 34cm. Mains voltage tappings: 240V. Price: on application.

T1

FM stereo tuner with range: 88-109MHz. Variable tuning. Switchable AFC. Sensitivity (mono): 1.1 μ V. Sensitivity (stereo): 35 μ V. Signal strength and tuning meters. S/N ratio (stereo): 84dB. Variable output. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 43.5 x 9.7 x 37cm. Mains voltage tappings: 240V. Price: on application.

RECORD DECKS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADC

BSR Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath (0384) 65191.

1700 DD Quartz *

Direct drive quartz-locked semi-automatic with rigid straight arm. Mounted on unique ABS moulded sandwich base. Available complete with ADC XLM Mk III cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: less than 0.3%. Rumble: DIN 'B' -70dB. Turntable 302mm weighing 2.3lb made of diecast aluminium. Direct drive. Pickup arm: low mass straight arm with cradle suspension, micron polished instrument bearings, tempered spring anti-skate, viscous cueing, plug-in carbon fibre headshell with gold plated connector pins. Finish: "Rolls Royce" metallic black. Soft-rubber anti-static mat, LED power indicator, electronic microswitches, free standing/removable dust cover, auto-return arm. Typical Market Price: £107.00.

1500 FG

Semi-automatic belt drive turntable with low resonance 'S' shaped arm. Mounted on unique ABS moulded sandwich plinth. Available complete with ADC QLM34 Mk III cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: less than 0.5%. Rumble: DIN 'B' -67dB. Turntable: 302mm weighing 2lb and made of diecast aluminium. Belt drive. Motor: frequency generator servo-controlled DC motor. Pick-up arm S-shaped statically balanced arm with open cradle suspension, ball race lateral bearings, anti-skate control, viscous cue, decoupled counterweight, plug-in magnesium headshell. Finish: "Rolls Royce" metallic finish. Soft-rubber anti-static mat, LED power indicator, electronic microswitches. Free standing/removable dust cover. Auto-return arm. Typical Market Price: £67.00.

1600 DD

Semi-automatic direct drive turntable with low mass straight arm. Mounted on unique ABS moulded plinth. Available complete with ADC QLM36 Mk II cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: less than 0.4%. Rumble: DIN 'B' -68dB. Turntable: 302mm, weighing 2.3lb made of diecast aluminium. Direct drive. Motor: low speed, electronically controlled DC brushless direct drive motor. Pick-up arm: low mass straight arm with cradle suspension, micro polished instrument bearings, tempered spring anti-skate, viscous cueing, plug-in carbon fibre headshell with gold plated connector pins. Finish: "Rolls Royce" metallic black. Soft

rubber anti-static mat. LED power indicator, electronic micro-switches, free standing/removable dust cover. Auto-arm return. Typical Market Price: £86.00.

■ AIWA

Aiwa Sales & Service (UK) Ltd,
30 and 32 Concord Road,
Westwood Park Trading Estate,
London W3
Tel: 01-993 1672.

LP 3000

Linear trace, programmable Direct-drive turntable with arm but no cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.025%. Flutter: 0.0038%. Zinc diecast turntable, 31cm dia. weighing 3.2kg. Quartz PLL Direct Drive system. Motor: pulse synthesiser quartz PLL servo DD motor. DC motor-arm drive, DC motor-arm raise/lower. Pick-up arm: 182mm, linear tracking static balance. Typical Market Price: £499.00.

AP 2600

Quartz-locked Direct-drive turntable with arm but no cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.025%. Flutter: 0.038%. Aluminium alloy diecast turntable with diameter of 33.8cm, weight 2.1kg. Motor: 3 phase 8 pole 24 slot DC direct drive motor with quartz locked PLL servo. Pick-up arm 237mm long, static balanced "S" shaped. Typical Market Price: £150.00.

AP 2400

Fully automatic Direct-drive turntable with arm and cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.028%. Flutter: 0.05%. Aluminium diecast turntable with diameter of 32cm, weight: 1.2kg. Motor: 20-pole 30-slot, PLL DC servo motor. Static balanced straight pick-up arm with overhang of 16.8mm and length of 222mm. Typical Market Price: £120.00.

AP 2300

Semi-auto Direct-drive turntable with arm and cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.035%. Flutter: 0.065%. Aluminium die-cast turntable with diameter of 30.6cm and weighing 1.2kg. Motor: 2 phase 8 pole FG servo DC direct-drive motor. Pickup arm: static balanced type with overhang of 15mm, length 215mm. Price: £110.00.

APD 50 *

Front loading, fully automatic direct-drive turntable. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.028%. Aluminium diecast turntable, 30cm

diameter, weighing 1.3kg. Motor: 4-phase, 8-pole linear torque direct drive motor plus 1 DC motor x 2. Pickup arm: static balanced type. Effective arm length 215mm, overhang 15mm. Price: to be announced.

APD 30

Direct drive turntable, semi-automatic operation. Speeds: 33 $\frac{1}{3}$, 45rpm. Wow: 0.035%. Aluminium diecast turntable, 30.6cm diameter, weighing 1.2kg. Motor: slotless linear torque direct-drive motor. Pickup arm: static balanced type, effective arm length 215mm, overhang 15mm. Price: to be announced.

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane, London NW2 2DP.
Tel: 01-450 2011.

APB10C

Record deck with plinth, arm and cover. Belt drive manual system, induction motor. W and F: 0.05%. Akai magnetic cartridge. Price: £60.95 (inc. VAT).

AP 100C

Record deck with plinth, arm and cover. Semi auto belt drive system, 4-pole synchronous motor. W and F: 0.05%. Static balanced tone arm. Price: £69.75 (inc. VAT).

APB20C

Record deck with plinth, arm and cover. Belt drive semi auto system. Induction motor. W and F: 0.05%. Akai magnetic cartridge. Finish: gun metal grey. Price: £76.75 (inc. VAT).

AP206

Record deck with plinth, arm and cover. Direct drive auto return system. W and F: 0.025%. Discolith coil DC servo motor. $\pm 2.5\%$ pitch controls. Price: £97.50 (inc. VAT).

AP206C

As above with Akai PC100 magnetic cartridge. Price: £102.50 (inc. VAT).

AP 306

Record deck with plinth, arm and cover. Quartz lock direct drive auto return system. Discolith coil DC servo motor. Quartz oscillator, controlled strobe light. W and F: 0.025%. $\pm 2.5\%$ pitch control. Anti-skate adjustment. Price: £150.00 (inc. VAT).

AP306C

As above with Akai PC100 cartridge. Price: £160.00 (inc. VAT).

AP307

As AP306 with addition of fully automatic operation. Price: £175.50 (inc. VAT)

■ ARISTON ROLLS

Ariston Accustics Ltd,
Unit 176 Brieryside, Prestwick Airport,
Mcnkton, Ayrshire.

RD11S *

Record deck on plinth. No pickup arm supplied. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: below



ADC 1700DD



Aiwa APD 50

meaningful measurement. Rumble: better than -75dB. Turntable: 12in. dia. Belt drive with clutch and two-speed pulley. 24-pole precision synchronous motor. Finish: walnut, teak or black with stainless steel top plate. Price: £224.00 (plus VAT).

■ **AUDIO LINEAR**

Wilmex Ltd
Compton House, New Malden, Surrey.
Tel: 01-949 2545.

TD 4001 *

Record deck without plinth or arm, but pre-cut to accept SME arm. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: less than 0.06%. Rumble: -70dB. Aluminium turntable 12in. diameter. Belt drive. 240V synchronous motor. Finish: black. Price: £106.00 (plus VAT).

■ **BEOGRAM**

Bang & Olufsen (UK) Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

Beogram 4002

Plinth-mounted motor unit with tangential arm and MMC 4000 integrated cartridge. Hinged translucent dust cover. Servo driven tone arm plus detector arm for automatic record size and speed sensing. Computer-like data unit gives completely automatic operation. Speeds: 33 $\frac{1}{3}$ and 45 rpm (with 6% fine speed adjustment). W and F: better than $\pm 0.05\%$ DIN ($\pm 0.025\%$ RMS). Rumble: better than -65dB DIN 'B'. Turntable: 12in. aluminium alloy radially ribbed. Belt drive DC tachomotor. Individual speed indicator lights. Power supply: 110, 130, 220 and 240V AC 50/60Hz. Price: approx. £348.00 (plus VAT).

1500

Automatic integrated record player fitted with pickup arm and MMC 20S cartridge on plinth with hinged dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: $< \pm 0.035\%$ WRMS. Rumble: > 62 dB DIN weighted. 12in. aluminium turntable. Belt drive DC tachomotor. Magnesium alloy pickup arm, anti-skating device. Finish: teak, rosewood. Price: approx. £105.00 (plus VAT).



Ariston RD11S



Audio Linear TD 4001

2200

Auto record player with plinth, magnesium alloy pickup arm and MMC 20E cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $< \pm 0.06\%$. Rumble: > 65 dB weighted. Turntable: 12in. weighing 0.8kg and made of aluminium. Belt drive. Motor: electronic servo drive, DC 2.5V. Pickup arm: integrated magnesium alloy. Finish: all controls on front panel. Self sensing 7in. or 12in. position on turntable. Price: £153.00 (plus VAT).

4004

As 4002. Remote controlled when used with Beomaster 2400. Price: £361.00 (plus VAT).

1700

Automatic integrated record player with plinth, pickup arm and MMC205 cartridge. Speeds: 33 $\frac{1}{3}$, 45. Wow: $< \pm 0.09\%$ DIN, $< \pm 0.045\%$ WRMS. Flutter: $< \pm 0.09\%$ DIN, $< \pm 0.045\%$ WRMS. Rumble > 62 dB weighted, > 42 dB unweighted DIN "B" reference. Turntable of aluminium with Nextel finish, dia: 30cm, weight: 0.5kg. Electronic servo drive via belt. DC tachomotor 2.5V. Pickup arm with radial low mass, finished in tubular aluminium. Finish: teak, rosewood as standard with oak and white to special order. Features: one touch operation, very resistant to external shocks, totally integrated system. Price: £105.00 (plus VAT).

2202*

Automatic integrated record player with plinth, pickup arm and MMC20E cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: $< \pm 0.06\%$ DIN, $< \pm 0.03\%$ WRMS. Flutter: $< \pm 0.06\%$ DIN, $< \pm 0.03\%$ WRMS. Rumble: > 65 dB weighted, > 45 dB unweighted DIN "B" reference. Aluminium turntable with Nextel finish and lead rim. Dia: 30cm, weight 0.8kg. Electronic servo drive via belt. DC tachomotor 2.5V. Pickup arm of radial low mass, finished in tubular aluminium. Finish: teak, rosewood as standard with oak and white to special order. Features: one touch operation, very resistant to external shocks, totally integrated system. Price: £153.00 (plus VAT).

2402

As 2202 but can be operated by remote control when used with Beomaster 2400/2. Fitted with MMC20EN. Price: £167.00 (plus VAT).



Beogram 2202

■ **B.I.C.**

Cambridge Audio Ltd,
105-109 Oyster Lane, Byfleet, Surrey KT14 7JH.
Tel: Byfleet (09323) 51051

SP-65

Single play, automatic record player with plinth, dust cover, pickup arm and Sonus black cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Belt drive. Synchronous 24 pole, 300 rpm motor. Dynamically balanced pickup arm, 9in. Price: £149.00 (plus VAT).

SP-85*

Single play automatic record player with plinth, dust cover, pickup arm and Sonus black cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. Belt drive MPU controlled motor. Pickup as SP-65 with plug-in tone arm tube. Features: stopwatch. Price: £190.00 (plus VAT).

■ **DENON**

Eumig (UK) Ltd,
14 Priestley Way, London NW2 7TN.
Tel: 01-450 8070.

DP-2550.

Quartz-locked direct drive record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.015%. Turntable: 30cm dia. made of aluminium alloy diecast. AC servo motor. Stroboscope. Typical Market Price: £260.00.

DP 2500

Direct drive player phase-locked to a quartz crystal oscillator. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.015%. Turntable: 30cm made of aluminium alloy diecast. AC servo motor. Dynamically damped tonearm, oil damped cueing device, anti-skating device. Typical Market Price: £280.00.

DP 30L*

Record deck with plinth and pickup arm,



B.I.C. SP-85



Denon DP30L

Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.18%. Rumble: -75dB DIN 'B'. Diecast aluminium turntable, dia: 300mm, weight: 1.5kg. Direct drive. AC servo motor. S-shaped pickup arm, auto lift, non contact record end sensor, length: 220mm. Finish: silver. Price: approx. £150.00 (plus VAT).

■ DUAL

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St Peter, Bucks SL9 9EW.
Tel: Gerrards Cross (028 13) 88447.

CS606 *

Record deck including arm/cartridge of ULM design mounted in plinth. Speeds: $33\frac{1}{3}$, 45 rpm. Wow: 0.04%. 304mm turntable weighing 1kg. Direct drive. Motor: 240V AC. Finish: walnut and black. Price: on application.

CS626

As CS606 with full auto and front controls.

CS506

Record deck complete with ULM arm/cartridge system and mounted on plinth. Speeds: 45, $33\frac{1}{3}$ rpm. Wow: 0.05%. Turntable 30cm in diameter weighing 1.1kg. Belt drive. Ultra low mass pickup arm including cartridge. Finish: walnut and black. Price: on application.

CS522

As 506 but with fully auto operation.

CS650RC

Record deck complete with remote infra red control system. Speeds: $33\frac{1}{3}$, 45 rpm. Wow: 0.03%. 304mm turntable weighing 1.4kg. Direct drive. Motor: 240V AC ULM tonearm/cartridge system. Finish: metallic silver, metallic brown.

■ EAGLE

Eagle International, Precision Centre,
Heather Park Drive, Wembley HA0 1SU.
Tel: 01-902 8832.



Dual CS 606



Eagle D7500

D7500 *

Integrated semi-auto turntable in plinth fitted with tonearm and headshell. Smoked acrylic dust-cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.05%. Rumble: -60dB weighted. Turntable: 300mm dia. weighing 1kg and made of diecast alloy. Belt drive. Synchronous 4-pole motor. Pickup arm: S-shaped tubular with adjustable counterweight and tracking dial. Pulley weight bias compensation and damped cueing control. Standard IEC headshell. Finish: stepped plinth with black feet and turntable mat, grey smoked acrylic dustcover. Features: semi-autoarm manoeuvres, auto-start, auto-cut, auto-return and switch off.

■ ESOTERIC

Marantz Audio UK Ltd,
193 London Road, Staines, Middlesex.
Tel: Staines 50132

TT 1000 *

Non resonant direct drive record player system with adjustable mass dynamic balanced straight tone arm. Power supply via independent supply unit which eliminates AC main hum. High torque motor. Massive turntable of 3.2kg. Full details on application.

■ FIDELITY

Fidelity Radio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

350P

Direct drive semi-automatic record player in plinth with "S" shaped arm and Shure magnetic cartridge. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.05%. Rumble: -68dB DIN B. Diecast turntable weighing 2.31b. DC electrically controlled motor. Pickup arm statically balanced with gimbal suspension, anti-skate control, viscous cueing, decoupled weight and plug-in headshell. Finish: streamlined brushed aluminium, variable speed control, stroboscope.

■ GARRARD

Garrard Ltd,
Factory 103, Cheney Manor Industrial Estate,
Swindon, Wilts.
Tel: Swindon (0793) 35381.

DD450 *

Record deck fitted with "S" shaped arm with removeable carbon headshell. Integral plinth with cover. Speeds: $33\frac{1}{3}$, 45 $\pm 3\%$. W and F: 0.06%. Rumble: DIN A -50dB, Din B -70dB. 319mm turntable of die cast aluminium weighing 2kg. Direct drive. Coreless DC motor. Pickup arm: "S" shaped aluminium with jewel/ball race pivots, viscous cue tracking 4-9gms. Also available fully automatic (DD455).



Esoteric TT 1000

DDQ550

Record deck with fitted straight arm and removeable headshell. Integral plinth with cover. Speeds: $33\frac{1}{3}$, 45 rpm. DIN A -50dB, DIN B -70dB. Diecast aluminium turntable, 311mm diameter weighing 1.6kg. Direct drive. Coreless DC motor with quartz lock. Pickup arm: straight low mass with cone and ball race pivots. Tracking 4-9gms. Viscous cue isolated C/B weight. Features: push-button front control operation.

DDQ650

Record deck with fitted straight arm with removeable headshell, integral plinth with cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.05%. Rumble: DIN A -50dB, DIN B -70dB. Diecast aluminium turntable, 311mm diameter weighing 1.6kg. Direct drive. Coreless DC motor with quartz lock. Straight low mass with cone and ball race pivots tracking 4-9gm. Viscous cue isolated C/B weight. Features: push-button front control operation.

DLQ650

Record deck with fitted straight arm and removeable headshell. As DDQ650 but with variant on the two speeds and 319mm turntable weighing 2kg.

GT350P

Record deck with fitted "S" shaped arm with removeable carbon fibre headshell, integral plinth with cover. Speeds: $33\frac{1}{3}$, 45 rpm $\pm 3\%$. W and F: 0.1%. Rumble: DIN A -45dB, DIN B -65dB. Diecast aluminium turntable, 319mm diameter weighing 2kg. Belt drive. DC servo motor. Pickup arm: "S" shaped aluminium with jewel/ball race pivots. Viscous cue control tracking 9gms. Features: front control operation. Also available fully automatic (GT350AP).

GT250P

Record deck with fitted 'S' shaped arm with removeable carbon fibre headshell. Integral plinth with cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.12%. Rumble: DIN A -43db, DIN B -63dB. Die cast aluminium turntable, 311mm diameter weighing 1.6kg. Belt drive, 4-pole synchronous motor. Pickup arm: "S" shaped aluminium with jewel/ball race pivots. Viscous cue tracking control 4-9gms. Features: front control operation. Also available fully automatic (GT250AP).

■ GRUNDIG

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

PS2000

Belt drive deck with PU arm, plinth and cover. Speeds: 45, $33\frac{1}{3}$. W and F: 0.08% DIN. Rumble: -65dB weighting. Motor: DC direct



Garrard DD450

control. Champagne metallic finish. Price: £65.00 (plus VAT).

HARKSOUND

Uher Sales and Services Ltd,
24 Market Place, London NW11.
Tel: 01-455 1771.

HS 210

Record deck in slimline cabinet with independent floating sub-chassis, straight line tonearm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.07%. Rumble: 62dB DIN. Aluminium turntable with dia: 302mm, weight: 1.1kg. Belt drive. Four-pole synchronous motor. Straight low mass pickup arm. Features: semi-auto operation. Finish: silver grey. Price: £64.00 (plus VAT).

HS 410

Record deck in slimline cabinet with independent floating sub-chassis, straight tonearm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Rumble: 67dB DIN. Aluminium turntable with dia: 310mm, weight: 1.1kg. Direct drive. DC servo-controlled motor. Straight low mass pickup arm. Features: semi-auto operation. Finish: silver grey. Price: £90.00 (plus VAT).

HS 510

Record deck in slimline cabinet with front operation. Floating sub-chassis, straight tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -70dB. Aluminium turntable with dia: 320mm, weight: 1.8kg. Direct drive. DC servo controlled motor. Straight low mass pickup arm. Features: all controls accessible without raising cover. Finish: silver grey. Price: £108.00 (plus VAT).

HS910*

Record deck in slimline cabinet with front operation. Floating sub-chassis, straight tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.02%. Rumble: -75dB. Aluminium turntable with dia: 320mm, weight: 1.8kg. Direct drive. DC servo controlled motor. Straight low mass pickup arm. Features: light touch front operation keys with repeat. Finish: silver grey. Price: £150.00 (plus VAT).

HITACHI

Hitachi Sales (UK) Ltd,
Hitachi House, Stations Road, Hayes.
Tel: 01-848 8787.

HT 660*

Deck fitted with tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.06%. Rumble DIN B: -75dB.



Harksound HS910

Auto turntable. Direct drive. Uitorque motor, quartz PLL 240V. Static balance pickup. Price: £199.00 (plus VAT).

HT 40S

2-speed, direct-drive, semi-auto deck including cartridge. Straight tone-arm. Price: £79.95 (plus VAT).

HT 41S

2-speed, direct-drive, semi-auto deck including cartridge. Quartz lock. Straight tone-arm. Price: £89.95 (plus VAT).

HT 60S

2-speed, direct drive, fully auto deck including cartridge. Quartz lock, photo sensor, straight tone arm. Price: £109.00 (plus VAT).

H.M.V.

Intersound Electronics Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

4000P

Direct drive player with Shure magnetic cartridge. W and F: 0.05%. Rumble: -68dB. S-shaped arm with gimbal suspension, skate control, viscous cue, decoupled weight and plug-in headshell. Dimensions: 47 x 39 x 15.3cm. Finish: black. Price: £87.83 (plus VAT).

ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane,
Basildon, Essex SS14 3BW.
Tel: Basildon (0268) 3040.

8011

Complete record playing unit with plinth and cover, arm, cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.1% DIN. Rumble: -65dB. Turntable of aluminium alloy die-casting. 31cm dia. Direct drive. DC servo 12-pole motor. Static balance pickup arm, effective length 215mm, stylus force 0.3g, cartridge mass 4.5-11g. Semi-auto operation. Price: £126.00 (inc. VAT).

8012*

As above except: Rumble: -70dB. Turntable dia: 32cm. Length of PU arm: 227mm. Separate speed controls, fully auto. Price: £144.00 (inc. VAT).

8014

Complete record playing system with plinth, arm, cartridge, cover. Speeds: 33 $\frac{1}{3}$, 45 \pm 6%. W and F: 0.06%. 0.01% DIN. Rumble DIN B: -65dB. Turntable: 302mm dia. made of diecast aluminium. Belt drive. Motor: DCFG servo. Pickup arm: S-shaped, statically balanced tubular arm with gimball suspension using lateral ball races, decoupled counterweight, bias compensation, viscous cue. Finish:



ITT 8012

dark silver grey. Features: tinted counterbalanced dust cover. Price: £93.95 (inc. VAT).

HIFI 8015

Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05% (DIN/BS/IEC), 0.03%. (WRMS). Rumble: -50dB (IEC/DIN A). -73dB (IEC/DIN B). Turntable: 320mm diameter. Servo motor. PU arm: 227mm long. Optical record size sensing.

JBE

Janorhurst Group,
Century House, Shortmead Street,
Biggleswade, Beds.
Tel: Biggleswade (0767) 314252.

JBE Series III

Record deck with plinth and arm. Unusual platter comprises six aluminium discs fitted and balanced to the black acrylic platter. Thus 85% of record playing surface is firmly supported on high density foam pads. Strobe disc fitted over central aluminium disc. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.07%. Rumble: -73/72dB. 24-slot, 8-pole stator electronic control motor. SME tone arm. Off deck control box housing power on/off switch, speed selection and adjustment controls. Voltage: 110/240V. Price: £229.00 (plus VAT).

Dynavector

Dynavector tone arm can be fitted. However this requires a non-standard plinth size and dust cover and is available only to special order. Price: £250.00 (plus VAT).

JVC

JVC (UK) Ltd,
Eldonwell Trading Estate,
Staples Corner, 6-8 Priestley Way,
London NW2 7AF.
Tel: 01-450 2621.

QL-F6

Quartz-fully automatic turntable. Core-less DC servomotor. Direct drive system. W and F: less than 0.013%. S/N ratio: more than 78dB. Pitch control. Tonearm: statically balanced oil-damped arm with new Gimbal support. Dimensions: 45.6 x 14.2 x 40cm. Price: £251.50 (inc. VAT).

QL-10

Quartz turntable. Core-less DC servomotor. W and F: 0.008%. S/N ratio: 80dB. Pitch control. 316mm aluminium die cast platter. Dimensions: 50.9 x 18.7 x 41cm.

QL-ASR

Quartz auto-return turntable. Coreless DC servo motor. W and F: 0.015%. S/N ratio: 75dB. Speed deviation: 0.002%. 308mm aluminium die-cast platter. Dimensions: 38 x 43.8 x 13cm. Price: £128.00 (inc. VAT).

QL-A7

Quartz turntable with auto tone-arm lift-up/stop. DC servomotor. W and F: 0.013%. S/N ratio: 78dB. 313mm die cast aluminium platter. Dimensions: 48.1 x 16.5 x 40.3cm. Speed deviation: 0.002%. Price: £305.50 (inc. VAT). Less arm: £244.00.

QL-5

Quartz turntable. DC servomotor. W and F: 0.013%. S/N ratio: 78dB. Speed deviation: 0.004%. 312mm aluminium die-cast platter. Dimensions: 48.1 x 16.5 x 40.3cm. Price: £224.00 (inc. VAT).

L-A55

Auto return direct-drive turntable. Coreless DC

servomotor. W and F: 0.015%. S/N ratio: 75dB. Statically-balanced arm. 308mm platter. Dimensions: 38 x 43.8 x 13cm. Price: £98.00 (inc. VAT).

QL-F4

Quartz fully automatic turntable. Core-less DC servomotor. W and F: 0.015%. S/N ratio: 72dB. Speed deviation: 0.004%. 312mm die cast aluminium platter. Dimensions: 46 x 14.7 x 36.5cm. Price: £162.50 (inc. VAT).

L-A11

Auto-return belt drive turntable. 4-pole synchronous motor. W and F: 0.06%. S/N ratio: 63dB. 300mm aluminium alloy platter. Statically balanced tone arm. Dimensions: 43.8 x 14.3 x 38cm. Price: £77.00 (inc. VAT).

TT-101

Quartz turntable only. Core-less DC servo motor. W and F: 0.008%. S/N ratio: 80dB. Speed deviation: 0.002%. Dimensions: 35.8 x 15 x 35.8cm. Price: £490.00 (inc. VAT).

LUX

Howland-West,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293.

PD 131

No arm supplied, but bayonet fitting to take SMI arm. Fitting available for other arms. Mounted rosewood base and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -70dB. Turntable: 30cm dia, of aluminium die-cast. Direct drive. Brushless DC servo motor. Features: mirror system stroboscope. Price: £280.00 (plus VAT).

PD 441

As PD 272, but with no tone arm fitted. Motor: crystal control, load-free spindle system, flat brushless DC servo motor. Quartz-locked turntable. Detachable pickup arm base. Price: £360.00 (plus VAT).

PD 444

Spec as for 441, but with provision for two PU arms. Price: £420.00 (plus VAT).

PD 264

Record deck with pickup arm, plinth, and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: no more than 0.035%. Aluminium die cast turntable measuring 30cm dia and weighing 1.8kg. Direct drive. DC servo brushless motor. Straight type pickup arm. Finish. Black on black plinth and cover. Features: Semi-automatic operation. Price: £105.00 (plus VAT).

PD 277*

Record deck with pickup arm, plinth and cover.



Lux PD 277

Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: no more than 0.03%. Aluminium die cast turntable measuring 30cm and weighing 1.8kg. Direct drive. DC servo brushless and slotless motor. Pickup arm: straight type with nested double tube construction. Finish: brushed aluminium on rosewood plinth and cover. Features: Automatic operation. Price: £180.00 (plus VAT).

LYRICHORD

N. Miers & Co Ltd, Piercing Hill,
Theydon Bois, Epping, Essex CM16 7LE.
Tel: 01-849 2611/2.

200

Two speed auto player mounted on plinth with dust cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. Turntable: 11in. made of steel and aluminium. Belt drive. Motor: dynamically balanced 4-pole 240V. Pickup arm, S-shaped tubular tone arm, fully counterbalanced, Gimball mountings. Features: viscous damped cueing lever, bias compensator for elliptical or spherical stylus. Finish: satin black mainplate with brushed aluminium trims, bevelled edge turntable with castellated mat. Price: £82.00 (plus VAT).

198

Autochanger on wood plinth with friction hinged dust cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. Jockey pulley drive. 2-pole motor with variations available including 12V DC version. "S" shaped pickup arm. Finish: black, silver.

MARANTZ

Audio UK Ltd, Debmarc House,
203 London Road, Staines, Middlesex.
Tel: Staines (0784) 50132.

6170

Automatic turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W: 0.03%. Rumble: -70dB. Turntable: 310mm dia. Direct drive. DC servo control motor. Pickup arm: as 6025. Features: semi auto, speed variable by $\pm 3\%$. Price: £88.80 (plus VAT).

6270Q

Automatic turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.02%. Rumble: -75dB. Turntable: 320mm. Direct drive. Motor: quartz locked DC servo. Pickup arm: as 6025. Features: quartz locked. Price: £137.00 (plus VAT).

6370Q

Automatic turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W: 0.02%. Rumble: -75dB. Turntable: 320mm dia. Direct drive. Quartz locked DC servo motor. Pickup arm: as 6025, plus oil damped tone-arm for maximum cartridge trackability. Finish: Walnut. Features: speed variable by $\pm 6\%$. Price: £208.80 (plus VAT).

TT2000

Record deck with plinth and pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.03%. Rumble: -75dB DIN. Direct drive. Straight pickup arm with low mass. Features: semi-automatic, controls accessible with lid closed. Price: £70.00 (plus VAT).

TT4000*

As TT2000 except figure for Wow: 0.025%. Features: quartz locked. Price: £99.00 (plus VAT).

TT6000

Fully automatic record deck with specs as for TT4000. Price: £120.00 (plus VAT).

MICRO SEIKI

Harman UK, St. John's Road,
Tyler's Green, High Wycombe,
Bucks. HP10 8HR.
Tel: Penn (049 481) 5331.

MB-10

Belt-drive manual record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.06%. S/N ratio: more than 50dB. Belt drive with 4 pole synchronous motor. Static balance tone arm with effective length of 222mm and overhang of 15mm. Oil-damped cueing, anti-skating device. Price: £76.56 (plus VAT).

DQX-500

Quartz-locked PLL direct drive record player system incorporating MA-707 tonearm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.02%. Turntable 35cm dia aluminium diecast. Dynamic balance tonearm with effective length of 237mm, overhang 15mm. Price: £265.80 (plus VAT).

DXQ-1000

PLL quartz locked direct drive turntable system. 33 $\frac{1}{3}$, 45 rpm. W and F: 0.02% (WRMS). DC motor. Aluminium platter. Dimensions: 44.4 x 44.4 x 12.5cm.

DQ-50

Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.02% (WRMS). Motor: quartz-locked, PLL servo DC motor. Turntable: aluminium, 35cm diameter, 2.6kg. Direct drive. PU arm: dynamic balance. Dimensions: 50 x 41 x 17.5cm.

DD-24

DC servo direct drive auto-return turntable system. Speeds: 33 $\frac{1}{3}$, 45 rpm. E and F: 0.03%. Turntable: aluminium, 31cm diameter. PU arm: low static mass straight type. Dimensions: 44 x 35 x 12.5cm.

MB-14

Belt-drive, auto-return turntable system. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.055%. Turntable: die-cast aluminium, 30cm diameter. Motor: 4-pole synchronous. PU arm: low static mass straight type. Dimensions: 44 x 35 x 14.2cm.

MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts WD2 8LD.
Tel: Watford 40566.



Marantz TT4000

LINN PRODUCTS

235 Drakemire Drive,
Castlemilk,
Glasgow G45 9SZ.
Tel: 041-634 3860
Telex: 77301 Sondek G
Cables: Eurodeck



Linn
Sondek
LP12

Linn Products is a small Glasgow-based company manufacturing transcription record decks and domestic loudspeakers. The Linn Sondek LP12 first saw the light of day some ten years ago. This Transcription Turntable is designed on a somewhat different premise from other turntables on the market. The basic premise was that a turntable, as the carrier of the arm and cartridge, was a far more complex transducer than was currently thought to be the case, and as such deserved more attention and higher standards of design and manufacture if the full potential of this link in the chain was to be realised.

The concept of the turntable as a transducer disappeared with the demise of the Edison constant-pitch record and its replacement with the variable pitch device. Whilst this groove development enabled more time to be captured per LP per given speed, the essential historical coherence of the record-reproducing part of the hi-fi chain was to a very large extent abandoned, if not largely lost altogether.

In the record-based system, the most important part of the chain is obviously the record as this is the source of the information whose retrieval is sought. The first link in the chain is the record player, or transcription deck. Although all parts of the chain are equally important, the order of precedence starts with the turntable and ends with the loudspeakers, not the other way round as is commonly assumed. An amplifier, no matter how good it is, cannot improve a bad signal, neither can a loudspeaker. A cartridge or arm cannot perform optimally if the platform upon which both they and the record are mounted is not up to the task demanded of it. When the size of the groove, and hence the information cut in the groove, is considered, it is self-evident that the task facing the record player is enormous and that no system could

conceivably do full justice to the information cut on a normal, commercial LP.

It was an endeavour to do greater justice to the demands made by the modern long-playing record that led to the design of the Linn Sondek and its manufacture to standards hitherto unknown in the domestic audio business. The reception of the Linn Sondek LP12 in the market place was, to say the least, contentious. The fact that the product was claimed to improve any system seemed to be unbelievable to an uneducated market place. Furthermore, the premise upon which the product was sold, ie as a result of a comparison with other turntables, was considered to be absurd.

When we at Linn Products said that a turntable should be chosen in the same way as one chooses loudspeakers, most people were not even prepared to listen and hear if turntables made a difference. One wonders at the inherent lack of understanding and the basic technical ignorance of people who subscribed to these attitudes. Apparently, they thought that turntables should be chosen for their price or their features and/or price, and that none of them made any fundamental or even marginal differences to the amount of information retrieved from the record or had any influence on the quality of the system as a whole.

Fortunately, enough open-minded, technically-informed people evaluated the product and found out that our claims were true, that record players do make a difference and that our product, the Linn Sondek LP12 Transcription Turntable, was worthy of consideration.

Although throughout the world there are still a few people who don't believe that turntables make a difference, who refuse to even listen or measure the vast differences that do exist between turntables, and who tend to subscribe any difference they do

hear to the mat or the feet, even they are beginning to refute the irrationality that says a turntable cannot make a difference but a mat can.

Today, the Linn Sondek LP12 Transcription Turntable is sold through distributors and selected dealers virtually world-wide, and we are bold enough to say that we have many thousands of satisfied customers for whom our product has provided added pleasure and enjoyment from their record collection.

Loudspeaker developments at Linn Products go back some seven years and were born of similar considerations to those which lead to the inception of the turntable. With the Linn Isobariks range of loudspeakers, for probably the first time with moving coil transducers and perhaps with any form of transducer, an attempt was made, which we believe is largely successful, to construct a loudspeaker which, whilst capable of going down to extremely low frequencies, perhaps lower than any other domestic loudspeaker, nevertheless did not have a fundamental bass resonance problem.

The speakers handle very substantial amounts of power, are extremely efficient, and have a wide dispersion range and lower levels of distortion at lower frequencies than have hitherto been achieved. Obviously the speakers met with the same kind of scepticism that greeted the turntable, but now after some four years they are commercial products that are accepted as the turntable is — as a standard.

All the products designed and manufactured by Linn Products, are, we believe, almost unique in the degree of effort and inherent value which goes into their manufacture, and consequently we have evolved a system of distribution based upon selling by demonstration. We believe that if a product has any merit it will be obvious to the prospective customer in a fair, blind demonstration. We also believe that no product is universally applicable, and the preference of the customer is ultimately the most important consideration. The objective of the man who parts with his hard-earned money must be to secure the maximum pleasure from the recorded medium he employs. The equipment is essentially of no real concern to him and he should not be sold equipment on the basis of technical specification or marketing jargon. If the customer cannot hear any differences then, at least for him, none exists, and he should minimise his expenditure accordingly. If, however, the customer does hear a difference, he still has to decide how important it is and evaluate how much the difference is worth to him. Consequently, we see how the end user is presented with our products as the most important link in the cycle which began with the design of our range.

There is no use the customer buying our product because he is told it is the best; we only want a customer to buy our product if, after demonstration and experience, he **knows** it is the best for him.

DP-630

Fully automatic (with manual override) direct drive deck fitted with pickup arm and cartridge. W and F: (WRMS) 0.03%. Rumble: —70dB DIN weighted. Aluminium alloy platter. Controls located outside dust cover. $\pm 3\%$ pitch control on 33 $\frac{1}{3}$ and 45 rpm. Retail price: £105.00 (inc. VAT).

DP-EC7

Fully automatic (with manual override) direct drive deck. Butyl rubber damping to reduce colouration of cartridge response. All automatic functions controlled by microcomputer. W & F less than 0.03% (WRMS). S/N ratio better than 73dB (DIN B). Retail price: (including cartridge) £179.00 (inc. VAT).

LT-5V *

Vertical format belt drive linear tracking turntable. Fully automatic (with manual override). Tone arm statically balanced in all three dimensions. Tracking error no more than $\pm 0.1^\circ$. Aluminium platter. W and F: 0.045% WRMS. S/N ratio: 70dB (DIN B). Retail price: £199.00 (inc. VAT and cartridge).

■ **MONITOR AUDIO LTD**

347 Cherry Hinton Road, Cambridge CB1 4DJ.
Tel: Cambridge (0223) 42898/46344.

ET 500

Direct drive with platter mounted to motor shaft. Arm extra, various mountings available. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.55%. Rumble: —65dB. Turntable with special lead laminated base measuring 470 x 368 x 133mm and weighing 10kg. 18V direct drive motor with platter mounted to motor shaft. Wood finish in teak/walnut/rosewood or black. Price without arm: £149.50 (plus VAT); £159.50 (plus VAT) rosewood.

■ **OPTONICA**

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

RP2727C

Fully auto direct drive deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.045% DIN. Rumble: —65dB DIN 'B'. Turntable measures 31cm. Motor: DC coreless unitorque, FG servo. Static balanced S-shaped arm. Finish: black. Price: £133.24 (plus VAT).

RP5100N

Fully auto direct drive record deck. Speeds:

33 $\frac{1}{3}$, 45 rpm. W and F: 0.06%. Rumble: —68dB DIN "B". Turntable: 30cm dia. Motor: DC coreless FG servo. Static balanced tone arm S-shaped. Features: front panel operation, glass lid, second motor for arm. Cue button.

RP 7100

Stereo turntable with soft touch cue button. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow and Flutter: 0.03% ± 0.045 DIN. Rumble: better than 68dB DIN "B". Aluminium die-cast turntable with stroboscope, dia: 30cm. Direct drive. DC coreless motor with FG servo control system. Features: soft touch play, cue, repeat buttons all front mounted. APLD auto programme locate device to find and programme the start of tracks up to seven. Finish: plastic moulding. Price: on application.

RP9100

Record deck of advanced circuitry and double quartz locked servo system. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.028% ± 0.045 . Rumble: better than 68 dB. Aluminium die-cast turntable, dia: 31cm. Direct drive. DC coreless motor with FG servo control system. Features: cue system, soft touch button on front panel and on remote control, microprocessor and infra-red sensor to select auto tracks. Finish: wood. Price: on application.

■ **PANASONIC**

National Panasonic (UK) Ltd,
300-318 Bath Road, Slough SL1 6JB.
Tel: Slough 34522.

SLH 302

Plinth-mounted record deck complete with PU arm and Cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05% WRMS. Rumble: —65dB DIN B. Turntable: 304mm diameter, die-cast aluminium. Belt drive. Motor: DC servo controlled. PU arm: S-shaped, auto return, universal headshell. Includes MM cartridge EPC 270. Finish: silver. Price: on application. Available as part of the 2700 system or separately.

■ **PHILIPS**

Philips Audio,
City House,
420-430 London Road, Croydon.
Tel: 01-689 2166.

AF 777

Electronic auto record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05% or 0.08% DIN. Rumble: —43dB DIN 'A', —65dB DIN 'B'. Low mass tubular aluminium tone arm, effective length 215mm. Turntable of aluminium 308mm dia. DC direct control belt drive motor GP401 Mk II Super M Cartridge. Price: £88.00 approx.

AF 877*

Electronic semi-auto record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%, or 0.05% DIN. Rumble: —50dB DIN 'A', —70dB DIN 'B'.

Tubular aluminium tone arm, low mass. Effective arm length: 215mm. GP401 Super Mk II cartridge. Turntable: die-cast aluminium with odourless rubber mat, dia 310mm, DC direct control belt drive motor. Price: £119.70 approx.

AF 677

Semi-auto with speeds of 33 $\frac{1}{3}$, 45 rpm. W and F: 0.08% DIN or 0.05%. Rumble: —43dB DIN 'A', —65dB DIN 'B', GP 400 Super MM Mk II cartridge. Pressed aluminium turntable, dia 308mm. DC/direct control belt drive. Price: £71.40 approx.

AF 729

Record deck complete with plinth, pickup arm, cartridge, dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Rumble: —43dB DIN A, —65dB DIN B. Pressed aluminium turntable 290mm diameter. Belt drive with electronic speed control. Low voltage DC motor. Pickup arm: straight tubular aluminium with detachable headshell. Finish: charcoal grey plinth. Features: LED speed indication, GP 401 cartridge. Price: £104.72 (plus VAT).

AF 829

Record deck complete with plinth, pickup arm, cartridge, dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: —50dB DIN A, —73dB DIN B. Die-cast aluminium turntable, 290mm diameter. Belt drive with electronic speed control. Low voltage DC motor. Pick up arm: straight tubular aluminium with detachable headshell. Finish: charcoal grey plinth. Features: LED bar speed indication, GP412 cartridge. Price: £144.62 (plus VAT).

■ **PIONEER**

Pioneer HiFi (GB) Ltd,
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: 0753 652222.

PL 100X

Record deck, plinth with cover, fitted tone arm. Speeds: 33 $\frac{1}{3}$, 45. W and F: 0.045%. S/N ratio: 70dB. Alloy die cast turntable. Belt drive. FG DC servo motor. PU arm: S-shaped, static balanced, auto return, shut off, anti skate Pioneer cartridge PC110/11. Finish: matt black.

PL 200X

Record deck, plinth with cover and fitted tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.35%. S/N ratio: 75dB DIN 'B'. Turntable: 310mm weighing 0.9kg made of die-cast alloy. Direct drive. Motor: coreless DC-Hall. PU arm: static balanced S-shaped auto return. Features: coaxial suspension, stroboscope, resin panel. PU arm: PC110/11. Typical Market Price: £84.90.

PL 300X

Record deck, plinth with cover and fitted tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.035%. S/N ratio: 75dB DIN 'B'. Turntable: 310mm weighing 1.1kg die-cast alloy. Direct drive. Motor: quartz PLL Hall. PU arm: static balanced S-shaped, auto-return, PC150. Features: coaxial suspension, stroboscope, resin panel. Typical Market Price: £102.90.

PL 400X

Similar to 300X, but with PC 150. Typical Market Price: £121.90.

PL-L-1000

Record deck, plinth with cover and fitted tone arm (linear tracking). Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.013%. S/N ratio: 78dB DIN 'B'.



Mitsubishi LT-5V vertical turntable



Philips AF 877

Turntable: 320mm weighing 380kg, made of die cast alloy. Motor: SHR quartz direct drive Hall motor. PU arm: linear tracking tone arm. Features: solid particle board plinth.

■ **PYE**

Pye Ltd,
37 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

SX 5887

Record deck with pickup arm. Speeds: 33 $\frac{1}{3}$, rpm. W: <0.05%. Flutter: <0.025%. Rumble: -50dB DIN A, -73dB DIN B. Die-cast aluminium turntable 310mm in diameter. Belt drive. DC motor. Pickup arm: straight tubular with adjustable counterweight. Typical Market Price: £219.00.

SX 5777

Record deck with pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: <0.08%. Flutter: <0.05%. Rumble: -43dB DIN A, -65dB DIN B. Aluminium turntable 320mm diameter. Belt drive. DC motor. Pickup arm: photo-electric stop, straight tubular with adjustable counterweight. Typical Market Price: £99.00

■ **REGA**

Rega Research Ltd,
Swaines Industrial Estate,
Ashingdon Road, Rochford, Essex.
Tel: Southend 546674.

Planar 2

Complete integral unit with arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Turntable: 12in. glass. Belt drive. Motor: 24 pole synch dynamically suspended. Pickup arm suitable for most cartridges. Finish: Hardwood/black. Price £86.00 (plus VAT).

Planar 3*

As Planar 2 in black finish. Price: £120.43 (plus VAT).

■ **REVOX**

F. W. O. Bauch Ltd, 49 Theobald Street,
Borehamwood, Herts. WD6 4RZ.
Tel: 01-953 0091.

B790

Complete in plinth, cover, with pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm and variable $\pm 7\%$. W and F: 0.05%. Turntable: 313mm dia. Direct drive. Tangential tracking, ultra short servo driven. Price: £385.00 with Ortofon VMS 20E, £395.00 with Ortofon M20E, £399.00 with AKG P8ESR (plus VAT).

B795

Record deck complete with pickup arm, cartridge, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Rumble: better than 70dB. Alloy turntable 313mm weighing 2.1kg. Direct drive. Pick arm: tangential tonearm fitted with Revox P20 MDR cartridge. Finish: grey. Price: £295.00 (plus VAT).

■ **ROTEL**

Rotel HiFi Ltd,
2-4 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 317707.



Rega Planar 3

RP-1000*

Semi-automatic direct drive turntable, with arm and plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. DC servo motor. Features: auto shut-off, static-balanced tone arm, anti-skating device, cue lever, stroboscope with speed controls. Dimensions: 43.6 x 14.5 x 36cm. Typical Market Price: £89.00.

RP-300

Semi-automatic belt-drive turntable, plinth, arm. W and F: less than 0.07%. 4-pole synchronous motor, belt drive. Features: static-balanced tone-arm, anti-skating device, cue lever. Dimensions: 43.6 x 13.5 x 36 cm. Typical Market Price: £68.00.

■ **SANSUI**

Sansui Audio Europe NV,
Unit 10A, Lyon Industrial Estate,
Rockware Avenue, Greenford, Middlesex.
Tel: 01-575 1133.

FR-Q5, FR-D4, FR-D3, FR-D3S, SRB-200S

Record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.07%. Rumble: better than 65dB. Turntable: 300mm diameter, aluminium alloy. Belt Drive. Motor: 4-pole synchronous PU arm: statically balanced, S-shaped, length 210mm. Finish: available in black or silver. Price: £60.00 approx. (plus VAT).

■ **SCOTT**

Clement Electronics Ltd, Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57131

PS97XV

Automatic direct-drive turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Aluminium die cast turntable. "S" shaped tone arm. Features: LED indicator, spare headshell holder, record size selector, direct readout stylus pressure and anti-skating controls. **Strobe on platter.**



Revox B790



Rotel RP-1000

PS77XV

Semi-automatic quartz lock direct-drive turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Aluminium die-cast turntable. 72 pole FG AC motor. "S" shaped tonearm. Features: quartz lock speed indicator, strobe on platter.

PS67A

Semi-automatic direct-drive turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Aluminium die cast turntable. 72 pole FC AC motor. "S" shaped tone arm. Features: strobe light, direct readout stylus pressure and anti-skate controls.

PS17A

Semi-automatic turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.07%. Aluminium die-cast turntable. Belt drive. 4-pole synchronous motor. "S" shaped tone arm. Features: direct readout stylus pressure, anti-skate controls.

■ **STD**

C. W. and J. Walker,
Brentwood, Red Lane, Frodsham,
Warrington WA6 6RH.
Tel: Warrington 33326.

305M*

Record deck mounted on plinth, no arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.06% DIN. Rumble: -70dB DIN "B". Aluminium turntable dia: 300mm, weight: 2kg. Belt drive. 16 pole synchronous motor. Finish: anodised black or silver, extruded aluminium plinth. Price: £208.00 (plus VAT).

305S

As above except weight of turntable is 1.5kg. Finish: black. Price: £130.00 (plus VAT).

■ **TEAC**

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks HP10 8HR.
Tel: High Wycombe (049 481) 5331.

PX 300

Record deck with speeds 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -60dB. Direct drive, DC motor. Price: £77.39 (plus VAT).

PX 500

Quartz lock record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -60dB. Direct drive, DC motor. Price: £112.17 (plus VAT).



STD 305

■ TECHNICS

National Panasonic (UK) Ltd,
308 Bath Road, Slough,
Berks SL3 6JB.
Tel: Slough (0753) 34522.

SL-Q33

Fully automatic front control, quartz-phase-locked direct drive turntable, with pickup arm, and EPC-207C cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: -56dB DIN A, -78dB DIN B. Aluminium die-cast platter 31.2cm diameter. Static balanced universal tonearm with anti-skating, oil-damped cueing device. Price: £150.00 (plus VAT).

SL-Q2

Semi-automatic front control quartz-phase-locked direct drive turntable with pickup arm and EPC-207C cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: -56dB DIN A, -78dB DIN B. Aluminium die-cast platter 31.2cm diameter. Static balanced tubular tonearm. Soft touch front panel controls. Price: £125.17 (plus VAT).

SL-D3*

Fully-automatic front control direct drive turntable, pickup arm and EPC-170C cartridge. Speeds: 33 $\frac{1}{3}$, 45. Rumble: -53dB DIN A, -78dB DIN B. Aluminium diecast platter 31.2cm diameter. Integral rotor/platter assembly DC motor with B.FG servo control. Static balanced tubular tonearm. Features: pitch adjustable by 10%, front controls, memo-repeat, acoustic feedback eliminated. Price: £100.83 (plus VAT).

SL-D2

Semi-automatic front control direct-drive turntable with tone arm and EPC-207C cartridge. W and F: 0.03%. Rumble: -53dB DIN A, -78dB DIN B. Integral rotor/platter assembly and B.FG servo control. Static balanced tubular tonearm. Features: pitch adjustable by 10%, front control. Price: £86.21 (plus VAT).

SL-B3

Fully automatic front control FG servo belt-drive turntable, pickup arm and EPC-270C Cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.045%. Rumble: -70dB DIN B. Aluminium die-cast platter 30.4cm diameter. Direct drive. FG servo controlled DC motor and IC circuitry which automatically cancels any speed variations. Static balanced tubular tonearm. Features: pitch control with 6% variations, front controls, memo-repeat. Price: £83.56 (plus VAT).

SL-B2

Semi-automatic front control FG servo belt drive turntable, pickup arm and EPC-270C cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F:

0.045%. Rumble: -70db DIN B. Aluminium die-cast platter 30.4cm diameter. Full-cycle detection FG servo controlled DC motor with 6% pitch variability. Static balanced tubular tonearm. Price: £68.00 (plus VAT).

SL-1600MK2

Fully automatic quartz-synthesiser direct-drive turntable with front controls, pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: -78dB DIN B. Aluminium die-cast platter 33.2cm diameter. Ultra-low speed DC brushless motor. Static balanced tubular tonearm. Features: diecast aluminium base, double isolated suspension, pop-up stylus mirror. Price: £221.70 (plus VAT).

SL-1700MK2

Quartz-synthesiser direct drive turntable with front control, pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: -78dB DIN B. Aluminium die-cast platter 33.2cm diameter. Ultra-low speed DC brushless motor. Static balanced tubular tonearm. Features: die-cast aluminium base, double isolated suspension, front control, pop-up stylus illuminator. Price: £168.65 (plus VAT).

SL-10

Linear tracking quartz-locked direct-drive turntable. SL-10 is no wider than a record sleeve and can be played vertically as well as horizontally. All operations are completely automatic. Linear tracking assures optimum reproduction. MC cartridge fitted and switchable built-in pre-amp. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: -56dB DIN A, -78dB DIN B. Ultra-low speed brushless DC motor. Dynamic-balanced linear tracking gimbal suspension tonearm. Price: £285.00 (plus VAT).

SL-1000MKII

Quartz-phase-locked control direct-drive turntable with variable dynamic damping tonearm and Obsidian base. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W and F: 0.025%. Rumble: -56dB DIN A, -78dB DIN B. Aluminium die-cast platter 32cm diameter. Tone arm of Gimbal suspension with ruby bearings. Price: on application.

SP-15

Quartz-synthesiser direct-drive turntable. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W and F: 0.025%. Rumble: -56dB DIN A, -78dB DIN B. Aluminium die-cast platter 33.9cm diameter. Ultra low noise, brushless, heteropole DC motor with pitch control variance of 9.9%. No pickup arm. Price: £304.30 (plus VAT).

■ TENSAI

Wren Electronics Ltd, Dawson Road,
Mount Farm Estate, Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

TD 855D

Record deck complete with plinth, arm, cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.06%. Turntable: 31 cm weighing 1.4kg made of cast alloy. Direct drive. Motor: DC and AC-16 pole. Pickup arm: 'S' shaped. Features. Fully automatic. Typical Market Price: £70.00.

TD750QZ*

Record deck plinth mounted with dust cover and "S" shaped tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -65dB. Cast aluminium platter 30cm diameter. Direct drive. Quartz locked PLL DC servo motor. "S" shaped pickup arm 220mm effective length. Finish: champagne. Typical Market Price: £87.00.

TD530D

Record deck with "S" shaped pickup arm, plinth mounted with dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.035%. Rumble: -60dB. Cast aluminium turntable 30cm diameter. Direct drive. Brushless DC servo motor. "S" shaped pickup arm effective length 220mm. Finish: champagne. Typical Market Price: £70.00

■ THORENS

Cambrasound Ltd,
Freedex House, 4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

126 IIC

Belt drive transcription turntable with fully electronic cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: \pm 0.05%. Rumble: better than -72dB DIN 'B'. Zinc alloy turntable measuring 30cm dia. DC motor with 72-pole tachogenerator. Pickup arm: effective mass 7.5g, bearing friction <15mg, magnetic skating compensation. Price: £314.04 (plus VAT).

TD 126 III BC

As above without pickup arm. Price: £256.52 (plus VAT).

TD 115

Belt drive transcription turntable fitted with pickup arm, hinged cover and plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm, switched electronically with load-compensating automatic pitch control. W and F: \pm 0.05%. Rumble: better than -68dB DIN 'B'. Turntable measuring 30cm dia. DC motor governed by 72-pole tachogenerator. Pick-up arm: length 222mm, effective mass 7.5g bearing friction <15mg. Magnetic skating compensation. Features: four-point "orthoinertial" suspension damped in all directions. Price: £169.57 (inc. VAT).

TD 104/TD 105

Record deck supplied complete with arm, base and cover. Semi-automatic with friction-free velocity sensing electronic shut-off which lifts and returns the tonearm and stops the motor. Manual version: TD 104. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: <0.05% DIN. Rumble: -48dB unweighted, -65dB weighted. Turntable: 30cm weighing 1.3kg and made of zinc alloy, dynamically balanced. Belt drive. Motor: DC and 72-pole tachogenerator. Pickup arm: TP22, effective mass 7.5g. Price: TD104 £108.70, TD105 £130.43 (plus VAT).

TD 160BCII

Transcription turntable supplied with base and cover only, enabling the fitting of a wide choice of pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: <0.06% DIN. Rumble: -45dB weighted,



Technics SL-D3



Tensai TD 750 QZ

Regrettably a turntable must turn to do its job.

And while turning, its movement will be affected by four things: the motor, the friction of its bearings, the stylus pressure, and any vibrations it receives, either from its own mechanism or from an outside source.

Any or all of this can distort the output from that delicate stylus tip.

The perfect turntable would of course be totally unaffected.

Until that turntable appears (we're working on it) the Trio L-07D quartz-lock turntable is the next best thing.

It continuously monitors and controls its own running speed by comparing it with the constant period of vibration of a quartz crystal. And that combined with the flywheel effect of the heavy (5.5 kg) platter keeps the speed within plus or minus 0.020%.

Any transient pressures caused by the unavoidable drag of the stylus tip are completely smoothed out.

Finally, the total stiffness of the entire structure either eliminates transient vibrations or absorbs them before they can perceptibly affect the output.

So all you hear is what's in the groove. Because only the platter moves. The turntable is motionless.

THE MOTIONLESS TURNTABLE



L-07D Quartz-lock turntable



TRIO

HI-FI STEREO

If you're still unconvinced, send the coupon.

Please send me full information about Trio motionless turntables, and the name of my nearest dealer.

HFYB

NAME _____

ADDRESS _____

Exclusive United Kingdom Distributors:
B. H. Morris & Co. (Radio) Ltd., Precision Centre,
Heather Park Drive, Wembley, Middx. HA0 1SU.
Phone: 01-902 9422.

—65dB unweighted. Turntable: 30cm weighing 3.2kg made of zinc alloy, dynamically balanced. Belt drive. Motor: 16-pole two-phase synchronous with slip clutch for instantaneous start. Price: £117.40 (plus VAT).

TD160 super*

As TD 160BCII but with modified plinth with heavier base, blank wooden arm board, heavy resonance, damping mat, heavier main bearing, improved damping of chassis and subframe, friction-hinged lid. W and F: better than 0.04%. Rumble: —80dB with Thronex rumble measuring device coupled directly to main bearing. No pickup arm. Price: £165.22 (plus VAT).

TOSHIBA

Toshiba (UK) Ltd,
Toshiba House, Frimley Road,
Frimley, Camberley, Surrey.
Tel: Camberley (0276) 62222.

SR-F225

Fully automatic turntable. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.08%. S/N ratio: 60dB. Turntable: 31cm diameter, die-cast aluminium. Belt-drive. Motor: AC 4-pole synchronous. PU arm: S-shape, static balance, spring adjusted bias compensation, direct reading tracking weight adjuster, cueing lever. Price: £79.56 (plus VAT).

SR-F325*

Record deck. Speeds: 33 $\frac{1}{3}$, 45 rpm \pm 2% variable. W and F: 0.05%. S/N ratio: 65dB. Turntable: 31cm diameter, die-cast aluminium with stroboscope. Belt drive. Motor: PLL DC servo-controlled. PU arm: S-shape, static balance, anti-skating mechanism, direct reading track weight-adjuster, cueing lever. Price: £88.44 (plus VAT).

SR-Q660

Record deck with PU arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.025% WRMS. Turntable: 31cm diameter. Direct drive. Motor: quartz PLL servo motor. Features: LED clock display, fully automatic. Price: £113.91 (plus VAT).



Thorens TD 160 Super



Toshiba SR-F325

TRIO

B. H. Morris and Co Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex.
Tel: 01-902 9422.

KD 1033B

Fitted with PU arms plinth. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: 0.06%. Rumble: —65dB. Turntable 30cm dia. Belt drive. Synchronous 240V AC motor. Medium mass S-type pickup arm, pulley weight, bias. Matt black finish. Price: £56.00.

KD 650

Record player with pick-up arm, plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.025%. Rumble: better than —75dB. Turntable: 33cm, weighing 2.6kg made of aluminium alloy die-cast. Direct drive. Motor: 20-pole 30-slot brushless DC servo motor. Pickup arm: static balanced type, 'S' shaped pipe arm. Features: quartz, phase locked loop circuit. ARCB plinth has feel and looks of granite. Price: £247.09 (plus VAT).

KD 600

As above but without Pickup arm. Price: £210.00 (plus VAT).

KD4100R

Record deck fitted with pickup arm, plinth mounted. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.03%. Rumble: better than —71dB. Injection moulded turntable weighing 7.9kg. Direct drive. Coreless and slotless DC servo motor. "S" shaped tubular arm. Features: electronically controlled auto tone arm system facilitates remote control. Price: £128.10 (plus VAT).

KD3100

Basically same as KD4100R. Price: £100.64 (plus VAT).

L-07D*

Record deck fitted with pickup arm, plinth mounted. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.02%. Rumble: better than —94dB. Mahogany composite turntable. Quartz PLL direct drive. Coreless and slotless DC servo motor. J-shaped piped arm. Features: electronically and mechanically controlled brake, LED speed indicators, stylus pressure direct readout counter. Price: £869.56 (plus VAT).

KD-850

Record deck fitted with pickup arm, plinth mounted. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.02%. Rumble: better than —85dB. Turntable unit of laminated board with simulated wood grain veneer, anti-resonance compression base. Quartz PLL direct drive. 20-pole, 30-slot brushless EC servo motor. "S"

shaped piped arm. Features: all electronically controlled, full automatic tonearm system, auto disc size selector, stylus pressure direct readout. Price: £320.36 (plus VAT).

YAMAHA

Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.

P-550

Automatic record deck with plinth and pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.015%. Rumble: more than —77dB. Aluminium die-cast turntable dia: 30cm, weight: 1.6kg. FG servo direct drive. DC cordless, slotless Hall-effect 240V motor. Straight tubular pickup arm measuring 222mm, ADC type headshell. Finish: silver. Features: automatic, BMC base, slimline. Price: on application.

P-350

Semi-automatic record deck with plinth and pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: more than —70dB. Aluminium die-cast turntable, dia: 30cm, weight: 0.7kg. DC servo belt drive. DC servo 240V motor. Straight tubular pickup arm measuring 222mm, ADC type headshell. Finish: silver. Features: semi-automatic, BMC base, slimline. Price: on application.

PX-II

Record deck mounted on plinth with pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Direct drive 240V quartz locked PLL servo motor. Pickup arm: parallel tracking. Price on application.

P-750

Automatic record player including plinth and pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Rumble: better than —77dB. Aluminium die-cast turntable dia: 30cm, weight: 1.6kg. Direct drive. 240V quartz locked PLL servo motor. Straight tubular pickup arm measuring 222mm, weight adjustable, ADC type headshell. Finish: solid aluminium die-cast base. Features: optimum mass arm design, slim line styling. Price: on application.



Trio L-07D

BY POPULAR REQUEST

Demand for reprints of Wireless World constructional projects for audio equipment is so high that we have gathered 25 of the best of them together in High Fidelity Designs. These are the 'most requested' articles which **you** have asked for and all have been fully updated. Hurry for your copy — it's likely to sell out fast!

High fidelity designs

Tape / disc / radio / amplifiers / speakers / headphones

A BOOK FROM WIRELESS WORLD

£2.50 from newsagents and bookshops or £2.75 by post from the publishers

Contents: ● FM tuner design ● Novel stereo FM tuner ● Low-noise, low-cost cassette deck ● Wireless World Dolby noise reducer ● Wideband compander design ● High-quality compressor/limiter ● An automatic noise-limiter ● Modular integrated circuit audio mixer ● The "walltenna" ● Electronic piano design ● Advanced preamplifier design ● High quality tone control ● Multi-channel tone control ● Bailey-Burrows preamplifier ● 30-watt high fidelity amplifier ● 30-watt amplifier modification ● Baxandall tone control revisited ● Active crossover networks ● Electrostatic headphone amplifier ● Class A power amplifier ● An I.C. peak programme meter ● Horn loudspeaker design ● Horn loudspeaker ● Transmission-line loudspeaker enclosure ● Commercial quadrophonic systems

To: General Sales Department, Room 205, Quadrant House, The Quadrant, Sutton, Surrey SU12 5AS.

Please send me.....copy/copies of High Fidelity Designs at £2.75 each inclusive.

I enclose remittance value £.....
(cheques payable to IPC Business Press Ltd.)

NAME.....
(please print)

ADDRESS

Company registered in England No. 151537
Regd office Surrey House, 1 Throwley Way, Sutton, Surrey.

RECORDING TAPE AND CASSETTES

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

AGFA-GEVAERT LTD

Great West Road, Brentford,
Middlesex.
Tel: 01-560 2131.

PE36

Low noise, long play tape supplied in plastic library case, 13cm 270m £3.77; 15cm 360m £4.33; 18cm 540m £6.24; 26cm 1280 CINE £16.24; 26cm 280NAB £18.68. All prices plus VAT.

PE46

Low-noise, triple-play tape supplied in plastic library case. 13cm 360m £4.47; 15cm 540m £6.24; 18cm 720m £7.73. All prices plus VAT.

PE66

Low-noise, triple-play tape supplied in plastic library case. 13cm 540m £6.48; 18cm 1080m £9.71. All prices plus VAT.

PEM268

Low-noise, long-play, matt-backed tape supplied in plastic library case. Metal spools: 18cm 640m £10.80; 13cm 320m £6.43½; 26.5cm 1280m £23.36. Plastic spools: 13cm 320m £5.36; 18cm 640m £9.25; 26.5cm 1280m £19.48. All prices plus VAT.

PEM368

Low-noise, double-play, matt-backed tape supplied in plastic library case. Metal spools: 13cm 270m £5.27; 18cm 540m £8.74½; 26cm 1100m £20.44. Plastic spools: 13cm 270m £4.51; 18cm 540m £7.49; 26cm 1100m £16.91. All prices plus VAT.

Compact Cassettes

Ferrocolor C60+6 (2 x 33min) £1.17; C90+6 (2 x 48min) £1.59; C120 (2 x 60min) £2.38. All prices plus VAT.

Ten Pack (Low Noise)

C60 (2 x 30min) x 10 £10.47. C90 (2 x 45min) x 10 £14.30. All prices plus VAT.

Stereochrom (SM)

C60 + 6 (2 x 33min) £2.03; C90 + 6 (2 x 48min) £2.31; C120 (2 x 60min) £3.71. All prices plus VAT.

Carat (SM)

C48 (2 x 24min) £1.50; C60 + 6 (2 x 33min) £2.21; C90 + 6 (2 x 48min) £3.01. All prices plus VAT.

Superferro*

C60 + 6 (2 x 33min) £1.72; C90 + 6 (2 x 48min) £2.29; C120 (2 x 60min). All prices plus VAT.

Superchrom (SM)*

C60 + 6 (2 x 33min) £2.39; C90 + 6 (2 x 48min) £3.24. All prices plus VAT.

AMPEX GREAT BRITAIN LTD

Acre Road, Reading, Berks RG2 0QR.
Tel: Reading (0734) 85200.

Magnetic recording tape for every domestic and professional application, in various cassette,

open-reel and cartridge configurations. Prices and details of specifications on request.

Consumer Audio Tape

Grand Master Series cassettes & open reel
Full range of ancillary products

Consumer Video Tape

U-Matic Cassettes
Betamax
VHS



Agfa Super Ferro



Agfa Superchrom

Professional Audio Tape*

456 Grand Master Studio Mastering tape
406/407 low noise/high output tape

AUDIO MAGNETICS

AMSA Magnetics Ltd, Loverock Road,
Reading, Berks RG3 1JZ.
Tel: Reading (0734) 598036.

Plus*

Low noise ferric oxide tape, 5 screw housing, built-in head cleaner. C60 75p; C90 95p.

Extra*

Low noise ferric oxide tape, 5 screw housing, built-in head cleaner, exclusive jam-proof mechanics 10% extra playing time. C66 80p; C99 99p.

Super*

High density ferric oxide tape, 5 screw housing, built-in head cleaner, exclusive jam-proof mechanics low/medium bias tape, suitable for use on all popular cassette decks including music centres. C60 89p; C90 £1.12.

XHE Regular

Extra high energy ferric oxide tape, 5 screw impact clear housing, exclusive jam-proof mechanics medium/high bias tape. C60 99p; C90 £1.25.



Ampex Grand Master Series



Audio Magnetics Range

XHEI*

Extra high energy ferric oxide tape, 5 screw high impact clear housing, exclusive jam-proof mechanics, excellent MOL. Increased dynamic range. C60 £1.29; C90 £1.49.

XHEII High Bias*

Extra high energy ferric oxide tape with chrome characteristics. 5 screw high impact clear housing, exclusive jam-proof mechanics suitable for all high bias recordings. C60 £1.29; C90 £1.49.

■ **BASF UNITED KINGDOM LTD**

Audio/Video Tapes Division,
2-4 Fitzroy Street, London W1P 5AD.
Tel: 01-637 8971.

LP35 LHF_e Long Play Tape

Long-play, low-noise, high-output. In plastic swivel box: 5in. 902ft. £4.32; 5½in. 1201ft. £4.92; 7in. 1801ft. £6.72. All prices plus VAT.

DP26 LHF_e Double Play Tape

Double-play, low-noise, high output. In plastic swivel box: 5in. 1201ft. £4.92; 5½in. 1801ft. £6.72; 7in. 2402ft. £8.80. All prices plus VAT.

TP18 LFH_e Triple Play Tape

Triple-play, low-noise, high output. In plastic swivel box: 5in. 1801ft. £6.72; 5½in. 2402ft. £8.80; 7in. 3602ft. £13.22. All prices plus VAT.

LPR35 Ferro Super LH Professional Hi-Fi Long Play Tape

Long-play, low-noise, high output tape with conductive matt back for professional or semi-professional use with fast winding machines. In cardboard box, plastic spool 5in. 902ft. £6.66. In soft plastic box, metal spool 7in. 1801ft. £9.56; 10½in. 3602ft. £18.48. All prices plus VAT.

DPR26 Ferro Super LH Professional Hi-Fi Double Play Tape*

As LPR35 LH Matt Back, but double-play tape. In soft plastic box, metal spool 7in. 2100ft. £11.24; 10½in. 4203ft. £21.80. All prices plus VAT.

LH Hi-Fi LP35 Long Play Tape

10½in. 4203ft. £16.72 plus VAT.

LH SM Compact Cassettes

BASF LH tape with special mechanics in snap-pack box: C60 £1.21; C90 £1.57; C120 £2.35. All prices plus VAT.

LH Ferro Super SM Cassettes

Incorporates BASF special mechanics for smooth winding and avoidance of jamming, in snap-pack box: C60 £1.46; C90 £1.98; C120 £2.56. All prices exclude VAT.

Chromdioxid Cassette

Incorporates BASF special mechanics, CrO₂ tape, better dynamic range, lower background noise, when used with suitable machines. C60 £1.94; C90 £2.54; C120 £3.78. All prices exclude VAT.

Ferrochrom Cassettes

Dual oxide cassette in snap-pack. C60 £2.52; C90 £3.36.

Ferro Super LH1 Cassettes

High bias cassette for widest possible range of Japanese recorders. Very low noise level and improved HF response. With BASF special mechanics in snap-pack. C60 £1.66; C90 £2.22; C120 £2.90. All prices plus VAT.

Chromdioxid Super Cassette

C60 £2.80; C90 £3.70. All prices plus VAT.

■ **CONDOR**

Condor Electronics Ltd,
100 Coombe Lane,
London SW20 0AY.
Tel: 01-946 0033.

C60 High Dynamic

Low-noise German manufactured tape complete in plastic library case. Price: 85p plus VAT.

C90 High Dynamic

Low-noise German manufactured tape complete in plastic library case. Price: £1.28 plus VAT.

■ **DENON**

Eumig(UK) Ltd, 14 Priestley Way,
London NW2 7TN.
Tel: 01-450 8070.

DX3

Double coated tape for Normal position with wide dynamic range.



BASF DPR26 LH Super



Denon DX-1



Fuji Metal Tape

DX5

Double coated Fe-Cr music tape with improved high and middle frequency characteristics. High MOL and low noise level.

DX7

Double coated cobalt doped chrome position tape with expansion of linearity at high frequencies.

DX1*

Lower cost tape but made to usual Denon standards. Price: C60 86p; C90 £1.15.

■ **EMI**

EMI Tape Ltd,
Tape House, Dawley Road,
Hayes, Middlesex.
Tel: 01-573 3888.

Standard

High output, low noise cassette in C60, C90 and C120.

Super

Super-Ferric tape provides quality comparable to chrome with need for special switches. In C60, C90, C120.

Hi-Fidelity

Uses advanced oxides to give better results at normal bias settings, provide exceptional high frequency response without significant distortion or loss of presence. In C60, C90, C120.

Open Reel Tape

Standard tapes to stand up to repetitive playback. Double-play provides longest playing time on standard 5-7in. spools, but requires care in handling and periodic rewinding if long storage periods are planned. Long play tapes offer a compromise: extended playing time combined with good archival characteristics making a practical range for the average domestic user.

VHS Video Cassettes

Available in four different lengths, E30, E60, E120 and E180 and suitable for all PAL and SECAM VHS recorders. Enriched ferrite particles give increased video and audio output with excellent frequency response and low noise.

■ **FUJI**

Pyser Ltd, Fircroft Way,
Edenbridge, Kent TN8 6HA.
Tel: Edenbridge (0732) 864111.

FL Super Low Noise

FL C46 61p; FL C60 66p; FL C90 91p; FL C120 £1.25 (inc VAT).

FX-1

High output, low noise, ferric tape for 'normal' bias and 120µs equalisation. High maximum output level of +4dB, S/N ratio of 57dB, increased sensitivity, high-end frequency characteristics, flat frequency response, reduced noise, extended headroom, and new precision cassette shell for smooth and stabilised tape running. Prices: C46 81p; C60 91p; C90 £1.20 (inc VAT).

FX-11

High output, low noise, Beridox tape for 'chrome' position bias setting with 70µs equalisation. Can be used with any cassette decks featuring switching facilities for chromium dioxide tapes. Offers better performance than chromium dioxide tape, with high saturation level, reduced noise level, S/N

ratio 61dB, high maximum output level of +4dB, increased headroom and a new precision cassette shell to ensure optimum tape-to-head pressure and stable tape motion. Prices: C46 85p; C60 £1.00; C90 £1.45 (inc VAT).

Fuji Metal*

Ultra-fine metal alloy particles improve MOL dramatically— +10dB (10,000 kHz), +15dB (15,000 kHz), S/N ratio (1,000 Hz) 61dB. Special cassette housing and mechanics incorporating anti-static slip sheets. Anti-static leader tape, extra smooth rollers, larger pressure pads for closer head-to-tape contact. Prices: C60 £2.50; C90 £3.55 (inc. VAT).

GRUNDIG INTERNATIONAL LTD

Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

GDR 18 HiFi

640m on 18cm metal spool.

GDR 22 HiFi

900m on 22cm metal spool.

GDR 27 HiFi

1260m on 27cm metal spool.

C60 and C90 Profi Cassette

Ferrochrome tape compact cassettes, 60min and 90min playing time.

C60 and C90 HiFi Cassette

Chrome tape compact cassettes with 60min and 90min playing time.

C60 and C90 Super HiFi Cassettes

Super-chrome tape compact cassettes with 60min and 90min playing time.

N18

Spare 18cm metal spool (black).

N22

Spare 22cm metal spool (black).

N27

Spare 27cm metal spool (black).

HITACHI

Hitachi (UK) Ltd,
Hitachi House, Station Road,
Hayes, Middlesex UB3 4DR.
Tel: 01-848 8787.

Low Noise

C60 92p; C90 £1.30; C120 £1.90.

Ultra Dynamic

UDC60 £1.50; UDC90 £1.85; UDC120 £2.50;
UDER/EX60 £1.94; UDER/EX90 £2.42.

Metal Tape

ME46, ME60.

MAXELL

Natural Sound Systems, 10 Byron Road,
Wealdstone, Harrow, Middx. HA3 7TL.

UDXL cassettes

C60 £2.10; C90 £2.64.

UDXLI Cassettes

C60 £1.80; C90 £2.30.

UD Cassettes

C46 £1.32; C60 £1.46; C90 £1.65; C120 £2.25.

UL Cassettes

C60 £1.05; C90 £1.32; C120 £1.76.

UDXL Open Reel

UDXL35-90B £7.00; UDXL50-120B £12.20;
UDXL35-180B £13.50. (All prices plus VAT).

MEMOREX

Memorex (UK) Ltd,
Memorex House, 96 Church Street,
Staines, Middlesex.
Tel: Staines (0784) 51488.

MRX3

New high-quality cassette tape, ferric oxide for use on all types of cassette decks. Low distortion 0.8% —42dB DIN, low noise, increased maximum output, S/N ratio +55.2dB. Overall it provides a 2.5dB improvement in dynamic range over MRX2. Cassette halves are welded together, shells are made from high-impact polystyrene, are heat-resistant and able to withstand temperatures up to 56 deg C without warping. Should one of these cassettes cause trouble the company will exchange it and, if necessary, duplicate recorded material lost because of the failure. Price: C60 £1.85; C90 £2.46; C120 £3.22.

Quantum Open Reels

90-7in. x 1800ft. £8.28; 120-7in. x 2400ft. £11.14; 180-10¹/₂in. x 3600ft. £19.86.



Memorex Video Cassettes



Musonic range



Scotch Master Series

High Bias

Available shortly in C60 £2.40 and C90 £2.99 formats.

Home Video*

Available in 60, 120 and 180 minute lengths. Housed in protective plastic cases. At the moment all cassettes are VHS format, but Memorex will be introducing Betamax very shortly.

MUSONIC

S. & B. Trading, Stylus House,
34-38 Verulam Road, St. Albans,
Herts. AL3 4DF.
Tel: St. Albans (0727) 50611.

MT1*

C60 Professional low noise cassette. Price: 90p (plus VAT).

MT2*

C90 Professional low noise cassette. Price: £1.28 (plus VAT).

MT3*

C120 Professional low noise cassette. Price: £1.65 (plus VAT).

MT4

8-track cartridge, 80 minutes. Price: £1.94 (plus VAT).

MT24

30 minutes cassette in postal pack. Price: 83p (plus VAT).

PHILIPS

Philips Electrical Ltd, Video Division,
19 Commerce Way, Purley Way,
Croydon, Surrey.
Tel: 01-688 7766.

Cassettes

Ferro: low noise tape, balanced output and response. Super Ferro: high output, low noise, suitable for machines with low bias settings. Super Ferro: high output, low noise, suitable for machines with higher bias settings. Chromium: chromium dioxide coating, improved high frequency reproduction. Ferro Chromium: combines best characteristics of ferric and chromium dioxide tape coating.

REVOX

F. W. O. Bauch Ltd, 49 Theobald Street,
Borehamwood, Herts. WD6 4RZ.
Tel: 01-953 0091.

Low-Noise 621

Professional sound recording tapes featuring low-noise oxide with high signal output. Wide dynamic range. Antistatic backing. 42074 £16.72; 42093 £19.76, 42095 £19.76.

ROSS ELECTRONICS

32 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

RX1

High output, low noise. Super calendered for consistent performance with minimum wear. C60 42p, C90 60p and C120 82p, supplied in library case with index card. C30 38p letter tape supplied in mailing box.

RX2

Extra-high energy series utilising ultra high density tape formulation. Supplied in library cases with index cards. C60 64p; C90 88p; C120 £1.16; MC-40 (Microcassette) £1.20; Two pack C46 £1.12 (plus VAT).

■ **SCOTCH**

3M Ltd, PO Box 1, Bracknell, Berks.
Tel: Bracknell(0344)58357.

Cassette:

Low Noise Dynarange
C60; C90; C120.

High Energy 'Super Ferric'*

C45; C60; C90; C120.

Chrome

C45; C60; C90; C120.

Reel to Reel:

207 Professional Backcoated
10½in. 3600 ft.; 7in. 1700 ft.

256 Professional Backcoated

10½in. 2500ft.

Superlife 212

Long Play. 4in. 450ft.; 5in. 900ft.; 5½in. 1200ft.; 7in. 1800ft.

Hi-Fi Range in Library Box:

SP222

Standard Play. 5in. 600ft.; 5½in. 900ft.; 7in. 1200ft.

LP223

Long Play. 5 in. 500ft.; 5½in. 1200ft.; 7in. 1800ft.

DP224

Double Play. 5in. 1200ft.; 5½in. 1800ft.; 7in. 2400ft.

Cartridges:

High Output—low noise

8 Track. 45 mins; 90 mins.

Video cassette

Philips, Betamax, VHS, V2000 formats.

Start Pack

5 x C90 High Energy plus free head cleaner and cassette recording guide booklet.

Scotch Master 1*

For use on normal bias switch position or on decks with pre-set bias. Premium grade low-noise ferric oxide in new formulation giving good low and middle frequency performance coupled with excellent high frequency performance and 4dB better maximum output than most other low-noise cassettes.

Scotch Master II*

Chrome bias, 70µs Eq switch position formulated from modified ferric oxide encapsulated with cobalt and giving 3dB better signal-to-noise ratio and 3dB better sensitivity at low and high frequencies than normal chromium dioxide tape. Low abrasion characteristics equal to the finest ferric oxide tapes.

Scotch Master III Cassette*

For FeCr switch position unique patented dual-layer construction which increases both low and high frequency sensitivity over chromium dioxide and ferric oxide tapes. 3dB increase in maximum output at low frequencies and 2dB at high frequencies over chrome cassettes.

Meta fine

Metal cassettes—C46, C60, C90.

■ **SONY (UK) LTD**

Sony Showroom, Consumer Information,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

Cassettes*

Normal position/mid bias: AHF-60, AHF-90, BHF-60, BHF-90, BHF-120. CHF-60, CHF-90. Chrome position/high bias: CDA-60, CDA-90, FeCr position/medium bias: FeCr-46, FeCr-60, FeCr-90.

■ **SYNCROTAPE**

Adastra Electronics Ltd, Unit N22,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288.

Specification of Synchrotape includes the following: Coercivity 270 oersteds, remanent induction 0.75 maxwell per 6.25mm width. At 7½in/s ½-track biased to give max output at 1kHz, with DIN 70µs playback equalisation, main characteristics are: recorded flux for 2% third harmonic distortion 0.2 maxwell, unweighed RMS noise referred to 0.2 maxwell -65dB, print-through after 72 hours at 20 deg C -58dB.

Standard Play*

PVC base. 5in. 600ft. £1.68; 5½in. 900ft. £2.60; 7in. 1200ft. £2.82. All prices exclude VAT.

Long Play

PVC base. 5in. 900ft. £2.50; 5½in. 1200ft. £3.00; 7in. 1800ft. £3.75. All prices exclude VAT.

Syncassettes

Compact cassettes. C60 72p; C90 £1.02; C120 £1.20. All prices exclude VAT.

■ **TDK**

TDK Tape Distributor (UK) Ltd,
11th Floor, Pembroke House,
Wellesley Road, Croydon, Surrey.
Tel: 01-680 0023.

Cassettes

Acoustic Dynamic range—C45, C60, C90, C120. Dynamic cassettes available in C45, C60, C90, C120, C180. Super Avilyn cassettes—C60, C90. Optimum Dynamic C60, C90. Metal alloy cassette C60.

Open Reel

AUDUA L1800, L3600 and matt back AUDUA LB1800, LB3600. Accessories 7in. metal spool, 10½in. metal spool.



Sony Cassette tapes



Synchrotapes

SPEAKER ACCESSORIES

Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd,
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

M135 Loudspeaker Stand

Strong, all purpose designed stand in chromed tubular metal with four legs, each fitted with non-slip rubber ferrule. The circular steel plate is already drilled with holes to facilitate fitting to underside of loudspeaker cabinets, audio systems or TV. Height: 12in. Price: £11.40 (plus VAT).

L65/L66/L67

Range of metal cased 2-way LC networks with cross-over frequency of 3kHz. L65 for 3 ohm systems, L66—8 ohms, L67—15 ohms. Price: £2.10 (plus VAT).

L68

3-way LC network with cross-over points 1kHz and 5kHz. Imp: 8 ohms. Price: £4.00 (plus VAT).

■ ALBERT HESMER

Leesanne Overseas,
54 Mortimer Street, Herne Bay, Kent.
Tel: Herne Bay (02273) 67363.

Stands for TV, Audio and Video

Stands in steel or aluminium in either matt or mirror chrome finish. All electrostatic enamel finish in the user's choice of colour is also available. Some models feature ducting for cables via the central pillar.

All stands are delivered in sections complete with screws and instructions for assembly.

■ RICHARD ALLAN

Richard Allan Radio Ltd,
Bradford Road, Gomersal, Cleckheaton,
Yorks. BD19 4AZ.
Tel: Cleckheaton 87442.

CN54 Crossover Unit

Two-way quarter section. Recommended for use with CR5 bass unit and CB4 tweeter. Crossover frequency: 5kHz. Imp: 8 or 15 ohms. Price: (twin) £4.65; (triple) £4.85. All plus VAT.

CN104 Crossover Unit

A two-way half-section parallel network. Crossover frequency: 5kHz. Imp: 8 or 15 ohms. Price: £6.50 (plus VAT).

CN1284 Crossover Unit

A three-way crossover with main crossover operating from half-wave parallel network and subsidiary crossover capacity fed. Crossover frequencies: 1.1kHz and 5kHz. Imp: 8 or 15 ohms. Price: £5.70 (plus VAT).

CN1220 Crossover Unit

Three-way half-section. Crossover frequencies: 700Hz and 7kHz. Price: £11.25 (plus VAT).

CN820 Two-way Crossover

Frequency 3.5kHz. Low pass 12dB/oct. High pass 18dB/oct. Nominal imp: 8 ohms. Price: £5.00 (plus VAT).

CN8280 Three-way Crossover

Frequencies: 250Hz, 3.5kHz. Low pass 6dB/oct, band pass 12dB/oct and 18dB/oct. High pass 24dB/oct. Nominal imp: 8 ohms. Price: £28.50 (plus VAT).

CN54M Two-way Crossover

Frequency: 6kHz. Low pass 6dB/oct. High pass: 12dB/oct. Nominal imp: 8 ohms. Price: £4.85 (plus VAT).

CN1230 Three-way Crossover

Frequencies 1.2kHz + 6kHz. Low pass 12dB/oct. Band pass 6dB/oct. High pass 12dB/oct. Nominal imp: 8 ohms. Price: £8.50 (plus VAT).

CN35L

18dB/oct low pass filter at 3.5kHz. Price: £12.10 (plus VAT).

CN35H

24dB/oct high pass filter at 3.5kHz. Price: £4.85 (plus VAT).

■ APPOLO

Amilplan Co. Ltd,
Fort Works, Pelham Street,
Wolverhampton WV3 0DE.
Tel: Wolverhampton (0902) 773531.

Appolo 4/5/6

Popular stands suitable for most speakers and adjustable.

Wall Brackets

Popular and mini sizes. Do not require screwing into speaker cabinets. Swivel action.

■ AUDIO PACKS

Tape Recorder Spares Ltd,
206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844.

Sound Selector Units

A range of five units for routing signals to phones, speakers and amplifiers. Four of the units provide for the selection of up to three pairs of stereo headphones or up to three pairs of speakers. The fifth unit, model HZ793, provides facilities for connecting any three signal sources to any three amplifiers. Particularly suitable for demonstration purposes in showrooms and for comparative tests.

Loudspeaker Leads

Comprehensive range of loudspeaker leads covering 2 pin DIN phono, jack and spade terminal connections. Free trade catalogue on request. Nominal charge to public.

■ BADGER SOUND SERVICES

Badger Sound Services, 46 Wood Street,
Lytham St. Annes,
Lancs. FY8 1QG.
Tel: St. Annes (0253) 729247.

CN1 Crossover

Equivalent to Cambridge Audio R50. Combines B139, B110, T27 and STC 4001G. A very high quality network produced to meet the needs of the builders of 'Hi-Fi Answers' transmission

line design. Components are hand tested and selected for accuracy. High power-handling capacity—well suited to modern amplifiers of up to 75 watts rms per channel.

CN 114 Crossover

B139, B110, T27, HF2000. Specification as for CN 1 but using the Celestion HF2000 super tweeter in place of the 4001G. Used in the American 'Audio Amateur' magazine design.

CN 30 Crossover

Equivalent to KEF DN 12. Combines B139, B110 and T27. Crossover frequencies 400 and 3500Hz.

CN 31 Crossover

Equivalent to KEF DN 13 (SP 1015) but higher power handling. Combines B200 and T27. Crossover frequency 3500Hz.

CN 32 Crossover

Equivalent to KEF DN 13 (SP 1017). Combines B110 and T27. Crossover frequency 3500Hz.

CN 68 Crossover

B200/Peerless KO 10 DT Network to combine this well known bass/midrange unit with the Peerless 'soft dome' tweeter. Can be supplied modified for DT 10 HFC.

CN 104 Crossover

B200/Isophon KK8. As CN 68 but enabling the B200 to be combined with the Isophon KK8.

CN 109 Crossover

B200/Audax HD 12 9D25. A variation of CN 104 enabling the use of the very analytical Audax dome tweeter.

CN73 Crossover

B139/B110/T27 High Power network. A high power version of CN 30 suitable for use with amplifiers rated at up to 75 watts rms per channel.

CN 106 Crossover

B139/Peerless K040MRF/Audax HD12-9D25 or Isophon KK8 or SEAS (D86H). Network for the 'Practical Hi-Fi and Audio' PRO 9TL design (C. J. Rogers, October 1976).

CN 107 Crossover

Two Peerless KP 100WF/K040MRF/KO10DT for disco or domestic use. Network to construct a high efficiency (2.5W for 96dB at 1 metre) high power (100W) high quality system equally suitable for disco or domestic use. Uses two bass units in parallel. Imp: 4 ohms.

CN 95 Crossover

Daline 3-way crossover network—improved version. A network for the 'Hi-Fi News' 3-way Daline (R. Fris, October, 1975). For KO10DT tweeter.

CN 80 Crossover

Daline 2-way network B110/T27—improved version. As CN 95 but intended for 2-way version.

CN 91 Crossover

Daline 2-way network B110/KO10DT version.

(Hi-Fi News, Oct. 75). Additional network published in the above issue enabling a 2-way version using the Peerless tweeter.

CN 105 Crossover

B139/B110/Two HF1300/4001K. Network for the Hi-Fi News 'State of the Art' design (April 1976) by P. Atkinson.

CN 120 Crossover

Sonaudax HD17B25H/HD12-9D25. For systems A and E in our suggested enclosures.

CN 121 Crossover

Sonaudax HD20B25(H)-4 (or J version)/HD12-9D25. For systems B and C in our suggested enclosures. System C has been published as the Hi-Fi News & Record Review 'Tabor' (Sept. 1977) and this is the specified network.

CN 119 Crossover

Peerless KP825 WF/KO10DT. For system G in our suggested enclosures. A very good performer offering high efficiency and therefore well suited to budget amplifiers of low power.

CN 118 Crossover

Peerless KO825 WF/MT24. For system H in our suggested enclosures. Combines good performance with high efficiency. As with system G this design is well suited to low power budget amplifiers but offers a lower cost than system G.

CN 122 Crossover

Sonaudax HD24S45/HD17B25H/HD 12-9D25. For system D in our suggested enclosures. A modern large 3-way system producing surprisingly good results from a 10in bass unit.

CN 123 Crossover

Peerless KP100WF/K040MRF/KO10DT. A variation on our CN 107 network produced in response to requests for a smaller 8 ohm version. Use only one KP100WF in an enclosure of 2 cu ft (60 ltr.) Suitable for amplifiers up to 75 watts per channel and quite efficient.

CN 140 Crossover Network

Sonaudax HD24S45C/Peerless K040MRF/Isophon KK8. For System J in our suggested enclosures and now published as the 'Hi Fi Answers' Compact. Bass and midrange units in this design are modified.

CN 138 Crossover Network

Peerless K050WG/KO10DT (or MT24CT). For System K in our suggested enclosures.

CN 139 Crossover Network

Peerless K050WG/one KO10DT (or MT24CT). For System L in our suggested enclosures.

CN 148 Crossover Network

Monitor quality network for the B110/T27, similar in all essential respects to the LS3/5A.

EC 141 Electronic Centre Bass Crossover

Electronic network operating at 120Hz for combining bass signals to feed a centre bass system. Requires 18-30 volts DC supply.

PP 142 Power Supply Module

Circuit board carrying rectifying and smoothing components to provide DC power for EC 141 electronic crossover. Will also power PA145 power amplifier module. Mains transformers available.

PA 145 Power Amplifier Module

Power amplifier stage complete with heatsink

for adding to the EC 141 electronic centre bass system. Removes the need for an external amplifier to feed the bass speaker. High quality component conservatively rated at 35 watts/8 ohms or 50 watts/4 ohms.

■ BANDRIDGE

Bandridge of London Ltd,
1 York Road, London SW19 8TP.
Tel: 01-543 3633.

Mobile Speaker Supports

Enables a stereo system to be moved easily to allow for floor cleaning, etc. Hardwood construction gives good load bearing while dimple rubber pad holds speaker secure. BAS3 width 12in, depth 8in, height 3/4in. Price per pair: £19.75 (inc. VAT). BAS4 width 10in, depth 10in, height 3/4in. Price per pair: £18.75 (inc. VAT). BAS6 is a flat platform width 12in, depth 10in, height 3/4in. Price per pair: £19.75 (inc. VAT). BAS7 is a raised frame giving angled support with glider feet. Width 10in, depth 6in, height 5/8in. Price per pair: £18.75 (inc. VAT).

Wall Mounted Supports

With adjustable angle. Protection from wall is 4in. and they will take 55lbs weight. Price per pair: £16.40 (inc. VAT).

■ EAGLE

Eagle International,
Precision Centre, Heather Park Drive,
Wembley HA0 1SU.
Tel: 01-902 8832.

CXN 220

Two-way crossover, 6dB/octave. Nominal impedance: 8 ohms. Nominal capacity: 30 watts rms. Crossover frequency: 3.0kHz (nominal).

CXN 240

Two-way crossover, 12dB/octave. Nominal impedance: 8 ohms. Nominal capacity: 50 watts rms. Crossover frequency: 5.0kHz (nominal).

CXN 360

Three-way crossover, 12dB/octave. Nominal impedance: 8 ohms. Nominal capacity: 60 watts rms. Crossover frequencies: 1kHz and 6kHz (nominal).

■ GOODMAN'S

Goodman Loudspeakers Ltd,
Downley Road, Havant,
Hampshire PO9 2NL.
Tel: Havant 486344.

Loudspeakers Stand Type CS4

Packed in pairs, suitable for most floor standing speakers. Fitted with four castors for easy access and cleaning. Price: to be announced.

■ KEF

KEF Electronics Ltd,
Tovil, Maidstone, Kent ME15 6QP.
Tel: Maidstone (0622) 672261.

Crossover networks

DN12 (SP1004) combines B139, B110 and T27. DN13 (SP1017) combines B110 and T27. DN13 (SP1015) combines B200 and T27. DN22 (SP1065) modification kit to update Model 104 to Model 104aB specification.

■ KEITH MONKS

Keith Monks (Audio) Ltd,
26-28 Reading Road South, Fleet,
nr. Aldershot, Hants.
Tel: Fleet (025 14) 20568, 20569.

Loudspeaker Accessories *

SS/2 loudspeaker stand with three solid legs, available in three fixed heights: 9in (SS/2A) srp £19.40 (plus VAT); 18in (SS/2B) srp £20.60 (plus VAT); 36in (SS/2C) srp £22.40 (plus VAT).

MT/1 Tripod Stand

Collapsible speaker or boom stand. Weight 22lbs (10kg). Quick release plate, variable height 56in to 103in. £46.60 plus accessories (plus VAT).

■ QAS

Quality Audio Supplies,
Wollaton Road, Beeston,
Nottingham NH9 2PB.
Tel: Nottingham (0602) 265141.

Accessories

Wide range of audio accessories including phono plugs, DIN plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, connecting leads with all types of terminations, audio switching units, headphones, mics, cassettes.

■ QED

QED Audio Products Ltd,
Unit 11, Ashford Ind. Estate, Ashford,
Middlesex.
Tel: (078 42) 46236.

Type 16/2 Amplifier Switching Unit

A unit for switching two amplifiers or receivers into one pair of speakers. Price: £14.00 (plus VAT).

Type 8 Speaker Control Console

Provides control over two pairs of headphones and up to four pairs of speakers, any combination of which can be selected without the risk of damaging an expensive amplifier. Price: £14.76 (plus VAT).

Type 2/2 Two-way Speaker Switching Unit

Designed to allow an extra pair of speakers to be connected to amplifiers not having that facility, or to expand on existing facilities. Price: £6.80 (plus VAT).

Type 4/3 Speaker Volume Control

Designed to provide 'in-room' control over volume of additional pair of speakers remote from main amplifier. Particularly suitable for persons requiring speakers in several rooms, whilst still being able to control each pair individually. It is also possible to turn off this control without affecting any others. Price: £16.80 (plus VAT).

Type 4/4 Speaker Volume Control

Similar to 4/3 except suitable for 4 ohm speakers. Price: £16.80 (plus VAT).

Type 4/5 Speaker Volume Control

Single control knob (ganged) suitable for low power high efficiency speakers of between 4-16 ohms. Price: £12.15 (plus VAT).

Type 24/1 and 24/2 Speaker Control Centre

Connecting simply to the loudspeaker output terminals of a stereo amplifier, this unit provides switching facilities for up to two pairs of speakers. Price: £14.19 (plus VAT).

Type 13/6 42 Strand Speaker Cable

Use this low loss speaker cable to ensure that a good connection is made between amplifier and loudspeakers. The cable is manufactured using 42 strands (per conductor) of high purity

copper, moulded in a white twin PVC sleeve with a 'rib' along one side for easy identification. Current rating 6 amps. DC resistance 25 milli ohms/metre. Price: 26p/metre.

Type 13/8 79 Strand Speaker Cable

Similar to type 13/6 but with a current rating of 20 amps. DC resistance 7.9 milli ohms/metre. Price: 61p/metre (plus VAT).

Remote Volume Control *

Control the volume of the Hi-Fi system from the comfort of a favourite armchair. The R.V.C. duplicates the function of the amplifier so that it may be controlled from a remote location. Price: £11.93 (plus VAT).

Remote Headphone Control

Similar to R.V.C. but for headphones. Price: £10.42 (plus VAT).

■ ROGERS

Swisstone Electronics Ltd.
4-14 Barmeston Road, London SE6 3BN.
Tel: 01-697 8511.

Export or Compact Monitor Trolleys

Black finish complete with deluxe castors. Price per pair: £19.95 (plus VAT).

Loudspeaker Stands

Adjustable tripods, black organosol finish. Price per pair: £24.95 (plus VAT).

■ SELMOR

Selmor Engineering Industries Ltd,
24 Mulberry Street, Tower Hamlets,
London E1 1EH.
Tel: 01-247 3344.

LM 15 Adjustable Loudspeaker Stand

Foamed tape inside bracket grips speaker without scratching and absorbs speaker vibration. Width adjustable 23-35.5cm. Five height positions from 23-35.5cm. Incline of brackets directs sound from speaker to any ideal listening level. Steel construction in black or silver epoxy powder. Price: £10.00 per pair (plus VAT).

Player Stand and Storage Unit *

Teak or black ash effect wooden top, adjustable cassette rack slanted for easy title reading holding 36 cassettes. Up to 100 LPs or magazines can be stored between the sliding dividers. Castors for easy movement. Size 31 3/4 x 15 1/4 x 16 1/2 in. Price: £14.00 (plus VAT). Black ash tops £21.60 (plus VAT).



Double Top

As above but with double shelf. Price: £19.60 (plus VAT).

TV or Hi-Fi Stands

Supplied with or without castors. Triangular knob on crossbar selects required width, serrated black edging on angle brackets grips and holds the equipment. Side frames finished in silver epoxy powder to simulate brushed aluminium, crossbar in black epoxy powder. Packed in knock-down form. Size: Merlin S 35cm-61cm, Merlin L 46cm-76cm. Price: Merlin S £5.80, Merlin L £6.10 (plus VAT). Castors extra.

X6

Strong TV stand with telescopic crossbar for width adjustment. Finished in silver to simulate brushed aluminium. Price: £5.50 (plus VAT). Castors extra.

RPL

Adjustable TV, Hi-Fi and record player stand. Width adjustable. Finished in silver to simulate brushed aluminium. Telescopic crossbar locks at required width. Price: from £5.00 (plus VAT).

■ SONY

Sony (UK) Ltd.
London Showroom, Consumer Information,
134 Regent Street, London.

Loudspeaker Stands

Details upon application.

RK55 *

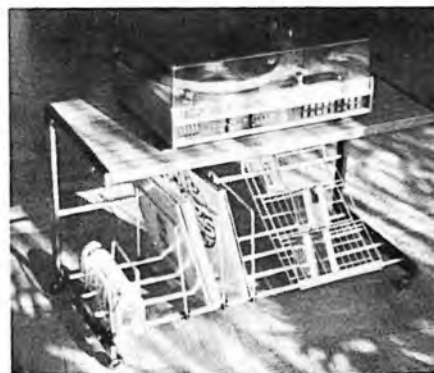
A 5m Litz wire (bare wires both ends) for connecting top quality amps and speakers. Imp 8.5 ohms, resistance 0.015 ohms/m.

RK510

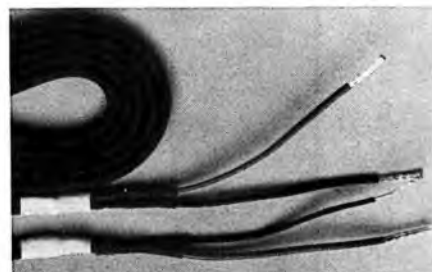
10m version of RK55.

■ TRISTAN

Danil Engineering Co,
Old Teme Bridge, Lower Wick,
Worcester WR2 4BY.
Tel: Worcester (0905) 425595.



Selmor Player Stand and Storage



Sony RK 5S10 Litz Cables

15T

Speaker stand suitable for small and medium floorstanding units up to 11in (280mm) wide by 11in (280mm) deep. All steel, finished in semi-matt black enamel. Holds speaker 10 1/2 in (267mm) above floor. Price: £12.00 per pair (plus VAT).

16

Speaker stand. Details as Tristan 15T but holds speaker 16in (406mm) above floor. Price: £16.00 per pair (plus VAT).

Tristan 22C *

Speaker stand. All steel, finished in semi-matt black enamel. Adjustable for width. With castors. Suitable for monitor type loudspeakers with a depth of 10in (254mm) or more and a width between 10 1/2-15in (267-381mm). Holds speaker 9 1/2 in (244mm) above floor. Price: £20.00 per pair (plus VAT).

44C

Speaker stand. All steel, finished in semi-matt black enamel. Adjustable width, with castors. Suitable for monitor type speakers with a depth of 10in (254mm) or more and a width between 11in (280mm) and 13 1/2 in (343mm). Holds speaker 16in (406mm) above floor. Price: £24.00 per pair (plus VAT).

■ VOGEL

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

BEK Wall Brackets

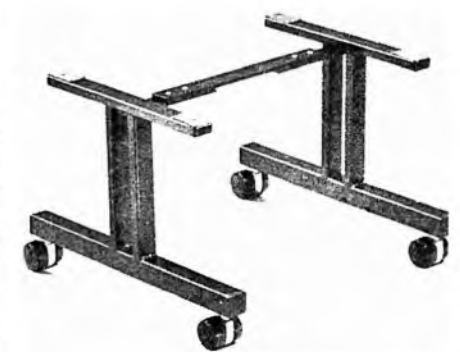
Easy adjustment in any direction both horizontally and vertically. Takes load of 25kg. Dimensions: 16 x 11 x 12cm. Finish: matt black. Price: £10.20 (plus VAT).

Minor 5

As above but taking a load of only 5kg. Dimensions: 5 x 5 x 10cm. Price: £5.00 (plus VAT).

VE 2521 Speaker Stands

Floor stand raising speakers approx 6in above floor level. Platform measures 25 x 21cm. Colour: matt black. Price: £16.40 (plus VAT).



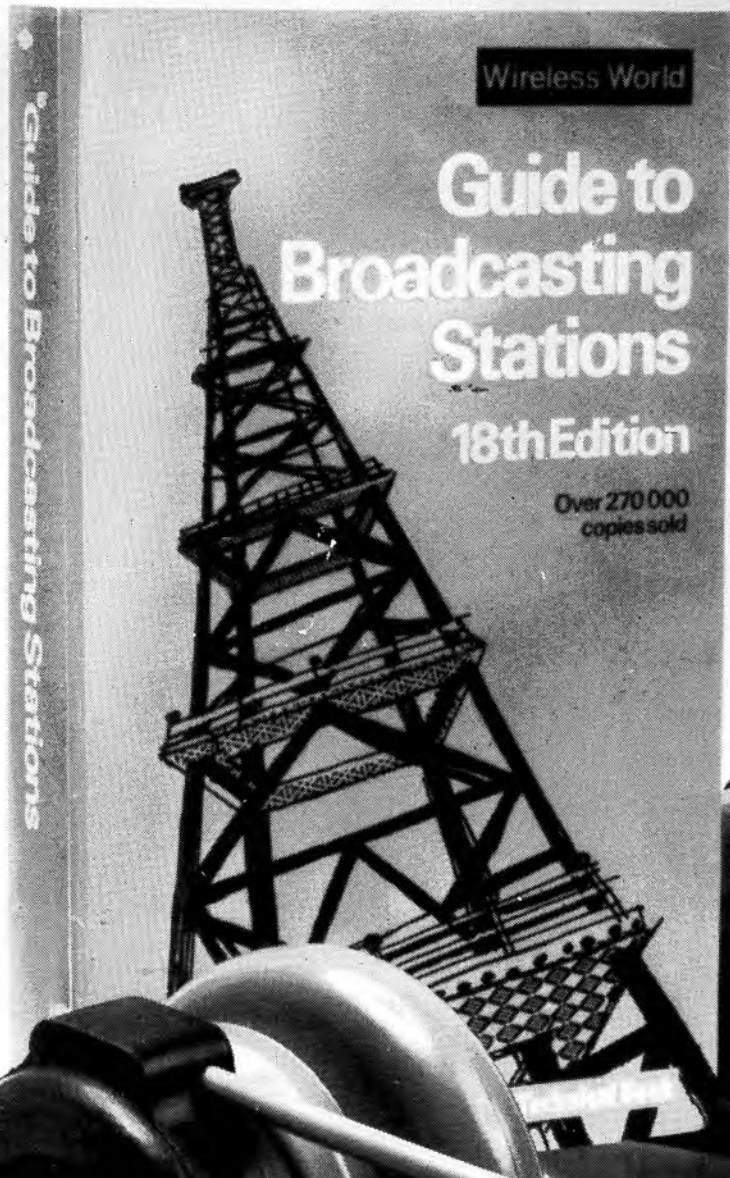
Tristan 22C

Guide to Broadcasting Stations

18th Edition

Around the world some thousands of radio stations are sending signals. If you're receiving, this standard guide will tell you who's where. It lists stations broadcasting in the long, medium, short wave and vhf bands, dealing with them by frequency, geographical location and alphabetical order. Sections are helpfully cross referenced. The Wireless World Guide to Broadcasting Stations is the eighteenth edition of a publication which has sold over 270,000 copies. In addition to the stations data, it includes much useful information on radio receivers, aerials, propagation, signal identifications and reception reports.

£3.25 inc. postage.



To: General Sales Dept., Room 205
Quadrant House, The Quadrant, Sutton, Surrey SU12 5AS
Please send me _____ copy/ies of the Wireless World Guide to Broadcasting Stations (18th edition) @ £3.25 a copy inclusive, (U.K.), \$8 overseas, remittance enclosed. Cheque/P.O. payable to IPC Business Press Ltd.

Name _____
(please print)
Address _____

Registered in England No. 151537
Registered Office: Surrey House, 1 Throwley Way, Sutton, Surrey

SPEAKER DRIVE UNITS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ADASTRA

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

Peak 100

Heavy-duty full-range speaker unit. 15in. nominal diameter. Fibre cone. Voice coil diameter: 2in. Voice coil material: aluminium. Imp: 8 or 16 ohms. Gap flux: 15,000 lines. HC: 50W (peak 100W), FR: 20Hz-15kHz. Ceramic magnet. Price: £36.00 (plus VAT).

Hi-Ten *

Full-range 10in. loudspeaker. Voice coil dia: 1in. Imp: 8 or 15/16 ohms. FR: 40Hz-13kHz. Bass resonance: 70Hz. Power handling: 10W. Flux density: 10,000 lines. Price £4.15 (plus VAT).

Top 30

Heavy-duty 12in. unit for electronic music, guitars, etc. Cast chassis, ceramic magnet. FR: 25Hz-13kHz. Bass resonance: 45Hz. Imp: 8 or 15/16 ohms. Power handling: 25W (40W peak). Flux density: 12,000 lines. Voice coil dia. 1½in. Weight: 4½lb. Price: £18.00 (plus VAT).

L.51 Horn Tweeter

3in. pressure-driven tweeter with 10W rating. FR: 1.5kHz-16kHz. Crossover frequency: 3kHz. Sensitivity: -104dB. Imp: 8 or 15/16 ohms. Price: £4.20 (plus VAT).

L.52/Foster FHT6 Horn Tweeter

Ceramic magnet horn tweeter with 20W handling capacity. FR: 5kHz-20kHz. Sensitivity: -102dB. Flux density: 10,000 lines. Imp: 8 ohms. Price: £7.20 (plus VAT).

L.55 Cone Tweeter

3W, compact HF unit with foam cone. FR: 3kHz-15kHz. Sensitivity: -95dB. Flux density: 8,000 lines. Imp: 8 ohms. Price: £2.52 (plus VAT).

L.56 Trumpet Tweeter

All metal cast horn tweeter with centre diffuser and 20W rating. FR: 2.5kHz-20kHz. Crossover frequency: 3kHz. Sensitivity: -105dB. Flux density: 12,000 lines. Imp: 8 ohms. Price: £8.40 (plus VAT).

L.57 Dome Tweeter

Slimline dome tweeter for front mounting.



Adastra Hi Ten

Heavy-duty ceramic magnet. 10W power. FR: 1.5kHz-20kHz. Crossover Frequency: 3kHz. Sensitivity: -98dB. Flux Density: 14,000 lines. Imp: 8 ohms. Price: £7.20 (plus VAT).

L.108 * System 3'

3-way system consisting of an 8in. bass woofer, 5in. mid-range unit and 2½in. HF reproducer. Teak cabinet with cushioned fascia and glass-wool lined interior. Dimensions: 21 x 10 x 9¾in. 20W handling capacity. FR: 40Hz-20kHz. Imp: 8 ohms. Weight: 11lb. Price: £54.00 (plus VAT).

■ RICHARD ALLAN

Richard Allan Radio Ltd,
Bradford Road, Gomersal,
Cleckheaton, Yorks BD19 4AZ.
Tel: Cleckheaton (0274) 872442.

CB4

4in. tweeter. Paper cone. Doped cambric surround. Ceramic magnet. Voice coil 9/16in. Gap flux 0.8 Tesla. HC: in systems up to 30W, Imp: 8 or 15 ohms. FR: 2kHz-17kHz. ref: 5kHz. Price: £4.75 (plus VAT).

DT20

20mm dome tweeter. Low mass, plastic foil dome. Ceramic magnet. Voice coil 20mm. Gap flux 1.2 Tesla. FR: 3kHz-25kHz. HC: in systems up to 100W. Imp: 8 or 15 ohms. ref: 7kHz. Price: £9.50 (plus VAT).

MID CBS

5in. mid-range unit. Coated paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux 1.2 Tesla. HC: in systems up to 30W. FR: 250Hz-15kHz. Imp: 8 or 15 ohms. Price: £8.75 (plus VAT).

CR5

5in. bass/mid-range unit. Paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux 1.4 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 30Hz-8kHz. Specially designed for use in small volume infinite baffle enclosure. Price: £12.50 (plus VAT).

CB8

8in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 1in. Gap flux 1.2 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £10.00 (plus VAT).

B8T

8in. paper cone plus tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil 1in. Gap flux 1.2 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £11.00 (plus VAT).

CG8

8in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 1in. Gap flux 1.4 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £13.00 (plus VAT).

CG8T

8in. paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil 1in. Gap flux 1.4 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £14.00 (plus VAT).

CG10

10in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 1½in. Gap flux 1.3 Tesla. HC: 45W. Imp: 8 or 15 ohms. FR: 35Hz-10kHz. Price: £22.00 (plus VAT).

CG10T

10in. paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil 1½in. Gap flux 1.3 Tesla. HC: 45W. Imp: 8 or 15 ohms. FR: 35Hz-15kHz. Price: £23.00 (plus VAT).

CG12

12in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 1½in. Gap flux 1.3 Tesla. HC: 45W. Imp: 8 or 15 ohms. FR: 25Hz-9kHz. Price: £24.00 (plus VAT).

CG12T

12in. paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil 1½in. Gap flux 1.3 Tesla. HC: 45W. Imp: 8 or 15 ohms. FR: 25Hz-15kHz. Price: £25.00 (plus VAT).

CG12 Super *

12in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 2in. Gap flux 11.39 Tesla. HC: 100W. Imp: 8 or 15 ohms. FR: 25Hz-5kHz. Price: £30.00 (plus VAT).

CG15

15in. paper cone. Doped cambric surround. Ceramic magnet. Voice coil 2in. Gap flux 11.39 Tesla. HC: 100W. Imp: 8 or 15 ohms. FR: 20Hz-5kHz. Price: £55.00 (plus VAT).

Richard Allan full-range speaker modules are included in Speaker Enclosure section. Twin Assembly, Triple-8 Assembly speaker kits are in the Constructional Kits section.

LP8B

8in. Bextrene. PVC roll surround. Ceramic magnet. Voice coil 25mm. Flux density: 1.2 Tesla. HC: 30W. Imp: 8 or 15 ohms. FR: 40Hz-5.5kHz. Price: £15.00 (plus VAT).

HP8B

8in. Bextrene cone. PVC roll surround. Ceramic



Richard Allan CG12 Super

magnet. Voice coil 38mm high temperature winding. Flux density: 1.3Telsa. HC: 45W. Imp: 8 or 15 ohms. FR: 25Hz-4.5kHz. Price: £21.50 (plus VAT).

HP12B

12in. Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil 50mm high temperature winding. Flux density: 1.3 Tesla. HC: 100W. Imp: 8 or 15 ohms. FR: 25Hz-1kHz. Price: £35.00 (plus VAT).

DT30

Soft dome tweeter, moving coil. Nominal cone dia: 2.5cm. Voice coil dia: 2.5cm. Nominal impedance: 8 or 15 ohms. Gap flux 1.2 Tesla. Nominal capacity: 100W RMS. FR: 2kHz-20kHz \pm 3dB. Recommended crossover frequency: 2.5kHz min. Price: £10.50 (plus VAT).

FB8

Moving coil bass/mid-range. Nominal cone dia: 20cm. Voice coil diameter: 2.5cm. Nominal impedance: 8 or 15 ohms. Gap flux 1.2 Tesla. Handling capacity: 30W RMS. FR: 30Hz-8kHz. Rec. crossover frequency: 6kHz. Max. Price: £11.00 (plus VAT).

CG12C

Moving coil bass. Nominal cone dia: 30cm. Voice coil dia: 4cm. Nominal impedance: 8 or 15 ohms. Gap flux 1.2 Tesla. Handling capacity: 45W RMS. FR: 25Hz-5kHz. Rec. crossover frequency: 2kHz. Price: £24.00 (plus VAT).

AB8

Auxiliary bass radiator. Nominal cone dia: 20cm. Treated polystyrene cone with polyurethane surround. Free air resonance 10Hz. Price: £6.10 (plus VAT).

HP12B Super

As HP12B but with 1.7 Tesla magnet. Price: £41.00 (plus VAT).

HP10B

Bass 10in. speaker. Voice coil diameter: 1.5 in. Imp: 8 or 15 ohms. Gap flux 1.4 Tesla. Capacity: 45W. FR: 25Hz-5kHz. Features: Bextrene cone. Price: £25.00 (plus VAT).

LPSB

Mid-range speaker 5in. dia. Voice coil diameter: 1in. Imp: 8 or 15 ohms. Gap flux 1.2 Tesla. Handling capacity: 100W. FR: 100Hz-7kHz. Recommended crossover frequency: 500Hz, 6kHz. Features: hextrene cone. Price: £9.50 (plus VAT).

CG12 Super Super

As CG12 Super except gap flux 1.7 Tesla. Price: £41.00 (plus VAT).

■ **ATC**

Acoustic Transducer Co Ltd,
Worton Hall Estate, Isleworth,
Middlesex TW7 6ER.
Tel: 01-568 6633.

SM 72-150 Soft Dome Midrange

Studio monitor midrange driver. Nominal cone diameter: 7.5cm. Voice coil diameter: 7.5cm. Imp: 8 ohms. Gap flux: 16,500 gauss. Nominal cap: 75W. Maximum input power 150W. FR: 200Hz-4.5kHz. Recommended crossover frequency: 3.5kHz. Features: soft dome, dual suspension edgewise wound ribbon wire voice coil. Price: £125.00 (plus VAT).

PA 75-234 STD

Full range paper cone, paper edge. Nominal cone diameter: 19cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 16 ohms. Gap flux: 12,500 gauss. Nominal cap: 75W. Maximum input power: 125W. FR: Resonance 100Hz nom. free air, usable up to 6kHz. Recommended crossover frequency: 300Hz, 2kHz PA system midrange. Features: edgewise wound ribbon wire voice coil. Price: £80.00 (plus VAT).

PA 75-234 STD-LS

Full range—paper cone—linen surround. Details as above. Price: £80.00 (plus VAT).

PA 75-234 Bass-LC

Bass driver, paper cone, linen edge. Nominal cone diameter: 19cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 12 ohms. Gap flux: 11,500 gauss. Nominal cap: 75W. Maximum recommended input power 150W. FR: Resonance (nom. free air) 45Hz usable up to 1.5kHz. Recommended crossover frequency: 300-750Hz. Features: edgewise wound ribbon wire voice coil. Price: £80.00 (plus VAT).

SB 75-234 Studio Bass

Bass driver, plasticised paper cone. Rubber surround. As above except FR: 25Hz-1.5kHz. Price: £80.00 (plus VAT).

PA 75-314 STD

Full range, paper cone, paper edge, edgewise wound copper ribbon wire voice coil. Nominal cone diameter: 26cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 16 ohms. Gap flux: 12,500 gauss. Nominal cap: 75W, maximum input power 125W. FR: 75Hz-6kHz. Recommended crossover frequency: 300Hz-1.6kHz PA system midrange. Price: £90.00 (plus VAT).

PA 75-314 STD-LS

Full range, paper cone, linen surround. As above except FR: 45Hz-6kHz. Price: £90.00 (plus VAT).

P 75-314 Bass-LC

Bass driver, paper cone, linen surround. Nominal cone diameter: 26cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 12 ohms. Gap flux: 11,500 gauss. Nominal capacity: 75W, maximum input power 150W. FR: 40Hz-3kHz. Recommended crossover frequency: 200Hz-500Hz. Features: Edgewise wound ribbon wire voice coil. Price: £90.00 (plus VAT).



ATC

SB 75-314 Studio Bass

Bass driver, plasticised paper cone, rubber surround. FR: 20Hz-1.5kHz. Other details as above. Price: £90.00 (plus VAT).

PA 100-375 STD

Full range bass driver, paper cone, paper edge. Nominal cone diameter: 32.5cm. Voice coil diameter: 10cm. Nominal imp: 8, 16 ohms. Gap flux: 14,500 gauss. Nominal capacity: 100W, maximum 150W recommended input power. FR: 55Hz-5kHz. Features: Edgewise wound ribbon wire voice coil. Price: £165.00 (plus VAT).

PA 100-375 STD-LS

Full range bass driver, paper cone, linen edge. Details as above except FR: 40Hz-5kHz. Price: £165.00 (plus VAT).

PA 100-375 Bass-LC

Bass driver, paper cone, linen surround. Nominal cone diameter: 32.5cm. Voice coil diameter: 10cm. Nominal imp: 8, 12 ohms. Gap flux: 13,000 gauss. Nominal capacity: 100W, maximum recommended input power 200W. FR: 35Hz-2.5kHz. Recommended crossover frequency 300-500Hz. Features: Edgewise wound ribbon wire voice coil. Price: £165.00 (plus VAT).

■ **BAKER**

Baker Loudspeakers Ltd,
337 Whitehouse Road,
Croydon, Surrey.
Tel: 01-684 1665.

Major

Full range 12in. speaker with integral tweeter cone. 14,000 gauss magnetic gap. FR: 30Hz-14.5kHz. HC: 25W. Imp: 3, 8 or 15 ohms. Cast aluminium chassis. Weight: 6lb. Price: £15.00.

Deluxe Mk II

Full range 12in cone speaker. 15W. Bass resonance: 30Hz. Gap flux 14,000 gauss. Copper voice coil: 1/2in. diameter. Imp: 8 or 15 ohms. Paper cone with foam plastic surround. Tweeter cone. FR 25Hz-16kHz. Cast aluminium chassis. Depth: 6in. Weight 6lb. Price: £17.00.

Superh Twelve

Full range 12in. speaker with tweeter cone. Foam plastic surround. Coil diameter: 1/2in. Imp: 8 or 15 ohms. Gap flux: 16,500 gauss. HC: 25W. FR: 20Hz-17kHz. Bass resonance: 25Hz. Copper speech coil. Diecast aluminium chassis. Weight: 10lb. Price: £24.00.

Auditorium 12

Full range 12in cone speaker suitable for bass unit multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1/2in. diameter, vci: 8 or 15 ohms. FR: 25Hz-16kHz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: £24.00.

Auditorium 15

High power 15in speaker suitable for bass unit in multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1/2in. dia. vci: 8 or 15 ohms FR: 25Hz-16kHz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: £35.00.

Group 45

12in. cone speaker with heavy duty suspension

for electronic music, guitars, etc. HC: 40W. vci: 3, 8 or 15 ohms. Bass resonance: 55Hz. FR: 30Hz-13kHz. Gap flux: 14,000 gauss. Voice coil: 1 1/2 in. Depth: 6 1/4 in. Weight: 6lb. Price: £15.00.

Group 100

15in. cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 75W. vci: 8 or 15 ohms. Bass resonance: 45Hz. FR: 30Hz-13kHz. Gap flux: 17,000 gauss. Voice coil: 2in. Depth: 8in. Weight: 15lb. Price: £35.00.

Group 75

12in. cone speaker with heavy duty suspension for electronic music, guitars, etc. vci: 8 or 15 ohms. Max. power: 60 watts. Bass resonance: 55Hz. Flux: 15,000 gauss. FR: 30Hz-16kHz. Voice coil: 1 1/2 in. Depth: 4 1/4 in. Weight: 10lb. Price: £24.00.

■ CASTLE ACOUSTICS LTD

Shortbank Road, Skipton, N. Yorks.
Tel: Skipton (0756) 53333.

8 RS DD

Full range. Cone diameter 20cm. Coil diameter 2.5cm. Imp: 8 ohms. Flux: 54,000 maxwells. HC: 15 watts. Peak cap: 25 watts. FR: 50-20,000Hz \pm 6dB. Resonant Frequency: 37Hz. Price: £15.50 (plus VAT).

■ COLES

Coles Electroacoustics Ltd,
Pindar Road, Hoddesdon, Herts EN11 0BZ.
Tel: Hoddesdon 66685/60060.

3100

Soft dome 25mm coil on aluminium former. FR: 50Hz-30kHz \pm 3dB. Imp: 8 ohms. Flux density: 12,000 gauss. Power handling: 50W. Finish: chrome or black.

4001

High frequency pressure unit. FR: 10kHz-35kHz \pm 3dB. Imp: 15 ohms, 8 ohms. Flux density: 14,000 gauss. Power handling: 3W.

3000

Tweeter. FR: 2kHz-15kHz within 3dB. Imp: 15 ohms, 8 ohms. Flux density: 10,000 gauss, 35,000 maxwells. Power handling: 30-50W.

■ CORAL

Videotone, 98 Crofton Park Road,
London SE4.
Tel: 01-690 1914/5.

12L60

Bass unit. Nominal cone diameter: 30.5cm. Imp: 8 ohms. Gap flux: 268,000 maxwell. Nominal capacity: 80W. FR: 27Hz-2.5kHz. Recommended crossover frequency: 2kHz.

15L100

Bass unit. Nominal cone diameter: 38cm. Imp: 8 ohms. Gap flux: 532,000 maxwell. Nominal capacity: 150W. FR: 25Hz-1500Hz. Recommended crossover frequency: 800Hz.

M-103

Compression midrange driver. Nominal cone diameter: 2.54cm. Imp: 18 ohms. Gap flux: 18,000 gauss. Nominal capacity: 100W. FR: 500Hz-18kHz. Recommended crossover frequency: 500Hz-7kHz. Special features: sound output 104dB.

10L60

Bass driver. Nominal cone diameter: 25.4cm.

Imp: 8 ohms. Gap flux: 160,000 maxwell. Nominal capacity: 60W. FR: 28Hz-5kHz. Recommended crossover frequency: 4kHz. Special features: sensitivity 94dB.

H-100

Bullet tweeter. Voice coil diameter: 1.8cm. Imp: 16 ohms. Gap flux: 19,500 gauss. Nominal capacity: 30W. FR: 7kHz-30kHz. Recommended crossover frequency: 8kHz. Special features: sound output level 110dB.

M 100

Mid-range compression driver. Nominal coil diameter: 2.54cm. Imp: 16 ohms. Gap flux: 19,000 gauss. Nominal capacity: 150W. FR: 500Hz-18kHz. Recommended crossover frequency: 500Hz-7kHz. Special features: sound output level 105dB.

■ EAGLE INTERNATIONAL

Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 8832.

DF406

Full range 10cm dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. cap: 6W. FR: 80-15,000Hz.

DF615

Full range 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. capacity: 15W. FR: 50-15,000Hz.

DF820

Full range 20cm. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 45-15,000Hz.

DB130

Woofer 20cm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. capacity: 30W. FR: 35-4,500Hz.

DB250

Woofer 30cm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. cap: 50W. FR: 30-3,000Hz.

DG500

Full range group 30cm. dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 50W.

DG750

Full range group 38cm. dia. Nom. imp: 8 ohms. Gap flux: 10,500 gauss. Nom. cap: 75W.

DTC 50

Cone tweeter 6cm dia. Nom. imp: 8 ohms. Gap flux: 7,800 gauss. Nom. cap: 30W. FR: 3,000-20,000Hz.

DTC 70

Cone tweeter 9cm dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 30W. FR: 4,000-20,000Hz.

DTH 110

Horn tweeter 9cm x 5.5cm. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 4,000-20,000Hz.

DTH 200

Horn tweeter 5.5cm. dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 5,000-20,000Hz.

DTS 250

Dome tweeter 9.5cm dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. FR: 1,500-18,000Hz.

DTS 280

Dome tweeter 11cm dia. Nom. imp: 8 ohms.

Gap flux: 11,000 gauss. Nom. cap: 40W. FR: 2,000-20,000Hz.

DMC 60

Cone midrange 13cm dia. Nom. imp: 8 ohms. Gap flux: 8,000 gauss. Nom. cap: 30W. FR: 800-9,000Hz.

DMC 100

Cone midrange 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 8,500 gauss. Nom. cap: 60W. FR: 800-5,000Hz.

DMS 170

Dome midrange 13cm dia. Nom. imp: 8 ohms. Gap flux: 9,500 gauss. Nom. cap: 30W. FR: 1,000-10,000Hz.

DMS 260

Dome midrange 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 9,100 gauss. Nom. cap: 50W. FR: 800-8,500Hz.

■ FAITAL

Armon Products Ltd,
Cottrell House, 53-63 Wembley Hill Road,
Wembley, Middlesex HA9 8NH.
Tel: 01-902 4321/3.

Serie 300

Consisting of models 12W14WCE, 12W14EUR, 12W14FEN, 12W12GTT.

Serie 250

Models 10W8GTA, 10W11GNA, 10W8GTT, 10W13WCE, 10W13EUR, 10W13FEN.

Serie 200

Eleven models of woofers.

Serie 100/130

Small speakers with characteristics of bigger woofers.

Larga Banda

This series has been used successfully in cheaper systems. Extended and balanced response with good efficiency at low frequencies. Supplied in 4-8 and 16 ohms for use in public address systems.

160/170

Woofers used in a wide range of systems. Four models.

Mid Range

For systems from 20-100W. Some models have their own compression chamber that insulates them from the influence of woofer. Nine models.

Tweeters

Twelve models to suit a wide range of systems.

Full specifications and other details on request.

■ GOODMAN'S

Goodmans Loudspeakers Ltd,
Downley Road, Havant, Hants PO9 2NL.
Tel: Havant (070 12) 6344.

Audiom 8PA *

Heavy duty. 20cm cone diameter. Paper cone. Paper surround. Nominal imp: 8 or 15 ohms. Capacity: 15 watts. FR: 50,9,000Hz.

Audiom 12AX

Bass drive unit. Nominal diameter: 12in. (312mm). Nominal imp: 8 ohms. Nominal power handling: 100W. Resonance frequency: 70Hz. Sensitivity (96dB at 1m): 0.12W. 10cm diameter voice coil.

Audiomax 15AX

Bass drive unit. Nominal diameter: 15in. (395mm). Nominal imp: 8 ohms. Nominal power handling: 100W. Resonance frequency: 60Hz. Sensitivity (96dB at 1m): 0.25W. 10cm diameter voice coil.

Audiom 18P

18in. Voice coil diameter: 3in. Imp: 8 ohms. HC: 100W. Fundamental resonance: 45Hz. Flux density: 13,500 gauss. Baffle hole diameter: 16¼in. Depth: 8¼in. Weight: 26lb. Recommended sealed enclosure (per speaker): 7,000cu in.

Pro Power 12 *

High power bass. Nominal cone diameter: 30cm. Voice coil diameter: 4.5cm. Nominal Impedance: 8 or 15 ohms. Nominal capacity: 65W. FR: 80Hz-4kHz. Recommended crossover frequency: 1.4kHz.

Pro Power D1-12 *

As above but nominal capacity: 75W and FR: 85Hz-10kHz. Feature: twin cone.

Pro Power Gr-12 *

High power bass unit. Nominal cone diameter: 30cm. Voice coil diameter: 4.5cm. Nominal impedance: 8 or 15 ohms. Nominal capacity: 75W. FR: 90Hz-4.5kHz. Recommended crossover frequency: 1.4kHz. Feature: metal dust cap.

Hi-fax 100 *

Imp: 8 or 15 ohms. Capacity: 50W. High power unit.

■ **ISOPHON-WERKE**

Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, SL9 9EW. Tel: Gerrards Cross (028 13) 88447.

A comprehensive range of loudspeaker drive units, including tweeters, mid-range and bass units.

■ **JORDAN**

E. J. Jordan Ltd, Stoneyway, Bovingdon Green, Marlow, Bucks SL7 2JH. Tel: Marlow 2526.

50 Module

Wide range single cone moving coil. Nominal cone diameter: 5cm. Voice coil diameter: 1cm. Imp: 8 ohms. Nominal capacity: 20W. FR: 100Hz-2.2kHz ±3dB. Recommended crossover frequency: 150Hz. Special features: very low distortion typically 0.3%, exceptional transient response. Price: £24.00 (plus VAT).

Crossover Unit

5-element series matrix. Crossover frequency: 150Hz. Slope: 12dB/octave. Power capacity: 100W. Imp: 8 ohms. Features: completely cased with flying lead connections. Price: £13.00 (plus VAT).

■ **JORDAN-WATTS**

Benlow Works, Silverdale Road, Hayes UB3 3BW. Tel: 01-573 6928.

Module Mk II *

Full range with nominal cone 10.2cm dia. Voice coil 3.8cm dia. Nominal imp: 4, 8 or 16 ohms. Gap flux: 11,500 gauss. Nominal capacity: 20W. FR: 40Hz-20,000Hz. Price: £22.00 (plus VAT).

■ **KEF**

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone (0672) 672261.

B139 SP1044 *

11.82 x 8.25in. 8lb. HC: 50W. Resonance: 23Hz. Imp: 8 ohms. FR: 20-1,000Hz. No rec. retail price.



Jordan-Watts Module Mk II

B200 SP1014

8¼in. dia. x 4in. 3¼lb. HC: 25W. Resonance: 25Hz. Imp: 8 ohms. FR: 25-3,500Hz. No rec. retail price.

B110 SP1003

5½in. dia. x 3½in. 3.6lb. HC: 20W. Resonance: 30Hz. Imp: 8 ohms. FR: 55-5,000Hz. No rec. retail price.

T27 SP1032

4¼in. dia. x 1½in. 1.4lb. HC: 8W. Resonance: 900Hz. Imp: 8 ohms. FR: 3,500-40,000Hz. No rec. retail price.

XLA 30

3-way crossover. Price: £1.17 (plus VAT).

■ **MOTOROLA**

Pulsar Developments Ltd, Spracklen House, Dukes Place, Marlow, Bucks. SL7 2QH. Tel: Marlow (06284) 73555.

Tweeters

KSN 6001A, 6005A, 6010A, 6016A, 6020A, 6023A, 6025A. Tweeters, nominal cone diameter: 5.5-9.5cm. Impedance variable with frequency. Nominal capacity: 60-80W. FR: 1.5Hz-40kHz. Recommended crossover frequency: 1.5-3kHz.

■ **PEERLESS**

Ross Electronics, 32 Rathbone Place, London W1P 1AD. Tel: 01-580 7112.

MT 20 HFC

Cone tweeter. 51 x 51mm. HC (System Max.): 50W. FR: 3,000-18,000Hz. Imp: 8 ohms. Price: £4.75 (plus VAT).

MT 225 HFC *

Cone tweeter. 58 x 58 mm. HC (System Max.): 50W. FR: 1,500-20,000Hz. Imp: 8 ohms. Price: £4.68 (plus VAT).



KEF B139 SP1044



Goodman range



Peerless MT225 HFC

MT 25 HFC

Cone tweeter. 68 x 68mm. HC (System Max.): 50W. FR: 2,000-18,000Hz. Imp: 8 ohms. Price: £4.64 (plus VAT).

KO 10 DT

Dome tweeter. 80 x 115mm. HC (System Max.): 50W. Cone resonance. 1,000Hz. FR: 1,500-20,000Hz. Imp: 8 ohms. Price: £10.78. (plus VAT).

KO 40 MRF

Enclosed Midrange. 122 x 122 x 110mm. deep. HC (System Max.): 50W. Cone resonance: 230Hz. Rec. FR: 500-5,000Hz. Imp: 8 ohms. Price: £14.09 (plus VAT).

KO 65 WG

Woofer, rubber roll surround. 165mm. dia. x 84mm. deep. HC: 20W. Cone resonance: 35Hz. Upper freq. limit: 4,000Hz. Imp: 8 ohms. Price: £11.68 (plus VAT).

MT 24 CT *

Cone tweeter, 55 x 55mm. HC (system max.): 50W. FR: 1,000-20,000Hz. Price: £5.04 (plus VAT).

KU 45 MR

Cone midrange, 110 x 110mm. HC (system max.): 50W. Cone resonance: 230Hz. FR: 250-10,000Hz. Price: £8.51 (plus VAT).



Peerless MT24CT



Peerless KP 100 WF

KO 50 WG

Woofer, foam roll surround, 130 x 130mm. HC: 20W. Cone resonance: 45Hz. Upper freq. limit: 4,000Hz. Price: £7.47 (plus VAT).

KO 825 WF

Woofer, foam roll surround, 210mm diameter. HC: 50W. Cone resonance: 36Hz. Upper freq. limit: 5,000Hz. Price: £12.47 (plus VAT).

KP 825 WF

Woofer, foam roll surround, 210mm diameter. HC: 70W. Cone resonance: 32Hz. Upper freq. limit: 5,000Hz. Price: £18.72 (plus VAT).

KP 100 WF *

Woofer, foam roll surround, 250mm diameter. HC: 70W. Cone resonance: 26Hz. Upper freq. limit: 5,000Hz. Price: £19.00 (plus VAT).

■ **PIEZO**

Pulsar Developments Ltd,
Spracklen House, Dukes Place,
Marlow, Bucks.
Tel: Marlow (06284) 73555.

KSN Series *

Direct Radiator and Exponential Horn. Drive units: 50mm upwards. Crossover frequency: 2kHz upwards. Frequency range: 1,500Hz-100kHz. Imp: 50-300 ohms. Recommended amplifier output: 30-50W. Dimensions: 2in. dia to 3 x 7in. Features: Piezo electric. Price per pair: from £6.00 to £25.00 (plus VAT).

■ **SONAUDAX**

Sonaudax Loudspeakers Ltd,
Woodside Avenue, Eastleigh,
Hants SO5 4YD.
Tel: (0703) 611444.

Tweeters Midrange Soft Dome

10 models available in black or anodised finish with black or chrome dome protection grilles.

Midrange Bass Isotropic Bextrene Cone

Treated with Plastiflex. Five models ranging from 13cm-24cm. Power handling from 25-50W.

Midrange Bass midrange

Seven models—paper cone with foam, PVC or pleated surround.

Tweeters

Paper cone, polycarbonate hard dome. 9 models from 5.4cm-10cm.

Magnesium die-cast chassis

Four basic models all available in varying specifications.

Commercial TV radio PA

Twelve models, paper cone.

■ **VOLT**

Volt Loudspeakers Ltd,
Westwood House, Great West Trading Estate,
Brentford, London.
Tel: 01-568 1185.

B250 *

High quality bass unit. Nominal diameter: 25cm. Voice coil diameter: 3.9cm. Nominal imp: 8 ohms. Gap flux: 10,000 gauss. Power handling capacity: 100W. Resonance frequency: 20Hz. FR: 20Hz-1kHz. Recommended crossover frequency: 500Hz and below. Features: optimised purely for bass frequencies. Price: £43.47 (plus VAT).

ABR 250

Auxilliary bass radiator. Resonance frequency: 8Hz. Price: £22.84 (plus VAT).



Volt B250



Piezo range

THE YEAR OF THE SPEAKERS

1980 may well be remembered as the year Audan Audio offered their first real challenge to the loudspeaker industry. This new range of domestic loudspeaker systems, heralds the start of a revolution for true sound reproduction. Join the rebels and insist on hearing the contents of record or tape as recorded. Gone are the days of honkey base, muffled mid-range and spiky top. Gone are the days of distorted vocals and unbelievable instruments; don't accept that high power input is necessary for high quality output; we at Audan Audio have proved otherwise.

If you have a pair of Audan 2, Audan 3, or Audan 7 loudspeakers, you will know that you now enjoy the best reproduction your equipment can supply, however, should you be one who has not yet heard them and disbelieve our claims, challenge us to prove it.

If you live anywhere in England, just phone and arrange a demonstration in your own home, we shall be happy to oblige without any obligation whatsoever on your part.



AUDAN 2

AUDAN 3

AUDAN 7

**AUDAN
AUDIO
LIMITED**

18B Mill Trading Estate,
Acton Lane,
London NW10 7NP, England.
Tel: 01-961 4300 & 01-965 8179.

Please send details of the
Audan Audio Range of Speaker Systems

To:

.....

.....

.....

HI-FI YB

SPEAKER ENCLOSURES

*Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ACOUSTAT

Transonic Imports (Acoustical) Ltd.,
Brooks Court, Stamford, Lincs.

Acoustat-X

Full range electrostatic speaker with 3 panels. Built-in power amplifiers with valve output stages. FR: 30Hz-20kHz. Dimensions: 48 x 28 x 19¼in. Price: £1,750 (plus VAT).

Acoustat Monitor

As above but 4-panel. Dimensions: 60 x 38 x 20in. Price: on application.

■ AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane, London NW2 2DP.
Tel: 01-450 2011.

SW7

Miniature 2-way speakers. Drive units: 12cm woofer, 5cm tweeter. Crossover frequency: 10kHz. FR: 55Hz-22kHz. Imp: 4 ohms. Max power input: 80W. Dimensions: 13.8 x 22 x 12.5cm. Finish: black. Price per pair: £80.00 (inc. VAT).

DW 137 II

Three-way speakers with maximum power input of 40W. Drive units: 25cm woofer, mid, 4.4cm tweeter. Crossover frequency: 1.5kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Dimensions: 38 x 57 x 29cm. Finish: Walnut. Price per pair: £142.00 (inc. VAT).

SW 157 II

Three-way speakers with maximum power input of 60W. Drive units: 30cm woofer, 12cm mid, 4.4cm tweeter. Crossover frequency: 1.5kHz. FR: 30Hz-20kHz. Dimensions: 38.5 x 57 x 29cm. Finish: walnut. Price per pair: £180.00 (inc. VAT).

SW177

Three-way speakers with maximum power input of 100W. Drive units: 38cm woofer, 13cm mid, two 4.4cm tweeters. Crossover frequency: 0.7kHz. FR: 25Hz-20kHz. Dimensions: 42.4 x 67 x 30cm. Finish: walnut. Price per pair: £256.00 (inc. VAT).

SW187

Three-way speakers with maximum power input of 120W. Drive units: 30cm woofer, 12cm mid, 4cm tweeter. Crossover frequency: 1.2kHz. FR: 35Hz-20kHz. Dimensions: 37.6 x 73 x 27.5cm. Finish: walnut. Price per pair: £380.00 (inc. VAT).

■ RICHARD ALLAN

Richard Allan Ltd,
Bradford Road, Gomersal, Cleckheaton,
West Yorkshire BD19 4AZ.
Tel: Cleckheaton(0274) 872442.

RA8

Compact enclosure designed to fit on bookshelves and room dividers. Imp: 8 ohms. FR: 50Hz-20kHz. Crossover: 3.5kHz. Handling capacity: 30W. Finish: teak or walnut. Size: 395 x 266 x 247mm. Price: £110.00 per pair (plus VAT).

RA82L

Floor standing constricted labyrinth enclosure. Electrically the same as RA82. FR: 40Hz-20kHz ±3dB. Size: 724 x 345 x 292mm. Finish: teak or walnut. Price: £190.00 (plus VAT).

RA828LP

Floor standing labyrinth enclosure. Crossover frequencies: 250Hz, 3.5kHz. Handling capacity: 45W. Size: 749 x 381 x 292mm. Finish: teak or walnut. Price: £320.00 per pair (plus VAT).

Tango

Infinite baffle speaker with dome treble and 200mm bass/mid. Crossover frequency: 6kHz. FR: 90Hz-20kHz ±3dB. Imp: 8 ohms. Rec. amplifier output: max 50W RMS. Dimensions: 40 x 35 x 29cm. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £100.00 (plus VAT).

Maramba

Auxiliary bass radiator. Drive units: 25mm dome treble, 200mm bass/mid, 200mm ABR. Crossover frequency: 6kHz electric, 120Hz acoustic. FR: 80Hz-20kHz ±3dB. Imp: 8 ohms. Rec. amplifier output: max 50W RMS. Dimensions: 60 x 25 x 22cm. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £125.00 (plus VAT).

Charisma

Reflex speaker. Drive units: 300mm bass, 200mm mid, 25mm dome treble. Crossover frequency: 1.2kHz +6kHz. FR: 40Hz-20kHz ±3dB. Imp: 8 or 15 ohms. Rec. amplifier output: max 70W RMS. Dimensions: 67 x 39 x

30cm. Finish: teak or walnut. Other features: acoustic foam front. Price: per pair £200.00 (plus VAT).

Monitor 80*

Infinite baffle speaker. Drive units: 250mm, 125mm, 25mm. Crossover frequency: 1,100Hz, 6,000Hz. FR: 35Hz-20kHz ±3dB. Imp: 8 ohms. Recommended amplifier output: 25-100W. Dimensions: 66 x 30 x 28cm. Finish: teak, walnut. Features: stand mounting. Price per pair: £280.00 (plus VAT).

■ ALLISON

Audio Pro (Hi-Fi) Ltd,
CASL House, Sandy Lane, Moston Road,
Sandbach, Cheshire CW11 9HT.
Tel: Sandbach (093 67) 7520.

Allison One

Room matched loudspeaker system. Drive units: 2 x 10in woofers, 2 x 3½in convex diaphragm mid-range, 2 x 1in convex diaphragm tweeters. Crossover frequencies: 350 and 3,750Hz. Full frequency range with 70W peak input. Impedance: 8 ohms. Dimensions: 40 x 10⅔ x 19in. Price per pair: £621.00 (plus VAT).

Allison Three

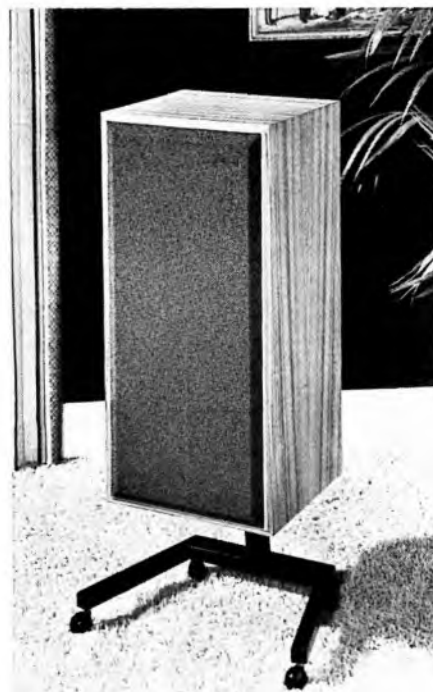
Flat bass power output for room corners. Drive units: 10in woofer, 3½in convex diaphragm mid-range, 1in tweeter. Crossover frequencies: 350 and 3,750Hz. Full frequency range with 70W peak input. Impedance: 4 ohms. Dimensions: 40 x 15¼ x 10in. Price: £480.00 (plus VAT).

Allison Four*

Moderate size bookshelf system with stabilised radiation loading. Drive units: 8in woofer, 2 x 1in convex diaphragm tweeters. Crossover frequency: 2kHz. Dimensions: 11 x 19¼ x 10in. Price: £284.00 (plus VAT).

Allison Five

Infinite Baffle with drive units: 8in woofer and 1in tweeter. Crossover frequency: 2,000Hz. FR: 41Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 15-200W. Dimensions: 11 x 18¼ x 10in. Finish: oiled walnut veneer. Features: stabilised radiation loading. Price per pair: £209.00 (plus VAT).



Richard Allan Monitor 80



Allison Four

Allison Six

Infinite baffle enclosure with drive units: 8in woofer and 1in tweeter. Crossover frequency: 2,000Hz. FR: 46.5Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 15-200W. Dimensions: 11¼ x 11¼ x 11¼in. Finish: walnut grain vinyl. Features: stabilised radiation loading. Price per pair: £159.00 (plus VAT).

■ **AMSTRAD**

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 0UF.
Tel: 01-801 4431.

EX 350

Fully sealed speaker enclosure. Drive units: 203, 114, 87mm. Crossover frequency: 900Hz and 5kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 10-35W. Dimensions: 27 x 26 x 50cm. Finish: teak effect cabinet and transparent black gauze front. Features: variable mid-range control. Price: £77.93 (per pair).

EX 450

Infinite baffle speaker. Drive units: 250mm bass, 120mm mid, 70mm tweeter. Frequency range: 35Hz-20kHz. Imp: 6-8 ohms. Recommended amplifier output: 10-45W. Dimensions: 33.5 x 29.5 x 56.5cm. Finish: teak/black. Features: chrome domes. Price: per pair £99.56 (plus VAT).

■ **AR**

Teledyne Acoustic Research,
High Street, Houghton Regis,
Dunstable, Beds. LU5 5QJ.
Tel: Dunstable 603151.

AR9

Floor-standing columnar acoustic suspension four-way system with 5 drive units including side facing woofers and AR Acoustic blanket. Drive units: two 300mm woofers, 200mm lower mid-range driver in own sub-enclosure, 38mm liquid-cooled dome upper mid-range driver with semi-horn, 19mm liquid-cooled dome high-range. Crossover frequency: 200Hz, 1,200Hz, 7,000Hz. FR: 18Hz-30kHz. Imp: 4 ohms. Maximum power handling: 275W. Finish: walnut veneer. Dimensions: 134 x 38 x 40.2cm. Price per pair: £940.00 (plus VAT).

AR90

Floor-standing columnar acoustic suspension four-way system with 5 drive units including side facing woofers and AR Acoustic blanket. Drive units: two 250mm woofers, 200mm lower mid-range driver in own sub-enclosure, 38mm liquid-cooled dome upper mid-range driver with semi-horn, 19mm liquid-cooled dome high-range driver. Crossover frequency: 200Hz, 1,200Hz, 7,000Hz. FR: 23Hz-30kHz. Imp: 4 ohms. Maximum handling power: 250W. Dimensions: 110.2 x 36.8 x 38.6cm. Finish: walnut veneer. Price per pair: £682.60 (plus VAT).

AR91

Floor-standing acoustic suspension three-way speaker system with AR Acoustic blanket. Drive units: 300mm, 38mm, 19mm. Crossover frequency: 700Hz, 7,500Hz. FR: 27Hz-30kHz. Maximum power handling: 225W. Dimensions: 80 x 35.6 x 29cm. Finish: walnut veneer. Price per pair: £483.00 (plus VAT).

AR92

Floor-standing columnar acoustic suspension three-way system with AR Acoustic blanket. Drive units: two 250mm woofer, 38mm, 19mm.

Crossover frequency: 700Hz, 7,500Hz. FR: 32Hz-30kHz. Imp: 4 ohms. Maximum power handling: 150W. Dimensions: 79.7 x 35.6 x 29cm. Finish: walnut veneer. Price per pair: £371.20 (plus VAT).

AR93*

Floor-standing acoustic suspension three-way system with 4 drive units including side facing woofers and AR Acoustic blanket. Drive units: two 200mm woofer, 20mm mid-range driver, 32mm high-range driver. Crossover frequency: 350Hz, 2,000Hz. FR: 32Hz-23kHz. Imp: 6 ohms. Maximum power handling: 150W. Dimensions: 77.8 x 35.6 x 27.3cm. Finish: black acoustically transparent cloth over high density particle board. Price per pair: £288.42 (plus VAT).

AR94

Floor-standing acoustic suspension three-way system with 3 drive units and AR Acoustic blanket. Drive units: 200mm, suspension woofer, 200mm mid-range, 32mm high-range. Crossover frequency: 350Hz, 2,000Hz. FR: 32Hz-23kHz. Imp: 6 ohms. Maximum power handling: 150W. Dimensions: 77.8 x 35.6 x 27.3cm. Finish: black acoustically transparent cloth over high density particle board. Price per pair: £210.44 (plus VAT).

AR25

Speaker enclosure with drive units: 200mm acoustic suspension woofer, 32mm pressure high-range. Crossover frequency: 2,000Hz. FR: 40Hz-25kHz. Imp: 8 ohms. Maximum power handling: 60W. Dimensions: 29.8 x 54.4 x 19.5cm. Finish: walnut, teak, vinyl. Price per pair: £135.00 (plus VAT).

AR18

Speaker enclosure with drive units: 200mm acoustic suspension woofer, 32mm pressure unit. Crossover frequency: 2,000Hz. FR: 48Hz-25kHz. Maximum power handling: 60W. Dimensions: 24.4 x 41.9 x 15.9cm. Finish: walnut, teak, vinyl. Price per pair: £90.00 (plus VAT).

■ **ARC**

Audio Reproduction Company Ltd,
Horton House, 2 Urmston Lane,
Stretford, Manchester M32.
Tel: 061-865 6494.

ARC 101

Infinite baffle enclosure, with drive units: ARC

**AR 93**

801 200mm doped paper cone low/mid and 25mm soft dome tweeter. Imp: 8 ohms. Amplifier output: 15-100W. Finish: black, teak, walnut. Dimensions: 56.6 x 31 x 28cm. Price per pair: £258.75 (inc. VAT). Stands £33.64.

ARC 202

Infinite baffle enclosure with drive units: ARC 802 200mm doped paper cone low/mid and 19mm soft dome tweeter. Imp: 8 ohms. Amplifier output: 25-100W. Finish: black, walnut, teak. Dimensions: 65.5 x 32.5 x 36cm. Price per pair: £450.80 (inc. VAT). Stands £33.64.

■ **A.T.C.**

Acoustic Transducer Co. Ltd,
Worton Hall Estate, Isleworth,
Middlesex TW7 6ER.
Tel: 01-568 6633.

S50*

Studio control monitor with 1¼in soft dome, 3in soft some and 9in bass driver. Nominal imp: 8 ohms. Nominal capacity: 300W. FR: 40Hz-20kHz. Price per pair: £1,500 (plus VAT).

S85*

Infinite baffle studio control monitor with 1¼in soft dome, 3in soft dome and 2 x 9in bass drivers. Nominal imp: 8 ohms. Nominal capacity: 300W. FR: 30Hz-20kHz. Dimensions: 86 x 46.1 x 47.6cm. Price: £1,660 per pair (plus VAT).

■ **AUDIO-PRO**

Audio-Pro (Hi-Fi) Ltd,
Brook House, Crewe Road, Wheelock,
Sandbach, Cheshire.
Tel: Sandbach (093 67) 7520.

5-40

Infinite baffle enclosure with drive units: 2 x 8cm piezo tweeter, 12.7cm mid, 2 x 20.3cm bass. Crossover frequency: 1,500Hz and 4,000Hz. FR: 28Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-90W. 40 litre cabinet. Finish: black ash. Price per pair: £209.56 (plus VAT).

4-40

Acoustic dipole with drive units: 2 x 8.9cm piezo

**ATC S50-S85**

tweeter, 2 x 20.3cm bass/mid. Crossover frequency: 3,000Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-90W. Finish: black ash or walnut. Price per pair: £206.18 (plus VAT).

3-35

Infinite baffle enclosure with drive units: 8.9cm piezo tweeter, 20.3cm, bass/mid, 20.3cm, ABR. Crossover frequency: 3,000Hz. FR: 40Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-35W. Finish: black ash or walnut. Price per pair: £135.20 (plus VAT).

2.25

Infinite baffle enclosure with drive units: 6½in bass, 1in tweeter. Crossover frequency: 2,500Hz. FR: 40Hz-20,000Hz. Imp: 6 ohms. Recommended amplifier output: 15-100W. Finish: black ash veneer, walnut veneer. Price per pair: £181.00 (plus VAT).

4.14

Bi-amplified Ace-bass enclosure. Drive units: two 5in Ace bass units, 4½in mid, 1in soft dome tweeter. Crossover frequency: 2,500Hz, 300Hz. FR: 30Hz-20kHz +0-3dB. Dimensions: 20¼ x 12½ x 10½in. Finish: black ash veneer or walnut veneer. Optical stands. Price per pair: £650.00 (plus VAT).

■ BEOVOX

Bang & Olufsen (UK) Ltd.
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

Beovox S25

Uni-phase pressure chamber with 2.5cm treble and 16.5cm bass units. Crossover frequency: 3kHz. FR: 60Hz-18kHz +4 -8dB. Imp: 4-8 ohms. Amplifier requirements: 25 Watts maximum. Dimensions: 22 x 14 x 41cm. Weight: 4kg. White or oak finish to special order. Standard in teak or rosewood. Price per pair: approx. £98.00 (inc. VAT).

Beovox S35/2

Pressure chamber enclosure with 2.5cm treble and 20cm bass drive units. Crossover frequency: 3kHz. FR: 49-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 35W max. Dimensions: 26 x 18 x 48cm. Teak or rosewood. Oak or white to special order. Price per pair: approx. £148.00 (inc. VAT).

Beovox P30

Phase linear pressure chamber with 2.5cm treble and 16.5cm bass drive units. Crossover frequency: 3kHz. FR: 49-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 30W max. Dimensions: 30 x 9 x 54cm. Weight: 5kg. White

to special order, but standard finish in teak or rosewood. Price per pair: £146.00 (inc. VAT).

Beovox P45

Phase linear pressure chamber with 2.5cm treble, phase link 9cm, 2 x 12.5cm bass. Crossover frequency: 2kHz. FR: 40-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 45W max. Dimensions: 35 x 14 x 65cm. Weight: 8kg. White, teak or rosewood finish. Price per pair: approx. £206.00 (inc. VAT).

S45/2

Phase linear with 2.5cm treble, phase link 9cm, 20cm bass drive units. Crossover frequency: 2,000Hz. FR: 38-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 45W max. Dimensions: 26 x 16 x 48cm. Weight: 7kg. Standard teak or rosewood finish with white or oak to special order. Price per pair: £208.00 (inc. VAT).

S75

Phase linear speaker with 2.5cm treble, 5cm mid, phase link 12.5cm, 25cm bass. Crossover frequency: 700Hz, 4kHz. Imp: 4-8 ohms. FR: 36Hz-20,000Hz. Amplifier requirements: 75W max. Dimensions: 32 x 20 x 59cm. Weight: 11kg. Standard teak or rosewood finish with white or oak to special order. Price per pair: approx. £287.00 (inc. VAT).

M 100/2

Phase linear with bass reflex. Drive units: 1½in tweeter, ¾in super tweeter, 2½in mid-range, 4½in phase-linear, 12in woofer. FR: 27-22,000Hz. Imp: 4-8 ohms. Recommended amplifier output: 100W, up to 500W RMS with protection circuits plus LED display if protection circuit operative. Dimensions: 35 x 29 x 70cm. Finish: teak/rosewood. Adjustable stand included in price. Price per pair: £685.00 (inc. VAT).

M 75

Pressure chamber with drive units: 2.5cm treble, 6cm mid, 12.5cm phase link, 25cm bass. Crossover frequency: 500Hz-4,500Hz. FR: 27Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 75W. Dimensions: 35 x 27 x 65cm. Oak, teak, rosewood finish. Protection circuits with LED display if operative. Price: £468.00 (inc. VAT).

C40*

Bookshelf speaker, logarithmic line transmission principle. Drive units: 10cm woofer, 2.5cm tweeter. Crossover frequency: 2,500Hz. FR: 80Hz-20kHz. Imp: 6 ohms. Recommended amplifier output: 40W. Dimensions: 11 x 20 x 20cm. Finish: black anodised or brushed aluminium. Price per pair: £155.00 (inc. VAT).

C75*

As above but FR: 50Hz-20kHz. Amplifier output: 75W. Dimensions: 11 x 20 x 35cm. Price: £217.00 (inc. VAT).

■ B.I.C.

Cambridge Audio Ltd
105-109 Oyster Lane, Byfleet,
Surrey KT14 7LA.
Tel: Byfleet (09323) 51051.

TPR-200

New series from B.I.C. comprises total power radiator which together with modified floor-coupled Venturi loaded low frequency enclosure operating as a sub-woofer represents a total departure from conventional technology. Model TPR 200 features heavy duty 8in low frequency

unit with oversized voice coil and custom matched mid and high frequency drivers. Imp: 6-8 ohms. Max input: 75W. Dimensions: 29.8 x 29.8 x 82.5cm. Finish: walnut veneer. Features: black see-through grille. Price per pair: £229.00 (plus VAT).

TPR-400

As above but here the 10in low frequency unit increases low frequency response while mid and treble TPR radiators are voiced for correct tonal balance. Imp: 6-8 ohms. Maximum input: 100W. Dimensions: 33 x 33 x 97cm. Finish: walnut veneer. Features: black see-through grille. Price per pair: £295.00 (plus VAT).

TPR-600*

As above but with 12in low frequency unit. Imp: 6-8 ohms. Maximum input: 130W. Dimensions: 38.7 x 38.7 x 104cm. Finish walnut veneer. Features: black see-through grille. Price per pair: £395.00 (plus VAT).

■ BOSE

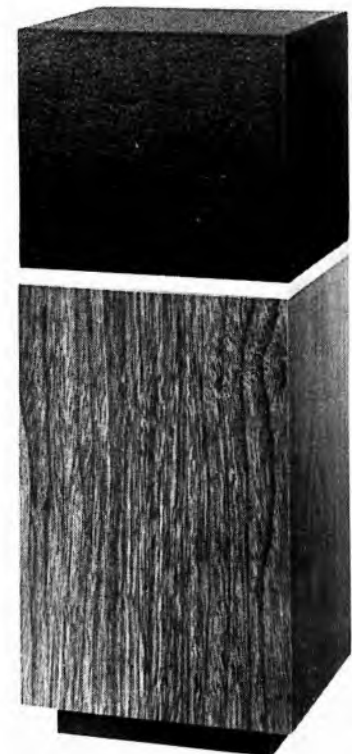
Bose (UK) Ltd,
Trinity Trading Estate, Milton Regis,
Sittingbourne, Kent.
Tel: Sittingbourne (0795) 75341.

New Model—Bose 301

Direct reflecting enclosure plus variable high frequency deflection 'sound paddle'. One 8in bass unit and one 3in tweeter. Crossover frequencies: 1kHz and 3kHz. Imp: 8 ohms. Amplifier requirements: 10W. HC: 60W RMS. Dimensions: 17 x 10½ x 9½in. Weight: 17lb each. Finish: walnut effect veneer with foam grille coverings. Asymmetrical direct/reflect. Bookshelf speaker. Sold in matched pairs. Price per pair: Walnut £178.25; Black £189.75 (inc. VAT).



Beovox Uni-Phase C75 and C40



B.I.C. TPR-600

601

Direct reflecting enclosure. Drive units: (six in total) 2 x 8in bass, 4 x 3in tweeter. Crossover frequency: 2kHz. FR: within 20Hz-20kHz. Imp: 8 ohms. Dimensions: 15 x 13 x 25½in. Finish: walnut veneer. Features: two position symmetry switch; asymmetric—side directed tweeters receive greater high frequency excitation. Symmetric: all tweeters equally excited—for speaker placement without adjacent reflecting walls. Price: £454.25 per mirror image pair (inc. VAT).

501 III

Direct reflecting speaker. Infinite baffle enclosure, assymetrical design, one 10in bass unit, 2 x 3in tweeters, one tweeter with direct energy control to adjust for room acoustics. FR: 20Hz-10kHz. Imp: 4 ohms. Dual frequency crossover network, 100W RMS, 20W min. Dimensions: 14½ x 14½ x 24in. Finish: walnut effect veneer. Price per pair: £333.50 (inc. VAT).

901 IV *

Direct reflecting speaker. Acoustic matrix multi-cell enclosure, drive units: 9 full range 4½in dia. drive units, utilising aluminium voice coils. FR: 20Hz-20kHz. Imp: 8 ohms. Min. power, 10W to any power amplifier. No max power rating. 8 drive units on rear panels. 1 only on front panel. Sold in matched pairs with equaliser to adjust room acoustics and to ensure 'flat power response'. Dimensions: 21 x 13 x 12½in. Walnut veneer finish. Price per pair: £695.75 (inc. VAT).

■ **B&W**

B&W Loudspeakers,
Meadow Road, Worthing, Sussex BN11 2RX.
Tel: Worthing (0903) 205611.

DM7

Monitor speaker with drive unit: 150mm aromatic polyamide fibre cone, acoustic drive low frequency radiator and externally mounted treble unit. Crossover frequency: 3kHz. FR: 30Hz-25kHz, 70Hz-20kHz on measuring axis —3dB at 50Hz. Imp: 8 ohms. Recommended amplifier output: 50-200W. Dimensions: 27 x 36.7 x 90.3cm. Teak, walnut, black ash, rosewood or satin white finish. Calibration certificate supplied. Price per pair: £355.36 (plus VAT). Rosewood £376.80 (plus VAT).

DM2/11*

Bass reflex enclosure. Drive units: 200mm bass, 160mm mid, 25mm treble. Crossover frequency: 410Hz, 3kHz. FR: 50Hz-18kHz ±3dB. Imp: 8 ohms. Recommended amplifier output: 25-

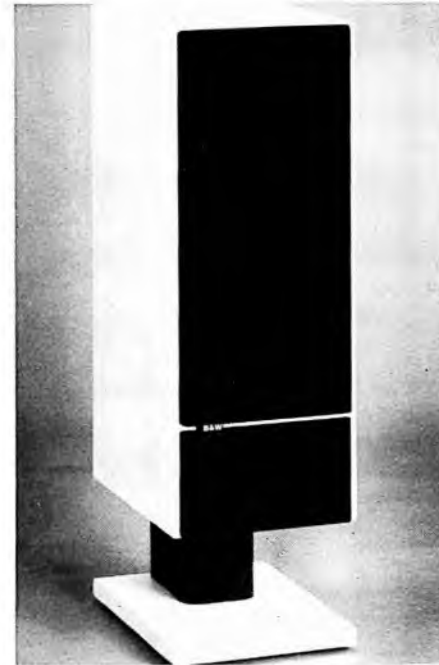
200W. Dimensions: 27 x 33 x 89cm. Finish: teak, walnut, black ash, satin white, rosewood. Features: plinth available as alternative to stand. Speakers individually tested-calibration cartridge supplied. Price per pair: £265.33 (plus VAT). Rosewood £276.33 (plus VAT).

DM12

Miniature speaker in 12 litre enclosure. Peak sound pressure: 106dB. FR: 85Hz-20kHz ±2dB. Overload protection. Dimensions: 35.5 x 22 x 27cm.

■ **CAMBRIDGE AUDIO**

Cambridge Audio Ltd
105-109 Oyster Lane,
Byfleet, Surrey.
Tel: Byfleet (91) 51051.



B & W DM2/11 with grille



Cambridge Audio TL200

L30F

Multi-port speaker with bass/mid-range 200mm and HF 25mm. Crossover frequency: 3.8kHz. Imp: 8 ohms. Amplifier output: 50W. Dimensions: 28 x 25 x 49cm. Grey fabric/charcoal grille, mustard fabric/green grille; brown fabric/dark brown grille. Price per pair: £144.00 (plus VAT).

L30W

Similar to C30F but with finish in polished walnut/dark brown grille. Price per pair: from £166.00 (plus VAT).

TL200*

Transmission line with bass 30 x 30cm, mid-range 13 x 7.5, med HF 11 x 2 UHF 3cm dia. Crossover frequency: 400Hz, 3kHz, 10kHz. FR: 20Hz-25kHz. Imp: 8 ohms. Rec. amplifier output: 50W nominal. Dimensions: 33.02 x 44.8 x 105.4 cm. Teak finish, other finishes to order. Price per pair: £420.00 (plus VAT).

TL100

Transmission line with bass 30 x 20cm, mid-range 13 x 7.5, HF 11 x 3cm. Crossover frequency: 400Hz, 3kHz. FR: 25Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 40W. Dimensions: 33.02 x 32.04 x 79.4cm. Teak finish, other finishes to order. Price per pair: £306.00 (plus VAT).

■ **CASTLE**

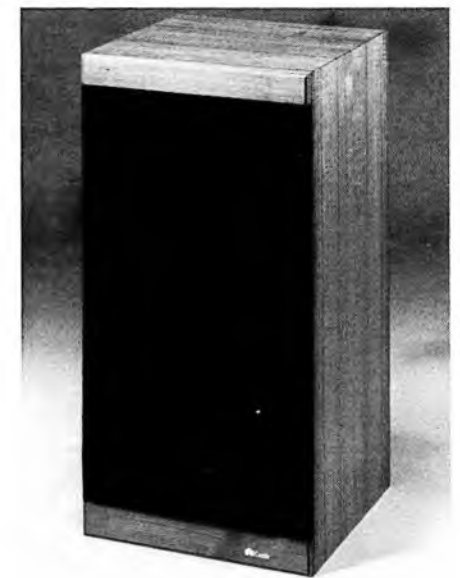
Castle Acoustics Ltd,
Shortbank Road, Skipton, Yorks.
Tel: Skipton (0756) 5333.

Richmond II

Drive units: 30mm tweeter, 15cm bass/mid-range, reflex loaded. Crossover frequency: 3.5kHz. FR: 55-20,000Hz. Imp: 4-8 ohms. Amplifier required: 8-30W. Size: 41.5 x 23 x 25cm. Finish: teak, walnut, oak, mahogany and rosewood. Price: £105.00 per pair teak. £108.00 per pair walnut, oak or mahogany. £130.00 per pair rosewood (all plus VAT).

Kendal II

Drive units: 30mm tweeter, 21cm bass/mid-range, reflex loaded. Crossover frequency: 3.5kHz. FR: 48-20,000Hz. Imp: 4-8 ohms. Amplifier required: 8-40W. Size: 52.5 x 29 x 28cm. Finish: teak, walnut, oak, mahogany and rosewood. Price: £151.00 per pair teak. £156.00



Howard II from Castle Acoustics



Bose 901 IV

per pair in walnut, oak or mahogany. £182.00 per pair in rosewood (all plus VAT).

Conway II

Drive units: 30mm tweeter, 80mm mid-range, 21cm bass, reflex loaded. Crossover frequency: 750Hz and 4,000Hz. FR: 35-22,000Hz. Imp: 4-8 ohms. Amplifier required: 25-100W. Size: 63.5 x 35 x 37cm. Finish: teak, walnut, oak, mahogany and rosewood. Price: £252.00 per pair teak. £260.00 per pair walnut, oak or mahogany. £290.00 per pair rosewood (all plus VAT).

Howard II*

Reflex enclosure. Drive units: 30mm, 80mm, with two x 21cm bass. Crossover frequency: 750Hz, 4,000Hz. FR: 30Hz-22kHz. Imp: 4-8 ohms. Recommended amplifier output: 15-150W per channel. Dimensions: 40 x 41.5 x 99.3cm including stand. Finish: teak, walnut, oak, mahogany, rosewood. Features: complete with plinth and castors. Price per pair: £435.00 teak; £445.00 walnut, oak, mahogany; £485.00 rosewood (all plus VAT).

CELESTION

Rola-Celestion Ltd,
Ditton Works, Foxhall Road,
Ipswich, Suffolk IP3 8JP.
Tel: Ipswich (0473) 73131.

Ditton 25

ABR enclosure with drive units: 26mm, 34mm (2), 308mm, 308mm ABR. Crossover frequency: 2kHz, 9kHz. FR: 20Hz-40kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-120W. Dimensions: 36 x 28 x 81cm. Teak/walnut finish. Price: £292.46 (plus VAT).

Ditton 22

Infinite baffle speaker with drive units: 26mm, 130mm, 205mm. Crossover frequency: 500Hz, 3kHz. FR: 30Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-80W. Dimensions: 33 x 37 x 51cm. Teak/walnut. New bookshelf type. Price per pair: £165.00 (plus VAT).

Ditton 33

Infinite baffle speaker with drive units: 26mm, 130mm, 256mm. Crossover frequency: 500Hz, 5kHz. FR: 25Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-80W. Dimensions: 35 x 26 x 21cm. Teak/walnut finish. Price per pair: £214.08 (plus VAT).

UL 8

ABR enclosure with drive units: 26mm, 205mm, 205mm ABR. Crossover frequency: 30Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 15-100W. Dimensions: 28 x 23 x 58cm. Teak/walnut finish. Price per pair: £160.84 (plus VAT).

UL 6

ABR enclosure with drive units: 26mm, 154mm, 154mm ABR. Crossover frequency: 2.5kHz. FR: 35Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 20-80W. Dimensions: 41 x 22 x 29cm. Teak/walnut finish. Bookshelf ABR. Price per pair: £130.45 (plus VAT).

Ditton 15XR

ABR enclosure with drive units: 26mm, 205mm, 205mm ABR. Crossover frequency: 2.4kHz. FR: 30Hz-28kHz. Imp: 8 ohms. Recommended amplifier output: 10-60W. Dimensions: 25 x 24 x 56cm. Teak/walnut finish. Bookshelf ABR unit. Price per pair: £120.37 (plus VAT).

Ditton 551

Vented box speaker with drive units: 19.7mm, 183mm, 290mm. Crossover frequency: 600Hz, 4.5kHz. FR: 38Hz-20kHz \pm 3dB. Imp: 8 ohms. Recommended amplifier output: 20-140W. Dimensions: 72 x 39.5 x 32.8cm. Finish: oiled American walnut, elm, black ash. Price per pair: £401.78 (inc. VAT).

Ditton 442

Infinite baffle speaker with drive units: 19.7mm, 130mm, 330mm. Crossover frequency: 600Hz, 4.5kHz. FR: 45Hz-20kHz \pm 3dB. Imp: 8 ohms. Recommended amplifier output: 20-120W. Dimensions: 76.2 x 39 x 29cm. Finish: oiled American walnut, elm, black ash. Price per pair: £340.20 (inc. VAT).

Ditton 662*

ABR enclosure with drive units: 19.7mm, 183mm, 330mm, 330mm. Crossover frequency: 700Hz, 4.5kHz. FR: 38Hz-20kHz \pm 3dB. Imp: 8 ohms. Recommended amplifier output: 20-160W. Dimensions: 105.7 x 40 x 30cm. Finish: oiled American walnut, elm. Price per pair: £584.92 (inc. VAT).

Ditton 121

Crossover frequency: 4kHz. FR: 60Hz-18kHz (\pm 6dB). Impedance: 8 ohms. Output: 10-40W. Dimensions: 26.5 x 22.65 x 39.5cm. Finish: teak, walnut, black. Typical market price: £69.90.



Celestion Ditton 662



Ceol PSL 5:15

Celestion Ditton 332

Three-way loudspeaker. Crossover frequency: 600Hz-4.5kHz. FR: 50Hz-20kHz (\pm 3dB). Impedance 8 ohms. Output: 100W. Dimensions: 35.6 x 28.5 x 65cm. Finish: oiled American walnut, elm, black ash. Typical market price: £239.00.

Celestion County

Compact loudspeaker. Crossover frequency: 2.5kHz. FR: 60Hz-20kHz (\pm 3dB). Impedance 8 ohms. Output: 10-50W. Dimensions: 24 x 24 x 48cm. Finish: teak, walnut, black. Typical market price: £89.90.

CEOL

Ceol Products Ltd,
Swanville Place, Rathmines,
Dublin 6, Ireland.
Tel: Dublin 808276.

PSL 5:15*

Two-way speaker system with drive units: 110mm bass and 10mm high frequency. Full details only available on request. Dimensions: 22.2 x 14.6 x 10.6cm. Price per pair: £189.00 (inc. VAT). Stands extra £25.00 per pair.

PSL 5:20

Sealed enclosure. Drive units: 200mm, 110mm, 10mm. Crossover frequency: 400Hz-2.2kHz. FR: 25Hz-18kHz 0.5dB-3dB. Imp: 4 ohms. Recommended amplifier output: 60W RMS, 250W transient. Dimensions: 25.3 x 36.9 x 68.4cm. Finish: light oak, dark oak, black. Features: incorporates PSL 5:15 in recess in baffle for mid and high frequencies. Price per pair: £499.00 (inc. VAT). Price includes PSL 5:15 mid and high frequency system.

CHARTWELL

Swisstone Electronics Ltd,
4-14 Barmeston Road,
London SE6 3BN.
Tel: 01-697 8511.

PM 110 Series 2

Reflex speaker with Chartwell CEA165 and Sonaudex 25mm drive units. Crossover frequency: 3.5kHz. FR: 50Hz-20kHz \pm 3dB. Imp: 8 ohms. Rec. amplifier output: 10-100W. Dimensions: 24 x 20 x 46cm. Sculptured foam grille. Finish: black/teak/walnut. Price: £169.50 (plus VAT).

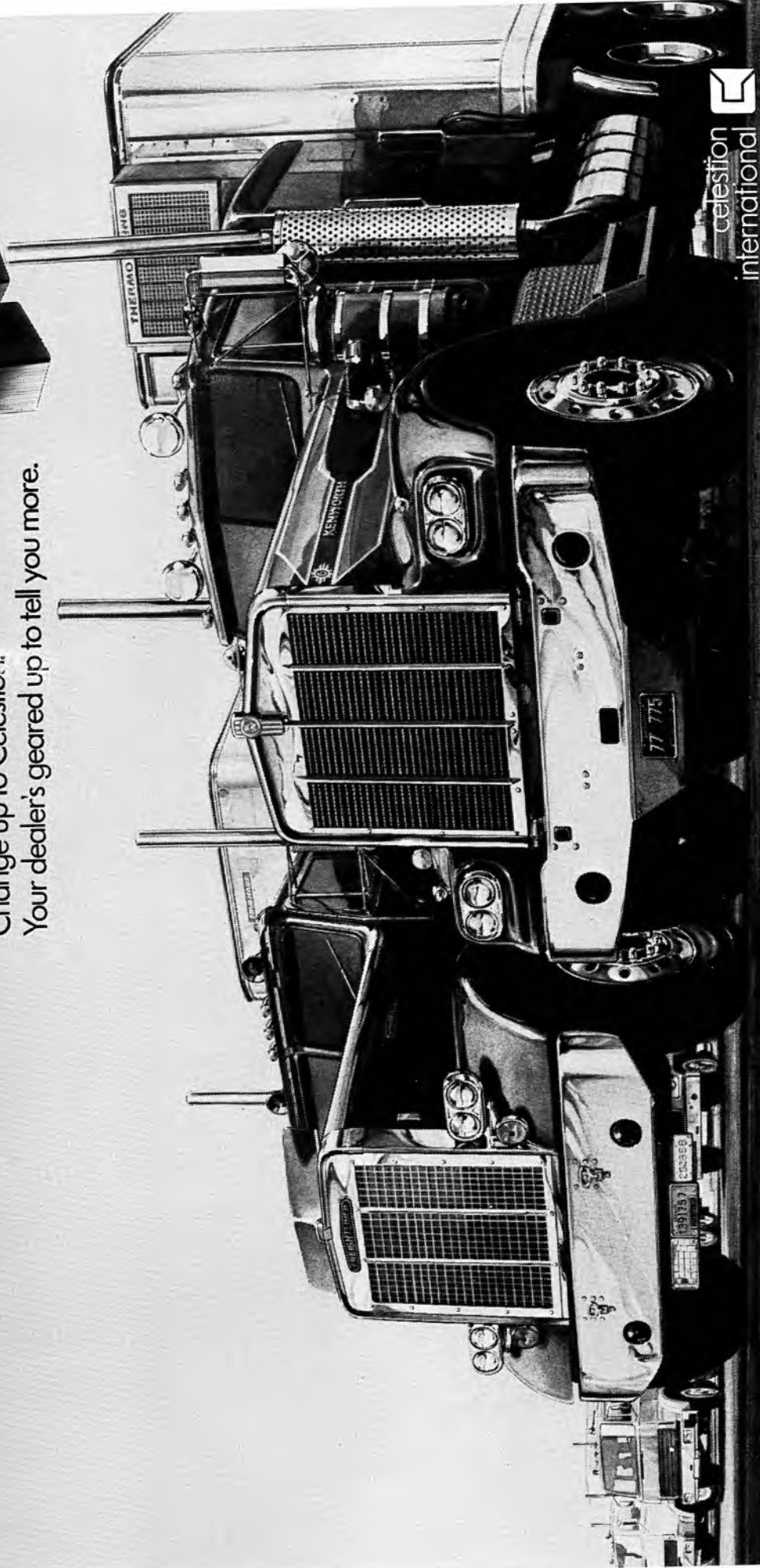
PM 210

Reflex speaker with Chartwell CEA205PP and Sonaudax 25mm drive units. Crossover frequency: 3.5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Amplifier output: 10-100W. Dimensions:



change up to celestion

Up front is the only place for you.
Take the ultimate option now.
Get ahead of the other rigs. Change up.
Change up to Celestion.
Your dealer's geared up to tell you more.



celestion
international



Rola Celestion Limited, Ditton Works, Foxhall Road, Ipswich, Suffolk. IP3 8JP. Tel: Ipswich (0473) 73131. Telex: 98365. Cables: Voicecoil Ipswich.

34.3 x 26.6 x 66cm. Sculptured foam grille. Finish: black/teak/walnut. Price: £279.50 (plus VAT).

PM 410*

Reflex speaker with Chartwell CEA305PP, Chartwell CEA145PP, Sonaudax 34mm drive units. Crossover frequency: 500Hz, 3.5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Rec. amplifier output: 100W. Dimensions: 38.1 x 33 x 86.4cm. Sculptured foam grille. Finish: black/teak/walnut. Price: £395.00 (plus VAT).

PM 450P

Reflex speaker with Chartwell CEA305PP and Sonaudax 34mm drive units. Crossover frequency: 1.8kHz. FR: 45Hz-20kHz \pm 3dB. Imp: 8 ohms. Recommended amplifier output: 50-200W. Dimensions: 76 x 46 x 41.2cm. Teak, black and walnut finish. Price: £590.00 (plus VAT).

BBC Monitor LS3/5A

Infinite baffle enclosure. FR: 70Hz-20kHz \pm 3dB. VCI: 15 ohms. Dimensions: 30 x 18.5 x 16cm. Two drive units. Recommended amplifier power minimum: 40W into 8 ohms both channels driven. Crossover: 3kHz. Finish: teak, walnut, rosewood or black. Price: £164.50 per pair or £179.50 per pair rosewood.

CLARK

Clark Speakers,
122 Hull Road, Anlaby,
North Humberside HU10 6UV.
Tel: Hull (0482) 656706.

A1-31H*

Critically damped three triangle transmission line enclosure. Drive units: bass 207mm Richard Allan HP8B 122mm Peerless K040 mid-range, 19mm KEF T27 tweeter. Crossover frequency: 450Hz and 3.3kHz. FR: 28Hz-30kHz. Imp 8 ohms. Amplifier requirements: suitable for 15-135W RMS per channel amplifiers. Dimensions: 78 x 39 x 35cm. Weight: 31kg. Finish: walnut or teak. Mounted on castors. Price: £350.00 (plus VAT).

A1-35/2*

Critically damped, three triangle, transmission line enclosure. Drive units: 300 x 210 KEF B139 bass, 210mm KEF B200 mid-range in 7.7 litre

isolated enclosure. 19mm KEF T27 tweeter. Undamped line length: 2.71m. Crossover frequencies: 450Hz, 3.3kHz. FR: 25Hz-30kHz. Imp: 8 ohms. Amplifier requirements: suitable for 25-125W RMS per channel amplifiers. Dimensions: 89 x 45 x 35cm. Weight: 3.8kg. Finish: walnut or teak. Mounted on castors.

TS22*

IB enclosure. Drive units: 19mm KEF T27 tweeter, 210mm KEF B200 bass/mid. Crossover frequency: 3.3kHz. FR: 35Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 40-100W. Dimensions: 56 x 30 x 25cm. Finish: teak or walnut. Price: £165.00 (plus VAT).

X-24

Totally sealed enclosure. Drive units: KEF T27 tweeter, Peerless K040 mid 122mm, Richard Allan HP8B bass 207mm. Crossover frequency: 450Hz, 3.3kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 25-125W. Dimensions: 61 x 30 x 25cm. Finish: teak, walnut. Features: mounted on castors, 17 element steep cutting filters. Price per pair: £260.00 (plus VAT).

COLES

Coles Electroacoustics Ltd,
Pindar Road, Hoddesdon, Herts. EN11 0BZ
Tel: Hoddesdon 66685/60060.

Nimbus*

Two-way speaker system with drive units: CE2000 bass/mid and CE3100 tweeter. Output: 100W programme, 40W continuous. FR: 60Hz-20kHz \pm 2.5dB. Imp: 8 ohms. Crossover frequency: 2.5kHz. Dimensions: 41.9 x 32 x

25.4cm. Finish: teak, walnut, rosewood, black oak veneers.

Compact Professional Monitor*

Three-way enclosure with drive units: 2000 bass/mid, 3000 tweeter, 4001 super-tweeter. FR: 50Hz-20kHz \pm 3dB. Power handling: 50W. Finish: walnut, teak, mahogany, rosewood, black, white. Dimensions: 31 x 31 x 61.2cm.

Dynaribbon Professional Reference Monitor*

Full-sized professional monitor for the studio engineer and critical home user which uses only two drive units: 33 x 19cm ribbon Horn unit, 8in bextrene bass/mid. FR: 25Hz-25kHz, 40Hz-20kHz \pm 3dB. Finish: walnut, teak, mahogany, black, white. Dimensions: 41.3 x 31 x 76.2cm.

CORAL

Videotone,
98 Crofton Park Road, London SE4.
Tel: 01-690 1914/5.

XVII

Reflex three-way speaker with drive units: 310mm, 90mm, 36mm. Crossover frequency: 470Hz, 5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 30-120W. Dimensions: 39 x 35 x 71cm. Finish: rosewood. Features: hard dome mid-range and tweeter units. Price per pair: £478.26 (plus VAT).

DYNATRON

Dynatron Radio Ltd,
Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (02205) 2781.

LS 3238*

Floor standing bass reflex. Drive unit: 8in bass, 5in mid, 1in HF. Power handling: 50W into 8 ohms. Crossover frequency: 1,500Hz, 6kHz. FR: 25Hz-20kHz. Sculptured grille. Finished in rosewood. Dimensions: 35.5 x 27 x 69cm.

LS5328PW/LS5428PM/LS5528PK

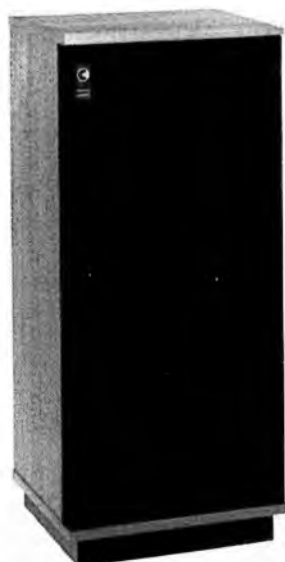
IB period speakers matching the Burlington, Kensington and Argyll music centres. Drive units: 8in bass, 2in HF. Power handling: 50W. Finish: walnut burr, cured mahogany, oak respectively.

EAGLE

Eagle International Precision Centre,
Heather Park Drive, Wembley HA0 1SU.
Tel: 01-902 8832.



Clark Speakers



Chartwell PM410



Coles speakers

L 7300

Infinite baffle enclosure. Drive units: 200mm, 75mm. Crossover frequency: 3kHz. FR: 90Hz-20kHz. Imp: 8 ohms. Output: 35W. Dimensions: 28.4 x 21 x 47.4cm. Finish: walnut.

L 7500

Infinite baffle enclosure with drive units: 250mm, 125mm, 75mm. Crossover frequency: 1kHz, 5kHz. FR: 70Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 50W. Dimensions: 32 x 24.5 x 54.6cm. Finish: walnut.

L 7700

Infinite baffle enclosure with drive units: 300mm, 135mm, and two 75mm tweeters. Crossover frequency: 800Hz, 4kHz. FR: 65Hz-20kHz. Imp: 8 ohms. Dimensions: 34.8 x 27 x 62.8cm. Finish: walnut.

■ **EMPEROR**

M.M.G. Associates,
19 St Andrews Road, Great Malvern,
Worcs. WR14 3PR.
Tel: Malvern (068 45) 63555.

Mk II Series

Infinite baffle speaker enclosure. 13 x 8in elliptical driver with coaxially mounted high frequency unit. Crossover frequency: adjustable. FR: 50Hz-16kHz ±3dB. Imp: 8 or 16 ohms. Amplifier requirements: 20W. Adjustable high frequency balance. Dimensions: 79 x 43 x 23cm. Finish: teak effect in Melamine. Price per pair: £130.00 (inc. VAT).

Studio Monitors

Specifications and prices on request.

■ **FIDELITY**

Fidelity Audio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

350S

Speaker enclosure with drive units: 8in woofer, 3½in mid, 1in domed tweeter. Multi-element crossover. FR: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 28 x 23 x 57cm. Finish: walnut effect. Features: 25litre wooden construction box. Price: on application.

■ **GALE**

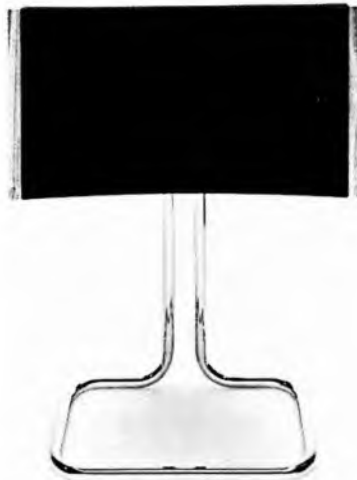
D.W. Labs Ltd
23 Bruton Place, London W1.
Tel: 01-499 9966.

GS401A*

Infinite baffle enclosure consisting of 2 bass drivers, mid-range and tweeter. Crossovers: 475 and 5,000Hz. FR: 55Hz-20,000Hz in anechoic chamber, 35Hz-20,000Hz normal room. Output: 40-200W. Imp: 4-8 ohms. Fuse protected; balance controls for midband and treble. Compact speaker designed for use as bookshelf unit or can be placed on Gale speaker stands. Dimensions: 33 x 27 x 60.5cm. Seven year guarantee. Finish: matt black and chrome. Features: Matching chrome stands £66.00 per pair (plus VAT). Price: £215.00 each (plus VAT).

■ **GOODMANS**

Goodmans Loudspeakers Ltd,
Downley Road, Havant,
Hampshire PO9 2NL.
Tel: Havant 486344.



Gale GS 401A



Dynatron LS 3238CR

XB25*

Drive units: 200mm, 25mm. Crossover frequency: 3.5kHz. FR: 50Hz-22kHz DIN. Output: 10-60W. Dimensions: 50 x 29 x 25.5cm. Finish: teak or walnut effect. Typical market price: £87.50.

XB35*

Drive units: 200mm, 85mm, 25mm. Crossover frequency: 1kHz and 4kHz. FR: 45Hz-22kHz DIN. Output: 10-60W. Dimensions: 62 x 32 x 25.5cm. Finish: teak or walnut effect. Typical market price: £110.

XB45*

Drive units: 200mm ABR, 25mm. Crossover frequency: 3.5kHz. FR: 35Hz-22kHz DIN. Output: 10-60W. Dimensions: 70 x 33 x 28.5cm. Finish: teak or walnut effect. Typical market price: £129.95.

G30

Reflex cabinet. Drive units: 204mm, 26mm. Crossover frequency: 6kHz. FR: 50Hz-20kHz. Impedance: 4 or 8 ohms. Output: 5-30W. Dimensions: 60 x 30 x 26.5cm. Finish: teak or walnut effect.

HE1

Reflex cabinet. Drive units: 255mm, 127mm, 25mm. Crossover frequency: 1kHz and 5kHz. FR: 50Hz-20kHz. Impedance: 8 ohms. Output: 3.5-85W. Dimensions: 87.5 x 34 x 35.5cm. Finish: silversand. Price: on application.

HE2

Reflex cabinet. Drive units: 255mm, 127mm, 25mm. Crossover frequency: 1.5kHz and 5kHz. FR: 60Hz-20kHz. Impedance: 8 ohms. Output: 3.5-65W. Dimensions: 72.5 x 34 x 35.5cm. Finish: silversand. Price: on application.

HE3

Reflex cabinet. Drive units: 200mm, piezo horn. Crossover frequency: 3.5kHz. FR: 80Hz-20kHz. Impedance: 8 ohms. Output: 5.5-55W. Dimensions: 58 x 27 x 25.5cm. Finish: silversand. Price: on application.

Achromat Beta

Closed box. Drive units: 165mm, 25mm. Crossover frequency: 3kHz. FR: 65Hz-23kHz. Impedance: 8 ohms. Output: 18-70W. Dimensions: 35 x 21.2 x 22.6cm. Finish: leather-look with hardwood nosing.

Achromat Kappa

Closed box. Drive units: 205mm, 25mm. Crossover frequency: 2.4kHz. FR: 45Hz-23kHz. Impedance: 8 ohms. Output: 20-95W. Dimensions: 54 x 27.2 x 26.8cm. Finish: leather-look with hardwood nosing. Price: on application.

Achromat Sigma

Reflex cabinet. Drive units: 205mm, 25mm, 260mm ABR. Crossover frequency: 2.4kHz. FR: 35Hz-23kHz. Impedance: 8 ohms. Output: 20-95W. Dimensions: 68.6 x 32.7 x 27.7cm. Finish: leather-look with hardwood nosing. Price: on application.

■ **GRIFFIN**

H.K. Griffin & Co(Electronics)
Siddons Factory Estate,
Howard Street, West Bromwich,
West Midlands B70 0SU.
Tel: 021-556 6823.

Alpha Two Model 15

Aperiodic reflex enclosure with KEF B110 bass

and Coles 3000 mid-range/tweeter. FR: 30Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 5-60W. Dimensions: 22.9 x 21.6 x 40.6cm. Finish: teak or walnut. Features: supplied in mirror paired to optimise stereo placement. Price per pair: £125.00 (plus VAT).

27 Aperiodic Three

Aperiodic reflex enclosure with KEF B200 bass, KEF T52 dome mid/treble, and Coles STC 4001K tweeter. FR: 30Hz-25kHz ± 2.5 dB. Aperiodic linear impedance crossover. Lower frequency limit depends on room size and speaker positioning. Imp: 8 ohms. Recommended amplifier output: 15-200W. Dimensions: 29.8 x 27.9 x 59cm. Finish: teak or walnut. Features: available with stand made of spring steel, tuned to the mass of the speaker to absorb and neutralise bass freq. and colouration from the cabinet. Price per pair: £305.00 (plus VAT). Stand £50.00 (plus VAT).

Omega Three Model 25

Friction reflex enclosure with KEF B200 bass, KEF T52 dome mid/treble and Coles 3000 tweeter. FR: 20Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 15-100W. Dimensions: 26.4 x 24.1 x 47.6cm. Finish: teak or walnut. Features: speakers supplied in mirror paired to optimise stereo placement. Price per pair: £205.00 (plus VAT).

Omega Two Model 25

Friction reflex enclosure with KEF B200 bass and Coles 3000 mid-range/tweeter. FR: 20Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 15-100W. Dimensions: 26.4 x 24.1 x 47.6cm. Finish: teak or walnut. Features: speakers supplied in mirror paired to optimise stereo placement. Price per pair: £150.00 (plus VAT).

Studio Electronic 85 Mk III *

Tandem-line with infra bass drive unit system. Drive units: re-coned KEF B200 bass, KEF B139, Radford MD6/1, two STC 4001G tweeters. FR: 22Hz-30kHz -4 dB $+2$ dB. Recommended amplifier output: tri-amp system equivalent to a single power amp with more than 500W power. Dimensions: 33 x 33 x 111.7cm (including stand). Finish: teak or walnut. Features: active crossover with plug-in tri-amplifiers. The two super tweeters reduce vertical dispersion and hence ceiling reflections.

Input is suitable for most conventional preamps 0.3V into 3.3K or 0.8V into 10K. Price per pair: £875.00 (plus VAT). Price includes stand.

Phoenix

Infinite baffle speaker. Drive units: 200mm bass, 50mm liquid cooled tweeter. Crossover frequency: 2kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 15-100W. Dimensions: 47.6 x 26.4 x 24.1cm. Finish: anigre veneer, teak, walnut or rosewood colour. Price per pair: £86.00 (plus VAT).

GRUNDIG

Grundig International Ltd.
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

M320

Infinite baffle enclosure with two drive units. Crossover frequency: 2000Hz. FR: 50Hz-25kHz. Impedance: 4 ohms. Recommended

amplifier output: 30W. Dimensions: 12 x 15 x 20cm. Finish: brown.

550B

As above but measuring 23 x 21 x 39cm.

M600

Infinite baffle enclosure with three drive units. Crossover frequency: 1,600 and 4,000Hz. FR: 40Hz-25kHz. Impedance: 4 ohms. Recommended amplifier output: 50W. Dimensions: 24 x 18 x 41cm. Finish: brown.

M800

Infinite baffle enclosure with three drive units. Crossover frequency: 1,000 and 3,500Hz. FR: 31.5-25kHz. Impedance: 4 ohms. Recommended amplifier output: 60W. Dimensions: 27 x 20 x 50cm. Finish: brown.

M1500

Infinite baffle enclosure with three drive units. Crossover frequency: 1,000 and 3,500Hz. FR: 31.5Hz-25kHz. Impedance: 4 ohms. Recommended amplifier output: 100W. Finish: brown.

SM 2000

Infinite baffle enclosure with four drive units. Crossover frequency: 1,100 and 4,000Hz. Impedance: 4 ohms. Recommended amplifier output: 120W. Dimensions: 25 x 21 x 90cm. Finish: brown.

HARBETH

Harbeth Acoustics,
2a Nova Road, West Croydon,
Surrey CR0 2TL.
Tel: 01-681 7876.

HL *

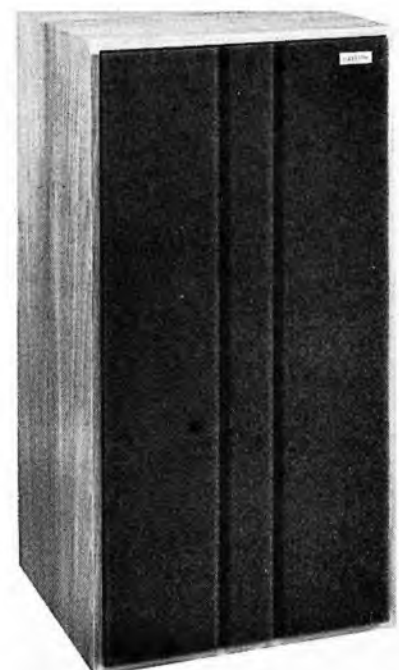
Reflex enclosure. Drive units: 200mm, 25mm. Crossover frequency: 2,000Hz. FR: 45Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 50W. Dimensions: 33 x 30.5 x 63.5cm. Finish: teak, black oak, walnut, rosewood. Price per pair: teak, black oak £298.00, walnut £299.00, rosewood £329.00 (all plus VAT).



Griffin Studio Electronic 85



Goodmans Range



Harbeth HL

■ **HEYBROOK**

Mecom Acoustics Ltd,
Knighton Hill, Wembury, Plymouth, Devon.
Tel: 0752 863188.

HB2

Compact bookshelf speaker. Drive units: 150mm, 25mm. Output: 20-60W. Dimensions: 41 x 23 x 23cm. Finish: teak or white. Price: £149.00 per pair.

HB3

Stand mounted speaker. Crossover frequency: 800Hz and 5,500Hz. FR: 35Hz-20kHz. Amplifier output: 15-100W. Dimensions: 62.5 x 33.5 x 28.5cm. Finish: real teak or walnut veneer or black to order.

■ **HITACHI**

Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes UB3 4DR.
Tel: 01-848 8787.

HS 330

IB enclosure with drive units: 6.5mm, 4cm, 25cm. FR: 40Hz-20kHz. Crossover frequency: 900Hz, 2,500Hz and 700Hz, 3,200Hz. Imp: 6 ohms. Max. power input: 100W. Dimensions: 31.5 x 57.5 x 30.5cm. Finish: simulated walnut. Price: £129.00 each (inc. VAT).

SS 8500

IB enclosure with drive units: 25mm, and twin 205mm woofers. FR: 45Hz-22kHz. Imp: 8 ohms. Maximum power input: 150W. Dimensions: 32.1 x 62.2 x 25.2cm. Finish: simulated walnut. Price: £149.00 each (inc. VAT).

HS 530 *

IB speaker with drive units: 2.2, 5.5, 25cm. FR: 40Hz-20kHz. Imp: 6 ohms. Maximum power input: 120W. Dimensions: 35.5 x 63 x 27.5cm. Price: £169.00 each (inc. VAT).

■ **HMV**

Intersound Electronics Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 6834.

4000S

Designed for use with HMV components. Drive units: 8in woofer, 3½in mid-range and 1in domed tweeter. Power handling: 40W. FR: 30Hz-20kHz. Imp: 8 ohms. Dimensions: 57 x 28 x 23cm. Finish: walnut effect. Price per pair: £60.87 (plus VAT).



Hitachi HS 530

■ **IAS**

Integrated Audio Systems,
18 High Road, Swaythling, Southampton.
Tel: Southampton 553473.

Hamble

Bookshelf system using horn loading. Drive units: 127mm, 51mm. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-60W. Dimensions: 33 x 20.3 x 22.9cm. Finish: teak. Features: totally new kind of horn loading. Price per pair: £86.52 (plus VAT).

Bartley

Bookshelf system using horn loading with extended bass response and excellent spatial resolution. Drive units: 203mm, 51mm. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-85W. Dimensions: 45.7 x 25.4 x 24.1cm. Finish: teak. Features: new kind of horn loading. Price per pair: £126.52 (plus VAT).

Ashurst

Pressure loaded horn enclosure. Drive units: 203mm, 25mm. FR: 25Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-85W. Dimensions: 63.5 x 30.5 x 30.5cm. Finish: teak, walnut. Feature: ferrofluid in soft dome tweeter. Price per pair: £175.00 (plus VAT).

Midhurst

Handbuilt enclosure, pressure loaded horn. Drive units: 203mm, 127mm, 25mm. FR: 23Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-100W. Dimensions: 63.5 x 30.5 x 30.5cm. Finish: hand veneered in any wood finish. Feature: ferrofluid in soft dome tweeter. Price per pair: £240.00 (plus VAT).

Beaulieu

Pressure loaded horn enclosure. Drive unit: 250mm, 114mm, 25mm. Imp: 8 ohms. FR: 13Hz-20kHz. Recommended amplifier output: 30-150W. Dimensions: 66.2 x 40.6 x 34.3cm. Features: hand built and finished in any wood veneer or laminate. Price per pair: approx £450.00 (plus VAT) depending on finish.

■ **IMF**

IMF Electronics Ltd,
Westbourne Street, High Wycombe,
Bucks.
Tel: High Wycombe (0494) 35576.

ALS 40 11a

Active Line loudspeaker. Drive units: 20.5cm bass, 20.5cm sub bass, 10cm mid-range and dome tweeter. Crossover frequency: 150Hz, 375Hz, 3kHz. FR: 28Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 25-60W. Dimensions: 35 x 35 x 68cm. Finish: walnut. Features: perspective control.

TLS 50 11a

Transmission line loudspeaker with stand (optional). Drive units: 20.5cm bass, 10cm mid-range, dome tweeter and super tweeter. Crossover frequency: 375Hz, 3kHz, 15kHz. FR: 23Hz upwards. Imp: 4-8 ohms. Recommended amplifier output: 30-70W. Dimensions: 39 x 35 x 100cm. Finish: walnut. Features: perspective control.

Monitor TLS80II *

Transmission line loudspeaker with stand. Drive units: 30 x 21cm bass, 15cm mid, 4.5cm tweeter and 2cm super tweeter. Crossover frequency: 350Hz, 3kHz, 30kHz. FR: 28Hz upwards. Imp: 4-8 ohms. Recommended amplifier output: 40-100W. Dimensions: 46 x

40 x 106cm inc. stand. Finish: walnut. Features: tilt control.

Reference Standard Professional Monitor Mk IV

Transmission line loudspeaker with stand. Drive units: 30 x 21cm bass, 15cm mid, 4.5cm tweeter and 2cm super tweeter. Crossover frequency: 350Hz, 3kHz, 13kHz. FR: 17Hz upwards to beyond audibility. Imp: 4-8 ohms. Recommended amplifier output: 50-150W. Dimensions: 50 x 43 x 116cm including stand. Finish: walnut. Features: filter, tilt and slope controls.

Super Compact II

Reflex enclosure. Drive units: 20.5cm bass, 10cm mid. Crossover frequency: 375Hz, 3.5kHz. FR: 30Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 20-50W. Dimensions: 30 x 28 x 46cm. Finish: walnut woodgrain.

ALS 30

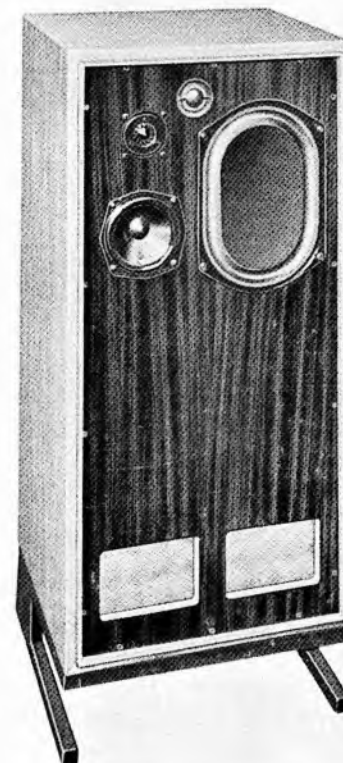
Active Line Loudspeaker. Drive units: 16.5cm bass, 16.5cm sub bass, 10cm mid and dome tweeter. Crossover frequency: 250Hz, 450Hz, 3.5kHz. FR: 29Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 25-50W. Dimensions: 30 x 28 x 57cm. Finish: walnut woodgrain.

■ **INTAGLIO**

S.K.S. Products,
"Cannington Farm", High Street,
Nailsea, Avon.
Tel: 0272 857419.

Intaglio

Compact infinite baffle two-way loudspeaker system. Drive units: 1in soft dome tweeter, 8in doped paper cone bass unit. Crossover frequency: 4,000Hz at 6dB/oct. FR: 35Hz-



IMF Monitor TLS 80II

35kHz. Output: 350W. Dimensions: 11 x 12 x 20in. Finish: teak veneered enclosure, foam front. Price: £299.00 per pair (inc. VAT).

■ ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane, Basildon,
Essex SS14 3BW.

8073

Reflex enclosure with drive units: 250mm, 37mm and 25mm. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 5-130W. Real teak or walnut veneer finish. Features: arrival time compensation, treble control, mid-range control. Price per pair: £234.00 (inc. VAT).

8071

Reflex enclosure with drive unit: 137mm and 25mm dome. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 13-90W. Real teak or walnut veneer finish. Features: arrival time compensation, treble control. Price per pair: £127.00 (inc. VAT).

8072

Reflex enclosure with drive units: 200mm, 34mm, 25mm. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 12-90W. Real teak or walnut veneer finish. Arrival time compensation, treble and mid-range control. Price per pair: £185.00 (inc. VAT).

8070

Reflex speaker with drive units: 125mm bass, 25mm dome tweeter. Crossover frequency: 4kHz. FR: 50Hz-20kHz (DIN). Imp: 4-8 ohms. Recommended amplifier output: 12-70W into 4 ohms, 6-35W into 8 ohms. Dimensions: 23 x 20 x 32cm. Finish: teak or walnut real wood veneer. Features: seven-element crossover network with high performance components. Price per pair: £89.95 (inc. VAT).

■ JBL

St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (049 481) 5331.

L300

Three-way floor-standing loudspeaker system. Home version of JBL's full size professional studio monitor. Drive units: HF slot-loaded ring radiator, mid-range compression driver/horn/slant-plate lens, 380mm low frequency speaker. Imp: 8 ohms. Recommended amplifier output: 300W. Sensitivity: 93dB. Dimensions: 80.3 x 58.4 x 57.2cm. Finish: black, blue, brown, camel. Price: £888.44 (plus VAT) each.

L19

Two-way bookshelf speaker. Drive units: 40mm, 200mm. Imp: 8 ohms. Sensitivity: 87dB. Dimensions: 53.3 x 33 x 25.4cm. Recommended amplifier output: 60W. Finish: black, brown. Price: £110.67 (plus VAT) each.

L40

Two-way bookshelf or floor standing speaker. Drive units: 25mm, 250mm. Imp: 8 ohms. Sensitivity: 88dB. Recommended amplifier output: 70W. Dimensions: 58.4 x 38.1 x 30.2cm. Finish: brown, rust, tan. Price: £146.25 (plus VAT) each.

L220

Three-way floor standing loudspeaker system incorporating 15in ABR. Details on application. Price: £710.67 (plus VAT) each.

55VX

Two-way speaker in the Radiance Series. Drive units: 200mm low frequency, 75mm high. Crossover frequency: 2,000Hz. Impedance: 6 ohms. Recommended amplifier power: 10-80W. Dimensions: 54.6 x 34.3 x 28.4cm.

77VX

Three-way speaker in the Radiance Series. Drive units: 250mm, 130mm, 75mm. Crossover frequency: 600Hz, 3,000Hz. Nominal impedance: 6 ohms. Recommended amplifier power: 10-160W. Dimensions: 64.8 x 40.4 x 28.4cm.

99VX

Three-way speaker in the Radiance Series. Drive units: 300mm, 130mm, 75mm. Crossover frequency: 600Hz, 3,000Hz. Nominal impedance: 6 ohms. Recommended amplifier power: 10-200W. Dimensions: 69.9 x 43.4 x 32.6cm.

■ JORDAN-WATTS

Jordan-Watts Ltd,
Benlow Works, Silverdale Road,
Hayes UB3 3BW.
Tel: 01-573 6928.

GT

Reflex enclosure. One Jordan-Watts module and HF dome tweeter. Treble control fitted. Size: 68 x 32 x 17cm. FR: 30Hz-22kHz. Imp: 4, 8, 16 ohms. Output: 20-40W. Finish: teak or walnut. Price per pair: £144.00 (plus VAT).

Jodrell

Reflex enclosure. Twin Jordan-Watts module. Treble control fitted. FR: 30Hz-22kHz. Imp: 4, 8, 16 ohms. Output: 10-80W. Size: 76 x 35 x 22cm. Finish: teak or walnut. Price per pair: £198.00 (plus VAT).

Double Qubique

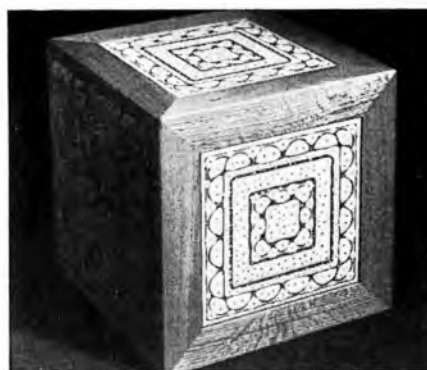
Reflex enclosure, decorative anti-resonant ceramic panels in solid wood. Twin Jordan-Watts modules, treble control fitted. FR: 30Hz-22kHz. Imp: 8 ohms. Dimensions: 30 x 30 x 60cm. Output: 10-80W. Finish: oak or walnut. Price per pair: £240.00.

Jupiter TLS/ABR

Transmission line speaker system. Output: 15-80W. Imp: 4, 8, 16 ohms. Forward-facing. Incorporates two Jordan-Watts modular units. Treble control incorporated. Enclosure lined with sheet lead. FR: 35Hz-22kHz. Size: 88 x 38 x 27cm. Finish: teak or walnut. Price per pair: £252.00 (plus VAT).

Jericho

Infinite baffle 3-unit high power system. 10in



Jordan Watts Qubique

bass with Jordan-Watts module and treble control. Crossover at 300Hz and 2,000Hz. Output: 20-100W. Imp: 8 ohms. Dimensions: 42 x 30 x 62cm. Price per pair: £240.00 (plus VAT).

Qubique *

Cuboid reflex 30cm with massive ceramic decorative panels for overall stiffness. Solid wood frame. Output: 20W RMS. FR: 35Hz-20kHz. Price per pair: £110.00 (plus VAT).

Jumbo

Infinite baffle with power handling 20W RMS. Forward facing. Shelf or wall mounting. Incorporates one Jordan-Watts modular unit. FR: 70Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 20-40W. Dimensions: 42 x 20 x 9cm. Finish: teak, walnut or white. Price per pair: £79.20 (plus VAT).

Janet

Infinite baffle. FR: 70Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 20-40W. Compact shelf-mounting full range speaker system. Finish: teak or walnut with green Vynair. Size: 30 x 20 x 15cm. Price per pair: £79.20 (plus VAT).

Juno

Reflex enclosure with full range drive unit. Imp: 4, 8, 16 ohms. Output: 20-40W. Forward facing. FR: 40Hz-20kHz. Output: 10-40W. Size: 61 x 30 x 16cm. Finish: teak or walnut. Price per pair: £104.00 (plus VAT).

Juliet

Reflex cabinet with 15cm drive unit. FR: 40Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 10-40W. Compact shelf-mounting full range speaker system. Finish: teak or walnut with green Vynair. Size: 40 x 25 x 23cm. Price per pair: £104.00 (plus VAT).

Flagon

Ceramic loudspeaker. 55Hz-20kHz. HC: 20W. Exclusive decorative pottery enclosure. Size: 36cm diameter. Weight: 10kg. Price per pair: £104.00 (plus VAT).

■ JPW

JPW Loudspeakers Ltd,
P.O. Box 31, Plymouth, Devon PL1 1YH.
Tel: Yelverton 4374.

Tavy

Small bookshelf model for use in a budget system or as a second pair within the home. Drive units: 165mm dual cone. FR: 60Hz-20kHz. Impedance: 8 ohms. Output: 5-30W. Dimensions: 13 x 8 x 8in. Price: £51.30 (plus VAT).

Meavy

Compact high fidelity loudspeaker system. Drive units: 165mm doped paper bass/mid, 19mm dome tweeter. FR: 50Hz-20kHz. Impedance: 8 ohms. Output: 5-35W. Dimensions: 16 x 9 x 8in. Price: £68.70 (plus VAT).

Lopwell

Bookshelf speaker. Drive units: 165mm doped paper bass/mid, 25mm dome tweeter. FR: 50Hz-20kHz. Impedance: 8 ohms. Output: 5-40W. Dimensions: 16 x 9 x 8in. Price: £86.09 (plus VAT).

Buckland

Bookshelf or stand mounting system. Drive units: 200mm bextrene bass/mid, 25mm dome tweeter. FR: 50Hz-20kHz. Impedance: 8 ohms. Output: 10-60W. Dimensions: 18 x 10 x 8in. Price: £103.48 (plus VAT).

Barton

Infinite baffle enclosure designed for stand mounting. Drive units: 200mm doped paper bass/mid, 25mm dome tweeter. FR: 45Hz-20kHz. Impedance: 8 ohms. Output: 5-60W. Dimensions: 25 x 12½ x 12in. Price: £138.26 (plus VAT).

Milton

Reflex loaded system designed for stand mounting. Drive units: 200mm bextrene bass/mid, 25mm dome tweeter. FR: 40Hz-20kHz. Impedance: 8 ohms. Output: 10-80W. Dimensions: 25 x 12½ x 12in. Price: £155.65 (plus VAT).

Lydford

Large slim floor standing model with integral stand and castors. Drive units: 250mm doped paper bass, 115mm doped paper mid, 25mm dome tweeter. FR: 35Hz-20kHz. Impedance: 8 ohms. Output: 20-150W. Dimensions: 32 x 12 x 13in. Price: £303.48 (plus VAT).

Denham

Large slim floor standing model with integral stand and castors. Drive units: 250mm paper bass, 250mm ABR, 100mm doped paper mid, 25mm dome tweeter. FR: 30Hz-20kHz. Impedance: 8 ohms. Output: 20-200W. Dimensions: 33 x 12½ x 14in. Price: £477.39 (plus VAT).

JR

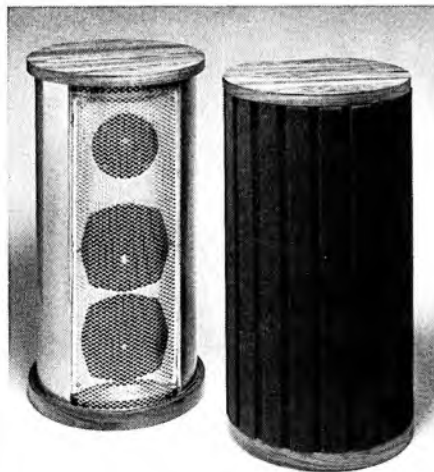
JR Loudspeakers Ltd,
114 Ashley Road, St. Albans,
Herts. AL1 5JR.
Tel: St. Albans 64337/9.

JR149

Heavy gauge aluminium in a near cylindrical shape with discs at each end held under tension by a steel rod. 13cm bass unit, 2cm treble unit. Crossover frequency: 3kHz. Frequency range: 70Hz-20kHz ±3dB, 55Hz-20kHz ±4dB. Imp: nominally 15 ohms, minimum 8 ohms. Size: 37cm high, 23cm dia. Weight: 5.5kg. Declon foam circular grille capped top and bottom with decorative discs. Enclosure virtually non-resonant. Price per pair: £139.00. Wall brackets £12.50. Floor stand in black £26.00. Floor stand in Chrome £26.00. (All plus VAT).

JR150*

Heavy gauge aluminium in near cylindrical shape with the ends of the tube terminated by

**JR 150**

concave aluminium spinnings of extreme rigidity. The vertical standing wave is therefore considerably reduced. Two 13cm long throw voice coils with doped cones. One 2.5cm soft dome tweeter. Crossover frequency: 2.2kHz, 24dB per octave. FR: 45Hz-20kHz. Imp: 8 ohms. Output: 100W programme. Dimensions: 55cm high x 28cm diameter. Sensitivity: 87dB, ref. 1W into 8 ohms. System resonance: 65Hz critically damped. Declon acoustic foam grille. Capped top and bottom in a variety of finishes. Price: £214.00 per pair. Floor stand £22.00 per pair, black. £22.00 per pair, chrome. (All plus VAT).

JVC

JVC (UK) Ltd,
Eldonwell Trading Estate, Staples Corner,
6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

SK-44

Three-speaker acoustic suspension system. Drive units: 20cm woofer, 9cm mid, 6cm tweeter. FR: 40Hz-20kHz. Power handling capacity: 70W. Dimensions: 49.3 x 27.3 x 21cm. Price: £99.00 (inc. VAT).

SK-33

Two-speaker acoustic suspension system. Drive units: 20cm woofer, 5cm tweeter. FR: 40Hz-20kHz. Power handling capacity: 50W. Dimensions: 45.6 x 25.3 x 20.5cm. Price: £64.00 (inc. VAT).

GB-1E Mark III

Eight-speaker omni-direction speaker system. Drive units: 13cm woofer, 7cm tweeters (4). FR: 35Hz-20kHz. Power handling capacity: 100W. Dimensions: 34.3cm dia. Price: £169.00 (inc. VAT).

SK-1000*

Reflex speaker. Crossover frequency: 100Hz, 10,000Hz. FR: 30Hz-20kHz. Imp: 8 ohms. Dimensions: 65 x 40 x 32.5cm. Finish: wood. Price per pair: £166.00 (inc. VAT).

SK700

Reflex speaker. Crossover frequency: 1,000Hz, 10,000Hz. FR: 35Hz-20kHz. Imp: 8 ohms. Dimensions: 56.4 x 34.1 x 31.3cm. Wood finish. Price per pair: £101.00 (inc. VAT).

SK-500

Reflex speaker. Crossover frequency: 2,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Dimensions: 49.7 x 31.5 x 28.6cm. Finish: wood. Price: £121.00 per pair (inc. VAT).

Xero 9

Three-way 4-speaker bass reflex system. Drive units: 2 x 30cm, 10cm and tweeter. FR: 25Hz-50kHz. Power handling capacity: 240/120W.

**JVC SK-1000**

Dimensions: 40.8 x 104.8 x 41.0cm. Price: £375 each (inc. VAT).

KEF

KEF Electronics Ltd,
Tovil, Maidstone, Kent ME15 6QP.
Tel: Maidstone (0622) 672261.

Cantata

Free standing, supplied in mirror image pairs. Elliptical low frequency, 110mm mid frequency, 52mm high frequency. Crossover frequency: 250 and 3,000Hz. Imp: 8 ohms. 15-150W. Size: 34 x 39 x 81cm. Teak or walnut finish. Switchable controls for mid and high frequency.

Calinda

Free standing. Mechanical reflex. 200mm low frequency, 27mm high frequency, elliptical bass radiator. Crossover frequency: 45Hz acoustically coupled and 3,500Hz. Frequency range: 40-30,000Hz. Imp: 8 ohms. 15-100W. Size: 28 x 35 x 70cm. Teak or walnut finish. Computer developed filter section. Typical market price: £226.00.

Corelli

Compact, IB shelf enclosure. 200mm low frequency 27mm high frequency. Crossover frequency: 3,500Hz. Frequency range: 50-30,000Hz. Imp: 8 ohms. 25-50W. Size: 28 x 22 x 47cm. Teak or walnut finish. Supplied in matched pairs. Typical market price: £148.00

Model 104ab

Compact, floor standing mechanical reflex. 200mm low frequency, 27mm high frequency. Elliptical bass radiator. Crossover frequency: 45Hz acoustically coupled and 3,000Hz. Frequency range: 30-40,000Hz. Imp: 8 ohms. 15-100W. Size: 33 x 26 x 63cm. Weight: 16kg. Teak or walnut finish. Typical market price: £273.00.

Concord III

Free standing system with drive units: 2 x 200mm bass and 25mm soft dome HF unit. Crossover frequency is novel in that it allows both bass drive units to operate in parallel at

**Kef 105 Series II**

low frequencies, whilst in the middle frequencies the input to lower unit is progressively attenuated so that only one 200mm unit is radiating at the upper crossover frequency. FR: 60Hz-20kHz \pm 3dB. Imp: 8 ohms. Minimum amplifier requirements: 10W. Dimensions: 68 x 28 x 31.5cm. Finish: black grille fabric on satin black plinth. Typical market price: £167.00.

Celeste III

Compact system with drive units: 200mm bass and 25mm soft dome HF unit. FR: 70Hz-20kHz \pm 2dB. Imp: 8 ohms. Minimum amplifier requirements: 10W. Dimensions: 50.8 x 26.5 x 23cm. Typical market price: £100.00.

Reference Series 105 Series II*

Infinite baffle enclosure. Drive units: 300mm, 110mm, 52mm. Crossover frequency: 400Hz, 3,000Hz. FR: 38Hz-22,000Hz. Imp: 8 ohms. Recommended amplifier output: 40-200W. Dimensions: 96.5 x 41.5 x 45.5cm. Finish: teak or walnut. Features: self powered electronic circuit protects against accidental overload.

Reference Series 101

Infinite baffle enclosure. Drive units: 110mm bass Melinex, dome HF. Crossover frequency: 3,000Hz. FR: 90Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 20-100W. Dimensions: 34 x 18 x 19cm. Finish: teak or walnut. Features: self powered electronic circuit protects system against accidental overload.

LENTEK AUDIO

Lentek Audio Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon, Cambs. PE17 4LF.
Tel: St. Ives 62225.

Monitor

Transmission line with 1 x 12in. bass driver, 1 x 5.5in. mid, 1 x 0.8in. high plus super tweeter. Crossover frequencies: 400Hz, 3.5kHz, 10kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Power handling: 50W per channel. Dimensions: 107.3 x 40.6 x 39.4cm. Price per pair: £413.04 (plus VAT).

**Lentek Loudspeaker System S4****S4***

Two-way system with 200mm bass/mid and 25mm hemispherical dome tweeter. Crossover frequency: 18dB/octave at 2.5kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Dimensions: 49.5 x 25 x 25.5cm. Finish: walnut with dark brown grille, cabinets supplied in matched pairs and veneered on all surfaces. Amplifier requirement: 25W to 75W. Price per pair: £242.00 (plus VAT). Optional stand available on request.

Monitor X

Damped with drive units: 300 x 300mm, 130mm, 20mm. Crossover frequency: 400Hz, 3.5kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-100W. Dimensions: 107.3 x 40.6 x 39.4cm. Finish: walnut or teak. Price per pair: £478.26 (plus VAT).

LNB

LNB Audio Ltd,
Duke Street, Loughborough, Leics.
Tel: Loughborough (0509) 61229.

LAB-6 Series II

Labyrinth enclosure. Drive units: 165mm long throw bass, T27/SP1032. Crossover frequency: 3kHz. FR: 45Hz-25kHz. Imp: nominal 8 ohms. Recommended amplifier output: 30W. Dimensions: 22.8 x 26 x 47cm. Finish: teak, walnut, eggshell black or rosewood. Price per pair: £126.00 (inc. VAT).

LAB-8*

Labyrinth enclosure. Drive units: 200mm, T27/SP1032. Crossover frequency: 3kHz. FR: 40Hz-26kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 28 x 28.5 x 59.7cm. Finish: teak or walnut, eggshell black or rosewood. Price per pair: £178.25 (inc. VAT).

LAB-30

Labyrinth enclosure. Drive units: 200mm, T27/SP1032. Crossover frequency: 3kHz. FR: 30Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 29.3 x 28.5 x 72.5cm. Finish: teak or walnut, eggshell black or rosewood. Features: mounted on good quality castors which can be removed if necessary. Price per pair: £287.50 (inc. VAT).

**LNB LAB-8****LUX**

Howland West Ltd,
3-5 Eden Grove, London N7 8EQ.
Tel: 01-609 0293/5.

MS-10

Two-way bookshelf speaker system, multi-vent controlled. Drive units: 20cm Aramid cone, 25mm Polyester film dome. FR: 50Hz-20kHz. Maximum input: 60W. Crossover frequency: 3,000Hz. Imp: 8 ohms. Dimensions: 25 x 26 x 54cm.

MS-20

Multi-woofer and multi-vent controlled two-way three-unit loudspeaker system. Drive units: 20cm bass-mid, two 25mm treble, polyester film dome. FR: 45Hz-20kHz. Maximum input: 80W. Crossover frequency: 3,000Hz. Imp: 6 ohms. Dimensions: 32 x 30 x 63.6cm.

McLAREN AUDIO

GR International Electronics Ltd,
Almondbank, Perthshire.
Tel: Almondbank (073 883) 441.

L912

IB speaker. Drive units: 200mm. FR: 60Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 30W. Dimensions: 29 x 23 x 51cm. Finish: teak wood veneer. Price per pair: £74.56 (plus VAT).

MARANTZ

Audio UK Ltd,
Debmarc House, 203 London Road,
Staines, Middlesex.
Tel: Staines 50132.

4G

IB two-way bookshelf. Drive units: 200mm, 45mm. Crossover frequency: 3.6kHz. Rec. amp output: 10-30W. FR: 60Hz-18kHz. FR: 40Hz-18kHz. Imp: 8 ohms. Size: 28.6 x 21.6 x 48.6cm. Finish: walnut. Price per pair: £60.00 (plus VAT).

4G3

IB three-way bookshelf speaker. Drive units: 200mm, 75mm, 75mm. Crossover frequency: 2kHz, 8kHz. FR: 50Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 10-35W. Dimensions: 28.5 x 21.5 x 48cm. Finish: walnut. Price per pair: £71.00 (plus VAT).

HD 440

IB three-way speaker. Drive units: 200mm, 90mm, 90mm. Crossover frequency: 2kHz-8kHz. FR: 40Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 15-40W. Dimensions: 28.6 x 21.6 x 48.6cm. Finish: walnut. Price per pair: £88.80 (plus VAT).

HD 550

IB or ported speaker. Drive units: 200mm, 130mm, 40mm. Crossover frequency: 800Hz-3kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 15-50W. Dimensions: 32.4 x 24.1 x 57.1cm. Finish: walnut. Features: Vari-Q a simple control which changes system from tuned port reflex to infinite baffle. Price per pair: £138.00 (plus VAT).

HD 660

IB or ported. Drive units: 255mm, 130mm, 40mm. Crossover frequency: 750Hz-2.5kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-80W. Dimensions: 37.1 x 29.2 x 61.6cm. Finish: walnut. Features: simple control changes system from tuned port reflex

to infinite baffle. Price per pair: £222.00 (plus VAT).

HD 770

IB or ported speaker. Drive units: 305mm, 130mm, 40mm, 30mm. Crossover frequency: 750Hz, 2.3kHz, 5kHz. FR: 33Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 30-125W. Dimensions: 38.1 x 29.8 x 67.3cm. Finish: walnut. Features: super tweeter, tweeter and mid range controls. Simple control changes system from tuned port reflex to infinite baffle. Price per pair: £311.00 (plus VAT).

HD 880

IB or ported speaker. Drive units: 305mm, 130mm, 40mm, 30mm. Crossover frequency: 750Hz, 2.3kHz, 5kHz. FR: 30Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 40-150W. Dimensions: 40.6 x 30.5 x 102.2cm. Finish: walnut. Features: as HD 770. Price: £444.00 (plus VAT).

DS 900*

IB or ported. Drive units: 255mm, 130mm, 40mm. Crossover frequency: 750Hz, 2.5kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 25-80W. Dimensions: 38.1 x 30.5 x 71.8cm. Finish: walnut. Features: tweeter and mid-range level controls. Vari-Q—see HD 550. Price per pair: £455.00 (plus VAT).

DS 920*

IB or ported speaker. Drive units: 305mm, 130mm, 40mm. Crossover frequency: 2.3kHz, 20kHz. Imp: 8 ohms. Recommended amplifier output: 25-125W. Dimensions: 38.1 x 30.5 x 97.2cm. Finish: walnut. Features: same as DS 900. Price per pair: £531.00 (plus VAT).

DS 930*

IB or ported speaker. Drive units: 305mm, 120mm, 40mm, 30mm. Crossover frequency: 750Hz-2.3kHz, 5kHz. FR: 33Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 30-125W. Dimensions: 38.1 x 30.5 x 71.8cm. Finish: walnut. Features: same as HD 880. Price per pair: £503.00 (plus VAT).

DS 940*

Similar to DS 930 except: FR: 30Hz-22kHz. Price per pair: £586.00 (plus VAT).

MATRIX

Acoustic Fidelity Speakers,
The Oaks, Tysea Hill,
Stapleford Abbotts,
Essex.
Tel: Ingrebourne 45329.

Matrix 1.2.2*

Reflex enclosure. Drive units: 200mm Bextrene-coned bass-mid piezo-electric tweeter. Crossover frequency: 2.8kHz. FR: 50Hz-20kHz ±2dB. Under domestic conditions 20Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 30-150W per channel into 8 ohms. Dimensions: 28 x 31 x 60cm. Finish: walnut with black fronts. Features: unique internal construction virtually eliminates parallel surfaces, thus reducing standing-wave coloration. High impedance of tweeter eliminates transient intermodulation distortion from amplifiers. Price per pair: £260.00 (plus VAT).



Matrix 1.2.2

MERIDIAN

Boothroyd Stuart Ltd
13 Clifton Road, Huntingdon, Cambs.
Tel: 0480 57339.

M2

Two-way integrated active loudspeaker with drive units: 2 x 110mm low frequency and 52mm dome tweeter. Crossover frequency: 1.75kHz. FR: 37Hz-25kHz ±3dB. Output: 70W. Dimensions: 76.2 x 38.1 x 17.8cm. Finish: black ash, rosewood veneer. Price per pair: £750.00 (inc. VAT).

M1

Complete with integral power amplifiers and connection cables. Price: £1,510.00 (inc. VAT) black ash; £1,600.00 rosewood.

MISSION

Mission Electronics
P.O. Box 65, London SW7 1PP.
Tel: 01-589 0048.

Mission 700

Two-way ported enclosure speaker. Drive units: 210mm, 19mm. Impedance: 8 ohms. Output: 15-80W. Dimensions: 26 x 24.5 x 46cm. Finish: walnut.

Mission 710 Mk II

Two-way ported enclosure speaker. Drive units: 210mm, 25mm. Impedance: 8 ohms. Output: 15-80W. Dimensions: 29 x 26 x 52cm. Finish: walnut. Price: on application.

Mission 720

Three-way infinite baffle speaker. Drive units: 250mm, 105mm, 25mm. Impedance: 8 ohms. Output: 25-125W. Frequency range: 25Hz-30kHz. Frequency response: 50Hz-20kHz ±3dB. Impedance: 8 ohms. Dimensions: 32 x 32 x 67cm. Finish: walnut.

Mission 730

Three-way reflex speaker. Drive units: 255mm, 110mm, 25mm. Impedance: 8 ohms. Output: 30-175W. Frequency range: 20Hz-30kHz. Frequency response: 40Hz-20kHz ±3dB. Dimensions: 32 x 32 x 90cm. Finish: walnut.

Mission 770*

Broadcast monitor two-way reflex speaker. Drive units: 206mm, 25mm. Imp: 8 ohms. Output: 25-150W. Frequency range: 20Hz-20kHz. Frequency response: 40Hz-20kHz ±2.5dB. Dimensions: 30 x 30.7 x 59cm. Finish: black or walnut wood.



Mission 770



Marantz 900, 920, 940, 930 system

■ MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts. WD2 8LD.
Tel: Watford(0923) 40566.

SS630E

50W, 8 ohms, two-way, speakers manufactured in the UK. Price per pair: £115.00 (inc. VAT).

DS-25B

6 ohms, two-way speaker. FR: 45-20,000Hz. 60W (peak) power handling capacity. Crossover frequency: 1,500Hz. Walnut finish. Price per pair: £153.00 (inc. VAT).

DS-35B

6 ohms, three-way speaker. FR: 35-20,000Hz. 80W (peak) power handling capacity. Crossover frequencies: 800Hz and 5,000Hz. Walnut finish. Price per pair: £240.00 (inc. VAT).

SS 080

25W, 8 ohms, two-way bookshelf speakers. Price per pair: £77.00 (inc. VAT).

■ MONITOR AUDIO

347 Cherry Hinton Road,
Cambridge CB1 4DJ.
Tel: Cambridge (0223) 42898.

MA 10 Series II

Infinite baffle enclosure with drive units: 305mm LF, 110mm mid, 38mm HF. Crossover frequency: 250Hz, 3kHz. FR: 50Hz-20kHz on axis at 35Hz and 25kHz. 40Hz-18kHz at 15 deg. vertical, 40Hz-16kHz at 30 deg. lateral. Dimensions: 38 x 38 x 80cm. Teak, walnut or rosewood finish. Price per pair: £541.00 (plus VAT).

MA 2

Construction involves no compromise; en-

closure employs internal bracing in diagonal circumferential form, with a large section of the cabinet allocated to the mid-range sub-enclosure. A sealed box design, the cabinet walls are heavily damped to minimise coloration, and thick, top quality multi-ply is used for the vital front panel which is permanently locked into the main structure. Amp. power: 100W per channel. Distortion: less than 1.5%. FR: 60Hz-20kHz. Finish: teak, walnut, black, white and rosewood to special order. Dimensions: 85 x 30 x 35cm. Price per pair: £345.00 (plus VAT).

MA6 Improved

Budget model. FR: 45Hz-19kHz \pm 3dB. Max. amplifier power: 50W per channel. Sensitivity: 10W for 96dB. Imp: 8 ohms. Drive units: 220mm and 25mm. Dimensions: 58 x 30 x 28.5cm. Price per pair: £184.00 (plus VAT).

MA4 Series II Improved

Compact stand-mounted enclosure. FR: 55Hz-20kHz. Max. amplifier power: 100W per channel. Distortion: less than 1%. Imp: 8 ohms. Crossover point: 2.2kHz. Dimensions: 69.4 x 31.6 x 27.8cm. Price per pair: £222.00 (plus VAT).

MA 84*

Constructed as MA2. FR: 50Hz-22kHz \pm 2dB. Impedance: 8 ohms. Dimensions: 28 x 33 x 77.5cm. Floor-standing model with integral stand and castors. Price: £250.00 (plus VAT) per pair.

MA 9

Bookshelf speaker with drive units: 140mm, 25mm. FR: 70Hz-20kHz \pm 3dB. Impedance: 8 ohms. Recommended amplifier output: 10-60W. Dimensions: 23 x 21.5 x 40.5cm. Reflex-loaded bookshelf speaker. Price: £103.50 (plus VAT) per pair.

MA 16

Bookshelf speaker with two drive units. FR: 65Hz-20kHz \pm 3dB. Impedance: 8 ohms. Recommended amplifier output: 8-40W. Dimensions: 23 x 21.5 x 40.5cm. Bookshelf model. Price: £86.50 (plus VAT) per pair.

Mini Monitor

Speaker enclosure with drive units: 165mm, 25mm. Crossover frequency: 2.8kHz. FR: 60Hz-20kHz \pm 3dB. Impedance: 8 ohms. Recommended amplifier output: 10-50W. Dimensions: 22.8 x 19 x 38cm. Finish: teak, walnut and black, white and rosewood to order. Price: £123.20 (plus VAT) per pair.

■ MORDAUNT-SHORT

Mordaunt-Short Ltd,
Durford Mill, Petersfield,
Hampshire GU31 5AZ.
Tel: Rogate(073 080) 721/2.

Carnival Series 2

Infinite baffle. Bookshelf enclosure. Drive units: 208mm DSB 208 bass/mid-frequency unit; 68mm cone high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 45-20,000Hz, 85-17,000Hz \pm 3dB. Imp: 8 ohms. 10-80W per channel. Size: 24.1 x 14.5 x 40cm. Weight: 5.9kg. Teak or walnut veneer. Dual DIN/push-lock connectors. Connecting plugs and leads supplied. Price per pair: £88.00 (plus VAT).

Festival Series 2

Infinite baffle. Bookshelf enclosure. Drive units: 208mm DSB 208 bass/mid, 19mm dome

high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 32-25,000Hz, 75-20,000Hz \pm 3dB. Imp: 8 ohms. 10-90W per channel. Size: 27.9 x 18.5 x 45.4cm. Weight: 7.2kg. Teak or walnut veneer. Dual DIN/push-lock connector. Connecting plugs and leads supplied. Price per pair: £117.50 (plus VAT).

Pageant Series 2

Reflex enclosure. Drive units: 208mm DSB 208 bass/mid 25mm dome high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 25-25,000Hz, 65-20,000Hz \pm 3dB. Imp: 8 ohms. 15-100W per channel. Size: 33 x 23 x 53.3cm. Weight: 10.1kg. Teak or walnut veneer. Mid and upper frequency ranges controlled by separate switches. Dual DIN/push-lock connectors. Connecting plugs and leads supplied. Price per pair: £176.00 (plus VAT). Matching stand: black finish fitted with castors. Size 33 x 25 x 30.5cm. Price per pair: £206.00 (plus VAT).

Signifer*

Reflex enclosure, stand-mounted. Drive units: 300mm bass, 135mm mid range, 25mm dome high frequency unit. Crossover frequency: 500Hz, 4kHz. FR: 20Hz-25kHz, 38Hz-20kHz \pm 2dB. Imp: 8 ohms. Recommended amplifier output: 250W. per channel. Dimensions: 38.5 x 32.5 x 81cm. Finish: teak or walnut veneer. Features: acoustic environment balance control adjusts mid and high frequencies. System fused, connecting leads supplied. Price per pair: £515.00 (plus VAT) including matching stand.

■ NAMCO

Shadow Audio,
Lumen Road, Royston, Herts. SG8 6EL.
Tel: Royston (0763) 46631.

NSQ-551

Acoustic air suspension type enclosure with drive units: 30cm woofer, 13cm mid and 8cm dome tweeter. Crossover frequency: 900Hz, 9kHz. FR: 30Hz-23kHz. Imp: 8 ohms. Recommended amplifier output: 160W. Dimensions: 36.2 x 64 x 29.7cm. Finish: simulated walnut, detachable black grille. Price per pair: £209.95 (inc. VAT).

NSQ-331

Acoustic air suspension enclosure with drive units: 25cm woofer, 13cm mid and 8cm dome tweeter. Crossover frequency: 900Hz, 9kHz. FR: 35Hz-23kHz. Imp: 8 ohms. Recommended amplifier output: 120W. Dimensions: 32 x 56 x 29.7cm. Finish: simulated walnut, detachable black grille. Price per pair: £159.95 (inc. VAT).



Monitor MA84



Mordaunt-Short Signifer

NSQ-221

Acoustic air suspension enclosure with drive units: 20cm woofer, 10cm mid, 8cm dome tweeter. Crossover frequency: 2,000Hz, 9,000Hz. FR: 40Hz-23kHz. Imp: 8 ohms. Recommended amplifier output: 70W. Dimensions: 25 x 49 x 24.9cm. Finish: simulated walnut grain with detachable black grille. Price per pair: £109.95 (inc. VAT).

NSZ-555

Acoustic air suspension enclosure with drive units: 30cm woofer, 13cm mid, 5cm cone tweeter. Crossover frequency: 1,800Hz and 8,200Hz. FR: 28Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 130W. Dimensions: 36.2 x 64 x 29.7cm. Finish: simulated walnut with brown detachable grille. Price per pair: £199.95 (inc. VAT).

HSZ-333

Acoustic air suspension enclosure with drive units: 25cm woofer, 13cm mid and 5cm dome tweeter. Crossover frequency: 2,200Hz and 8,200Hz. FR: 33Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 90W. Dimensions: 32 x 56 x 29.7cm. Finish: simulated walnut grain with detached brown grille. Price per pair: £149.95 (inc. VAT).

NSZ-222

Acoustic air suspension enclosure with drive units: 20cm woofer, 5cm cone tweeter. Crossover frequency: 4,600Hz. FR: 40Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 25 x 49 x 24.9cm. Finish: simulated walnut with detachable brown grille. Price per pair: £99.95 (inc. VAT).

NSR-500

Acoustic air suspension type three-way speaker. Drive units: 300mm, 120mm, 100mm. Crossover frequency: 700Hz-5kHz. FR: 25Hz-24kHz. Impedance: 8 ohms. Dimensions: 36.2 x 29.7 x 64cm. Finish: simulated walnut.

NSR-300

Acoustic air suspension type three-way speaker. Drive units: 250mm, 120mm, 100mm. Crossover frequency: 700Hz-5kHz. FR: 30Hz-24kHz. Impedance: 8 ohms. Dimensions: 32 x 29.7 x 56cm. Finish: simulated walnut.

NSR-200

Acoustic air suspension type three-way speaker. Drive units: 200mm, 100mm, 100mm. Crossover frequency: 800Hz-6kHz. FR: 35Hz-24kHz. Impedance: 8 ohms. Dimensions: 25 x 24.9 x 49cm. Finish: simulated walnut.

NSZ-222

Acoustic air suspension enclosure with drive units: 20cm woofer, 5cm cone tweeter. Crossover frequency: 4,600Hz. FR: 40Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 25 x 49 x 24.9cm. Finish: simulated walnut with detachable brown grille. Price per pair: £99.95 (inc. VAT).

NEAL FERROGRAPH

North East Audio Ltd,
Simonside Works, South Shields,
Tyne & Wear NE34 9NX.
Tel: South Shields (0632) 566321.

The range of Neal-Ferrograph loudspeakers has a uniformity of sound achieved by the use of common drive units for bass/mid range and also high frequencies, mounted in similarly designed cabinets. In addition to their uniformly simple styling, this makes them ideal

for use in quadrasonic applications as well as giving common sound in different rooms.

S22

Bookshelf enclosure with 2 units, crossover and ducted port. Units: one bass/mid range 130mm long throw roll surround, one tweeter 25mm soft dome. FR: 80Hz-18kHz ±4dB. Power handling: 20W RMS. Sensitivity: 88dB SPL 1W at 1 metre. Imp: 8 ohms (minimum 6 ohms). Cabinet high density particle board, teak or walnut veneer. Grille: soft crimplene, brown, removable. Size: 332 x 181 x 215mm (13 1/4 x 7 1/8 x 8 5/16) HxWxD. Weight: 4.6kg (10lb). Connections: 'banana' plugs and DIN plug—5 metre connecting lead (0.75sq. mm) with plug and socket (2-pin DIN) supplied. Price per pair: £80.28 (plus VAT).

S23

Larger bookshelf enclosure with three units, crossover and acoustic labyrinth. Units: two bass and mid range 130mm long throw roll surround, one tweeter 25mm soft dome. FR: 65Hz-20kHz ±4dB. Power handling: 35W RMS. Sensitivity: 90dB SPL 1W at 1 metre. Impedance: 8 ohms (minimum 6 ohms). Cabinet: high density particle board, teak or walnut veneer. Grille: soft crimplene, brown, removable. Size: 440 x 190 x 280mm (17 3/8 x 7 1/2 x 11in) HxWxD. Weight: 8.8kg (19 1/2lb). Connections: 'banana' plugs and DIN plug—5 metre lead (0.75sq mm) with plug and socket. (2-pin DIN) supplied. Price per pair: £127.34 (plus VAT).

NIGHTINGALE

Nightingale Acoustics,
60a Green Street, Eastbourne, Sussex.
Tel: Eastbourne (0323) 30405.

NMI*

Labyrinth enclosure with 280 x 204mm bass, 102mm mid and 25mm top units. Crossover frequency: 525, 3,550Hz. Imp: 8 ohms. Output: 25-100W. Dimensions: 40.6 x 28.6 x 85.6cm. Most finishes. Price per pair: £386.66 (plus VAT).

Point Five

Reflex speaker. Drive units: 200mm, 102mm, 25mm. Crossover frequency: 500Hz, 3kHz. Imp: 8 ohms. Recommended amplifier output: 25-75W. Dimensions: 26.7 x 37 x 80cm. Most finishes. Linear phase. Price per pair: £284.00 (plus VAT).



Nightingale NMI

NM3

Reflex enclosure with drive units: 280 x 204mm bass, 102mm mid and 25mm top. Crossover frequency: 500Hz, 3,000Hz. Imp: 8 ohms. Recommended amplifier output: 50-100W. Dimensions: 35.5 x 48.3 x 82.6cm. Features: linear phase. Price per pair: £500.00 (plus VAT).

OMAR

Omar Skinner & Sons,
Bracknell, Berks.
Tel: Bracknell (03447) 2207.

Henley

Small bookshelf speaker with two drive units: 58mm, 110mm. Crossover frequency: 3kHz. Impedance: 8 ohms. Power handling: 25W. Dimensions: 27.5 x 16.5 x 18.7cm. Finish: teak or walnut. FR: 70Hz-20kHz.

Goring

Small bookshelf speaker. Drive units: 165mm, 58mm. Crossover frequency: 3kHz. Impedance: 8 ohms. FR: 60Hz-20kHz. Handling capacity: 30W. Dimensions: 35.5 x 22.8 x 19.7cm. Finish: teak or walnut.

Wendover:

Medium bookshelf speaker. Drive units: 210mm, 58mm. Crossover frequency: 3kHz. FR: 50Hz-20kHz. Impedance: 8 ohms. Handling capacity: 40W. Dimensions: 45.8 x 28 x 24.2cm. Finish: teak or walnut.

Winchester

Medium bookshelf speaker. Drive units: 210mm, 100 x 100mm, 25mm. Crossover frequency: 1,500Hz and 4.5kHz. FR: 40Hz-22kHz. Impedance: 8 ohms. Handling capacity: 50W. Dimensions: 51.3 x 28 x 24.2cm. Finish: teak or walnut.

Westminster

Floor standing two speaker system. Drive units: 210mm, 95mm. Crossover frequency: 3.5kHz. FR: 45Hz-25kHz. Impedance: 8 ohms. Handling capacity: 80W. Dimensions: 54.8 x 30.2 x 24.5cm. Finish: teak or walnut.

Wentworth

Medium floor standing speaker. Drive units: 250mm, 122mm, 94mm. Crossover frequency: 500Hz and 4.5kHz. FR: 35Hz-22kHz. Impedance: 6 ohms. Handling capacity: 80W. Dimensions: 58.5 x 31.7 x 24cm. Finish: teak or walnut.

CR251

Bookshelf monitor speaker. Drive units: 223mm, 116 x 80mm. Crossover frequency: 3.5kHz. FR: ±2.5dB 90Hz-22kHz, +2.5 -6dB 50Hz-22kHz. Impedance: 8 ohms. Handling capacity: 50W. Dimensions: 51.3 x 28 x 24.2cm. Finish: teak or walnut.

CR351 P.E.

Monitor standard speaker. Drive units: 223mm, 116 x 80mm. Crossover frequency: 500Hz and 4.5kHz. FR: ±2.5dB 85Hz-30kHz. Impedance: 8 ohms. Handling capacity: 50W. Dimensions: 54.8 x 30.2 x 24.5cm. Finish: teak or walnut.

CR455

Monitor standard speaker. Drive units: 250mm, 130mm, 116 x 80mm. Crossover frequency: 900Hz and 4.5kHz. FR: ±2.5dB 40Hz-22kHz. Impedance: 8 ohms. Handling capacity: 80W. Dimensions: 58.5 x 31.7 x 24cm. Finish: teak or walnut.

CR501

Floor standing monitor speaker. Drive units: 210mm, 130mm, 116 x 80mm. Crossover frequency: 900Hz and 4.5kHz. FR: ± 2.5 dB 35Hz-22kHz. Impedance: 8 ohms. Handling capacity: 80W. Dimensions: 81.5 x 37 x 30.5cm. Finish: teak or walnut.

■ **OPTONICA**

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

CP2525 *

Infinite baffle enclosure with drive units: 250mm, 40mm, 24mm. Crossover frequency: 600Hz, 5kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 20-60W. Dimensions: 32 x 32 x 58cm. Finish: rosewood.

■ **PANASONIC**

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3DR.

SB50 UK

IB two-way speaker. Drive units: 200mm bass, 27mm soft dome tweeter. Imp: 4 ohms. Recommended amplifier output: 18-50W. Dimensions: 26.5 x 24 x 47cm. Finish: simulated rosewood, black grille. Features: DIN or screw connection. Price per pair: £84.40 (plus VAT).

■ **PHILIPS**

Philips Electrical Ltd,
Audio Div, City House, 420 London Road,
Croydon, Surrey.
Tel: 01-689 2166.

AH 489

Bass reflex speaker with drive units: 200mm bass, 50mm mid, 25mm tweeter. Crossover frequency: 950Hz, 5,000Hz. FR: 38Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 35 x 22 x 56cm. Finish: walnut effect foil. Features: detachable front panel. Price per pair: £124.14.

AH 494

Infinite baffle enclosure with drive units: 250mm bass, 50mm mid, 25mm tweeter. Crossover frequency: 600Hz, 6,000Hz. FR: 32Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 80W. Dimensions: 39 x 24 x 58cm. Finish: walnut effect foil. Features: detachable front panel, variable controls for sensitivity of mid-range speaker and tweeter. Price: on application.

AH 495

Infinite baffle enclosure with drive units: 300mm bass, 50mm mid, 25mm tweeter. Crossover frequency: 750Hz, 5,500Hz. FR:

32Hz-220kHz. Imp: 8 ohms. Recommended amplifier output: 100W. Dimensions: 44 x 26 x 65cm. Finish: walnut effect foil. Features: detachable front panel, variable sensitivity controls for mid and treble speakers. Price: on application.

AH 685 (Active MFB 35W)

Infinite baffle enclosure with drive units: 175mm bass, 25mm treble. Crossover frequency: 1,500Hz. FR: 35Hz-20kHz. Imp: 1K-100K. Preamp output (1V) up to 60W power amp recommended. Dimensions: 23 x 22 x 34cm. Features: integral 35W amp, motion feedback on bass loudspeaker, variable sensitivity. Price per pair: £271.10 (plus VAT).

AH 589 (Active MFB 75W)

Infinite baffle speaker enclosure with drive units: 200mm bass, 50mm mid, 25mm treble. Crossover frequency: 650Hz and 3,500Hz. FR: 27Hz-20kHz. Imp: 1K-100K. Recommended amplifier output: preamp output (1V) up to 100W power amp. Dimensions: 30 x 26 x 48cm. Finish: black ash. Features: integral 75W amp, motion feedback on bass loudspeakers, variable sensitivity. Price per pair: £416.98 (plus VAT).

■ **PIONEER**

Pioneer Hi-Fi (BG) Ltd,
Pioneer House, The Ridgeway, Iver, Bucks.
Tel: 0753 652222.

HPM 30 *

Bass reflex speaker. Drive units: 200mm, 45mm, super tweeter high polymer film. Crossover frequency: 1,500Hz (low high), 12,000Hz (high superhigh). FR: 40Hz-25kHz. Impedance: 8 ohms. HC: 30W. Dimensions: 30 x 53 x 29.3cm. Finish: black. Features: bookshelf size, die-cast speaker chassis, H/F attenuator, three-way system.

HPM 50

Bass reflex speaker. Drive units: 250mm, 45mm, super tweeter high polymer film. Crossover frequency: 2,500Hz (low high), 12,000Hz (high superhigh). FR: 35Hz-25kHz. Impedance: 8 ohms. HC: 40W. Dimensions: 32.5 x 57 x 31.7cm. Finish: black. Features: bookshelf size, die-cast speaker chassis, H/F attenuator, three-way system, large bass driver, max. input 80W.

HPM 70

Bass reflex speaker. Drive units: 250mm, 100mm, 45mm. Crossover frequency: 35Hz-25kHz. Impedance: 8 ohms. HC: 60W.

Dimensions: 35 x 61 x 32.1cm. Finish: black. Features: bookshelf size, die-cast speaker chassis, H/F attenuator, four-way system, large bass driver, max. input 120W.

HPM 110

Bass reflex speaker. Drive units: 300mm, 100mm, 45mm. Crossover frequency: 30Hz-25kHz. Impedance: 8 ohms. HC: 100W. Dimensions: 39 x 67 x 39.3cm. Finish: black. Features: bookshelf size, die-cast speaker chassis, H/F attenuator, four-way system, large bass driver, max input 200W, mid/high attenuation controls.

S-X311E

Two-way infinite baffle speaker. Drive units: 100mm, 25mm. FR: 50Hz-20kHz. Impedance: 6.3 ohms. HC: 25W. Dimensions: 11.8 x 11.8 x 11.2cm. Finish: grey. Features: bookshelf size, wall-mounting hook.

■ **P.W.B.**

P.W.B. Electronics Ltd,
1 Norfolk Gardens, Leeds LS7 4PP.
Tel: Leeds 682550.

Orthodynamic Add-on Unit

Designed primarily to update the older speaker systems but most systems would benefit. The panel sits on top of the existing cabinet and connects easily across the input terminals of the speaker. An integrated crossover network allows all frequencies above 1kHz to be added to the existing system. The integrated sound adds transparency and improved stereo imagery. Dimensions: 4 x 2½ x 13½in. Price: £125.00 per pair (inc. VAT).

Orthodynamic Speaker Top Mid/Hi

Designed to be integrated with a separate bass system. Crossover point required at 500Hz. It has four times the radiating area of the add-on model and sits on top of the bass system. Dimensions: 6 x 3 x 18in. Price: £264.50 per pair (inc. VAT).

Orthodynamic Mini Tower

The panel is housed in a 4in wide floor standing structure. The tower produces a sound source duplicating the original. This technique removes all cabinet colouration and produces a transparently open sound. Dimensions: 4 x 3 x 60in. Price: £747.50 per pair (inc. VAT).

Orthodynamic Tower

It has four times the radiating area of the mini tower. Dimensions: 6 x 3 x 68in. Price: £1,265.00 per pair (inc. VAT).

Studio Bass System

Designed to complement the orthodynamic panels. The moving coil drive unit has a straight sided piston made from long fibred pulp. An auxiliary bass radiator extends the response down to 20Hz. It incorporates the necessary crossover network for itself and the panels. Dimensions: 12½ x 14 x 25in. Finish: black. Price: £391.00 per pair (inc. VAT).

■ **PYE**

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham 2781.

SX6483

Reflex enclosure with drive units: 200mm, 25mm. Crossover frequency: 3,800Hz. FR: 42Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 28.5 x 18 x 43.7cm. Finish: foil. Going price per pair: £69.00.

*Optonica CP 2525**Pioneer HPM 30*

SX6484 *

Reflex enclosure with drive units: 200mm, 125mm, 25mm. Crossover frequency: 4,000Hz and 9,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 50W. Dimensions: 33 x 20 x 51.5cm. Finish: foil. Going price per pair: £99.00.

■ **QUAD**

The Acoustical Manufacturing Co Ltd, St. Peters Road, Huntingdon PE18 7DB. Tel: Huntingdon (0480) 52561.

Quad Electrostatic *

Full range electrostatic loudspeaker. FR: 45Hz-18kHz. Imp: 15 ohms. Amplifier requirements: 15W min, 33 peak volts max. Dimensions: 88 x 27 x 79cm. Weight: 18kg. Finish: black or bronze anodised grille. Price per pair: £604.00 (plus VAT).

■ **RADFORD**

Radford Electronics Ltd, 4 High Street, Nailsea, Bristol BS19 1BW. Tel: Bristol 6636.

T90 Tristar

Bookshelf speaker. Drive units: bass, dome mid, dome treble. FR: 55Hz-20kHz. Imp: 8 ohms. Power handling capacity: 50W. Dimensions: 53 x 32 x 24cm. Weight: 15kg. Price: £155.00 each (plus VAT).

■ **RADIO COMPONENTS**

Radio Components (Leighton Buzzard) Ltd, Unit E2, Hunton Bridge Works, Bridge Road, Hunton Bridge, Watford, Herts. Tel: Kings Langley 68399.



Pye SX 6484



Quad Electrostatic

Mini Reference

Loudspeaker system with drive units: 166mm bass/mid, 26mm dome tweeter. FR: 45Hz-25kHz. Imp: 8 ohms. Amplifier matching: 6-40W. Dimensions: 34.5 x 24 x 20cm. Finish: teak, walnut or black veneers. Price per pair: £69.50 (plus VAT).

Reference II

Loudspeaker system with drive units: 250mm bass/mid, 34mm dome tweeter. FR: 25Hz-20kHz. Imp: 8 ohms. Amplifier matching: 10-70W. Dimensions: 49 x 32 x 29cm. Finish: teak, walnut or black. Price per pair: £164.00 (plus VAT).

Reference III

Loudspeaker system with drive units: 250mm bass, 130mm mid, 25mm dome tweeter. FR: 20Hz-20kHz. Imp: 8 ohms. Amplifier matching: 10-100W. Dimensions: 65 x 34 x 29cm. Finish: teak, walnut, black. Price per pair: £230.00 (plus VAT).

■ **RED PROFESSIONAL**

Red Acoustics, Chelsea Wharf, 15 Lots Road, London SW10 0QH. Tel: 01-351 1394.

"A" *

Active loudspeaker system with integral power amplifier. Drive units: two 8in LF units, two 1in HF units. FR: 40Hz-18kHz ±3dB in typical listening room. Input: 68K or more depending on selected sensitivity. Amplifier output: 250W. Dimensions: 48 x 33.5 x 34.5cm. Finish: matt black cabinet, black glossy enamel grille. Features: cannon, jack, phono input facilities. Price: £1,500.00 (plus VAT).

"B" *

Active loudspeaker system with integral power



Red Professional



Revox BR 530

amplifier. Drive units: 8in LF unit, two 1in HF units. Input: 68K or more depending on selected sensitivity. Amplifier output: 150W. Dimensions: 48 x 33.5 x 34.5cm. Finish: matt black cabinet, black glossy enamel grille. Features: cannon, jack, phono, DIN input facilities. Price: £1,200.00 (plus VAT).

■ **REVOX**

F. W. O. Bauch Ltd, 49 Theobald Street, Borehamwood, Herts. WD6 4RZ. Tel: 01-953 0091.

BX 4100

Infinite baffle with drive units: 8 x 122mm, 175mm, 199mm. Crossover frequencies: 600Hz, 4,000Hz. FR: 35Hz-25kHz. Imp: 4 ohms. Recommended amplifier output: 20-200W. Dimensions: 45 x 43.3 x 79cm. Walnut finish. Features: mid-range adjustable ±2dB. Treble adjustment ±2dB. Price per pair: £890.00 (plus VAT).

BR 430

Tuned port with drive units: 245mm, 38mm, 19mm. Crossover frequency: 850Hz, 4,200Hz. FR: 30Hz-25kHz. Imp: 4 ohms. Recommended amplifier output: 20-80W. Dimensions: 34 x 31.5 x 56cm. Finish: nextel or walnut. Price per pair: £260.00 (plus VAT).

BX 350

Infinite baffle with drive units: 4 x 122mm, 25mm. Crossover frequency: 3,200Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-80W. Dimensions: 35 x 29.5 x 52cm. Walnut or nextel finish. Features: treble adjustable ±2dB. Price per pair: £336.00 (plus VAT).

BR 530 *

Tuned port reflex enclosure. Drive units: 315mm, 50mm, 19mm. Crossover frequency: 750Hz, 3,000Hz. FR: 25Hz-35kHz. Imp: 4 ohms. Rec. amplifier output: 20-110W. Dimensions: 38.5 x 34.5 x 61cm. Finish: walnut. Features: 5m cable included. Price per pair: £336.00 (plus VAT).

Triton System

Separate sub-woofer and satellite speakers. Drive units: 245mm, 175mm, 30mm. Crossover frequency: 150, 1,300, 3,200Hz. FR: 30Hz-25kHz. Imp: 4 ohms. Recommended amplifier output: 20-110W. Finish: walnut. Features: can be used as equipment console. Price: £750.00 (plus VAT) including cabinet for equipment.

■ **ROGERS**

Swisstone Electronics Ltd, 4-14 Barmeston Road, London SE6 3BN. Tel: 01-697 8511.

Export Monitor

Three drive unit. Crossover with air-cored inductors and precision low loss capacitors. Imp: 8 ohms. Size: 30 x 30 x 63cm. Height with stand: approx. 93cm. Teak or walnut finish. Power handling: 50W RMS 100W speech and music. Price: £269.50 per pair (plus VAT).

BBC Monitor LS3/5A

Infinite baffle enclosure. FR: 70Hz-20kHz ±3dB. VCI: 15 ohms. Size: 300 x 185 x 160mm. Weight: 5.5kg. Two drive units. Recommended amplifier power minimum 40W into 8 ohms. Crossover: 3kHz. Finish: teak, walnut, rosewood or black. Price: £164.50 per pair (plus VAT). Rosewood £179.50 (plus VAT).

Compact Monitor

IB two drive unit enclosure using exclusive Rogers 205mm bass drive units and 25mm fabric dome tweeter. Power handling 40W RMS 80W speech and music. Finish: teak or walnut. Size: 27 x 27 x 56cm. Price: £184.50 per pair (plus VAT).

Rogers LS5/8

Two-drive unit bi-amplified electronic crossover studio monitor loudspeaker, manufactured under licence from the BBC. Polypropylene bass/mid range drive unit: 34mm soft dome tweeter, twin 100W power amplifier plus electronic crossover for each loudspeaker XLR connectors balanced 16K ohms input. Size: 76 x 46 x 41cm. Weight: 32kg. Power handling: not applicable (115dB at 2m from a pair). Finish: teak, walnut, black. Price: £1,900.00 (plus VAT).

Reference Monitor System*

Electronic crossover system using Rogers LS3/5A monitors plus XAY5 crossover amplifier plus L35B bass enclosures. designed for use with Rogers A100 or A75 series 3 amplifier. Size: 82.5 x 42 x 46cm. Weight: 31kg. Finish: teak, walnut. Price: £779.50 (plus VAT) including LS3/5A monitors, but excluding pre/power amplifier for LS3/5A and TY5 tuner.

SALORA

Salora (UK) Ltd,
25A Techno Trading Estate,
Swindon SN2 6EZ.
Tel: Swindon (0793) 46321.

KS330

Closed chamber with drive units: 245mm low, soft dome medium, soft dome high. FR: 25Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 55-90W. Dimensions: 30 x 25 x 60cm. Finish: black. Features: special high frequency attenuator to compensate for room absorption. Price per pair: approx. £168.00 (plus VAT).

KS315

Closed chamber with drive units: 200mm low, soft dome high. FR: 50Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 35-50W. Dimensions: 30 x 18 x 44cm. Finish: black. Features: special high frequency attenuator to compensate for room absorption. Price per pair: approx. £128.00 (plus VAT).



Rogers Reference Monitor System

SANSUI

Sansui Audio Europe NV,
Unit 10A, Lyon Industrial Estate,
Rockware Avenue, Greenford, Middlesex.
Tel: 01-575 1133.

ESP 801

IB speaker. Drive units: 212mm, 87mm, 65mm. Crossover frequency: 1.8kHz-9kHz. FR: 40Hz-20kHz. Impedance: 8 ohms. Output: 25-60W. Dimensions: 28.5 x 21 x 51cm. Finish: walnut. price: £86.00 (plus VAT) per pair.

ESP 601

IB speaker. Drive units: 212mm, 65mm. Crossover frequency: 8kHz. FR: 40Hz-18kHz. Impedance: 8 ohms. Output: 20-45W. Dimensions: 27 x 21.5 x 49cm. Finish: walnut. Price: £56.50 (plus VAT) per pair.

SCOTT

Clement Electronics Ltd,
Unit 8, Road Three,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford(060 65) 57131.

PRO100B

Bi-directional studio monitor with drive units: 38cm woofer, two 11cm mid and two 2.5cm dome tweeters. Crossover frequency: 700Hz, 3,500Hz. FR: 36Hz-20kHz. Imp: 4 ohms. Power handling: 20-150W. Dimensions: 74.3 x 48.2 x 36.8cm. Finish: walnut hardwood veneer. Features: high powered woofer.

197B

Loudspeaker system with drive units: 38cm, 11cm, 2.5cm. Crossover frequency: 750Hz, 3,500Hz. FR: 38Hz-20kHz. Imp: 6-8 ohms. Power handling: 15-125W. Dimensions: 69.2 x 42.9 x 33.6cm. Features high powered woofer.

196B

Bookshelf speaker with drive units: 30cm, 11cm, 2.5cm. Crossover frequency: 800Hz, 3,500Hz. FR: 38Hz-20kHz. Power handling: 15-90W. Dimensions: 64.8 x 38.1 x 27cm. Features: high powered woofer.

188T

Floor standing speaker system with drive units: 25cm, 11cm, 2.5cm. Crossover frequency: 900Hz, 3,500Hz. FR: 38Hz-20kHz. Imp: 6-8 ohms. Power handling: 10-75W. Dimensions: 84.8 x 38.1 x 27cm. Features: high powered woofer.

186B

Bookshelf speaker with drive units: 25cm, 11cm, 2.5cm. Crossover frequency: 900Hz, 3,500Hz. FR: 28Hz-20kHz. Imp: 6-8 ohms. Power handling: 10-75W. Dimensions: 61 x 34.3 x 26.7cm. Features: high powered woofer.

180B

Three-way speaker system with drive units: 25cm, 12cm, 4.5cm. Crossover frequency: 1,100Hz/3,500Hz. FR: 45Hz-18kHz. Imp: 6-8 ohms. Power handling: 10-60W. Dimensions: 58.4 x 31.8 x 26.7cm. Features: high powered woofer, phenolic ring tweeter.

177B

Loudspeaker system suitable for apartment and small sized listening environments. Drive units: 20cm, 13cm, 4.5cm. Crossover frequency: 1,200Hz/3,500Hz. FR: 50Hz-18kHz. Imp: 6-8 ohms. Power handling: 7-55W. Dimensions:

48.3 x 28 x 23.2cm. Features: high powered-woofer with long voice coil phenolic ring tweeter.

166

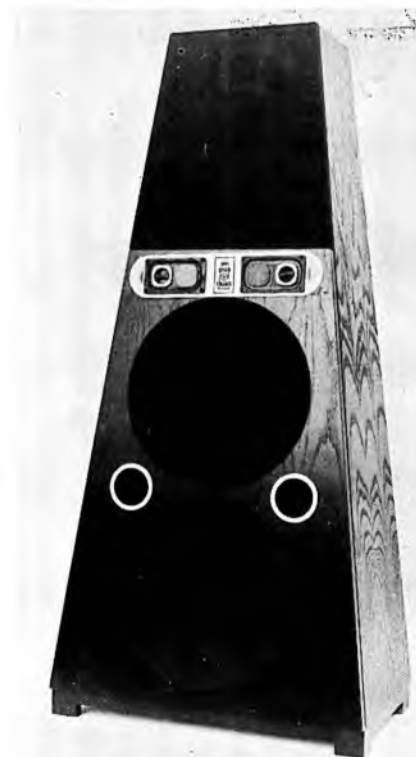
Loudspeaker system with drive units: 16.5cm, 2.5cm. Crossover frequency: 2,200Hz. FR: 55Hz-20kHz. Imp: 8 ohms. Power handling: 10-100W. Dimensions: 33 x 19 x 16.5cm. Features: high powered woofer, textile dome tweeter.

SEAS

Radio Components Ltd,
Unit E2, Hunton Bridge Works,
Bridge Road, Hunton Bridge, Watford, Herts.
Tel: Watford(0923) 68399.

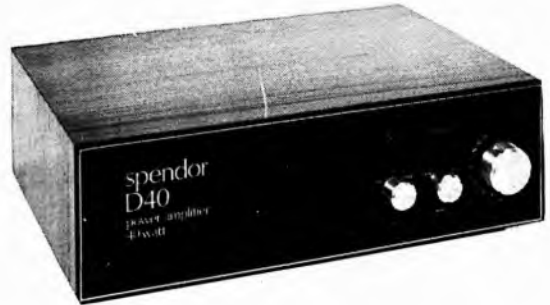
DD-Tower

Four-way loudspeaker system. Each system of two separate cabinets with one mounted on top of the other. The 33cm driver is operating in its own chamber which is reflexed to the bottom of the cabinet. The driver incorporates the SEAS patented dynamic damping principle which eliminates the normal problems of transient distortion in bass reflex systems and gives the driver a built in electromagnetic brake which controls the woofer at high excursions when being driven by high power levels. The other three drivers are mounted in a separate dual chamber enclosure. With the speakers mounted in line the front angle of the combined cabinets and the distance between the drivers has been calculated so that the acoustical centres of the drivers are on a vertical line to enhance the sound picture at the listener. The DD-tower is styled in rosewood with a trim of black acoustic transparent foam. FR: 28Hz-25kHz. Crossover frequency: 180Hz, 600Hz, 4,000Hz. Power: 120W (nominal), 200W (music). Sensitivity: 90dB. Imp: 8 ohms. Recommended amplifier output: 30-200W. Dimensions: 119.5 x 45.1 x 35cm. Price per pair: £595.00 (plus VAT).



SEAS Disco Tower

spendor



Spendor loudspeakers and amplifiers are used extensively by professional organisations such as the BBC, IBA, RTE (Ireland), WDR (Germany) and many other broadcasting and recording studios.

All Spendor loudspeakers are of studio quality and are generally regarded as one of the most accurate monitoring systems available.



**Spendor Audio Systems Limited
Station Road Industrial Estate
Hailsham, Sussex BN27 2ER
Telephone Hailsham 843474**

Disco Tower*

Designed to reproduce really high sound-pressure. Power handling capacity is 160W (music power) and sensitivity 100dB at 1m with power input of 1W. Mixture of 2 woofers, 2 mid-range, and 3 tweeters on a horn loaded tweeter all in a ported cabinet, gives aggressive and open sound in the mid-tweeter area, and tremendous attack in the bass area. On the front panel are mounted separate level controls for the mid-range and tweeter units. The sound level can be raised and lowered 1.5dB in order to achieve an optimal adjustment to the listening room. On the same panel are also mounted indicator lights for the automatic mid-range/tweeter protection circuit. At extremely high power inputs the protection circuit will be activated and the lamps will light up. Disco Tower is supplied in black lacquered ash. The frame is covered in black stretch cloth. FR: 40Hz-20kHz. Crossover frequency: 900Hz, 2,500Hz, 6,000Hz. Power: 120W (nominal) 160W (music). Sensitivity: 100dB. Imp: 8 ohms. Recommended amplifier output: 6W-160W. Dimensions: 125 x 58 x 34.8cm. Price per pair: £643.00 (plus VAT).

■ SMC

SMC Loudspeakers,
76 Bedford Road, Kempston, Beds.
Tel: Bedford(0234) 854133.

Super Saturn

IB enclosure with drive units: 210mm LF and 25mm HF. Crossover frequency: 3.5kHz. FR: 45Hz-25kHz DIN 55Hz-20kHz \pm 3dB. Imp: 8 ohms. HC: 12-50W. Dimensions: 25 x 24 x 46cm. Teak or walnut finish. 9 element crossover. Price per pair: £152.13 (plus VAT).

AS40

IB enclosure with MR in its own line. Drive units: 250mm low, 115mm mid, 25mm high.



SMC AL50 Studio

Crossover frequency: 500Hz, 4kHz. FR: 35Hz-25kHz DIN, 45Hz-20kHz \pm 3dB. Imp: 8 ohms. HC: 25-100W. Dimensions: 32 x 36 x 64cm. Teak or walnut finish. Price per pair: £286.91 (plus VAT). T40 Trolleys £27.71 (plus VAT).

Supernova

IB with 250mm Bextrene cone LF, 25mm Audax soft dome HF. Crossover frequency: 2.8kHz. FR: 35Hz-25kHz DIN, 50-20kHz \pm 3dB. Imp: 8 ohms. HC: 20-70W. Dimensions: 29 x 30 x 60cm. Finish in teak or walnut. Price: £217.13 (plus VAT). SN trolleys £25.63 (plus VAT).

AL50 Studio*

Acoustic labyrinth with drive units: 300 x 210mm low, 120mm mid and 25mm high. Crossover frequency: 500Hz, 4kHz. FR: 25Hz-25kHz DIN, 35Hz-20kHz \pm 3dB. Imp: 8 ohms. HC: 15-120W. Dimensions: 38 x 43 x 73cm. Price per pair: £599.96 (plus VAT). including T50 trolleys.

■ SONY

Sony (UK) Ltd, Consumer Information,
Sony Showroom, 134 Regent Street,
London W1R 6DJ.
Tel: 01-439 3879.

SS-G3

Infinite baffle enclosure with 250mm woofer, 80mm mid-range and 50mm tweeter. Crossover frequency: 900Hz, 5kHz. FR: 40Hz-20,000Hz. Imp: 8 ohms. Recommended amplifier output: 60W nominal handling power: dimensions: 34.5 x 34 x 61.5cm. Finish: walnut. Features: mid-range and tweeter attenuators.

SS-G5

Bass reflex speaker with 300mm woofer, 80mm mid-range and 25mm tweeter. Crossover frequency: 600Hz, 5.5kHz. FR: 35Hz-20,000Hz. Imp: 8 ohms. HC: 80W. Dimensions: 41.5 x 35 x 72cm. Finish: walnut. Features: mid-range and tweeter attenuators.

SS-G7

Bass reflex speaker with 380mm cone type woofer, 100mm mid-range and 35mm tweeter. Crossover frequency: 550Hz, 4.5kHz at 12dB/oct. FR: 30Hz-20,000Hz. Imp: 8 ohms. HC: 100W. Dimensions: 51 x 44.5 x 94cm. Finish: walnut. Features: mid-range and tweeter attenuators.



Sony SS-G1

SS-G1*

IB speaker with drive units: 250mm, 80mm, 25mm. Crossover frequency: 800Hz, 4kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 55W. Dimensions: 34 x 59.5 x 30cm. Finish: walnut.

■ SPENDOR

Spendor Audio Systems Ltd,
Station Road Industrial Estate,
Hailsham, Sussex.
Tel: Hailsham (0323) 843474.

BC 111*

Reflex enclosure with drive units: 305mm, 205mm both Spendor plus Celestion HF3100, HF2000. Crossover frequency: 700Hz, 3kHz, 13kHz. Frequency range: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 70W. Dimensions: 39.4 x 39.4 x 8cm. Finish: teak, walnut, black oak. Price: on application.

SA1*

Infinite baffle speaker with drive units: 115mm Spendor, 25mm Audax. Crossover frequency: 3kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 21.6 x 22.5 x 30.4cm. Finish: teak, walnut, black oak. Price: on application.

SA3

Reflex enclosure with drive units: 305mm Spendor, 35mm Audax. Crossover frequency: 1.8kHz. FR: 30Hz-18kHz. Built-in electronic crossover, 100W amplifier bass unit, 50W amplifier treble unit. Dimensions: 38 x 46 x 85cm. Finish: teak, walnut, black oak. Features: also available in passive version. Price: on application.

BC1*

Reflex enclosure with drive units: 20mm Spendor, HF1300 Celestion, 4001G Coles. Crossover frequency: 3,000Hz, 13kHz. FR: 50Hz-15kHz. Imp: 8 ohms. Recommended amplifier output: 55W. Dimensions: 30 x 30 x 63.5cm. Finish: teak, walnut, black oak. Features: trolley available. Price: on application.

BC1A

As BC1 but with built-in amplifier of 50W.

■ STUDIOCRAFT

Bose (UK) Ltd,
Trinity Trading Estate, Milton Regis,
Sittingbourne, Kent.
Tel: Sittingbourne (0795) 75341.



Spendor SA1, BC1, BC111

Model 110

Ported reflex enclosure with two drive units. Imp: 4 ohms. Amplifier requirements: 15W. Dimensions: 9 x 7½ x 14in. Weight: 13lb. each. HC: 40W RMS. Sold in matched pairs. Price per pair: £102.63 black, £97.75 walnut vinyl (inc. VAT).

Model 220

Ported reflex enclosure with two drive units. One 8in bass and one 1¾in. tweeter. Imp: 8 ohms. Amplifier requirements: 8-10W. Dimensions: 12 x 8 x 20in. Weight: 16lb each. Finish: walnut grained effect veneer. HC: 50W RMS. Sold in matched pairs. Price per pair: £135.24 black, £128.80 walnut vinyl (inc. VAT).

Model 330

Ported reflex enclosure with three drive units. One 8in bass and two 1¾in tweeter in convex array. Imp: 8 ohms. Amplifier requirements: 10W. Dimensions: 13½ x 9 x 21½in. Weight: 20lb each. Finish: walnut grained effect veneer. HC: 60W RMS. Sold in matched pairs. Price per pair: £176.29 black; £167.90 walnut vinyl (inc. VAT).

■ SWALLOW

The Old School, St. Ann's Lane,
Godmanchester, Huntingdon, Cambs.
Tel: 0450 59910.

CM 70

Infinite baffle speaker enclosure. Drive units: 200mm, 20mm. Crossover frequency: 4kHz. FR: 60Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 30-50W. Dimensions: 24 x 23 x 36cm. Finish: teak, walnut. Price per pair: approx. £154.00 (plus VAT).

RM200

Infinite baffle speaker enclosure. Drive units: 200mm, 150mm, 34mm, 20mm. Crossover frequency: 400Hz, 3kHz, 7kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 30-80W. Dimensions: 32 x 30 x 64cm. Finish: teak, walnut. Price per pair: £330.00 (plus VAT) approx.

■ TANDBERG

Tandberg (UK) Ltd,
Farnell House, 81 Kirkstall Road,
Leeds LS3 1HR.
Tel: Leeds (0532) 35111.

TLM 3005

Bass reflex enclosure with drive units: 330mm, 160mm, 34mm mid and 25mm tweeter. FR: 33Hz-20kHz. Crossover frequencies: 450Hz, 1,800Hz, 4,000Hz. Dimensions: 88 x 60 x 28cm. Features: three separate contour controls automatic overload protection, LED indicators visible through door panels, symmetrical pairs with angled baffles to give correct sound distribution. Finish: black, rosewood. Price per pair: £950.00 (inc. VAT).

■ TANGENT

Tangent Acoustic Ltd,
4 Viking Way, Bar Hill,
Cambridgeshire CB3 8EL.
Tel: Crafts Hill (0954) 81377.

Monitor TM3 Improved

Compact IB bookshelf system. Drive units: 19mm tweeter, 200mm plastic cone mid/bass. Crossover frequency: 18dB/oct. Imp: 8 ohms. HC: 60W. FR: 55Hz-30kHz ±3dB. Dimensions: 25.5 x 37 x 28.5cm. Finish: teak or walnut veneer with brown fabric grille. Other finishes to order. Price per pair: £113.00 (plus VAT).

Monitor TM1 Improved

Low-distortion reflex system. Drive units: 19mm tweeter, 200mm plastic cone mid/bass. Crossover frequency: 18dB/oct. Imp: 8 ohms. HC: 80W. FR: 40Hz-30kHz ±3dB. Dimensions: 30.5 x 63 x 31.8cm. Finish: teak or walnut veneer with grey fabric grille. Other finishes to order. Price per pair: £167.34 (plus VAT).

Reference RS2 Improved

IB bookshelf system for studio and domestic use. Drive units: 19mm dome tweeter, 140mm bextrene cone/mid/bass. Imp: 8 ohms. HC: 60W. FR: 52Hz-30kHz ±3dB. Dimensions: 25.5 x 37 x 28.5cm. Finish: teak or walnut veneer with brown fabric grille. Other finishes to order. Price per pair: £156.48 (plus VAT).

Reference RS4 Improved

Reflex system with cabinet braced and lined with acoustically absorbent plastic foam providing virtually anechoic conditions at critical mid-band frequencies. Drive units: 19mm dome tweeter, 200mm bextrene cone mid/bass. Imp: 8 ohms. HC: 100W. FR: 39Hz-30kHz ±3dB. Dimensions: 30.5 x 63 x 31.5cm. Finish: teak or walnut veneer with brown fabric grille. Other finishes to order. Price per pair: £234.74 (plus VAT).

SPL1

Bookshelf speaker with two drive units: 25.4mm dome tweeter and 110mm mid/bass. Imp: 8 ohms. FR: 95Hz-25kHz ±3dB. HC: 50W. Finish: walnut or teak, others to order. Dimensions: 17.9 x 27.5 x 19.7cm. Price per pair: £76.47 (plus VAT).

PS8 *

Infinite baffle speaker with drive units: 254mm low, 127mm mid, 25mm dome tweeter. Crossover frequency: 400Hz, 2.9kHz. FR: 27Hz-25kHz ±3dB. Imp: 8 ohms. Recommended amplifier output: 200W. Dimensions:



Tangent PS speakers

40.6 x 38.1 x 100.3cm. Finish: various wood veneers with black or brown fabric covered grille. Features: a phase compensated system designed for very accurate stereo imagery. Price per pair: £554.74 (plus VAT).

PS6*

Infinite baffle speaker with drive units: 203mm, 127mm, 25mm. Crossover frequency: 400Hz, 2.9kHz. FR: 32Hz-25kHz ±3dB. Imp: 8 ohms. Recommended maximum amplifier output: 180W. Dimensions: 37.5 x 29.5 x 87.5cm. Finish: various wood veneers with black or brown fabric covered grilles. Features: a phase compensated system designed for very accurate stereo imagery. Price per pair: £391.26 (plus VAT).

PS4*

Infinite baffle enclosure with drive units: 165mm, 127mm, 25mm. Crossover frequency: 400Hz and 2.9kHz. FR: 35Hz-25kHz ±3dB. Imp: 8 ohms. Recommended maximum amplifier output: 120W. Dimensions: 35.5 x 27 x 74.9cm. Finish: various wood veneers with black or brown fabric covered grilles. Features: a phase compensated system designed for very accurate stereo imagery. Price per pair: £260.83 (plus VAT).

■ TANNOY

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: High Wycombe (049-481) 5331.

Ascot T145 *

Utilises a new 10in bass driver unique to Tannoy. It uses a massive cast frame and mass-decoupling copolymer cone. Power handling: 60W. Sensitivity: 90dB. Dimensions: 48.5 x 34 x 24.8. Price: £300.43 (plus VAT) per pair.

Chester T165 *

As above but dimensions: 52.4 x 35 x 26.8cm. Price: £300.43 (plus VAT) per pair.

Dorset T185 *

Dual concentric drive system as in T145 and T165 but with different form of acoustic loading. Instead of bass reflex ports, a passive bass radiator is fitted into larger enclosures. Other specs as T145. Dimensions: 67 x 37 x 28.8cm. Price: £350.87 (plus VAT) per pair.

Mayfair T225 *

As T185 except dimensions: 71.4 x 37 x 29cm. Price: £400.43 (plus VAT) per pair.



Tannoy group. L-R: T165, T185, T225, T145

Berkeley

15in dual concentric speaker. Power handling: 85W. Sensitivity: 91dB. Dimensions: 84.6 x 63.6 x 30.8cm. Price: £558.70 (plus VAT) per pair.

Arden

Similar to Berkeley. Price: £604.35 (plus VAT) per pair.

Windsor

Power handling: 100W. Sensitivity: 92dB. Dimensions: 81.5 x 58 x 40cm. Price: £1,395.65 (plus VAT) per pair.

Buckinghamham

As above but power handling of 200W. Price: £2,130.44 (plus VAT) per pair.

Oxford T125

Designed for smaller rooms. Power handling: 50W. Sensitivity: 90dB. Dimensions: 56 x 33 x 27cm. Price: £187.39 (plus VAT) per pair.

T115 Cambridge

Crossover frequency: 4kHz. Output: 120W. Dimensions: 30.2 x 25 x 49.6cm. Impedance: 8 ohms. Finish: oiled walnut veneer. Price: £156.09 (plus VAT) per pair.

Cheviot Mk 2

Improved version of Arden and Berkely. Price: £472.17 (plus VAT) per pair.

TECHNICS

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough, Berks. SL1 3DR.
Tel: Slough (0753) 34522.

SB-3500

Two-way bass reflex system. Drive units: 16cm, 6cm. Imp: 8 ohms. Input power: 60W music. Output level: 89dB/W. Crossover frequency: 2,500Hz. FR: 50Hz-20kHz. Dimensions: 23 x 47.9 x 22cm.

SB-4000

Two-way linear-phase speaker system. Drive units: 20cm, 6cm. Imp: 8 ohms. Input power: 75W music. Output level: 91dB/W. Crossover frequency: 2,500Hz. FR: 46Hz-20kHz. Dimensions: 28 x 56.1 x 24.8cm.

SB-F1/F2/F3

Two-way compact linear-phase speaker systems. Details on application.

SB-F3

Linear phase two-way speaker system with drive units: 16cm cone and dome tweeter. Crossover frequency: 3,500Hz. FR: 45Hz-20kHz. Imp: 8 ohms. Features: protection circuit against excess input power. Input power: 90W. Dimensions: 17.9 x 32.1 x 19.1cm. Price per pair: £88.80 (plus VAT).

SB-F2

Linear phase two-way speaker system with drive units: 12cm cone and dome tweeter. Crossover frequency: 3,500Hz. FR: 48Hz-20kHz. Dimensions: 13.8 x 25.4 x 15.7cm. Input power: 75W. Features: protection circuitry against excess input power. Price per pair: £115.46 (inc. VAT).

SB-F1

Linear phase two-way speaker system with drive units: 10cm cone, dome tweeter. Crossover frequency: 4,000Hz. FR: 50Hz-20kHz. Dimensions: 11.8 x 21 x 12.6cm. Input power: 60W. Price per pair: £159.92 (plus VAT).

SB-R3

Linear phase three-way speaker system with drive units: 20cm woofer, 10cm mid, horn tweeter. Crossover frequency: 1,500Hz and 4,000Hz. FR: 42Hz-22kHz. Dimensions: 24.6 x 47.1 x 26.8cm. Input power: 110W. Features: protection relay with LED warning indicator to protect voice coils from damage caused by overloading. Price per pair: £173.82 (plus VAT).

SB-R4

Linear phase three-way speaker system with drive units: 25cm, 12cm, tweeter. Crossover frequency: 1,000Hz and 4,000Hz. FR: 40Hz-22kHz. Dimensions: 29.6 x 55.6 x 30.8cm. Input power: 130W. Price per pair: £226.00 (plus VAT).

SB-7

Honeycomb disc three-way linear phase speaker system. Drive units: 25cm, 8cm, tweeter. Crossover frequency: 900Hz, 1.25kHz. FR: 34Hz-125kHz. Imp: 8 ohms. Input power: 130W. Dimensions: 36 x 63 x 31.8cm. Price per pair: £340.00 (plus VAT).

SB-10*

Honeycomb disc three-way linear phase speaker system. Drive units: 32cm, 8cm, tweeter. Crossover frequency: 400Hz, 4,000Hz. FR: 28Hz-125kHz. Imp: 8 ohms. Input power: 150W. Dimensions: 40.2 x 71.1 x 31.8cm. Price per pair: £475.00 (plus VAT).

TOSHIBA

Toshiba (UK) Ltd,
Toshiba House, Frimley Road, Frimley,
Camberley, Surrey.
Tel: Camberley (0276) 62222.

SS-45GB

Two-way infinite baffle speakers. Drive units: Sonaudax 220mm dia. bass speaker with 25mm aluminium voice coil, Sonaudax 25mm soft dome high frequency speaker. Power rating: 45 watts continuous. FR: 48Hz-22kHz. Crossover frequency: 3kHz via 7 element network. Imp: 8 ohms. Efficiency: 6.5 watts for 96dB. Front grille removable. Dimensions: W x H x D, 286 x 536 x 287mm. Finish: simulated walnut. Price: £97.33 (plus VAT).

SS-100GB*

Three-way infinite baffle speaker. Drive units: Sonaudax 251mm dia. bass speaker with 46.3mm aluminium four layer voice coil.

Sonaudax 130mm mid range speaker with a 25.5mm aluminium voice coil and specially treated cone. Sonaudax 25mm soft dome HF speaker. Power rating: 100W continuous. FR: 48Hz-22kHz. Crossover frequency: 680Hz and 5.5Hz. Resonance: 43Hz. Imp: 8 ohms nominal. Efficiency: 8.2 watts for 9.6dB. Front grille removable. Dimensions: W x H x D, 338 x 636 x 287mm. Finish: simulated walnut. Price: £168.44 (plus VAT).

SS50 GB

Drive units: 203mm, 87mm, 25mm. Crossover frequency: 700Hz-3.5kHz with a 10-element network. FR: 48Hz-22kHz. Impedance: 8 ohms. HC: 50W. Dimensions: 28.6 x 28.7 x 53.6cm. Finish: teak. Price: £129.57 per pair (plus VAT).

TRIO

B. H. Morris & Co. Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

LS 1900*

Reflex speaker with drive units: 330mm bass, 130mm mid, diffraction horn type HF. Crossover frequency: 500Hz, 600Hz. FR: 30Hz-21kHz. Imp: 8 ohms. Recommended amplifier output: 60-170W. Dimensions: 56 x 45 x 105.5cm. Finish: walnut veneer. Features: attenuator level controls for mid and high frequencies. Price per pair: £1,391.30 (plus VAT).

LS 1600

Reflex speaker with drive units: 330mm bass, 130mm mid and diffraction horn high frequency. Crossover frequency: 900Hz, 5,000Hz. FR: 32Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 50-120W. Dimensions: 39 x 32.3 x 71cm. Finish: walnut

*Toshiba SS-100-GB**Trio LS 1900**Technics SB10*

vener. Features: attenuator level controls for mid and high frequencies. Price per pair: £595.65.

LS 1200

Reflex speaker with drive units: 250mm bass, 100mm mid, 40mm high. Crossover frequency: 1,000Hz, 6,000Hz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 40-100W. Dimensions: 35 x 32.7 x 65cm. Finish: simulated walnut. Features: attenuator level controls for mid and high frequencies. Price per pair: £218.76.

LSK 400B

Air suspension system. Drive units: 225mm bass, 111mm mid, 45mm high. Crossover frequency: 3,300Hz, 6,600Hz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 30-80W. Dimensions: 35.6 x 28 x 61.1cm. Finish: simulated walnut. Price per pair: £108.69.

LS-1000

Reflex enclosure with drive units: 250mm, 40mm. Crossover frequency: 2,000Hz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 90W. Dimensions: 30 x 31.1 x 59cm. Finish: simulated wood grain finish. Features: acoustic level control for high frequencies. Price per pair: £205.94 (plus VAT).

LS-800

Reflex enclosure with drive units: 250mm, 40mm. Crossover frequency: 3,500Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 90W. Dimensions: 30 x 29.1 x 59cm. Finish: simulated wood grain finish. Features: acoustic level control for high frequencies. Price per pair: £146.40 (plus VAT).

S-5

Reflex enclosure with drive units: 200mm, 30mm. Crossover frequency: 5,000Hz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 80W. Dimensions: 23 x 21.6 x 41cm. Finish: laminated with polyvinyl finish. Features: acoustic level control for high frequencies. Price per pair: £128.10 (plus VAT).

S-3

Reflex enclosure with drive units: 160mm, 50mm. Crossover frequency: 5,000Hz. FR: 55Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 21.5 x 20.5 x 36cm. Finish: laminated with polyvinyl finish. Price per pair: £91.48 (plus VAT).

■ **VIDEOTONE**

Videotone,
98 Crofton Park Road,
London SE4.
Tel: 01-690 1914.



Videotone GBS

GBS*

Reflex enclosure with drive units: 255mm woofer, 50mm, 14mm tweeter. Crossover frequency: 900-1.5kHz. FR: 40Hz-22kHz. Imp: 8 ohms. Recommended amplifier output: up to 80W. Dimensions: 31 x 31 x 62cm. Finish: teak. Price per pair: £180.00 (plus VAT).

■ **VISONIK**

Uher Ltd,
24 Market Place, Falloden Way,
London NW11.
Tel: 01-455 1771/01-458 8491.

David 502

Infinite baffle speaker with 98mm cone woofer and 19mm dome tweeter. Crossover frequency: 1,400Hz. FR: 45Hz-30kHz. Imp: 4, 8 ohms. Recommended amplifier output: 20-70W. Dimensions: 10.3 x 10.7 x 17cm. Grey/black grilles. Price per pair: £103.50 (plus VAT).

David 4000

IB speaker with drive units: 98mm woofer, 25mm tweeter. Crossover frequency: 2,500Hz. FR: 50Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 20-50W. Dimensions: 10.9 x 10 x 17.2cm. Finish: black. Price per pair: £87.00 (plus VAT).

David 6000

As 4000 but FR: 45Hz-25kHz. Dimensions: 12.6 x 13.3 x 19.5cm. LED overload. Price per pair: £109.00 (plus VAT).

David 7000

IB speaker with drive units: 130mm woofer, 25mm tweeter. Crossover frequency: 2,500Hz. FR: 40Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 25-70W. Dimensions: 16.1 x 1.7 x 25cm. Finish: black. LED overload. Price per pair: £126.00 (plus VAT).

David 9000

IB speaker with drive units: 245mm woofer, 98mm mid, 25mm tweeter. Crossover frequencies: 900, 500Hz. FR: 35Hz-45kHz. Imp: 4-8 ohms. Recommended amplifier output: 30-100W. Dimensions: 23.5 x 24.8 x 36.5cm. Finish: black. LED overload. Price per pair: £220.00 (plus VAT).

Sub 1

Drive units: 300mm. Crossover frequency: 150-2,500Hz. FR: 20Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 30-100W. Dimensions: 43 x 35.5 x 63.5cm. Finish: black. Price: £226.00 (plus VAT).

Sub 2

As Sub 1 but with 245mm drive unit. Size: 36 x 31 x 49.5cm. Price: £175.00 (plus VAT).

Expuls 1*

IB speaker with drive units: 200mm, 37mm, 19mm. Crossover frequency: 900-4,500Hz. FR: 30Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 30-120W. Dimensions: 30 x 23 x 63cm. Finish: black. Price: £364.00 (plus VAT).

Expuls 2*

IB speaker. Drive units: 245mm, 37mm, 19mm. Crossover frequency: 800-4,500Hz. FR: 25Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 40-150W. Dimensions: 36.5 x 26 x 75cm. Finish: black. Price: £429.00 (plus VAT).

Expuls 3*

IB speaker. Drive units: 300mm, 98mm, 19mm. Crossover frequency: 550-4,000Hz. FR: 20Hz-30kHz. Imp: 4-8 ohms. Recommended amplifier output: 50-200W. Dimensions: 43 x 31 x 95cm. Finish: black. Price: £654.00 (plus VAT).

■ **WHARFEDALE**

Rank Hi-Fi,
Highfield Road, Idle,
Bradford, West Yorks.
Tel: Idle 611131.

E20

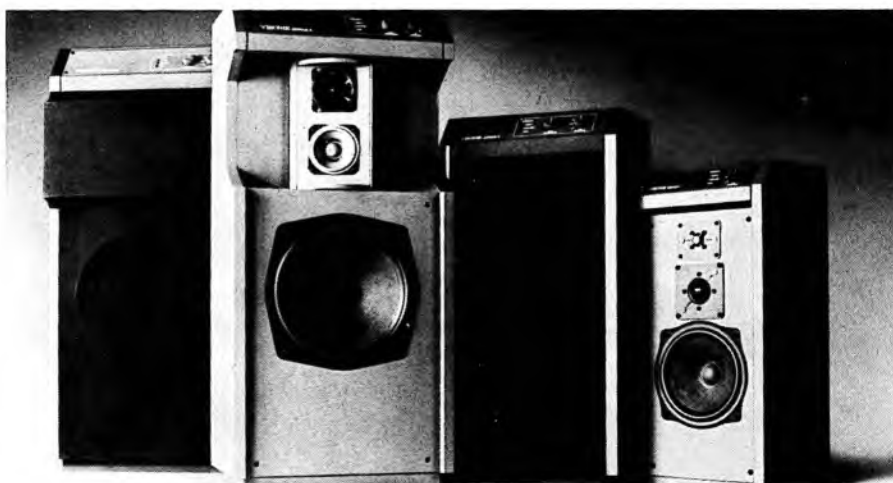
Computer optimised reflex enclosure with drive units: 25mm tweeter, 200mm bass. Crossover frequency: 4kHz. FR: 45Hz-18kHz. Imp 8 ohms. Rec. amplifier output: 15-65W. Dimensions: 30.48 x 24.13 x 56.5cm. Finish: walnut. Features: high efficiency 95dB at 1 metre for 1W. Typical market price: £159.90.

E30

Computer optimised reflex enclosure with drive units: 25mm, 170mm bass. Crossover frequency: 4kHz. FR: 45Hz-19kHz. Imp: 8 ohms. Recommended amplifier output: 15-75W. Dimensions: 33.5 x 26.1 x 58cm. Finish: walnut. Features: high efficiency 94dB at 1 metre for 1W. Typical market price: £199.90.

E50

Computer optimised reflex enclosure with drive units: 25mm, 100mm, 250mm. Crossover frequency: 800Hz, 7kHz. FR: 40Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 15-100W. Dimensions: 34.2 x 24.2 x 66.5cm. Finish: walnut. Typical market price: £299.90.



Visonik Expuls 1, 2, & 3

- E70**
Computer optimised reflex enclosure with drive units: 25mm, two 100mm, 250mm. Crossover frequency: 800Hz, 7kHz. FR: 30Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 15-100W. Dimensions: 34.2 x 36 x 81.5cm. Finish: walnut. Features: high efficiency 95dB at 1 metre for 1W. Typical market price: £349.90.
- E90**
Computer optimised reflex enclosure with drive units: 25mm, two 100mm, 250mm. Crossover frequency: 150Hz, 800Hz, 7kHz. FR: 30Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 15-200W. Dimensions: 38 x 42 x 113cm. Finish: walnut. Features: high efficiency 95dB at 1 metre for 1W. Typical market price: £499.90.
- TSR108**
Computer optimised reflex enclosure with drive units: 25mm, 200mm. Crossover frequency: 3.5kHz. FR: 35Hz-25kHz. Imp: 6 ohms. Recommended amplifier output: 15-80W. Dimensions: 30.9 x 28.5 x 57.7cm. Finish: walnut. Features: as TSR110.
- TSR110**
Computer optimised acoustic suspension speaker with drive units: 25mm, two 200mm. Crossover frequency: 300Hz, 3.5kHz. Imp: 6 ohms. Recommended amplifier output: 15-140W. Dimensions: 33.2 x 33.5 x 69.5cm. Finish: walnut. Features: new cone material for bass/mid drivers. Time delay compensation, high efficiency.
- TSR112**
Computer optimised acoustic suspension enclosure with drive units: 25mm, 200mm, two 250mm. Crossover frequency: 100Hz, 600Hz-3.5kHz. FR: 30Hz-25kHz. Imp: 6 ohms. Recommended amplifier output: 15-190W. Dimensions: 38 x 39.4 x 108.7cm. Finish: walnut. Features: new cone material for bass/mid drivers. Delay compensation, high efficiency.
- Laser 40**
Infinite baffle enclosure. Drive units: 50mm, 170mm. Crossover frequency: 3.5kHz. FR: 58Hz-22kHz. Imp: 6 ohms. Recommended amplifier output: 15-60W. Dimensions: 24.6 x 24.2 x 35.5cm. Finish: teak. Features: as Laser 60.
- Laser 60**
Infinite baffle enclosure with drive unit: 19mm, 200mm. Crossover frequency: 3.5kHz. FR: 55Hz-30kHz. Imp: 6 ohms. Recommended amplifier output: 15-75W. Dimensions: 26.4 x 24.3 x 41.2cm. Finish: teak. Features: low modulus polyamide domed tweeter, plus Wharfedale developed mid cone.
- Laser 80**
Infinite baffle enclosure with drive units: 19mm, 100mm, 200mm. Crossover frequency: 650Hz-3.5kHz. FR: 52Hz-30kHz. Imp: 6 ohms. Dimensions: 26.4 x 24.4 x 47.6cm. Finish: teak. Features: as Laser 100.
- Laser 100**
Infinite baffle enclosure with drive units: 19mm, 100mm, 250mm. Crossover frequency: 700Hz, 3.5kHz. FR: 40Hz-30kHz. Imp: 6 ohms. Recommended amplifier output: 15-105W. Dimensions: 30.5 x 24.6 x 56.5cm. Finish: teak.
- Features: low modulus polyamide domed tweeter, plus Wharfedale developed mid cone.
- Laser 200**
Computer optimised reflex with drive units: 45 x 25mm Isodynamic tweeter, 200mm bass. Crossover frequency: 1kHz, 5kHz. FR: 30Hz-26kHz. Imp: 6 ohms. Recommended amplifier output: 15-70W. Dimensions: 30.5 x 27.5 x 56.5cm. Finish: walnut. Features: as Laser 400.
- Laser 400**
Computer optimised reflex with drive units: 45 x 25mm Isodynamic tweeter, 100mm, 250mm. Crossover frequency: 1kHz, 4.5kHz. FR: 30Hz-40kHz. Imp: 6 ohms. Recommended amplifier output: 15-120W. Dimensions: 34.2 x 34.8 x 66.5cm. Finish: walnut. Features: Isodynamic tweeter plus Wharfedale developed cone material for bass/mid drivers produced using laser technology.
- **WIFONA**
Paul Spring Electronics Ltd,
6 Oasthouse Way, St. Mary Cray,
Orpington, Kent.
Tel: Orpington (0689) 31341.
- LS V**
Infinite baffle with drive units: 200mm, 120mm, 87mm, 52mm. Crossover frequency: 300Hz, 1,000Hz, 4,000Hz. FR: 30Hz-20kHz. Imp: 6 ohms. Recommended amplifier output: 75-100W. Dimensions: 27.5 x 22 x 48cm. Genuine walnut. Price per pair: £87.50 (plus VAT).
- Pop Sound***
Infinite baffle speaker with Disco lights. Drive units: 165mm, 57mm. Crossover frequency: 2,000Hz. FR: 50Hz-18,000Hz. Imp: 4 ohms. Recommended amplifier output: 30-40W. Dimensions: 25 x 21.5 x 36cm. Ebonised walnut cabinet. Contains switching amplifier with AGC and sockets for two coloured 40W reflector bulbs and mains connection, 2 threshold controls, 1 bulb flashes in sympathy with treble notes, the other with bass. Price: £93.50 (plus VAT).
- **YAMAHA**
Natural Sound Systems,
10 Byron Road, Wealdstone,
Harrow, Middlesex.
Tel: 01-863 8622.
- NS 144**
Infinite baffle speaker. Drive units: 200mm, 60mm. Crossover frequency: 2,000Hz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 50W. Dimensions: 50.6 x 30 x 24.5cm. Finish: walnut. Features: variable tweeter. Price: on application.
- NS 344**
Infinite baffle speaker. Drive units: 250mm, 120mm, 30mm. Crossover frequency: 700Hz, 6,000Hz. FR: 50Hz-38kHz. Imp: 8 ohms. Recommended amplifier output: 70W. Dimensions: 56.8 x 33 x 31.3cm. Finish: walnut. Features: variable midrange and tweeter. Price: on application.
- NS 244**
Infinite baffle speaker. Drive units: 250mm, 30mm. Crossover frequency: 2,000Hz. FR: 50Hz-38kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 54 x 32 x 30cm. Finish: walnut. Features: variable tweeter. Price: on application.
- NS-1000M**
Infinite baffle speaker. Drive units: 300mm, 88mm, 30mm. Crossover frequency: 500Hz, 6,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Dimensions: 67.5 x 37.5 x 32.6cm. Finish: black. Features: variable roll off mid range and tweeter. Price: on application.
- NS 590**
Infinite baffle speaker. Drive units: 300mm, 120mm, 30mm. Crossover frequency: 700Hz, 6,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms.
- continued on page 219*



Wifona Pop Sound



Wharfedale Laser 200



Yamaha 590

ADVERTISERS INDEX

Acoustical Manufacturing Co Ltd	3
Audan Audio Ltd	164
Audio Dynamics Corporation	32
Aura Sounds Ltd	204
Bang & Olufsen UK Limited	107
Beyer Sounds	70
Bib Hi-Fi Accessories	92
Castle Acoustics	8
Lennard Developments Ltd	70
Linn Products	144
Magee, E&W Ltd	70
Panasonic UK (Technics)	50-51
Philips Hi-Fi	52
Pioneer High Fidelity (GB) Ltd	Back Cover
Pye Ltd	Inside Front Cover
Rola Celestion Ltd	170
Ross Electronics	24
S.M.E. Ltd	114-115
Sansui	49
Sanyo (UK) Ltd	Inside Back Cover
Shure Electronics Ltd	83, 118
Spendour Audio Systems	184
Trio	54, 148
Wolsey Electronics	36
Yamaha Organs	210

TAPE ACCESSORIES

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

(For tape storage units in cabinet styling see under Hi-Fi Cabinets)

■ ADASTRA

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288.

R100 Cassette Carrying Case Mk II

Designed to hold 16 compact cassettes in rigid drop-front case. Finished in padded simulated leathercloth. Snap-fast closing. Slotted compartments and moulded handle. Finish: red, tan or black. Size: 14½ x 4¾ x 3¼in. Price: £2.82 (plus VAT).

R51

Tape splicer. Self-contained with instant cut and trim action. Spring-loaded arms secure tape to padded cutting block. Price: £1.62 (plus VAT).

R101 Cassette Carrying Case

32 cassette version of R100 with double opening front and individual moulded tray holders. Size: 14½ x 3½ x 9in. Price: £4.30 (plus VAT).

R54

De luxe tape head demagnetiser. Operates from AC mains 220-240V. Removes residual magnetism from recording head, etc. Features extra long probe for access to difficult parts. Complete with 1m lead. Heavy duty 'Torpedo' shaped body. Overall length: 6½in. Price: £3.96 (plus VAT).

R110/R111 Stako-Tape

Vertical and horizontal interlocking storage system in two versions: (R110) holding 10 cassettes; (R111) containing 8 8-track cartridges. Moulded cabinets in orange, white or black. Can be wall-mounted or used free-standing. Price: 80p (plus VAT).

Tape Spools

First grade plastic tape spools with standard tape threading facilities and of a design enabling them to fit all tape recorders. In sizes 3, 4, 5, 5¼, 7in. Price: on application.

R40 Cassette Library Cases

Standard design to accommodate all compact cassettes with the flip lid moulded in clear material. Size: 110 x 70 x 17mm. Price: 10p each.

R45 Cassette Tape Tension Winders (M1111)

For manual winding of compact cassettes for editing and repair purposes. Neat moulded knobs in black with silver trim have hexagon shaped projections for fitting into the hub recesses of compact cassettes packed in pairs in top card see-through presentation. Price: 42p (plus VAT).

R55

Deluxe tape head demagnetiser with 1½in angled probe for cassette and cartridge application. 1 metre lead. Moulded body. Overall length 5¼in. Price: £4.15 (plus VAT).

R50

Cassette head cleaner with impregnated tape for safe cleaning of cassette heads. Price: 42p (plus VAT).

R106

Carousel type rotating double sided rack accommodating 40 cassettes. Cabinet is finished in teak, rosewood or white. Price: £8.00 (plus VAT).

M105 Imp-Verta *

Impedance converter enabling long lead, low impedance microphones to be used directly into input sockets of amplifiers and tape recorders. Conversion ratio of 20:1. Jack socket connections. Internal 9V battery. Price: £6.00 (plus VAT).

■ AUDIO MAGNETICS

AMSA Magnetics Ltd,
Loverock Road, Reading,
Berks. RG3 1JZ.
Tel: Reading (0734) 598036.

Head Cleaners

Cassette—50p.

■ BASF

BASF United Kingdom Ltd,
Audio/Video Tapes Division,
4-5 Fitzroy Square, London W1P 5AM.
Tel: 01-388 4200.

Plastic Spools

Standard sizes: 8-26.5in. Prices: 46p-£3.72 (plus VAT).

Metal Spools

18cm £4.88; 22cm £7.34; 26cm £7.92 (all plus VAT). Spools for ferro, super LH tape: 13cm 62p; 15cm 74p; 18cm 76p.

Hinged Lid Plastic Boxes

5¼in. £1.30 and 7in reels £1.44 (plus VAT).

Hinged Lid Plastic Boxes for LH Super Tape

5in £1.06; 5¼in. £1.22; 7in. reels £1.56.

Other Accessories

Empty C Box—64p; C Box carrying handle—86p; C Box mounting bracket—86p; BR reel to reel cleaning tape: £2.96; CR cleaning cassette—£2.96; Profi-nab adaptor—£6.52; hobby box (reel to reel)—£5.36; hobby box (cassette)—£5.86; leader tape 300m/984ft—£5.44; leader tape 25m/80ft.—£1.60; splicing tape 6.25mm x 25m (¼in. x 80ft.)—£2.56; splicing tape 12.50mm x 25m (½in. x 80ft.)—£3.98; splicing set—£1.14; metallised foil 6.25mm x 25m (¼in. x 80ft.):£4.44; leader tape set—£2.40; plastic tape clips (box of 10)—78p; head alignment tape—£9.68; 7-pin microphone (9202/9302 model)—£7.92; mains lead (9202/9302 model)—£3.08.

BASF Checkpoint Accessories *

Tape head cleaning kit—80p; cleaning cassette—88p; cassette tape splicing kit—£1.60; cassette tape editing kit—£2.50; cassette repair and care kit—£3.70; 50 cassette labels and 25 index cards—90p; 2 cassette boxes, 2 index cards, 4 labels—40p; cassette screwdrivers—50p; cleaning fluid—36p; salvage cassette—60p; cassette splicing tabs—80p; test cassette—£3.52; scissors and tweezers—68p; chinagraph pencils (3)—48p; reel-to-reel tape editing kit—£4.40; red and green leader tape (10m each)—86p; clear leader tape (10m)—60p; grey/white and red/white leader tape (10m each)—86p; reel-to-reel splicing tabs—68p; reel-to-reel tape clips (20)—£1.16; reel-to-reel tape splicing block—£2.00; complete cassette care kit—£4.70; complete reel-to-reel tape care kit—£10.28.

■ BIB

Bib Hi-Fi Accessories Ltd,
Kesley House, Wood Lane End,
Hemel Hempstead, Herts. HP2 4RQ.
Tel: Hemel Hempstead (0442) 61291.

Ref. J. Compact Tape and Cleaning Kit

Price: £1.75 (inc. VAT).

Ref. 78. Cassette Fast Hand Winder

Very simple and easy to use, it winds a C90 cassette in 60 seconds. Saves batteries. Price: £1.66 (inc. VAT).

Ref. 31. Cassette Head Cleaner

Price: 87p (inc. VAT).

Ref. 38. Cassette Title and Container Labels

Cassette index and title cards. Price: £1.82 per



Adastra Imp-Verta



BASF Checkpoint

pack (inc. VAT).

Ref. 93. Combined Cassette Head Cleaner/Demagnetiser

Cleans and demagnetises tape heads in one simple operation. Price: £3.06 (inc. VAT).

Ref. 25. Tape Head Cleaning Kit

Suitable for all makes of tape recorders. Features the patented BIB multi-angled head cleaning tool, cleaning brush, inspection mirror, tape head cleaning fluid and 8 spare cleaning pads. Price: £2.48 (inc. VAT).

Ref. 56. Universal Splicing Kit

Suitable for cassette and 1/4in tape. Comprising patented BIB cassette tape splicer, on which diagonal and butt joins can be made. Splicing tape on dispenser, tape cutter with handle and adapter for 1/4in. tape. Price: £2.88 (inc. VAT).

Ref. 90-AE. Tape Head Demagnetiser

For all tape recorders. Supplied with two removable probes. Built-in switch which automatically cuts off when not in use. Price: £8.74 (inc. VAT).

Ref. 115-AE. Tape Head Cleaner

Multi-angled cleaning tool suitable for all types of tape recorders for removing tape oxides, dust and dirt from tape heads, capstan and pinch wheel. Supplied with inspection mirror, cleaning brush, fluid and cleaning tips. Price: £5.08 (inc. VAT).

Ref. 24-AE. Cassette Tape Splicer

For repairing or for accurate tape editing. Fitted with clamps and suitable for use with recording tape of any thickness. Price: £5.47 (inc. VAT). 1/4in. splicer. Ref. 20-AE, same price.

■ CAMBRA INTERNATIONAL LTD

Cambrasound Ltd.
4-10 North Road, London N7 9HN.
Tel: 01-607 8141.

No. 29

Cassette tray holding 36 cassettes in individual divisions. Free standing or wall mounted in attractive smoke finish. Provides easy access and product identification.

Music Mobile Model 111

Record and cassette storage unit holding 150 LP records and 69 cassettes in individual divisions. Extra area for small accessories. Fitted castors and translucent hinged lift-off lid. Packed in knockdown form.

Stakotape Storage Units *

Each individual unit holds ten cassettes or eight cartridges. Free standing or wall mounted. Interlocking horizontally and vertically and available in five attractive colours: orange, white, black, smoked, brown. Many other cases and cabinets to hold both records and cassettes. Details on request.

Model 56 Cassette Caddy

Holds up to 56 cassettes without library boxes or 40 in library boxes. Hinged, translucent smoked finish sides for easy title identification.

■ CONDOR

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

C105 Cassette Head Cleaner

Cleaning tape packed in rugged library case and

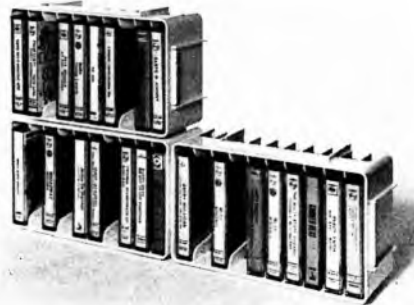
presented in a dispenser carton for retailers. Price: 55p (plus VAT).

C107 Tape Editing and Care System

Custom styled storage case holding splicing block, splicing tape 1/4 x 1/8in., cutters, cassette head cleaner, polishing stick and fluid. Price: £3.45 (plus VAT).

C110 Splicing Block

Professional splicing block accurately machined for 1/4in. and cassette tape widths. Features 45deg and 90deg cutting guides. non-slip base. Complete on blister card with cutting blade. Price: £1.72 (plus VAT).



Cambra cassette stakotape



Condor Cassette Head cleaner and Demagnetiser



Eagle TD 83 Tape Head Demagnetiser

C115 Cassette Care Pack

Comprises cassette head cleaner, tape stick, 30cc bottle of tape and capstan cleaning fluid. Price: £1.20 (plus VAT).

C118 Tape Head and Capstan Cleaning Kit

30cc bottle tape head and capstan cleaning fluid, plus cleaning and polishing tape head stick. Price: 83p (plus VAT).

C209 Head Cleaner Demagnetiser

For cassettes. Price: £2.55 (plus VAT).

C210 Head Cleaner Demagnetiser

For cassettes. Price: £3.55 (plus VAT).

C69T

Tape head and capstan cleaning fluid. 30cc bottles of tape head fluid suitable for removing stubborn deposits from operational parts of all tape recorders. Price: 36p (plus VAT).

C94

Index Cards. Blank index cards presented in packs of 25. Price: £1.12 (plus VAT).

C109

Tape head cleaning stick. Ingeniously designed cleaning and polishing stick for removing stubborn deposits from operational parts of all tape recorders. Price: 30p (plus VAT).

C111*

Cassette head cleaner and demagnetiser. Price: £2.17 (plus VAT).

■ EAGLE

Eagle International,
Precision Centre, Heather Park Drive,
Wembley HA0 1SU.
Tel: 01-902 8832.

TD79 Tape Head Demagnetiser

250V AC mains operation.

TD83*

Cassette head demagnetiser 240V AC operation, suitable for compact cassette recorders and players.

■ ELECTROLUBE

QFD Audio Products Ltd,
Unit 12, Ashford Industrial Estate,
Ashford, Middlesex.
Tel: Ashford (07842) 46236.

Type EL/1 Tape Clean

A special safety solvent for cleaning recording heads and other delicate parts of sound and video recorders. Tape Clean dries rapidly and leaves a perfectly clean surface. Price: £2.06.

■ EMI

EMI Tape Ltd,
Tape House, Dawley Road,
Hayes, Middlesex.
Tel: 01-573 3888.

Cassette Maintenance Kit

Comprising head cleaner, head cleaning fluid, inspection mirror, lint-free cloth, cotton buds.

Cassette Editing Kits

Including splicing block, splicing tape, razor blades, leader tape. All in special library case.

Cassette Head Cleaner

Prevents build-up of oxide debris.

Cassette Head Cleaning Fluid

For cleaning magnetic heads, pinch roller and capstan assemblies.

Cassette Library Cases

Each pack contains two library cases.

Open Reel Editing Block

Accurately machined to splice 1/4in. tape to professional standards.

Open Reel Splicing Tape

1/4in. splicing tape. Easy-to-use self-adhesive.

Open Reel Leader Tape

Both red and green in twin pack.

FERROGRAPH

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX.
Tel: South Shields (0632) 566321.

Defluxer

For depolarising heads, capstans and guides. Ensures maximum signal/noise ratio. Prevents hiss and protects tapes from cumulative background noise. Price: £12.94 (plus VAT).

Carrying Case for Tape Recorders

Waterproof canvas case with zip fastener. Price: on application. Please quote model.

Endless Loop Cassette

Permits Ferrographs to be operated continuously on an endless loop of 8 min duration at 7 1/2in. Price: £18.00 (plus VAT).

Ferrotape Spools

Aluminium, anodised grey. Prices: 7in. £3.14 (plus VAT); 8 1/4in. £4.32 (plus VAT). In library boxes: 7in. £3.83; 8 1/4in. £5.01; 10in £6.27 (plus VAT).

NAB Adaptor

Converts cine centred spool carrier to NAB centred. Price: £7.85 (plus VAT).

Remote Control Unit (Logic 7, SP7)

Duplicates main operating controls for Logic 7 recorders; run, pause, record/cancel, wind/reverse, stop. Price: £47.06 (plus VAT).

Dust Cover

Rigid transparent cover to protect recorders. Price: Series 7 £20.76 (plus VAT). Super 7 and Logic 7 £27.68 (plus VAT); PC4 Neal 102, 103 £15.00 (plus VAT).

GARDNERS TRANSFORMERS LTD

Christchurch, Dorset BH23 3PN.
Tel: Christchurch (0202) 482284.

Invertamod Inverters *

The Invertamod range provides 220 or 240V at 50Hz and has been designed with economy, reliability, flexibility and efficiency as basic features. Input, either 12, 24 or 50V DC (nominal). Output frequency, 45Hz to 400Hz (pre-settable). Rating from 50W to 4,000W. Overload capability 150% full load. Protection, short circuit and reverse polarity. Operating temperature range 0 to 50degC. Load regulation better than 10%. The unit can also be fitted with an automatic changeover unit to switch from mains to battery in the event of mains failure. Full specification sheet on request. Prices: on application.

KNOWIN

Knowin (UK) Ltd,

Knowin House, 37 Churchill Way,
Fleckney, Leicestershire LE8 0UD.
Tel: Leicester (0533) 403331.

Archifix Boxes

New system of filing records and cassettes in a space saving and clear way. Cassette boxes measure 34 x 32 x 8cm, available in a variety of colours.

Archi-Box 17cm

'L' Racks. Measure 20 x 10 x 11cm in Polystyrol and will take 10 cassettes. Available in a variety of colours.

Cassette-Carousel*

A method of storing so that cassettes can be easily seen and selected. Several units form a space saving cassette library in colours to suit modern tastes.

Profile

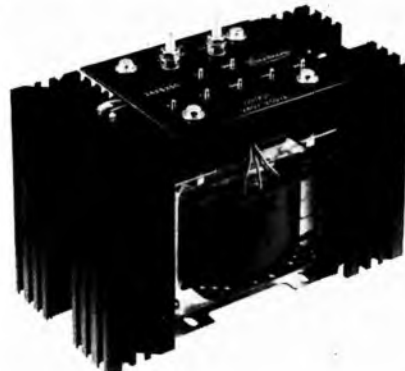
Cassette box for 36 cassettes.

LEDA

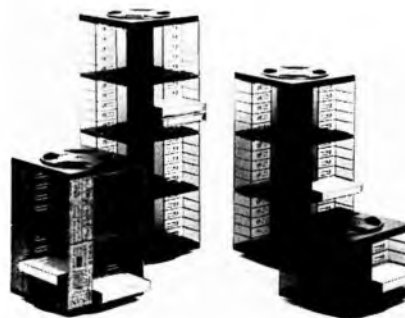
Leda Audio Accessories Ltd,
16 Tewin Court, Welwyn Garden City,
Herts. AL7 1AU.
Tel: Welwyn Garden 27666.

LA 31 Supa Care Pack 2*

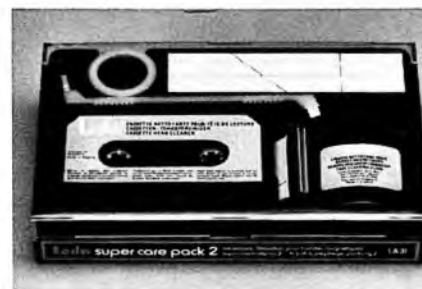
Custom styled storage case holding splicing



Gardners Invertamod



Knowin Carousel Collection



Leda LA31 Supa Care Pack

block, splicing tape, cutters, cassette head cleaner, polishing stick and fluid. Everything permanently stored for the cassette enthusiast.

LA20 Cassette Care Pack

All purpose cassette cleaning kit includes cassette head cleaner in library case, 30cc tape cleaner fluid and double ended polishing tool to remove stubborn deposits that easily affect reproduction.

LA27 Splicing Block

Accommodates both 1/4in and cassette tape widths. Cutting guides are machined for 90deg and 45deg cutting. Block includes non-slip rubber base and single edge cutter.

LA32 Supa Care Pack 3

Professional Tape Editing and repair kit including LA27 splicing block, scissors, tweezers, screwdriver, jointing tape, marking pencil and cutter. Most editing problems are easily solved with this complete set of tools stored in custom made case.

LA45 Video Recorder Care Kit

Versatile kit comprises special cleaning tool with interchangeable heads for removing residue build up. Also includes inspection mirror, cloth, dusting brush and fluid all housed in permanent storage box.

LENNARD

Lennard Developments Ltd,
206 Chase Side, Enfield,
Middlesex EN2 0QX.
Tel: 01-363 8238.

Tape Accessories

Full range including Tapehead cleaning fluid, tape cassettes and cartridges, tape library cases, cassette and cartridge cleaners, cassette index cards, swab sticks, tapehead and capstan cleaners, cassette care kits, cassette and cartridge carrying cases, standard and long-play tapes, tape spools, plastic tape boxes, leader tapes, splicer tapes.

LYRICHORDS

N. Miers & Co. Ltd,
Piercing Hill, Theydon Bois,
Nr. Epping, Essex CM16 7LE.
Tel: 037-881 2611.

Tape Accessories

8-track cartridge demonstration and test tape £2.48 (plus VAT); 8-track cartridge tape head cleaner £1.10 (plus VAT); tape head cleaning kit for reel-to-reel and cassette recorders 90p (plus VAT); 1/4in. cassette splicing and editing kit £1.99 (plus VAT); cassette salvage kit 48p (plus VAT); universal modification kit £1.50 (plus VAT).

METROCARE

Cambrasound Ltd,
4-10 North Road, London N7 9HN.
Tel: 01-607 8141.

M91A Compact Kit

Cassette and disc cleaners combined in a storage unit. For owners of complete music systems. Price: £4.16 (inc. VAT).

M92A Music Centre Kit

Head cleaner cassette, fluid and spatula with record cleaning arm and ioniser in a storage case. For the owners of quality music centres. Price: £7.27 (inc. VAT).

M88A Tape Head Aerosol Spray
Suitable for cassette, reel-to-reel, and 8-track machines. Price: £1.58 (inc. VAT).

M110A Cordless Head Demagnetiser and Cleaner Cassette
This non-electric device provides automatic head demagnetising when inserted into a cassette machine, cleaning the heads at the same time with a non-abrasive material. Price: £2.97 (inc. VAT).

M113A Tape Editing Kit
Splice with ease and professional accuracy. The aluminium splicing block is machined to a high degree of accuracy to grip tape without damage. Splicing tape and two cutting blades provided in the kit. All neatly boxed in a standard cassette storage case. Suitable for 1/4in cassette tape or 1/2in reel-to-reel. Price: £2.69 (inc. VAT).

M87A Cassette Head Care Kit
Contains a head cleaning cassette, cleaning fluid and spatula. Price: £1.76 (inc. VAT).

M86A Tape Head Cleaner Kit
A bottle of tape head cleaning fluid and two special cleaning spatulas with brush and polishing pads are provided. Price: £1.09 (inc. VAT).

M71A Cassette Deck Care Kit
Presented in special purpose permanent storage case containing head cleaner, cassette head cleaning spatula with brush and velvet polisher, cassette head cleaning fluid, multi-purpose duster and spare spatula velvets. Price: £3.02 (inc. VAT).

M32A Head Cleaner Cassette
Complete cassette conforming to international specification; loaded with silicone impregnated, non-abrasive, fibrous tape; contained in plastic library case. Price: 97p (inc. VAT).

M62A Cassette Salvage Kit
Kit contains one complete compact cassette splicing block, editabs, hub key and cutter to facilitate easy and economical repair of damaged cassettes. Price: £1.38 (inc. VAT).

■ **MUSONIC**
S & B Trading,
34-38 Verulam Road, St. Albans,
Herts. AL3 4DF.
Tel: St. Albans (0727) 50611.

MT5
Cassette cleaner in library box. Price: 75p (plus VAT).

MT6
Cartridge head cleaner. Price: £1.35 (plus VAT).

MT7
Cartridge head and capstan cleaner. Price: £2.10 (plus VAT).

MT12
Cassette storage. Each module holds 8 cassettes and can be interlocked in a variety of ways. Price: £1.05 (plus VAT).

MT13
Add'n'stac for 6 cartridges. Price: £1.28 (plus VAT).

MT16
Empty cassette library box. Price: 23p (plus VAT).

M18
Cassette cleaner without library box. Price: 60p (plus VAT).

MT20*
Pack of 10 spare cassette index cards. Price: 53p (plus VAT).

MT25
Tape cleaning head kit. Cleaning tool, fluid; can be used as a jointing block. Price: 83p (plus VAT).

MT26
Cassette tape splicing block. Price: £1.43 (plus VAT).

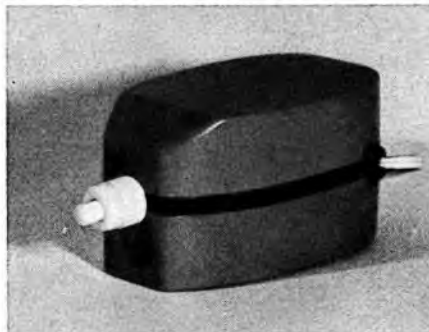
■ **NAGAOKA**
J. Osawa & Co. (UK) Ltd,



Musonic MT20



Nion Checklite



Osmabet Bulk Eraser

10 Forge Court, Reading Road,
Yateley, Camberley, Surrey GU17 7RX.
Tel: Yateley (0252) 879121.

CD-1
Cassette head cleaner and demagnetiser. Cleaning tape. Price: £2.99 (plus VAT).

HC-800
Head clean kit comprising tape head cleaner, pinch roller cleaner and cotton sticks. Price: £3.49 (plus VAT).

Tape Head Cleaner
Liquid spray complete with spray-tube extension for hard-to-reach locations and cotton tipped swabs. Price: £2.49 (plus VAT).

■ **NEAL**
North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX.
Tel: South Shields (0632) 566321.

Remote Control Unit 300
Duplicates main operating controls for 312, 302, 330, 340 cassette recorders. Fast forward, rewind, play, stop, record. Price: £28.00 (plus VAT).

Wood Side Panels
Real wood end cheeks for 312, 302, 330, 340. Price: £11.07 (plus VAT).

Dust Cover
Rigid transparent cover to protect recorders. Neal 102, 103. Price: £15.00 (plus VAT).

■ **NETWORK**
Network Marketing Ltd,
Middlesex House, 29-45 High Street,
Edgware, Middlesex.
Tel: 01-952 6225.

Allsop 3
Ribbonless cassette to clean head, capstan and pinch roller. Fixed arm wiper clean and completely non-abrasive pads absorb residue, wiper arm wiper deck head clean. All done in 20-40 seconds by merely inserting cassette.

■ **NION**
Roy Martin Freeman (RTB) Ltd,
141A London Road, Camberley,
Surrey GU15 3JY.

Checklite*
High quality mirror illuminated to enable the user to inspect tape heads with the minimum of effort. Power pack is specially constructed to minimise battery leakage and is powered by a sealed cell with an approx life of two years. Price: £3.30 (inc. VAT).

■ **OSMABET**
Osmabet Ltd,
46 Kenilworth Road,
Edgware, Middlesex HA8 8YG.
Tel: 01-958 9314.

Bulk Tape Eraser and Recording Head Demagnetiser*
Operates from AC mains to provide rapid and complete erasure of tapes and cassettes prior to making quality recordings. In addition, the eraser can be used for the instant removal of residual magnetisation of recording heads, in the majority of cases without the removal of recording head protective covering. Is suitable for all sizes of tape reels or cassettes. Price: £7.50 (plus VAT).

■ PHILIPS

Philips Electronics and Associated Industries Ltd,
604 Purley Way, Croydon CR9 4DR.
Tel: 01-686 0505.

Head Cleaning Cassette 811/CCT

It is inevitable that the slight friction between tape and tape-heads/guides should grind small amounts of material off the tape and certain low quality types are more prone to this problem than others. Particles adhere to heads reducing tape contact degrading both recording and playback. Overcomes these problems by removing the particles and polishing the head. Tape sound is improved and recording head lasts longer. Where build-up becomes excessive, cleaning with alcohol is necessary.

■ QAS

Quality Audio Supplies,
Wollaton Road, Beeston,
Nottingham NG9 2PB.
Tel: Nottingham (0602) 252222.

Wide range of audio accessories, including phono plugs, DIN plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, connecting leads with all types of terminations, audio switching units. New additions to the range are screw fixing blank cassettes, cassette head cleaners and dynamic microphones. All items individually blister-packed for over the counter or self-service sales.

Tape Selector

Two and three-way units to record and play back from facilities. Size: 5½ x 1¼ x 2¾in. Finish: brushed aluminium. Price: £6.75 (plus VAT).

AC/DC Adaptor

220/240V mains AC to 6V, 7.5V or 9V DC. Polarity change switch, neon on/off mains switch, manufactured to BS 415 and ideal for powering tape recorders, calculators, transistor radios, etc.

■ QED

QED Audio Products Ltd,
Unit 12, Ashford Industrial Estate,
Ashford, Middlesex.

Type 14/1 Variable Attenuator

When connecting various pieces of Hi-Fi equipment, it is sometimes necessary to attenuate the input or output to avoid overload. This attenuator is designed to overcome the problem by providing four adjustable level controls that can be set in minutes. The device is connected in series with the audio lead. DIN to 4 phono. Price: £5.80 (plus VAT).

Type 14/2 Variable Attenuator

As above except DIN to DIN. Price: £5.20 (plus VAT).

Type 22/1 Tape Switching Unit (2-way)

New slim line unit suitable for connecting and controlling up to two tape decks. Built-in comparability controls to allow any matching between decks. Rocker switch operation. Price: £15.50 (plus VAT).

Type 14/3 Variable Attenuator

Similar to 14/1 except Phono to Phono. Price: £6.00 (plus VAT).

Type 23/1 Tape Switching Unit (3-way)*

Similar to 22/1 but for up to three tape decks.

Fitted with DIN sockets. Size: 155 x 43 x 94mm control surface. Height: 33mm. Price: £19.92 (plus VAT).

Type 23/2 Tape Switching Unit (3-way)*

Same as 23/1 but with phono sockets. Price: £26.20.

■ REVOX

F. W. O. Bauch Ltd,
49 Theobald Street, Borehamwood,
Herts. WD6 4RZ.
Tel: 01-953 0091.

Slide Synchroniser

For use with automatic projectors. Switching pulses are recorded on the second track while tape remains laced in its normal path. For A77. Price: £91.44 (plus VAT).

Remote Control

For A77 controls all operating modes. May be used in conjunction with electric timers. Price: £31.68 (plus VAT). For G36 start-stop only. Price: £13.25 (plus VAT). A77 control with three position thumb-switch for play/stop/repeat. Price: on application.

Empty Reels

7in. dia. with slotted driving hole as per cine spec, made of anodised aluminium. 10.5in. dia. with NAB hole made of anodised aluminium.

Library Boxes

Made of high-impact plastic. Lid hinges to one



QED 23/1, 23/2 Tape Switching Unit



Ross RE 634

side allowing easy removal of stored tape reel. Several boxes may be assembled to form a practical storage unit.

Tape Cutting and Splicing Block

May be installed directly over sound heads in place of head cover. For lateral or diagonal cutting, permitting use of wide or narrow splicing tape. Price: £4.26 (plus VAT).

Cleaning Kit

Special liquid and tools for keeping recorder and tape heads in perfect condition. Price: £1.80 (plus VAT).

Cutter Set

For splicing and editing operations. Consists of 1 splicing block, 1 antimagnetic scissors, splicing tabs, 1 grease pencil — all in handy case. Price: £8.10.

Remote Control

For B77, controls all tape transport functions and set/record facilities for slide synchronisation. Built-in off/play/record switch for use with electric timers. Price: £78.48 (plus VAT).

Varispeed Control

For B77, coarse and fine control of tape speed. The unit gives a speed variation from 2.5 to 11 i/s. Price: £61.20 (plus VAT).

■ ROSS ELECTRONICS LTD

323 Rathbone Place, London W1P 1AD.
Tel: 01-580 7112.

Cassette Head Cleaner

Lint-free cleaning tape in a compact cassette package removes oxide residue and dirt from record and erase heads. Price: 48p (plus VAT).

RE527K Tape Head Demagnetiser

Removes gradual build-up of residual magnetism from tape heads by briefly applying tip to heads in cassette and reel-to-reel recorders. Operates from mains supply. Totally enclosed and insulated. Price: £3.48 (plus VAT).

RE528K

Construction and operation similar to RE527K but equipped with specially shaped pole piece designed to reach into cassette recorder head without dismantling case parts. Price: £3.90 (plus VAT).

RE537K

Bulk tape eraser for cassettes, 8-track cartridges and open reel tape up to 7in. diameter. Totally enclosed in a tough plastic case with foldaway reel spindle. For 230/250 volts AC operation. Price: £12.50 (plus VAT).

RE632

Cassette head care kit. Comprises: special cleaner to prevent build-up of cassette head deposits. Price: £1.12 (plus VAT).

RE634*

Cassette editing and salvage kit, providing practical and economical repair of valuable cassette recordings, plus editing facility. Kit comprises: 5-screw fixing replacement cassette case, leader and splicing tape, splicing block and two cutters. Price: £2.80 (plus VAT).

RE464

Designed to facilitate servicing of in-car cassette player mechanisms. Kit contains: miniature torch with angled lens, dental mirror with universal joint to view tape head condition,

cleaning tool with detachable straight or angled brush, cassette head cleaner, cleaning fluid and spare brush. In plastic storage case with 2-part Velcro strips for simple in-car fixing. Price: £4.10 (plus VAT).

SCOTCH

3M United Kingdom Ltd,
3M House, P.O. Box 1,
Bracknell, Berks.
Tel: Bracknell (0344) 58357.

Editing and Repair Kit*

Designed specifically for home use, the kit comprises a precision splicing block, adhesive-tip polyester picks and splicing tabs. Retrieval of broken ends of cassette tapes, professional splicing and manual winding from one cassette reel to another are all possible using this kit. Price: £1.50.

Cassette Head Cleaner

Cleaning cassette for use on all designs of cassette deck. Activated in the "play" position, the cleaner will ensure that recording and playing heads are kept clean for maximum performance. Each cassette will last for 24 uses. Price: 85p.

SHAPE

Bandridge of London Ltd,
1 York Road, London SW19 8TP.
Tel: 01-543 3633.

Cassette Box

Front loading boxes which stack together and eject the cassette automatically. Prices: 6-pack box £3.75 (inc. VAT); 12-pack box £7.50 (inc. VAT); 24-pack box £15.00 (inc. VAT). Tilt bracket £1.25 (inc. VAT).

Video Box

Operating on the same principle as the cassette box. Price: 3-pack box £7.50 (inc. VAT).

SONY

Sony (UK) Ltd,
London Showroom,
Consumer Information Service,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

SB200

The SB200 is a SOS and echo adaptor for three head stereo tape recorders which have an independent channel monitoring facility. It provides a simulated echo effect or a full sound on sound facility. This enables one for example, to record a guitar backing on one track and then play back the guitar recording and while monitoring this through headphones, to add a piano melody, both then being recorded on the other track. This process can be repeated adding different instruments, each time transferring the recording from track to track. Price: on application.

SB300

SB300 is a tape deck selector, which will be invaluable to anyone possessing more than one tape recorder but with insufficient tape inputs and outputs on the amplifier. The SB300 permits up to 3 tape recorders to be connected to a standard amplifier. Simply by selecting the appropriate buttons it is possible to record, and play back using any desired combinations of your units. Full A-B, monitoring is possible from all recorders providing the amplifier is equipped with a tape monitor switch. Price: on application.

Tape Spools

RSA empty spool 5in.; R7A empty spool 7in.; R7MB empty spool 7in. in black; R11A empty 10½in. NAB spool. Price: on application.

Recorder Cassette Accessories*

RAD 1 10½in. NAB reel adaptor; RE4 endless cassette, size 46m. BE9H cassette eraser and micro cassette cover. DP24 dust cover for TC138SD. DP25 dust cover for TC177SD. DP27 dust cover for TC645. DP28 dust cover for TC135/136SD. DP30 dust cover for TC765/766.2 FS6 foot switch. HE3 tape head demagnetiser. Carrying cases. RM15, RM30 remote control switches. SB 200E—switch box (SOS & echo) for 3-head tape recorders. SB300—switch box—interconnect/monitor 3 tape recorders. BP28 rechargeable battery for TC510-2; BP8 rechargeable battery for TC153SD, TC158SD, TC520CS, TC525; CK15 cassette stand designed to hold 15 tapes, hinged cases. Prices: on application.

TANDBERG

Tandberg (UK) Ltd,
Farnell House, 81 Kirkstall Road,



Scotch Editing and Repair Kit



Sony Foot Switch

Leeds LS3 1HR.

Tel: Leeds (0532) 35111.

Spools

Empty metal spool boxed, 10½in. £11.00 (inc. VAT).

Slide Synchroniser

Model 3 can be used with any automatic slide projector and stereo tape recorder, and also with mono recorder equipped with free head output. Price: £84.93 (plus VAT).

Head Cleaning Kit

Price: £2.00 (plus VAT).

Infra Red Remote Control Unit

For TD20A and TCD480A. Price: £80.00 (inc. VAT).

Rack Mounting Kit

19in. rack for TCD420/440. Price: £30.00 (inc. VAT).

TAPE RECORDER SPARES LTD

206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844.

Large range of spares and accessories for all makes of tape recorder. Free trade catalogue on request—nominal charge to the public.

Bulk Spares Service*

99 matching packs of 100 components covering DIN, jack, power and aerial plugs and sockets. Brochure on request.

Fuse Kits

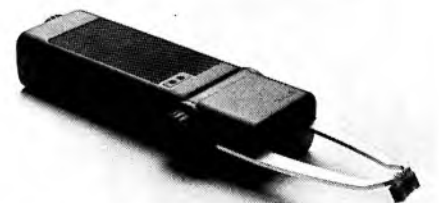
85 x 20mm fuse kits each containing 250 fuses of five different ratings. In partitioned plastic flip-top dispenser. Range includes Quick Blow and Anti Surge and replacement packs of 10 or 50 fuses. Brochures on request.

8¼in. x 1¼in. Fuse Kits each containing 150 fuses of five different ratings. In partitioned plastic flip-top dispenser. Range includes Quick Blow and Anti Surge and replacement packs of 10 or 30 fuses. Brochure on request.

continued on page 224



Tape Recorder Spares Bulk Spares



TDK HD11 Universal Head Demagnetizer

TAPE DECKS AND RECORDERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

AKAI

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW2 2DP.
Tel: 01-450 2011.

GX 4000D

4 track 2 channel stereo recorder. Tape speeds: 3 3/4, 7 1/2 ips. W. and F: <0.08%. FR: 30Hz-24kHz \pm 3dB. S/N ratio: >60dB. 4 pole induction motor. Heads: 3. Dimensions: 44 x 31.5 x 23cm. Features: replay head guaranteed for life, full monitor system, sound on sound recording, pause control, variable output/headphone control. Reel capacity: 7in. Price: £243.50 (inc. VAT).

GX 4000 DB

As above with Dolby noise reduction unit. Price: £284.50 (inc. VAT).

1722 II

Complete tape recorder system with 5W output power per channel and built-in speakers. Reel capacity: 7in. 4 track, 2 channel stereo. Tape speeds: 3 3/4, 7 1/2 ips. W and F: <0.14% FR: 30Hz-21kHz \pm 3dB. S/N ratio: >50dB. 2 speed induction motor. Heads: 3. Dimensions: 35.8 x 36 x 24.8cm. Features: built-in equaliser amplifier, direct phono recording, 3 way monitor system, public address system. Price: £264.50 (inc. VAT).

GX 620 D

4 track, 2 channel recorder with 5W output power per channel. Reel capacity: 10 1/2in. Tape speeds: 3 3/4, 7 1/2 ips. W and F: <0.03% at 3 3/4, 0.04% at 7 1/2 ips. FR: 30Hz-26kHz \pm 3dB. S/N ratio: >62dB. Heads: 3. Dimensions: 44 x 44.6 x 24.1cm. Features: 3 motor direct drive, feather touch controls, mic/line mixing, full monitor system. Price: £438.00 (inc. VAT).

GX 635 D

4 track, 2 channel recorder. Reel capacity: 10 1/2in. Tape speeds: 3 3/4, 7 1/2 ips. W and F: <0.03% at 3 3/4, 0.04% at 7 1/2 ips. FR: 30Hz-27kHz \pm 3dB. S/N ratio: >62dB. Motors: 3. Heads: 6. Dimensions: 44 x 48.3 x 25.6cm. Features: auto reverse record/play, feather touch logic controls, real time counter. Price: £675.00 (inc. VAT).

AMPEX

Ampeg GB Ltd,
Acre Road, Reading, Berks RG2 0QR.
Tel: Reading (0734) 85200.

ATR-700

Studio recorder reproducer, portable. Tape speeds: 7 1/2/15 or 3 3/4/7 1/2 ips. W and F: 0.08% at 7 1/2 ips, 0.12% at 3 3/4 ips. FR: 40Hz-7.5kHz at 3 3/4 ips, 40Hz-15kHz at 7 1/2 ips, 40Hz-18kHz at 15 ips. Output: nom +4dB 600 ohms, max +24dB. S/N ratio: 2 track 60dB. Bias frequency: 150kHz, three switched levels. Motors: 3. Heads: erase, record, play and optional 4th head. Max spool capacity: 10.5in. Dimensions: 54.8 x 44 x 24.6cm. Price: on application.

FERROGRAPH

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX
Tel: South Shields (0632) 566321.

Series 76: 'Logic 7'. Push-button control with electronic interlocks by logic circuits.

7602H

1/2-track, high speed stereo tape unit, with pre-amps only. Speeds (cm/sec): 38, 19, 9 1/2. Max spool size: 10 1/2in. W and F: 0.08% (38), 0.10% (19), 0.17% (9 1/2). S/N ratio: better than 60dB (unweighted). FR: 30Hz-20kHz \pm 2dB (38), 30Hz-17kHz \pm 2dB (19), 40Hz-14kHz \pm 3dB (9 1/2). Inputs: mic 200 μ V-50k, 200-1000 ohms. Line 50mV-7V at 2 ohms. Mixing plus master record control. Outputs: 600 ohms 2V, low level 300mV into 10k ohms, phones—for 8-600 ohms. Bass and treble controls, bias adjustable. Motors: 1 synchronous and 2 constant torque. Mains: 200-250V 50Hz AC or 117V 60Hz (suffix A). Three heads, PB multiplay, AB comparison, adjustable tape tensioning. Size: 50.6 x 54.2 x 25.3cm. Price: £649.41 (plus VAT).

7602DH

Same specification as 7602H, but includes Dolby 'B'. Price: £751.76 (plus VAT).

7622H

Same specifications as 7602H but with power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £738.82 (plus VAT).

7622DH *

Same specification as 7602H but with power amps and Dolby 'B'. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £841.18 (plus VAT).

7604H

1/4-track, high speed stereo tape unit with pre-amps only. Same specification as 7602H. S/N ratio: better than 58dB (unweighted). Price: £649.41 (plus VAT).

7604DH

1/4-track, high speed stereo tape unit with Dolby 'B' and pre-amps. Same specification as 7602H. Price: £751.76 (plus VAT).

7624H

1/4-track, high speed stereo tape unit with power amps. Same specification as 7602H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £738.82 (plus VAT).

7624DH

1/4-track, high speed stereo tape unit with Dolby 'B' and power amps. Same specification as 7602H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £841.18 (plus VAT).

7602M

1/2-track medium speed stereo tape unit with pre-amps only. Same specification as 7602H except tape speed (cm/sec): 19, 9 1/2, 4.76. W and F: 0.08% (19), 0.15% (9 1/2), 0.20% (4.76) DIN weighted. FR (cm/sec): 30Hz-17kHz \pm 2dB (19), 40Hz-14kHz \pm 3dB (9 1/2), 50Hz-7kHz \pm 3dB (4.76). Price: £720.00 (plus VAT).

7602DM

Same specification as 7602M but with Dolby 'B'. Price: £822.35 (plus VAT).

7622M

Same specification as 7602M but with power amps. Speaker output: up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £809.41 (plus VAT).

7622DM

Same specification as 7602M but with power amps and Dolby 'B'. Speaker output: up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £911.77 (plus VAT).

7604M

1/4-track medium speed stereo tape recorder with pre-amps only. Same specification as 7602M. S/N ratio: better than 58dB (unweighted). Price: £720.00 (plus VAT).



Ferrograph 7622DH



Grundig TS 1000/4

7604DM

¼-track medium speed stereo tape recorder with pre-amps and Dolby 'B'. Same specification as 7602M. S/N ratio: better than 58dB (unweighted). Price: £822.35 (plus VAT).

7624M

¼-track medium speed stereo tape recorder with power amps. Same specification as 7602M. S/N ratio: better than 58dB (unweighted). Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £809.41 (plus VAT).

7624DM

¼-track medium speed stereo with power amps and Dolby 'B'. Same specification as 7602M. S/N ratio: better than 58dB (unweighted). Speaker output: up to 10W per channel into 8-16 ohms. Speaker size: 17.7 x 10cm. Price: £911.77 (plus VAT).

■ **GRUNDIG**

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

TS 945

½-track semi-professional. Tape speeds: 3¼, 7½ ips. W and F: 0.09 and 0.05. FR: 20Hz-16,000Hz at 3¼, 20Hz-20,000Hz at 7½ ips. Outputs: 2 x 50mW/400 ohms. Dimensions: 47 x 18 x 41cm. Typical market price: £249.90.

TS 1000/4*

¼-track semi-professional. Tape speeds: 1½, 3¼, 7½ ips. W and F: 0.15, 0.09, 0.05. FR: 20Hz-12,500Hz, 20Hz-16,000Hz, 20Hz-20,000Hz. Output: 2 x 50mW/400 ohms. Features: twin VU meters, facilities for trick recording, sensor buttons. Dolby noise reduction. Dimensions: 54 x 20 x 50cm. Typical market price: £399.90.

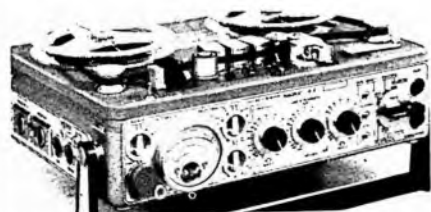
■ **NAGRA**

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross (028 13) 5511.

Audio equipment showroom, service department and despatch department, Unit 1, Wye Ind. Est., London Road, High Wycombe, Bucks.

Model 4.2*

Professional battery-operated portable tape recorder. Speeds: 15i/s, 7½i/s, 3¼i/s. Size: 12½ x 8¾ x 4½in. Max spool: (lid closed) 5in. (lid open) 7in. Power supply: 12 type SP2 batteries fitted internally, or external mains unit. Switchable auto-level control. Switchable input filters. Two-stage over-load filter. Modular construction. Preamplifiers to suit all types of microphones. Built-in monitoring speaker. Single DC servo-controlled motor. Monitoring headphones switchable to tape or direct. Reference tone generator. Separate record and playback amplifiers. Electro-magnetic indication of speed stability, battery



Nagra 4.2

level and tape jamming. W and F: 15i/s 0.05%, 7½i/s 0.07%, 3¼i/s 0.15%.

Model 4.2L

Full-track mono version with pilot tone. Inputs from two mics and line. Line output: 4.4V 600 ohms. S/N ratio: —67 to —70dB depending on speed and tape. Visual pilot tone indicator input level 0.5-25V.

Model 4.2LSP

As Model 4.2L but excluding pilot tone facility.

Model IV-S LSP

Stereo model with universal microphone pre-amplifiers. Output 1V 600 ohms. Equalisation NAB or CCIR and special Nagramaster record equalisation. Coaxial PPM, switchable to read groove cutting depth S/N ratio: —65dB to —72dB depending on speech and tape.

Model IV-SL

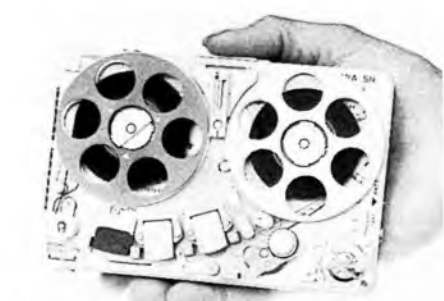
As model IV-S LSP but fitted with third FM channel to permit pilot tone and cue speech recording.

Miniature Nagra SN*

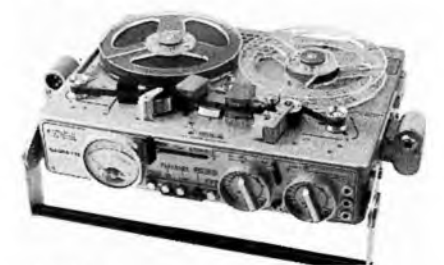
Full-track battery-operated professional mono recorder. Speeds: (model SNN-2) 3¼, 1½i/s; (model SN-2) 1½, 1½/16i/s. Spool capacity: 154m standard tape, 308m 12.5 micron tape. W and F: 3¼i/s ±0.1%, 1½i/s ±0.15% (both to DIN 45 507). S/N ratio: 3¼i/s 603dB (ASA 'A' with tape); 1½i/s 55dB (ASA 'A' with tape). FR: 80Hz-15kHz ±2dB. Replay char: CCIR. Meter level indicator. Inputs: microphone, current input from 200 ohms or greater (3µA RMS, max level 100µA RMS). Alternative line input for normal modulation level from 100 ohms source—160mV RMS. Outlets: line 600mV across 1K, headphones. One DC series commutator motor. Size: 5¾ x 4 x 1½in. approximately.

IS*

Compact, battery operated mono portable tape recorder of modular construction with two microphone inputs and switchable input filters. DC servo-controlled motor. Monitoring headphones switchable to either tape or direct. Tape speed: 7½ ips. W and F: 0.15%. FR: 50-15,000Hz. Output: 4.4V into 600 ohms.



Nagra SN



Nagra IS

S/N: 68dB ASA weighted ref 320nWb/mm. Bias frequency: 120kHz. DC brush type motor. Three heads. Maximum spool capacity: 5in. Dimensions: 10¾ x 8 x 3¼in.

IS-DE

Identical to IS but with universal microphone preamplifier (for dynamic and capacitor microphones), level metering switchable to modulation, super VU-meter or PV-meter, reference generator supplied as an option.

IS-DT

Identical to IS-DE version, but with two tape speeds, 7½ and 3¼in. A combined circuit with automatic level control and reference generator is supplied as an option.

IS-LT

Same as IS-DT but with pilot tone.

E

Low cost professional portable tape recorder. Power supply 12 HP2 batteries fitted internally, or external mains unit. Single speed mono, non-pilot only. One line input, one microphone input, microphone input switchable to accept either 200 ohms dynamic or A-B powered capacitor microphone. Single DC servo controlled motor. Built-in monitor loudspeaker. Monitor headphones switchable between tape and direct. A 3-frequency 2-level reference generator allows the adjustment of bias record gain and equalisation without need for external measuring instruments. Tape speeds: 7½ ips. W and F: ±0.1% to DIN 45507. FR: 50Hz-15kHz. Output: 0.94V for 32nWb/m. S/N ratio: 62dB ASA 'A' weighted. DC brush type motor, 3 heads. Maximum spool capacity: 5in. lid closed, 7in. lid open. Dimensions: 31.5 x 22.6 x 10.4cm.

TRVR

2-channel logging recorder with third track for time code (IRIG B). Auto-start on both channels (AC or DC). The machine continuously self-checks all functions and starts a back-up recorder. Tape speeds: 1½/16, 1½, 3¼, 7½ ips. W and F: <0.15%, <0.09%, <0.07%. FR: 170Hz-5kHz, 170Hz-10kHz, 170Hz-15kHz, 170Hz-17kHz. LF response can be extended to 30Hz at all speeds. Unbalanced line output 0dB 0.775V 600 ohms. S/N ratio: 50dB, 45dB, 58dB. DC brush type motors. Five heads. Maximum spool capacity: 7in. dia. Dimensions: 19 x 12.5 x 13in.

■ **PHILIPS**

Philips Electrical Ltd, City House,
420 London Road, Croydon, Surrey.
Tel: 01-689 2166.

N4520

Semi-professional recorder with Quartz control, NAB spool, solenoid operation, ¼ track stereo. Tape speeds: 3¼, 7½, 15 ips. W and F: 0.07% at 3¼, 0.05% at 7½, 0.03% at 15 ips. FR: 30Hz-16kHz at 3¼, 30Hz-20kHz at 7½, 30Hz-26kHz at 15 ips. Output: 1V at 10K. S/N ratio: 57dB unweighted at 3¼, 58dB at 7½, 58dB at 15 ips. Two direct drive spooling motors and Quartz controlled capstan. Three heads. Maximum spool capacity: 10½in. Dimensions: 53 x 22 x 52cm. Price: £630.14 (plus VAT).

N4522

As 4520 except one track stereo. S/N ratio 59dB unweighted at 3¼, 61dB at 7½, 61dB at 15 ips. Price: on application.

N7150

¼-track stereo recorder. Tape speeds: 1½, 3¼, 7½ ips. W and F: 0.2% at 1½, 0.15% at 3¼,

0.1% at 7½. FR: 35Hz-12.5kHz at 1½, 35Hz-18kHz at 3¼; 35Hz-25kHz at 7½ ips. Output: 1V at 10K. S/N ratio: 56dB at 1½, 60dB at 3¼, 62dB at 7½ ips. Two DC spooling motors, capstan drive and transport drive. Three heads. Maximum spool capacity: 7in. Dimensions: 39 x 21 x 39in. Price: on application.

■ PIONEER

Shriro (UK) Ltd, Shriro House, The Ridgeway, Iver, Bucks SL0 9JL. Tel: Iver (0753) 652222.

RT 707*

Rack mountable 7in. open reel front loading auto reverse 4 track 2 channel with auto reverse format, solenoid drive, direct switchable function, pitch control, dual capstan. Tape speeds: 19 and 9.5cm/s. W and F: less than 0.05% at 19cm/s, less than 0.08% at 9.5cm/s. FR: 20Hz-28kHz at 19cm/s, 20Hz-20kHz at 9.5cm/s. Output: line 450mV/700mV/50K. Headphones: 70mV/80 ohms. S/N: more than 58dB. Distortion: less than 1% at 19cm/s. Bias frequency: 125kHz. Two by STD/LH Bias Selectors. Two by EQ STD/LH Selectors. Motors: one by FG AC Servo for capstan two 6-pole induction motors for reel drive. Four tape heads. Maximum spool capacity: 7in. Dimensions: 48 x 35.6 x 23cm. Typical market price: £398.90.

■ REVOX

F. W. O. Bauch Ltd, 49 Theobald Street, Boreham Wood, Herts WD6 4RZ. Tel: 01-953 0091.

Series 77*

Stereo tape recorder. Tape speed: 3¼/s and 7½/s max deviation from nominal ±0.2%. W and F: total RMS, weighted 0.04% at 7½/s and 0.05% at 3¼/s. Weighted peak to peak

flutter as per DIN 0.08% at 7½/s and 0.1% at 3¼/s. Tape slip: not exceeding 0.2%. Max spool size: up to 10½in. (minimum hum diameter 2½in.). Operating - position: horizontal, vertical or inclined. S/N ratio weighted as per ASA-A, readings via tape: 7½/s better than 66dB (4 track 59dB). Crosstalk (at 1kHz); mono better than 60dB, stereo better than 45dB. Inputs (per channel): mic, low impedance 50-600 ohms. 0.15mV, high impedance up to 100K, 2.5mV, radio 2.5mV; aux 35mV. All inputs have an overload margin of 40dB (1:00). Outputs (per channel): amplifier max 2.5V; Internal impedance 2.5K; headphones, volume adjustable, load impedance 200 ohms or more. Power amplifier: optional plug-in amplifiers, 2 x 8W continuous RMS power, 2 x 10W music power as per IHFM. Power requirements: voltage selector for 110-250V, 50-60Hz operation without need for conversion, consumption 70-100W. Various versions as follows:

Model 1102 or 1104

Chassis in teak surround, no output amplifiers, ½ or ¼-track. Price: £575.00 (plus VAT).

A700*

Stereo tape recorder. Tape speed: 15i/s, 7½i/s and 3¼i/s. Weighted peak flutter: at 15i/s less than 0.08%, at 3¼i/s less than ±0.06%, at 7½i/s less than ±0.1%. FR (via tape): 15i/s 50Hz-18kHz ±1.5dB; 7½i/s 50Hz-15kHz ±1.5dB; 3¼i/s 50Hz-10kHz ±1.5dB. Equalisation: S/N: (ASA-A) referred to peak recording level (+6VU), 15i/s better than 65dB, 7½i/s less than ±0.1%. FR (via tape): 15i/s balanced 50-600 ohms; position Low: 0.15V 6K; position High: 1.8V 6K. Phono 2.5mV 50K; radio 3mV 33K, 2 x 40mV 100K. All inputs have an overload margin of 40dB (1:100). Outputs: output level from a peak-level recording at +6VU. Lines A and B 1.55V 5K. 1 x radio (DIN): 0.775V, 10K; 2 x headphone: max 4.9V 100 ohms; 1 x power amplifier: max 3.1V 100 ohms, including remote mains switching for A722. Price: £1,323.00 (plus VAT).

B77

Stereo tape recorder available in half or quarter track. Tape speed: 3¼, 7½ips. W and F: 3¼ less than 0.1%. 7½ less than 0.08%. FR: 3¼ 50Hz-10kHz ±1.5dB; 7½ less than 0.08%. Output: 1.55V at +6dB above 0VU adjustable with preset control, max attenuation 26dB. S/N ratio: 3¼ better than 63dB (½ track), 59dB (¼

track). 7½ better than 66dB (½-track), 62dB (¼-track). Three motors, three heads. Max spool capacity: 10.5in. Dimensions: 45.2 x 20.7 x 41.4cm. Price: £600.00 (plus VAT). Also available in high speed (7½, 15ips) versions, NAB or IEC equalisation. Price: £630.00 (plus VAT).

Alternative Versions

Details available on request.

■ SONY

Consumer Information, Sony Showroom, 134 Regent Street, London W1R 6DJ. Tel: 01-439 3874.

TC880-2

Stereo tape recorder. Recording system: AC bias, 160kHz. Track system: 2-track, 2 channel, rec/PB, 4-track, 2-channel, PB. Speeds: 7½i/s, 15i/s. W and F: 7½i/s ±0.04% DIN, 15i/s ±0.03% DIN. S/N ratio: 60dB SLH tape. FR: normal 7½i/s 25Hz-20kHz ±2dB. FeCr tape 25Hz-30kHz ±2dB, normal 15i/s 25Hz-30kHz ±2dB, FeCr tape 20Hz-40kHz ±2dB. Inputs: mic low -72dB (0.2mV), line -22dB (60mV) 100K. AC servo-controlled, direct-drive system motor. Mains: 240V AC. Price: £1,450 (inc. VAT).

TC 510-2

2-track portable stereo tape deck working from battery, battery pack, mains (adaptor supplied), car battery. Speeds: 19, 9.5cm/s. W and F: ±0.05% at 19cm/s, ±0.08% at 9.5cm/s. FR: 30Hz-25,000Hz ±3dB at 19cm/s, 30Hz-16,000Hz ±3dB. Output: 435mV at 100K. S/N Ratio: 64dB (FeCr tape) -19cm/s. Low, med, high bias switch. DC servo motor. Three heads. Spool capacity: 5in. Dimensions: 33 x 30 x 14cm. Price: £540.00 (inc. VAT).

TC 765*

4-track open open-reel tape deck, closed loop dual capstan drive with AC servo control, logic control panel and remote control facility. Speeds: 19, 9.5cm/s. W and F: ±0.04% at 19cm/s, ±0.08% at 9cm/s. FR: 30Hz-25,000Hz ±3dB at 19cm/s; 30Hz-18,000Hz -3dB at 9 cm/s. Output: 435mV-100K. S/N ratio: 58dB -SLH tape 19cm/s, 61dB FeCr tape 19cm/s. Low, mid, high bias switch. Switching for normal, special, FeCr, etc. Three motors. Three heads, spool capacity 10½in. Dimensions: 45 x 53cm. Price: £579.00 (inc. VAT).

TC 766-2

2-track open-reel tape deck, closed loop dual capstan drive with AC servo control, logic control panel and remote control facility.



Pioneer RT707



Revox series 77



Revox A700



Sony TC765

Speeds: 38, 19cm/s. W and F: 0.018% at 38cm/s, 0.04% at 19cm/s. FR: 30Hz-30,000Hz ±3dB at 38cm/s; 30Hz-25,000Hz at 19cm/s. Output: 435mV-100K. S/N ratio: 61dB—SLh tape at 38cm/s, 64dB FeCr tape 38cm/s. Low, med, high bias switch. Three motors. Four heads. Spool cap: 10 1/2 in. Dimensions: 45 x 2 x 53cm. Price: £690.00 (inc. VAT).

TC 399

Three-head open reel tape recorder—ferrite and ferrite heads. Tape speeds: 7 1/2, 3 3/4, 1 1/2 ips. W and F: 0.06% at 7 1/2 ips, 0.09% at 3 3/4 ips, 0.12% at 1 1/2 ips. FR: 30Hz-25kHz ±3dB at 7 1/2 ips, 30Hz-18kHz ±3dB at 3 3/4 ips. Output: line—more than 10K 435mV. S/N ratio: 58dB at 7 1/2 ips special tape SLH. Bias and eq. switching. Motors: 1. Heads: 3. Maximum spool capacity: 7in. Dimensions: 41.5 x 19 x 43.5cm. Price: on application.

■ TANDBERG

Tandberg (UK) Ltd, 81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds(0532) 35111.

TD 20A*

2 or 4-track 10 1/2 in. reel-to-reel deck employing Tandberg Actilinear Recording System. Tape speeds: 15 and 7 1/2, or 7 1/2 and 3 3/4 ips. W and F: 0.06%, 0.08%, 0.14% peak or 0.03%, 0.05%, 0.10% weighted. FR: 15Hz-34kHz at 15ips, 15Hz-30kHz at 7 1/2 ips, 15Hz-20kHz at 3 3/4 ips. At DIN: 20Hz-30kHz at 15ips, 20Hz-25kHz at 7 1/2 ips, 20Hz-18kHz at 3 3/4 ips ±3dB. S/N ratio: 69dB at 15ips, 67dB at 7 1/2 ips, 66dB at 3 3/4 ips. Three motors: four heads. Max. spool capacity: 10 1/2 in. Dimensions: 43.5 x 45 x 19.5cm. Price: £520.87 (plus VAT).

■ TEAC

Harman UK, St. John's Road, Tyler's Green, High Wycombe, Bucks. Tel: High Wycombe(049 481) 5331.

A 3340 S

4-track, multi-channel with simu sync. Tape speeds: 15, 7 1/2 ips (±5%). W and F: 0.04% at 15, 0.06% at 7 1/2. FR: 30Hz-30kHz at 15, 30Hz-28kHz at 7 1/2. Output: 2 stereo headphone jacks (one front, one rear), impedance 10K output level 0.775V. S/N ratio: 55dB. Three motors, three heads. Maximum spool capacity: 10 1/2 in. Price: £880.00 (plus VAT).

X-10

Three motor, three head tape deck. Reel capacity: 1 1/2 in. Dual capstan closed loop transport. Three DC motors, electrically assisted reel brakes, pitch control, logic transport function controls, optional remote

control. Manual cue lever, VU meters. Price: £433.91 (plus VAT).

X-10R

Bi-directional three motor, six head tape deck. Same as X-10 but with playback of up to six hours uninterrupted entertainment. Bi-directional timer can be set to record or play in either direction when activated by external timer unit. Price: £486.09 (plus VAT).

X-7

Three motor three head tape deck. As X-10 but with 7in. reel capacity. Price: £346.96 (plus VAT).

X-7R

Bi-directional three motor, six head tape deck. Up to three hours uninterrupted sound. Reel capacity: 7in. Deck can be activated by external unit. Price: £399.13 (plus VAT).

■ TECHNICS

National Panasonic (UK) Ltd, 101-109 Whitby Road Trading Estate, Slough SL1 3DR. Tel: Slough(0753) 34522.

RS-1700, RS-1506US, RS-1500US, RS-1800.

Details on application.

■ UHER LTD

24 Market Place, Falloden Way, London NW11. Tel: 01-455 1771/01-458 8491.

Accessory

Scene marker module No. Z521. Price: £9.73 (plus VAT).

5000 Universal

Mains 1/2-track mono recorder. Speeds: 3 3/4, 1 1/2, 1 1/8, 1 1/4 ips. FR: 40Hz-15kHz ±3dB at 3 3/4 ips. Max spool: 5 1/2 in. W and F: 3 3/4 ips ±0.2%. Inputs: mic 200 ohms, radio 47K, PU 1M. Solenoid operation for remote control working. All metal case. Large range of dictation and transcription accessories available, price approximately £338.00 (including VAT).

SG521

Stereo mains reel to reel tape recorder with internal speakers and interchangeable head assemblies (1/2-track and 1/4-track). Speeds: 7 1/2, 3 3/4, 1 1/2 ips. Max spool size: 7in. W and F: 7 1/2 ips 0.05%, 3 3/4 ips 0.10%. Hum and noise: 7 1/2 ips —57dB/2-tracks (—55dB/4-tracks), 3 3/4 ips —55dB/2-tracks (—53dB/4-tracks), 1 1/2 ips —55dB/2-tracks (—53dB/4-tracks). FR: 7 1/2 ips 30Hz-20kHz, 3 3/4 ips 30Hz-15kHz, 1 1/2 ips 30Hz-8kHz. All figures to DIN specification 45 500. Inputs: mic 0.16mV-30mV, radio 1.8mV-600mV, phono (1) 80.0mV-7mV, phono (2) 250.0mV-25V. Outputs: line (2 tracks) 2 x 800mV across 15K, line (4 track) 2 x 600mV across 15K. Speakers: 2 x 6W (sine) across 4 ohms. Features: Input mixing, vertical and horizontal operation, interchangeable plug-in head assemblies, add-on automatic level control module (optional accessory), matt black finish and tinted perspex cover. Price: £283.00 (plus VAT).

SG561

Semi-professional mains operated reel to reel tape recorder with dia-pilot slide synchroniser mono/stereo 1/4-track or 1/2-track (interchangeable assemblies). Speeds: 7 1/2, 3 3/4, 1 1/2, 1 1/8 ips. Max spool size: 7in. W and F: 7 1/2 ips ±0.04%, 3 3/4 ips ±0.10%, 1 1/2 ips ±0.20%. Hum and noise: 7 1/2 ips —58dB/2-track (—56dB/4-track), 3 3/4 ips —57dB/2-track (—55dB/4-

track), 1 1/2 ips —56dB/2-track (—55dB/4-track). FR: 7 1/2 ips 20Hz-20kHz, 3 3/4 ips 20Hz-15kHz, 1 1/2 ips 20Hz-9kHz. All figures to DIN specification 45 500. Level indicators: 2 VU meters. Inputs: mic. 0.12mV-70mV 200 ohms, radio 1.2mV-110mV 47K, phono (1) 40.0mV-2.8V, phono (2) 200mV-18V. Outputs: monitor: 2 x 0.65V across 15K, line 2 x 600mV across 15K, speaker 2 x 10W (sine) across 4 ohms. Audio output with internal speakers: 6W per channel (sine). Features: pause, inching, straight through amplifier, horizontal or vertical operation, A-B monitoring, input mixing, echo, sound with sound, sound on sound, dia-pilot slide synchronising, separate replay bass treble controls, matt black finish and tinted perspex cover. Price: £435.00 (plus VAT).

4000 Report IC

Transistor mono battery portable tape recorder 1/2-track. Speeds: 7 1/2, 3 3/4, 1 1/2, 1 1/8 ips. W and F: 7 1/2 ips 0.20%, 3 3/4 ips 0.25%, 1 1/2 ips 0.35%. Hum and noise: 7 1/2 ips —57 dB, 3 3/4 ips —55dB, 1 1/2 ips —53dB. FR: 7 1/2 ips 35Hz-20kHz, 3 3/4 ips 35 Hz-16kHz, 1 1/2 ips 35Hz-8kHz, 1 1/8 ips 35Hz-5kHz. All figures to DIN specifications 45 500. Inputs: mic 0.12mV-40mV across 200 ohms, radio 2.4 V-700mV across 47K, phono 45mV-20V across 2M ohms. Output: line 1V across 15K, speaker 0.8W across 4 ohms. Features: die-cast metal case, 5in. spool size, operation from dry batteries. rechargeable accumulator, 110-240V AC mains/charger unit, 6V, 12V, 24V car battery, power supply for condenser mic, internal speaker, switchable (speech, music and off) automatic level control. Price: £320.00 (plus VAT).

SG 631 Logic

Professional standard with omega drive—a non pinch roller drive system. Speeds: 19, 9.5 and 4.7cm/s. W and F: 19cm/s 0.04%, 9.5cm/s 0.1%, 4.7cm/s 0.20%. FR: 20Hz-25kHz at 19, 20Hz-16kHz at 9.5, 20Hz-10kHz at 4.75%. Output: DIN 750mV 15K ohms, monitor 750mV 15K ohms, headphone 1.7V 200 ohms. Switching for Fe tapes. Four motors: 2 heads. Max spool cap: 10 1/2 in. Dimensions: 51 x 40 x 14.6cm. Price: £557.00 (plus VAT).

Other Models

4000 Report Monitor: 4200 Report Monitor * Stereo 1/2 track; 4400 Report Monitor Stereo 1/4 track.



Uher 4200 Report Monitor



Tandberg TD20A

TEST TAPES AND DISCS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ AMPEX

Ampex Great Britain Ltd,
Acre Road, Reading, Berks. RG2 0QR.
Tel: Reading 85200.

For all pro audio tapes, including CCIR and NAB test tapes 1/4in. to 2in. Prices and details of specifications on request.

■ BIB

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts HP2 7EP.
Tel: Hemel Hempstead 61291.

53 Stereo Test Cassette*

Devised by BIB and recorded by Decca the cassette contains: channel identification, balance control, speaker phasing, adjusting record volume controls, reducing tape hiss and eliminating hum, wow and flutter. Also includes music, brass band, grand organ, etc. Price: £4.12 (inc. VAT).

■ CAMFORD PRODUCTIONS

Camford Productions,
4 Cambridge Drive, Eastcote, Ruislip,
Middlesex HA4 9JS.
Tel: 01-866 3790.

CP19

Test Tape with 3 3/4ips with 90-3,180μs characteristic. Full-track recording. Spoken announcements followed by 30Hz-14kHz in bands. Section of 3kHz tone for checking Wow and Flutter, also strobe markings for checking speed.

CP18

Test Tape at 7 1/2ips with 70μs characteristic. Full-track recording. Spoken announcement

followed by 30Hz-16kHz in bands. Section of 3kHz tone for checking Wow and Flutter, also strobe markings for checking speed.

CP17

Test Tape at 15ips with 35μs characteristic. Full-track recording. Spoken announcements followed by 30Hz-20kHz in bands. Section of 3kHz tone for Wow and Flutter, also strobe markings for checking speed.

CP18C

Test Tape at 7 1/2ips with 70μs characteristic. Full-track recording. Spoken announcements followed by 30Hz-16kHz in bands. Wound into broadcast type cartridge.

Prices and further details of these and other Camford Production Test Tapes available on request.

■ DECCA

Decca Record Company Ltd,
Decca House, Albert Embankment,
London SE1 7SW.

A Guide to Better Listening

A complete Hi-Fi system test on one LP (PFFS1). Features: left and right channel identification, balancing and phasing, tone controls, separation and crosstalk, pick-up trackability, transient response, rumble hum and noise, wow and flutter, realism in sound reproduction. Side two features a recording of the **Firebird Suite** (Stravinsky) with Hans Vonk conducting the Royal Philharmonic Orchestra. Price: £5.25.

■ FERROGRAPH

North East Audio Ltd,
Simonside Works, South Shields,
Tyne & Wear NE34 9NX.
Tel: South Shields (0632) 66321.

781-028

0 VU level. Full track recording on 1/4in. tape; continuous tone 500Hz. Corresponds to US 'operating level' and Dolby NR system reference level. Price: £12.00 (plus VAT).

781-029

1/4-track alignment. Track 2 recorded on 1/4in. tape; continuous tone 63Hz. For correct head height setting of 1/4 track stereo replay head. Price: £12.00 (plus VAT).

781-030

Two separate full width recordings on 1/4in. tape at 19cm/s (7 1/2in./s). Response tones (10dB below peak level) NAB/DIN (19H) 50 + 318μ sec and IEC/CCIR/DIN (studio) 70μsec characteristics; also includes peak level (320nW/m), US 'operating level'. (0 VU) and azimuth alignment. Price: £48.00 (plus VAT).

781-033

Full width recording on 1/4in. tape at 19cm/s (7 1/2in./s). Response tones (10dB below peak level) at NAB/DIN (19H) 50 + 318μ sec characteristic; also includes US 'operating level' (0 VU) and azimuth alignment. Price: £30.00 (plus VAT).

781-034

Full width recording on 1/4in. tape at 19cm/s (7 1/2in./s). Response tones (10dB below peak level) at IEC/CCIR/DIN (studio) 70μsec characteristic; also includes peak level (320nW/m) and azimuth alignment. Price: £30.00 (plus VAT).

781-035

Full width recording on 1/4in. tape at 38cm/s (15in./s). Response tones (10dB below peak level) at IEC/CCIR/DIN (38) 35μ sec characteristic; also includes peak level (320nW/m) and azimuth alignment. Price: £30.00 (plus VAT).

781-036

Full width recording on 1/4in. tape at 9.5cm/s (3 3/4in./s). Response tones (20dB below peak level) at IEC/NAB/DIN (9.5) 90 + 3180μ sec characteristic; also includes azimuth alignment and repeat response frequencies as calibration check. Price: £30.00 (plus VAT).

■ MAGNETIC REFERENCE LABORATORY

F.W.O. Bauch Ltd,
39 Theobald Street, Boreham Wood,
Herts WD6 4RZ.
Tel: 01-953 0091.

Catalogue lists over 160 different types of reproducer Calibration Tapes suitable for a wide range of applications in the design, manufacture, and maintenance of tape recorders.

■ LYRICHORD

N. Miers & Co Ltd, Piercing Hill,
Theydon Bois, Nr. Epping,
Essex CM16 7LE.
Tel: 037-881 2611.

8-track cartridge demonstration and test tape £2.48 (plus VAT).

■ METROSOUND

Cambrasound Ltd,
Freedex House, 4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

MT63 Cassette Azimuth Alignment Tape

For accurate alignment of cassette deck playback heads.

MT73 Cassette Frequency Response Test Tape
Required for the precise checking of accuracy of tones produced from cassette machines.

MT74 Reel to Reel Azimuth Alignment Test Tape

To allow for correct setting of replay heads on open reel recorders.

MT75 Reel to Reel Dolby Tone Test Tape

A specially produced tape for correct setting up and calibration of reel to reel recorders incorporating Dolby noise reduction systems.



Bib Hi-Fi Stereo Test Cassette

MT76 Reel to Reel Frequency Response Test Tape

Essential for the precise checking of accuracy of tones produced from open reel recorders.

M48 Dolby Tone Test Cassette

A specially produced pre-recorded tape for correct setting up, alignment and calibration of high quality Dolby cassette players.

■ **PHILIPS**

Philips Service,
604 Purley Way, Croydon,
Croydon CR9 4DR.
Tel: 01-686 0505.

Universal Test Cassette

(SBC 126 for Chrome applications)
(SBC 133 for Ferro applications)
Providing measuring frequencies:

Side 1: 3150Hz is to be used for measuring wow and flutter and checking or adjusting the tape speed.

50Hz is to be used for checking or adjusting the tape-speed with Cassette Service Set 800 CSS or 801 CSS.

315Hz 0dB reference level for Dolby control. Recording according DIN 4513 (250 pWb/mm).

SBC 126 only: 10kHz to be used for azimuth alignment.

40, 250Hz and 6.3, 10, 12.5kHz are to be used for checking the frequency response. Recording level—20dB relating to 0dB of 315Hz signal.

SBC 133 only: 8kHz to be used for azimuth alignment.

125, 250Hz and 4, 8, 10kHz are to be used for checking the frequency response. Recording level—20dB, relating to 0dB of 315Hz signal.

Side 2: This side is empty and can be used for own recordings according DIN 45513.

Test Cassette 812/MCT

The azimuth setting of the record/playback head may be adjusted using 812/MCT which

has an 8kHz tone recorded on one of its tracks. Only if the record/playback head is accurately set so that it is vertical to the running direction of the tape will high frequencies, which includes the 8kHz tone, be reproduced properly.

Mirror Cassette 814/SMC *

Device which enables visual check to be made on state of tape guide and pressure roller as well as providing check on recording/playback and erase heads for wear and/or contamination. Adjustments can then be made as necessary to ensure tape runs in straight path past the heads and capstan with a minimum of twisting and bending.

Torque Meter 811/CTM

Indicates the applied torque of both spindles under the following advantages conditions: (a) measurement under normal operating situation. (b) use in recorders with automatic stop mechanism without having to make special changes. (c) measurement without the need to dismantle the recorder. With practice and experience the torque values obtained can provide a good indication of the actual cause of the trouble such as slipping drive belts, faulty capstan bearing, incorrect adjustment of pressure roller, etc. The torque meter is placed in the recorder like any normal cassette, then the recorder is switched to either the record or playback mode, tape-up or take-up spool of the meter, the other spool indicating the counter torque.

Cassette Service Set 801/CSS

Stereo version, together with test cassette 812/MCT which is supplied, can be used to check and adjust the tape speed of a recorder, as well as the alignment of the record/playback head. For adjustment of the tape speed, the test cassette is inserted in the cassette recorder, and the 50Hz pre-recorded test signal reproduced is fed-back to the meter unit in the 801/CSS, where it is compared with the frequency of the mains. The recorder is adjusted for optimum tape speed when the swing of the meter pointer is at minimum.

■ **SHURELECTRONICS LTD**

Eccleston Road, Maidstone,
Kent ME15 6AU.
Tel: Maidstone (0622) 59881.

These records provide an effective means of cartridge evaluation through a variety of technical measurements. Shure engineers have developed four records for testing trackability, stylus wear, channel balance, phasing and anti-skating. TTR 115 & TTR 110 are designed for listening tests at home; the other two for use with professional test equipment.

TTR 103 Phone Cartridge Trackability Test Record—Professional Equipment required

45 rpm 12in. laboratory standard test record designed for use with sophisticated measuring equipment. TTR 103 contains three tests for trackability: (a) 10.8kHz pulsed high-frequency test with 270Hz repetition rate trackability and distortion test; (b) 1,000Hz plus 1,500Hz mid-frequency trackability and distortion test; (c) 400Hz plus 4,000Hz low-frequency trackability and distortion test. Three inspection methods are suggested: distortion measurements, an oscilloscope examination, and listening. Instructions on usage are included with the record. Price: £6.30 (plus VAT).

TTR 109 Level and Crosstalk Test Record—Professional Equipment required

This 33 $\frac{1}{3}$ rpm 12in. record provides 12 bands of 1kHz left and right reference levels at 5cm/sec recorded velocity. May be used as a crosstalk test. Designed for professional use. Instructions are included. Price: £5.10 (plus VAT).

TTR 110 'An Audio Obstacle Course—Era III'—Listening Test Record

This 33 $\frac{1}{3}$ rpm test record provides the most demanding and definitive audio tests for high fidelity cartridges. The total level range is the same as the TTR 101, but the increments of increased velocity are refined (6dB from first to second level; 2dB for the remaining three levels). The TTR 110 includes recordings of difficult-to-track instruments, with complete orchestral and vocal ensembles from commercial recordings plus level, balance and phasing checks. Complete instructions are included. Price: £3.30 (plus VAT).

TTR 115 'An Audio Obstacle Course—Era IV' Trackability Test Record

Test record to help evaluate total cartridge performance by analysing its most important performance characteristic: total trackability. Record enables one to evaluate trackability of the cartridge with musical instrument sounds covering high, mid-range and low frequencies at graduated recorded velocity level, and various combinations of these instruments which can present even greater demands on the cartridge. There are many other important tests, such as an arm-cartridge resonance test which indicates the ability of the cartridge pick-up arm system to reject warp effects. Level, balance, and phasing tests etc., are also included. Complete with instructions and evaluation guidelines. Price: £3.90 (plus VAT).

■ **WILSON STEREO LIBRARY LTD**

104-106 Norwood High Street,
London SE27.
Tel: 01-670 6394.

W.S.L. Blank Disc

Highly polished blank vinyl disc for adjusting side thrust and alignment. Indicates the amount of side thrust to be corrected. Mirror-like surface reflects underside of cartridge and stylus and assists in accurate alignment. Supplied with instructions for correcting side thrust. Price: £1.90, postage and packing included.



Philips Service Mirror Cassette 814 SMC

ELECTRONIC ORGANS AND SYNTHESISERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ BALDWIN

Baldwin Piano and Organ Company,
Rainham Road South, Dagenham, Essex.
Tel: 01-595 1212.

Fanfare Model 132.

Solo: Flutes 16, 8, 5 $\frac{1}{3}$, 4, 2, Cello 8, Violin 4, Accordion, Trumpet, Clarinet, muted Horn, long sustain, short sustain, solo off. Accompaniment: Diapason 8, Flutes 8, 4, Strings 8, 4, Reed 8, acc. soft. Pedal: Flutes 16, 8, Bass Guitar, pedal sustain, pedal soft. General: slow tremolo, fast tremolo, tremulant, light vibrato, full vibrato, delay vibrato, chorus, reverb, vibrato cut-off switch. Pre-sets: String ensemble, Flute ensemble, full Organ combination, cancel. Fantomfingers 2: Percussion voices: Piano, Harp, Guitar, Banjo, Harpsichord. Voice modifiers: mute, sustain, organ mode, acc/solo. Modes: arpeggio up, arpeggio down and up, strum, note patterns 1, 2 and 3. Mode modifiers: repeat, reverse, multi. Real rhythm sync: quarter note, eighth note, sixteenth note. Variable controls: volume, sustain length, rate. Automatic rhythms: 16 choices. Rhythm voices (manual): Pedal: bass, cymbal, clave brush. Accompaniment: brush, snare, cowbell. Rhythm voices (special): Bongo add, rhythm Guitar, muted Guitar, Drum roll. Functional controls: auto cancel, manual add. Variable controls: tempo, volume. Downbeat indicator light, on/off kick switch. Keyboards: 44-note solo and accompaniment manuals. Pedals: 13-note pedalboard. Amplification: transistorised 3-channel system. Tremolo channel: 50W, 4 ohms, 40Hz-20kHz, 1% THD. Vibrato and Stationary channels: 25W, 8 ohms, 20Hz-20kHz, 1% THD. Dimensions: 118.75 x 60.96 x 92.71cm. Finish: walnut.

Fanfare Theatre Model 133

Solo: Tibias 16, 8, 5 $\frac{1}{3}$, 4, 2, Cello 8, Violin 4, Accordion, Trumpet, Clarinet, muted Horn, long sustain, short sustain, solo off. Accompaniment: Diapason 8, Tibias 8, 4, Strings 8, 4, Reed 8, acc. soft. Pedal: Tibia 16, Flute 8, bass Guitar, pedal sustain, pedal soft. General: slow tremolo, fast tremolo, light vibrato, full vibrato, delay vibrato, chorus, reverb, vibrato cut-off switch. Pre-sets: String ensemble, Tibia ensemble, full organ combination, cancel. Fantomfingers 2: Percussion voices: Piano, Harp, Guitar, Banjo, Harpsichord. Voice modifiers: mute, sustain, organ mode, acc/solo. Modes: arpeggio up, arpeggio up and down, strum, note patterns 1, 2 and 3. Mode modifiers: repeat, reverse, multi. Real rhythm sync: quarter note, eighth note, sixteenth note. Variable controls: volume: sustain length, rate. Auto rhythm: Choice of 16 tempos. Rhythm voices (manual): Pedal: bass, cymbal, clave, brush. Accompaniment: brush, snare, cowbell. Rhythm voices (special): Bongo add, rhythm Guitar, muted Guitar, Drum roll. Functional controls: auto cancel, manual add. Variable controls: tempo, volume. Downbeat indicator light, on/off kick switch. Keyboards: 44-note solo and accompaniment manuals. Pedals: 13-

note pedalboard. Expression pedal. Headphone jack. Amplification: transistorised three-channel system. Tremolo channel: 50W, 4 ohms, 40Hz-20kHz, 1% THD. Vibrato and stationary channels: 25W, 8 ohms, 20Hz-20kHz, 1% THD. Dimensions: 118.75 x 60.96 x 92.71cm. Finish: walnut.

Funster Model 122

Solo: Flutes 16, 8, 4, Violin, Clarinet, Trumpet, Banjo (automatic repeat). Accompaniment: Flute: Cello, Horn. Pedal: pre-set with automatic sustain. Balance controls: accompaniment soft, pedal medium, pedal soft. General controls: tremolo, vibrato, reverb. Auto Rhythms: Waltz, March/Polka, Rumba, Bossa nova, Rock, Swing. General controls: drum volume (continuously variable), tempo (continuously variable), downbeat indicator light, Funmachine controls: on/off, bass, minor touch. Rhythm control: start. Keyboards: 37-note solo and accompaniment keyboards with Funmachine note indicators. Pedalboard: 13-note wooden pedalboard. On/off switch with indicator light. Expression pedal. Headphone and external input jacks. Amplification: single-channel system, 25W, 8 ohms, 20Hz-20kHz, 1% THD. Dimensions: 99.7 x 53.3 x 87cm. Finish: walnut, all-wood case.

Bravura Model 123

Solo: Flutes 16, 8, 4, Strings 8, 4, Clarinet, Reed. Accompaniment: Diapason 8, Flute 8, String 8, Horn 8. Pedal: Flute 16, 8, pedal sustain. Solo percussion: vibra Harp, Hawaiian Guitar, String, Banjo (automatic repeat), short sustain. Balance controls: pedal volume, accompaniment volume. General: tremolo, tremulant, reverb, light vibrato, full vibrato, delay vibrato. Funmachine/real rhythm: Rhythm patterns: Waltz, March, Rumba, Latin 3, Soul, Rock, Pop Rock, Dixieland, Swing, Fox trot. General controls: tempo, downbeat indicator light, drum volume. Funmachine controls: on/off, key selectors, touch rhythm, bass, minor touch, volume. Real rhythm controls: on/off, guitar. Keyboards: 44-note solo and accompaniment keyboards with note indicators. Pedals: 13-note pedalboard. Expression pedal. On/off switch with indicator light. Jacks: external input and stereo headphone. Amplification: transistorised single-channel system, 50W, 4 ohms, 40Hz-20kHz, 1% THD. Dimensions: 116.52 x 60.96 x 87cm. Finish: pecan.

Skyline 244 KT

Upper manual (44 keys, F-C): Flutes 16, 8, 4, Trombone 16, Trumpet 8, Oboe 8, Clarinet 8, Violin 8, Piccolo 4, reverb, sustain, Piano pre-set, Harpsichord pre-set, vibrato delay. Lower manual (44 keys, F-C): French Horn 8, Tuba Horn 8, Melodia 8, Diapason 8, Cello 8. Pedalboard: Bourdon 16, Flute 8, String Bass, sustain. Auto unit: 12 patterns. Output for external amplifier and headphone socket. Amplifier: 35W rms, 0.1% THD. Finish: walnut.

■ BONTEMPI

Internote UK Ltd,
Brennand Mill, Fraser Street,
Burnley, Lancs. BB10 1UL.
Tel: Burnley (0282) 35431.

HF202.6

Console styled organ featuring Auto Chord. Casing in brown high impact material, detachable legs and music stand in attractive woodgrain finish: 3 octave keyboard with 41 keys. Stops: Flute, Trumpet, Strings. 6 auto rhythms: Waltz, Swing, Slow Rock, Rock, Samba and Bossa Nova. Controls: volume, rhythm volume and tempo. Earphone socket.

HF204.6

Console organ featuring Auto Chord facility. Casing in brown high impact material, detachable legs and music stand in attractive woodgrain finish. 4 octave keyboard with 51 keys. Stops: Vibrato, Diapason, Violin, Reed and Clarinet. 6 auto rhythms for Waltz, Swing, Slow Rock, Rock Samba and Bossa Nova. Controls: bass and solo volume, rhythm volume and tempo. Metronome light indicator. Earphone socket. Compared to HF204.2 this model has improved cabinet and enriched tonal quality.

HP49.4

Single manual Organ, in wood effect finish cabinet. 49 note keyboard. Solo voices—Flute 8 and 4, Trombone, Clarinet, Oboe and Violin. Piano and Harpsichord effects are possible over the full four octave range. 16 auto rhythms and solo drum brake feature. One finger chords operate on the first 12 keys. Three finger chords, on the first 17 keys. Character of the one finger chords can be changed from major to minor or to seventh by the use of two control buttons on the front panel of the organ. Controls: Vibrato, volume, bass, accompaniment and solo voices. Provision is made for use of headphones addition of an external speaker system or tape recorder via the auxilliary output socket.

B370.34

Two manual organ in a woodgrain effect cabinet. 13 note pedal board with sustain and bass guitar, finger chord system with memory, Auto chord. Two keyboards of 32 notes each. Upper manual: Flute 8 and 4, Violin, Oboe and Clarinet. Lower manual: Diapason, Horn, String voices and manual bass. One finger chord system operates on the first 12 keys of the lower manual in either major or minor. 10 auto rhythms. Stops: Vibrato, control of bass volume, manual balance. Headphones and external speaker system.

B370.29*

Two manuals with 37 notes each, 13 note pedalboard. Stops on Upper manual: Flute 8, Flute 4, Violin, Piccolo, Clarinet. Lower manual: Diapason, strings, horn. Other Controls: Vibrato, brilliance, balance, rhythm, volume,

AURA SOUNDS

PRESENT AN INTRODUCTION TO
THE WORLD'S MOST EXCITING
BUILD-IT-YOURSELF ELECTRONIC
ORGAN . . .



 **WERSI**

**WERSI MAKES DO-IT-YOURSELF CONSTRUCTION EASIER THAN
EVER BEFORE AT A FRACTION OF THE PRICE OF THE FULLY
ASSEMBLED WERSI RANGE. GET THE FACTS NOW.**

For full enquires and illustrated brochure contact:

**AURA SOUNDS, 14/15 ROYAL OAK CENTRE, PURLEY,
SURREY. TEL: 01-668-9733**

**AURA SOUNDS, 17 UPPER CHARTER ARCADE,
BARNSELY, YORKS. TEL: 0226-5248**

BUILDING YOUR OWN ORGAN THE FACTS!

Why should you want to build your own organ? There are many good reasons; take cost, for instance. You can save between a half and two thirds of the cost of a ready-built unit by building yourself! And you don't need previous experience in electronics. As long as you are reasonably patient, and can follow simple instructions, you could soon join the many thousands of people who have built WERSI organs and other accessories in their own homes! Of course, should you get stuck, and it can happen of course, expert assistance is just a 'phone call away, and a chat with one of our friendly engineers will normally solve your problems. Remember, our customers are 100% satisfied with their WERSI organ only when it is successfully completed, and the excellent assembly manuals, combined with any additional assistance you might need, will ensure that you will enjoy both the building and playing of your instrument. Of course, you also build and play your organ in stages: therefore when you get the last section completed and installed, you will already know your way round the organ a lot better than someone who buys it ready built!

The actual act of building your own organ is very enjoyable too! It is surprising how much you learn too, even without realising it, and of course, the satisfaction of both playing and building an organ of this calibre is doubly rewarding.

How can do-it-yourself construction be made so easy? This is achieved by using modern 'silicon chip' integrated circuits, and ready made wiring harnesses, coupled to well illustrated and explicit assembly manuals. Components are packed in small bags, each clearly labelled, and the printed circuit boards are screen printed with the component locations. The manuals will tell you which bags to open, where to insert the components etc. You then solder them in position, snip off the unwanted leads, and proceed to the next step . . . it's as easy as that!

Only simple tools are needed to build your WERSI organ. A good soldering iron is essential, and also a small test meter. We are pleased to advise you with these, or we can supply you with suitable types at our showroom. Apart from these items, a pair of long-nosed pliers, sidecutters, and other tools you probably already have are all that you will need. Everything else is supplied in the kits, right down to solder, nuts and bolts. And, in case you are worried about your carpentry abilities, the cabinets come ready assembled and finished!

Each organ is built up in separate sections — we call them KitPaks. Most organs consist of 14 or 15 KitPaks. The first five kits will give you a basic playable organ, through external amplifiers and speakers. Add KitPaks 6 and 8, and the organ becomes completely self-contained. Add the other features as and when you wish!

Also, as WERSI bring out new effects for their organs, you will be able to add them to the instrument you have already built! In this way, you can keep your organ right up to date with the latest developments.

We welcome you to visit one of our showrooms, where you can see and hear the organs for yourself, and we will also be pleased to show you the kits, and the easy-to-follow instruction manuals.

rhythm tempo, metronome. 10 Auto rhythms: Cha-Cha, Western, Bossa, Samba, Rock, Slow Rock, Swing, Waltz, Rhythm 'n' blues, March. Auto chord, Bass volume, pedal sustain, headphone socket. Two front speakers dia. 200mm with stereo amplifier of 7W RMS per channel. Dimensions: 105 x 54 x 102cm.

■ CAVENDISH

Cavendish International (Organs) Ltd,
Brick Knoll Park, Ashley Road,
St. Albans, Herts.
Tel: St. Albans (0727) 60191.

New range about to be marketed. Details as yet unknown.

■ EKO

John Hornby Skewes & Co Ltd,
Salem House, Garforth, Leeds LS25 1PX,
West Yorkshire.
Tel: Leeds (0532) 865381.

Auto Tivoli 18A

Easy to play chord for the beginner with one keyboard of 37 keys plus 6 major chord buttons, 6 minor chord buttons and 6 bass note buttons. Stops: Flute, Horn, Reed, Strings. Effects: Vibrato. 6 auto rhythms and auto accompaniment. Controls: volume slider, rhythm

volume slider and rhythm tempo slider. Speakers: 6in. Dimensions: 76 x 79 x 41cm. Output: 5W. Features: Plastic top, simulated wood cabinet. Price: £173.04 (plus VAT).

Elite DUO 44 *

Double manual organ suitable for beginner, or competent musician. Two 44-note keyboards, 13-note pedal board. Stops: Flute 4, Flute 1, Violin, Trombone, Clarinet on upper manual. Flute, Reed, Viola on lower. Effects: vibrato, delay and speed control, variable sustain, volume control. Auto Rhythm: Latin, Shake, Slow Rock, Foxtrot, Waltz, Tango, Swing, March, Tempo Control, Volume Control. Other controls: key button which allows rhythm unit to start only when keys are depressed, accompaniment button, memory, chord magic (one finger chord facility), on/off switch, volume expression pedal. Speakers: 10in. single cone of 4 ohms impedance. Output: 10W. Dimensions: 54 x 98.5 x 90cm. Finish: simulated wood cabinet, complete with music rest and bench. Price: £478.26 (plus VAT).

■ ELECTROPHONIC

Cape Electronics Ltd,
56 Bedford Place, Southampton.
Tel: Southampton (0703) 21265.

Electro-Phonic Organs *

Each department is an independent organ and each has multiple generators, producing a wide sound front with chorus build up. Installed and voiced in the home, church or concert hall with all normal pipe organ facilities. Organs cost from about £3,500 ex-works (plus VAT).

■ ELGAM

J. T. Coppock (Leeds) Ltd,
Highfield House, Royds Lane, Leeds.
Tel: Leeds (0532) 634652.

Broadway 200

Two-44 note keyboards and 13 note pedal board. Auto rhythm. Speakers: two 10in. Output: 25W. Finish: walnut. Price: on application.

Broadway 500

Two keyboard console with Leslie tremolo unit. Two 49-note keyboards, 13-note pedal board.

Effects: magic touch, auto wha-wha. Auto rhythm. Two-speed Leslie Tremolo unit, memory chords. Speakers: two 12in. with co-axial tweeter. Output: two x 30W. Finish: walnut. Price: on application.

Mistral 210S

Two keyboard console organ and pedalboard. Two 44-note keyboards, 13-note pedalboard. Auto bass, memory chords. Rhythm unit. Speakers: two x 8in. Output: 25W. Finish: walnut. Price: on application.

Concert

Fully polyphonic string, Brass and Piano synthesiser. Five Octave keyboard which can be split into two sections. Stops: Piano, Harpsichord, Brass 8, Brass 16, Cello, Violin. Effects: Octave selector, String solo. Controls: split outputs for Brass and Strings if desired. Amplifier and speakers not included. Finish: walnut/black. Price: on application.

Serenade 'S'

Two manual console organ with pedalboard. Two 37-note keyboards and 13-note pedalboard. Auto rhythm. 8in. speaker. Output: 10W. Finish: walnut. Price: on application.

Recital de Luxe.

Two manual console with synthesiser and pedalboard plus Leslie tremolo unit. Two 49-note keyboards and 13-note pedalboard. Effects: synthesiser voices plus Leslie tremolo unit. Push button controls. Speakers two 12in. plus Tweeter. Output: two x 35W. Finish: walnut. Price on application.

Recital

Two-manual console organ with pedalboard and Leslie tremolo unit. Two 49-note keyboards, 13-note pedalboard. Auto rhythm. Speakers: two 12in. plus tweeter. Output: two x 35W. Finish: walnut. Price: on application.

Symphony 200 'S'

Double manual portable organ. Two 49-note keyboards and 13-note pedalboard. Effects: upper and lower sustain. Auto rhythm. Two elliptic speakers. Output: 25W. Finish: black. Price: on application.

■ ELKA-ORLA

Elka-Orla (UK) Ltd,
2-3 Bluebridge Industrial Estate,
Halstead, Essex CO9 2EX.
Tel: Halstead (07874) 5325.

Preudio 15

Two Manuals of 44 notes F-C. Pedalboard of 13 notes C-C with Flute 16, Flute 8, Sustain and Volume Control. Upper Manual with 16 presets: Organ I, Organ II, Organ III, Trombone, Trumpet, Brass, Cello, Strings, Strings Chorus, Piano, Clavichord, Honky Tonk, Classic, Guitar, Hawaiian Guitar and Cosmic-Flutes, Strings and Piano Sustain that can be adjusted separately. Lower Manual with Flute 8, Horn 8, Cello 8 and Volume Control. Vibrato On and Vibrato Slow/Fast, Tuning, Automatic Rhythm Unit with 16 rhythms, Automatic Bass and Accompaniment plus Drum Break Pedal Switch, 30 watts RMS Amplifier. Roll-top cover. Price: £817.72 (inc VAT).

Preudio 22/L

Two Manuals of 44 notes F-C. Pedalboard of 13 notes C-C with Flute 16, Flute 8, Sustain and Volume Control. Upper Manual: Flute 16, Flute 8, Flute 4, Oboe 16, Trumpet 8, Strings 4



Bontempi B370.29



Elite Duo 44 from John Hornby Skewes



Typical large Electro-Phonic organ

with Sustain Short/Long, Piano and Clavichord with Sustain and Volume Control. 2 Percussions Short/Long, 4 Organ Pre-sets; Full Organ, Mandolin, Clarinet and Harmonica, Lower Manual with Flute 8, Horn 8, Cello 8 and Volume Control, Vibrato Light, Full and Delay, Reverb with Depth Control, Leslie Automatic Rhythm Unit with 16 rhythms, Automatic Bass and Accompaniment plus Drum Break Pedal Switch, 2 Amplifiers of 40 watts RMS each. Roll-top cover. Price: £1,124.44 (inc. VAT).

Crescendo 303

Two Manuals of 44 notes F-C. Pedalboard of 13 notes C-C with Flute 16, Flute 8, Sustain and Volume Control, Upper Manual: Flute 16, Flute 8, Flute 4, Flute 2 $\frac{2}{3}$, Flute 2, Sax 16, Oboe 8, Clarinet 8, Strings 4 with Sustain Short/Long, 3 Percussions Short/Long, 9 Solo Pre-sets (Monophonic Synthesizer): Trombone, Trumpet, Sax, Clarinet, Guitar, Hawaiian Guitar, Violin, Telstar, Cosmic with Tuning and Volume Controls, 4 Organ Pre-sets: Full Organ 1, Full Organ 2, Beat and Mandolin, Lower Manual with Flute 8, Flute 4, Cello 8 and Volume Control, Cello, Strings Chorus, Piano and Clavichord Polyphonic Effects with Volume and Sustain Controls available on the upper or lower manuals, Vibrato Light, Full and Delay, Reverb Short/Long, Leslie Automatic Rhythm Unit with 16 rhythms, Super Automatic Bass and Accompaniment plus Drum Break Pedal Switch, 2 Amplifiers of 50 watts RMS each. Roll-top cover. Price: £1,839.99 (inc. VAT).

Artist 606

Two manuals of 44 notes F-C. Pedalboard of 13 notes C-C with Flute 16, Flute 8, Attack, Sustain and Volume Control, Upper Manual with 9 flute drawbars and Sustain: 16, 5 $\frac{1}{3}$, 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$, 1 $\frac{1}{3}$ and 1-6 Percussion Short/Long, Soft/Loud, 11 Solo Pre-sets (Monophonic Synthesizer): Trombone, Trumpet, Sax, Clarinet, Oboe, Guitar, Hawaiian Guitar, Violin, Flute, Telstar, Cosmic with Tuning and Volume Controls, 4 Organ Pre-sets: Theatre, Full Organ, Clarinet and Trumpet, Lower Manual with 5 flute drawbars and Sustain: 8, 4, 2 $\frac{2}{3}$ and 2, Cello, Strings Chorus, Piano and Clavichord Polyphonic Effects with Volume and Sustain Controls available on the upper or lower manuals, Vibrato Upper, Lower, Slow/Fast and Delay, Reverb Short/Long, Leslie, Automatic Rhythm Unit with 16 rhythms, Super Automatic Bass and Accompaniment plus Drum Break Pedal Switch, 2 Amplifiers of 50 watts RMS each. Roll-top fall cover. Price: £2,172.22 (inc. VAT).

Artist 707

Two Manuals of 49 notes C-C. Pedalboard of 13 notes C-C with Flute 16, Flute 8, Attack, Sustain, Pedal Bass to Manual Bass and Volume Control. Upper Manual with 9 flute drawbars and adjustable Sustain: 16, 5 $\frac{1}{3}$, 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$, 1 $\frac{1}{3}$ and 1-4 Percussions Soft/Loud, Short/Long, 11 Solo Pre-sets (monophonic Synthesizer): Trombone, Trumpet, Sax, Clarinet, Oboe, Guitar, Hawaiian Guitar, Violin, Flute, Telstar, Cosmic with Tuning and Volume Controls, Upper Solo/Bass Solo Tab, Solo Variations: Octave Down, VCA and VCF plus Filter, Vibrato and Bend Controls, 5 Organ Pre-sets: Full Organ, Theatre, Beat, Brass 1 and Brass 2 (the 2 Brass Pre-sets with Volume Control), Lower Manual with 6 flute drawbars and adjustable Sustain: 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$ and 1 Cello, String Chorus, Piano and Clavichord Polyphonic Effects with Volume and Sustain Controls available on the upper and lower manuals, Vibrato Upper, Lower, Delay

and Slow/Fast, Reverb with Depth Control, Leslie, Automatic Rhythm Unit with 16 rhythms, Super Automatic Bass and Accompaniment plus Drum Break Pedal Switch, Swell Cancel for Piano/Clavichord, Solo Effects and Rhythm Unit, 2 Amplifiers of 100 watts RMS each. Roll-top cover. Price: £3,066.66 (inc. VAT).

Artist 606 Deluxe

Same specifications as the Artist 606, the only differences being that the model Artist 606 Deluxe has a better finished luxury cabinet and lights to illuminate the tabs and controls panel. Price: £2,376.67 (inc. VAT).

Artist 707 Deluxe

Same specifications as the Artist 707, the only difference being that the model Artist 707 Deluxe has a better finished luxury cabinet. Price: £5,271.11 (inc. VAT).

X605

Portable inc. bench. Upper Manual 49 keys C-C, Lower Manual 49 keys C-C. Pedals 13 keys C-C, Upper Manual Voicing: Flute Drawbars 16, 5 $\frac{1}{3}$, 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$, 1 $\frac{1}{3}$, 1, Percussion: 5 $\frac{1}{3}$, 4, 2 $\frac{2}{3}$, 2, Soft/Loud, Short/Long, Organ Pre-sets with Push Button Selection and Indicator Lights: Drawbars, Full Organ, Theatre, Brass 1 and Brass 2, Clarinet, Cosmic, Cancel, Lower Manual Voicing: Flute Drawbars 8, 4, 2 $\frac{2}{3}$, 2 and 1. Pedalboard Voicing: Flute 16, Flute 8 and Pedal/Manual which transfers the bass to the first octave of the lower manual, String & Piano Effect: Cello, String Chorus, Piano, Clavichord. All these voices can be played on the upper or lower manuals depending on the position of the Upper/Lower tab, Sustain Controls: Upper and Lower Manuals, Pedalboard, Cello, Strings Chorus, Piano and Clavichord, Vibrato: On/Off, Delay, Slow/Fast, Reverb: On/Long, Elkatone: On/Off, Slow/Fast, Expression Pedal: With drum break control. Other Controls: On/Off switch with pilot light, Organ tuning knob, Slider Volume Controls for Bass, Cello/Strings, Chorus and Piano/Clavichord, Slider Sustain Controls for Upper Manual, Lower Manual, Bass, Cello/Strings, Chorus and Piano/Clavichord. Price £1,490.75 (inc. VAT).

X705

Portable inc. bench. Upper Manual 49 keys C-C, Lower Manual 49 keys C-C. Pedals 13 keys C-C, Upper Manual Voicing: Flute Drawbars 16, 5 $\frac{1}{3}$, 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$, 1 $\frac{1}{3}$ and 1, Percussion: 8, 5 $\frac{1}{3}$, 4, 2 $\frac{2}{3}$ and 1, Soft/Loud, Short/Long, Organ Pre-sets (Polyphonic): Tabs, Full Organ, Theatre, Beat, Brass 1, Brass 2, Cancel, Solo Pre-sets (monophonic Synthesizer): Trombone, Trumpet, Sax, Clarinet, Oboe, Guitar, Hawaiian Guitar, Violin, Flute, Telstar, Cosmic, Cancel, Solo Variations with Octave Down, VCA and VCF Envelope Controls and Filter, Vibrato and Bend Controls, Strings & Piano Effects: on Upper and Lower Cello, Strings Chorus, Piano, Clavichord, Flute, Cancel, Sustain Controls: strings Chorus, Piano/Clavichord, Flutes (Upper), Strings Chorus, Piano/Clavichord, Flutes (Lower), Vibrato: Slow, Fast, Delay, Upper or Lower, Lower Manual Voicing: Flute Drawbars 8, 4, 2 $\frac{2}{3}$, 2, 1 $\frac{3}{5}$ and 1, Pedalboard Voicing (optional): Flute 16, Flute 8, Attack, Sustain, Elkatone: Slow/Fast, Upper/Lower, Percussion, Reverb, Memorized Rhythm Unit with 16 rhythms: Tango, March, Waltz, Slow Rock, Swing, Rhythm & Blues, Jazz, Rock, Shake, Boogie Woogie, Afro, Beguine, Samba, Mamba, Rumba, Cha-Cha, Bossa Nova, Push Button Selectors for Rhythm Bass Guitar, Bass Sustain plus Memory, Push Button Selectors for

Automatic Bass and Walking Bass, Super Automatic Chord Accompaniment using Piano, Guitar and Brass Sounds plus Memory, Start and Key Push Buttons. Price: £2,622.02 (inc. VAT).

Prestige Console

Upper manual 44 notes from F-C. Lower manual 44 notes from F-C. Bass pedals 13 notes from C-C. Upper Keyboard Voices: Flute 16, Flute 8, Oboe 16, Trumpet 8, Strings 8, Piano, Jingle Piano, Clavichord and Guitar, Lower Keyboard Voices: Flute 8, Horn 8 and Cello 8, Bass Pedals Voices: Flute 16, Flute 8, Sustain Effects: Vibrato Light, Vibrato Full, Sustain Organ, Sustain Piano. Controls: Slider Volume for Bass, Lower Manual and Piano, Memorized Super Automatic: with 8 rhythms: Waltz, Slow Rock, Tango, Swing, Beat, Bossa Nova, Samba, Rumba, Push Button controls: Rhythms, Accompaniment, Arpeggio 1, Arpeggio 2, Arpeggio 3, Bass, Sustain, One Finger/Manual, Memory, Key and Start, Slider Tempo Control, Volume control for the rhythm, bass, arpeggio, accompaniment, Amplifier: 30 watts RMS. Outside Sockets: Headphone socket, Amplifier socket. Price: £638.89 (inc. VAT).

Prestige Portable

Upper manual 44 notes from F-C. Lower manual 44 notes from F-C. Bass pedals 13 notes from C-C. Upper Keyboard Voices: Flute 16, Flute 8, Oboe 16, Trumpet 8, Strings 8, Piano, Jingle Piano, Clavichord and Guitar, Lower Keyboard Voices: Flute 8, Horn 8, and Cello 8, Bass Pedals Voices: Flute 16, Flute 8, Sustain Effects: Vibrato Light, Vibrato Full, Sustain Organ, Sustain Piano. Controls: Slider Volume for Bass, Lower Manual and Piano, Memorized Super Automatic: with 8 rhythms: Waltz, Slow Rock, Tango, Swing, Beat, Bossa Nova, Samba, Rumba, Push Button controls: Rhythms, Accompaniment, Arpeggio 1, Arpeggio 2, Arpeggio 3, Bass, Sustain, One Finger/Manual, Memory, Key and Start, Slider Tempo Control, Volume control for the rhythm, bass, arpeggio, accompaniment. Amplifier: 30 watts RMS. Outside Sockets: Headphone socket, Amplifier socket. Price: £690.00 (inc. VAT).

Concorde 902

Electronic Accordion. Keyboard Voices: 9 flute drawbars, 5 Percussion Short/Long, Loud/Soft, Keyboard Pre-Sets: Tabs, Full Organ, Theatre, Beat, Brass 1 and 2, Keyboard Solo Pre-Sets: Trombone, Trumpet, Sax, Clarinet, Oboe, Guitar, Hawaiian Guitar, Violin, Flute, Telstar, Cosmic, Variations and Solo to Bass, Comprehensive Solo Variations, Sustain Controls, Reverb, Memorized Rhythm Unit with 16 rhythms, Super automatic chord accompaniment, Bass Section: Flute 16 and 8 and Piano, Chords: Organ Pre-Sets, Tabs, Flutes 1 and 2, Bass 1 and 2, Chord Effects: Cello, Strings, Piano and Clavichord. Price: £2,459.31 (inc. VAT).

Wilgamat 1

Rhythm Unit. Memorized Automatic Rhythm Unit with 16 Rhythms: Tango, March, Waltz, Slow Rock, Swing, Rhythm & Blues, Jazz Rock, Shake, Boogie Woogie, Afro, Beguine, Samba, Mamba, Rumba, Cha-Cha, Bossa Nova, Push Button Selectors for Automatic Bass and Walking Bass, Super Automatic Accompaniment with Piano, Guitar, Brass and Memory, Start and Key Push Buttons, Controls of the Wilgamat I: Slider control for overall volume, Slider volume control for tempo, Slider controls for rhythm, bass and accompaniment volumes, Tuning Knob. Price: £452.54 (inc. VAT).

Rhapsody 610

Manual with 61 keys F-F. Two register sections both including Violin, Cello, Strings, Piano, Clavichord: the first one, controls the first two octaves of the manual whilst the second one controls the three remaining octaves. Controls: On/Off switch with pilot light. Delay: allows sustain length control for the effects. Cancels: allows the immediate cancellation of the effects. Tuning Knob, Photoelectric cell expression pedal. Connections: Stereo output (one channel for Violin Cello, Strings and on channel for Piano, Clavichord). Presentation: The instrument is supplied in an elegant unbreakable plastic case, well padded on the inside and chrome-plated legs with respective leatherette bag. Price: £647.13 (inc. VAT).

Rhapsody 490

Manual with 49 keys C-C. Voice registers: Violin Cello and Strings. Controls: On/Off switch with pilot light. Volume control, Sustain length control. Tuning: allows external tuning of the instrument, Photoelectric cell expression pedal with respective cable. Legs with respective leatherette bag. Unbreakable plastic case. Price: £392.67 (inc. VAT).

■ HAMMOND

Hammond Organ (UK) Ltd,
19 Denbigh Hall, Bletchley,
Milton Keynes, Bucks MK3 7QT.

123J2

Spinet with two keyboards and 13-note pedalboard. Stops: Tibia 16, 8 and 4, Strings, Reeds, Piano, Banjo, Cello and Accordion. 20 one-finger chords, autochord, memory, Bass swing and variable Bass Walk. Pedal sustain, upper keyboard sustain, 10-pattern rhythm unit.

123J3

As 123J2 with extra Tibia 2 and Harpsichord on upper keyboard. Sound—Rama at fast or slow speeds.

124JM3

As 123J3 plus auto-vari rhythm and concert hall reverberation, visual memory. Two 44-note keyboards, upper keyboard, sustain, pedal sustain, memory, bass, swing and variable Bass walk.

125JM3

In-built two channel Leslie speaker. Voices include Tibia at 16, 8, 4, plus Diapason, Strings, Reed, Piano, Harpsichord, Accordion, Banjo, Synth Echo plus variable sustain and repeat. Electronic visual aid to learn pedals.

126JM2

As 126JM2 but with additional features including selective repeat, pedal volume control, Bass Guitar. Sound Simulator simulates Clarinet, Cornet, French Horn, Piccolo, novelty etc. All wood cabinet with in-laid music desk.

Aurora Classic

Top of range Spinet with 9 upper keyboard tonebars, 7 lower keyboard tonebars, variable tonebar sustain and 2nd and 3rd harmonic percussion. Independently keyed Piano, Polyphonic Synthesiser, auto arpeggiator and Phil-harmonic Strings. Horseshoe cabinet.

■ HOHNER

Hohner International,
39-45 Coldharbour Lane, London SE5 9NR.
Tel: 01-733 4411.

Bambi

Portable organ easily assembled and light to carry ideal for beginners as the white notes are numbered for easy tuition. Single manual keyboard with 49 notes. Stops: Flute, Strings, Flute and Strings. Auto Rhythm: Waltz, Swing, March. Slide control for rhythm volume and tempo. Built-in speaker and amplifier and illuminated mains on/off switch. Price: £147.39 (plus VAT).

Bonanza

Portable organ with legs. Keyboards: 2 manuals both with 44 notes and pedal board of 13 notes. Stops on upper manual: Flute 16, Flute 8, Oboe 16, Trumpet 8, Strings 8, Piano, Jingle Piano, Clavichord, Guitar. Stops on lower manual: Flute 8, Horn 8, Cello 8. Effects: Vibrato light, Vibrato full, Sustain Organ, Sustain Piano. Auto Rhythm: Waltz, Slow Rock, Tango, Swing, Beat, Bossa Nova, Samba, Rumba. Controls: volume controls for bass, lower, Piano. Volume controls for rhythm, accompaniment, bass, tempo controls slides, rhythm accompaniment, bass, sustain. Dimensions: 28 x 106 x 58cm. Weight 37.5kg. Price: £605.96 (plus VAT).

Organetta de Luxe 46P

Portable electronic automatic organ. Single manual of 49 notes. Stops: Trumpet, Oboe, String, Flute, Piano, Clavichord, Jingle Piano. Auto Rhythm: Waltz, Slow Rock, March, Swing, Cha Cha, Samba. Adjustable speed, light or full vibrato. Built-in amplifier and 10W speaker. Price: £346.74 (plus VAT).

Holiday Contempo

Solid state self-contained home organ with 44-note keyboards (two) and 13 pedals. Five 40W amplifiers, two 10in. heavy duty bass speakers, 8in. mid, two 6 x 9in. and a deluxe 10in. Leslie tremolo rotor. Upper keyboard: Trombone, Clarinet, Cornet, Kinura, Flutes (six). Lower keyboard: Flute 8, Flute 4, Piano, Guitar, Banjo, Pedals: Guitar Bass, sustain, etc. Track III stereo rhythm with 18 variations and rhythm controls. Price: £4,095 (inc. VAT).

Debut

Home spinet organ with two 37-note keyboards and 13-note pedal board. Heavy duty amplifier driving high efficiency 12in. speaker equipped with treble cone. Ten different auto rhythm settings and four rhythm controls. Upper stops: Trombone 16, Clarinet 16, Viola 8, Flute 16, Flute 8, Flute 4. Lower: Flute, Piano/Horn, Guitar/String, Banjo/Reed, Flute Volume control. Features: Magic Genie effects, pre-sets

for Vibraphone, Piano, Hawaiian Guitar, Banjo, Mandolin, Accordion. Effects: Vibrato, Flute Vibra Trem, Repeat, Harmony Magic, Custom Sustain Slider, Harmony Magic Volume. Price: £895.00 (inc. VAT).

Jubilee*

Home spinet organ with two 44-note keyboards and 13-note pedal board. Three 40W amplifiers with two 10in. heavy duty bass speakers and two in midrange with integrated treble cones. Stops on Upper Keyboard: Trombone 16, Clarinet 16, Cornet 16, Kinura 8, Viola 8, Violina 4, Flute 16, Flute 8, Flute 4, Flute 2 $\frac{2}{3}$, Flute 2. Lower keyboard: Flute 8, Viola 8, Piano 8, Guitar 8, Banjo 8. Magic Genie effects. 18 auto rhythm settings and 7 rhythm controls. Effects: AOC (automatic organ computer), repeat, sustain slider, reverb slider, stereophaze sound. Price: £2,695.00 (plus VAT).

■ THOMAS

Thomas Musical Instruments Ltd,
Unit No. 6, Abercorn Trading Estate,
Manor Farm Road, Alperton,
Wembley, Middlesex HA0 1YG.
Tel: 01-903 3081.

Playmate 1130-0

First in the Playmate range. Two 37 note manuals and 13 note radial pedalboard. Voices: Flute, Trombone, Trumpet, Oboe, Violin. Accompaniment: Melodia, Horn, Diapason, String. Controls: Vibrato, color-glo, manual balance, pedal volume, balanced expression pedal, earphone jack. Features: memo chord, pedal sustain/memory, Fancy foot (auto bass pedal patterns). Rhythms: Waltz, Foxtrot, Swing, Rock, Latin, Contemporary design cabinet in simulated walnut, bench included. Solid State silicon amplifier with 12in. speaker. Dimensions: 37 $\frac{1}{8}$ x 39 x 21 $\frac{1}{2}$ in. Price: £499.00 (inc. VAT).

1324*

Another Playmate organ with two 44 note manuals and 13 note radial arc pedalboard. Solo voices: Bass Flute 16, Orchestral Flute 8, Piccolo 4, Mellow Trombone, Oriental Oboe, Wood Clarinet, Symphonic Violin, Electric Piano, Honky Tonk, Classical Harpsichord, Flamenco Guitar, Orchestral Bells, Music Box, Solo Sustain. Accompaniment: Piano, Rhythm Guitar, Banjo, Harpsichord, French Horn, Organ, Reed, Strings. Controls: Dual tremulent, Slow/fast, Reverb, color-glo, manual balance, pedal volume, balanced expression pedal, earphone jack. Features: memo chord, pedal sustain/memory, Fancy Foot, Ac-



Lowrey Jubilee



Thomas Playmate 1324

companion rhythm, computerised arpeggio magic harmoniser. Rhythm: Waltz, Jazz Waltz, Foxtrot, Boogie 6/8, Swing, Ballad Rock/Country, Disco, Bassa, Samba, Mamba. Cabinet available in contemporary design wood finish or traditional design pecan veneer. Bench included. Dimensions: 37 1/4 x 43 1/2 x 21 1/2 in. Price: £1,299.00 (inc. VAT).

Other Playmate models

1130-76 £625.00; 1230-0 £575.00; 1230-76 £699.00; 1331-0 £995.00; 1331-8 £1,245.00; 1324-6 £1,499.00; 1385-0 £1,349.00; 1385-6 £1,549.00.

Californian 294

Organ with two keyboards of 44 notes and 13-note pedalboard. Upper keyboard solo: Tibia (16, 8, 5 1/3, 4, 2 2/3, 2, 1), Tuba 16, Bassoon 16, Trumpet 8, Oboe 8, Diapason 8, Vox Humana 8, Violin 8, Violina 4, Tijuana Trumpet, Voice d'jour, Percussion d'jour, Mandolin, Piano, Harpsichord, Accordion, Sustain, Auto sostenuto. Lower keyboard accompaniment: Tuba Horn 8, English Horn 8, Vox Humana 8, Cello 8, Viola 4, Tibia 8, Tibia 4. Pedal keyboard: Bourdon 16, Magic Flute 8, Bass Clarinet 8, String Bass 8, Pre-set accom. Controls: Reverb-variable slider, pedal volume, pre-sets volume, manual balance, voice d'Jour, power on/off, color-glo, Expression pedal, harmoniser volume. Features: memory chords, memory features, auto pedal, fancy fingers, strum, fancy foot, walking bass. Rhythms: Waltz, Foxtrot, Espana 6/8, Swing, March, Rock, Disco, Ballad, Metronome, Tango, Rumba, Samba, Bassa, Jazz Rock. Latin Disco, Cumbia. Rhythm controls: rhythm cancel, auto start, mellow, tempo, drums, tempo downbeat. Two Solid State amplifiers, two 12in. heavy duty woofers, two 2in. tweeters. Dimensions: 39 1/2 x 24 1/2 x 44 1/2 in. Price: £2,999.00 (inc. VAT).

Other Californians

291-0 A2 £1,799.00; 291-27 A2 £1,949.00; 294-0 A2 £2,645.00.

Other models

Galaxy Three manual £1,699.00; Coronado £3,595.00; Eldorado £4,495.00; Odyssey £3,696.00; Trianon £4,495.00; Celebrity Royale £6,395.00.

Add-on Features

These include Contra Phase II, Fancy Voice, Orchestral Presence, Color-Glo, and Master, Music Scanner. Arpeggio Magic. Full details and brochures from the company or agents. Prices include VAT.

■ **VISCOUNT**

Viscount Organs Ltd,
Hulleys-Lyon Industrial Estate,
Hartspring Lane, Watford, Herts.
Tel: Watford 47437/49345.

Alice

Ideal for beginner or for those with limited space. Two keyboards of 37-notes each, 13-note pedalboard. Stops on upper keyboard: Flute, Oboe, Horn, Trumpet, String, Wah-Wah, Percussion, Piano. Lower Keyboard: Flute, Reed, 8 auto rhythm units. Controls: volume, vibrato, volume expression. Amplifier output: 20W. Loudspeaker with 4 ohms wide range. Wood veneered matt polished cabinet in medium walnut finish with woven fabric front panel and smoked perspex music rest. Price: £381.73 (plus VAT).

Fair Lady*

Special keying circuitry enables many delightful

effects to be created by use of Sustain and Vibrato mixed with upper manual voices. Two keyboards of 44-notes each, 13-note pedalboard. Stops on upper keyboard: Flute at 16/8/4, Trombone 16, Clarinet 16, Trumpet 8, Oboe 8, Violin 8. Sustain for upper manual voices, repeat percussion for solo voices. Lower keyboard: Flute 8, Horn 8, Melodia 8. Pre-set voices: Piano, Spinnet, Vibes, Wah Wah, Synth Wah, 8 auto rhythm units. Amplifier power output: 20W. Speaker with 8 ohms wide range. Wood veneered matt polished cabinet, woven fabric front panel, smoked perspex music rest and locking tambour cover. Dimensions: 95 x 112 x 58cm. Price: £546.95 (plus VAT).

■ **Oklahoma**

Two keyboards of 44-notes each, pedalboard of 13-notes. Upper manual: Flutes 16/8/5 1/3 / 4/2 2/3 / 2, Trombone 16, Clarinet 16, Cello 16, Horn 8, Trumpet 8, String 8, Piccolo 2, Wah Wah. Lower manual: Flutes 8/4/2, Diapason 8, Horn 8, Melodia 8, String 4. Percussion and piano sections. Piano can be played solo. Effects: Vibrato, delay, sustain, reverb. Leslie upper-lower-chorus/tremolo-ensemble upper, lower. It plays separately on the keyboards but does not play with the pedal, piano and orchestra. Three speakers. Wood cabinet in walnut, locking tambour cover, wood music rest. Dimensions: 110 x 120 x 72cm. Price: £1,477.38 (plus VAT).

■ **Other Home and Entertainment Organs**

Cabaret Strings M-45 £651.30; Cabaret De Lux M-45 DL £712.17; Tiffany £1,129.57; M-80 £1,738.26; M-80 DL £1,912.18 (plus VAT).

■ **CL1**

Classical organ with single 61-note keyboard. Stops: Tibia, 16/8/4/2 3/4 / 2, String 16/8/4, Oboe 16, Horn 16, Trumpet 16, Clarinet 16, Octave 4, Cimbel, Sifflet. Effects: Vibrato, reverb, bright transposer. Expression pedal. Two speakers. 30W amplifier. Wood veneered cabinet with fabric front panel. Price: £381.74 (plus VAT).

■ **Other Classical Organs**

CL-1 £407.82; CL-30 £929.56; CL-40 £1,112.17; Domus Church Organs at £1,564.35, £1,912.17, £2,781.75 (plus VAT).

■ **WURLITZER**

Wurlitzer Ltd,
Parkgate Industrial Estate,
Knutsford, Cheshire WA16 8DU.
Tel: Knutsford (0565) 52621/52622.

470

Funmaker custom Spinet organ with two 37-note keyboards and pedal board. Stops: Flute

16, Flute 8, Flute 4, Diapason, Trumpet, Wah-Wah, Trombone, Cello, Clarinet, Banjo, on upper keyboard. Flute, Horn, String, on lower keyboard. Effects: all programmed rhythm orchestra features touch tone memory chords, dancing fingers, dancing chords, rhythm bass, pedal memory, bass riff, chromatic riff. Controls: five linear for volume, balance, tempo selection, vibrato, reverb, swinging rhythm, chord magic, slide, balance expression pedal. Dimensions: 96 x 105 x 55cm. Finish: traditional heritage fruitwood. Price: £1,494.00 (inc. VAT).

475

Funmaker custom spinet organ with two 37-note keyboards, 25-note synthesizer and pedal board of 13 notes. Stops: Flute 16, Flute 8, Flute 4, Diapason, Trumpet, Wah-Wah, Trombone, Cello, Clarinet, Banjo, on upper keyboard. Flute, Horn, String, on lower keyboard, 3 on lower. Effects: programmed rhythm orchestra, touch tone memory chords, dancing chords, rhythm bass, pedal memory, dancing fingers, bass riff, chromatic riff, chord magic slide, balanced expression pedal. Controls: synthesizer with 5 sine wave sounds, 5 pre-set voices, 5 linear controls for infinite shading and control. Orbit coupler allows synthesizer voices to be assigned to upper keyboard, vibrato, reverb swinging rhythm. Dimensions: 97 x 105 x 55cm. Price: £1,689.00 (inc. VAT).

480

Funmaker Deluxe Spinet Organ with two 44-note keyboards and 13-note pedal board plus Wurlitzer Syntha-Solo voices. Stops: Flute 16, Flute 8, Flute 4, Diapason 16, String 16, Clarinet 16, Trumpet 16, Wah-Wah Trumpet on upper keyboard. Flute 8, Diapason 8, Viola 8, on lower keyboard. Pedal volume-linear, bass 8, bass 16, pedal memory on pedal keyboard, auto rhythm. Other features: chord magic giving auto harmony in upper keyboard voices, linear volume and balance controls, vibrato, reverb. Programmed rhythm orchestra features touch tone memory chords, dancing chords, rhythm bass, dancing fingers, chromatic riff, and bass riff, slide, balance expression pedal. Dimensions: 98 x 111 x 60cm. Price: £1,798.00 (inc. VAT).

■ **Other Models**

Wurlitzer wide range includes: 565 at £2,041.87; 580 at £2,352.37; 580T at £2,547.00; 580T in antique white and gold £2,617.87; 630 at £2,945.25; 630T at £3,134.25; 630T in antique white and gold £3,206.25; 4700 Concert at £4,685.62; 950 at £4,911.75; 950TA at £5,680.00 and the 950TA in antique white and gold top of the range at £5,785.00 (all inc. VAT). Full specifications available from the company.

■ **YAMAHA**

Kemble (Organ Sales) Ltd,
Mount Avenue, Bletchley, Bucks. MK1 1JE.
Tel: Milton Keynes (0908) 71771.

B-35

Keyboards: Upper: 44 keys (3 2/3 octaves), Lower: 44 keys (3 1/2 octaves). Pedals: 13 keys (1 octave). Tone levers: upper: Flute 16, 8, 4, Trombone 16, Clarinet 16, Oboe 8, String 8, Wah Brass. Lower: Flute 8, Horn 8, Cello 8, Rhythmic Wah. Pedals: bass 16, 8. Upper pre-set selectors: Piano, Harpsichord, Vibraphone, Guitar. Effect levers: vibrato delay (upper), vibrato depth, attack 4 (upper), attack length. Effect controls: manual balance, upper sustain, pedal sustain. Effect selector: upper sustain. Tremolo selectors: speed, upper flute, upper orchestra, lower voice. ABC Fun Blocks:



Viscount Fair Lady

normal, single finger chord, fingered chord, custom ABC, constant, memory. Ten Auto Rhythms. Rhythm controls: start, synchro-start, stop (foot switch), tempo, volume, tempo light. Other controls and fittings: master volume, expression pedal, power switch, headphone jack, aux. in/out jacks, exp. in jack, power light, music rest, matching bench. Speakers: 1 x 30cm, 1 x 5cm. Output: 30W. Dimensions: 112 x 53 x 90cm. Finish: walnut. Price: on application.

A-55

Keyboards: Upper: 37 keys (3 octaves), lower 37 keys (3 octaves). Pedals: 13 keys (1 octave). Tone levers: as B-35 but without wah brass. Upper pre-set selectors: Piano, Harpsichord, Vibraphone. Effect levers: vibrato delay (upper), vibrato depth. Effect controls/selector: as B-35. ABC Fun Blocks: as B-35. Auto Rhythm section: as B-35. Controls and fittings: as B-35. Speakers/output: as B-35. Dimensions: 103 x 53 x 90cm. Finish: walnut. Price: on application.

B-75

Keyboards: Upper 44 keys ($3\frac{2}{3}$ octaves), lower 44 keys ($3\frac{2}{3}$ octaves), pedals 13 keys (1 octave). Tone levers: Upper Flute 16, 8, 4, Trombone 16, Clarinet 16, Trumpet 8, Oboe 8, String 8, Wah Brass, Flute $5\frac{1}{3}$, $2\frac{2}{3}$. Lower: Flute 8, Diapason 8, Horn 8, Cello 8, Rhythmic Wah, Flute 4. Pedals: bass 16, 8, bass Guitar. Special pre-set selectors: Piano, Harpsichord, Guitar, Vibraphone, Banjo, Accordion, Mandolin. Pre-set ensemble selectors: special pre-sets, upper ensemble, upper to lower. Effect levers: vibrato delay (upper), vibrato depth, attack 4 (upper), attack length, attack $2\frac{2}{3}$ (upper). Effect controls: manual balance, upper sustain, pedal sustain, reverb. Effect selectors: upper sustain, upper slow attack. Tremolo selectors: speed, upper Flute, upper orchestra. ABC Fun Blocks: normal, single finger chord, fingered chord, custom ABC, constant, memory. Auto rhythms: 11: Rhythm controls: start, synchro-start, stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section: voice selector, pattern selectors, volume, sustain. Other controls and fittings: master volume, special pre-set volume, expression pedal, tremolo speed, power switch, headphone jack, aux. in/out jacks, exp. in jack, power light, roll-top fallboard, music rest, matching bench. Speakers: 1 x 30cm, 1 x 12cm, 1 x 5cm. Output: 30W. Dimensions: 114 x 58 x 96cm. Finish: walnut. Price: on application.

B-55

Keyboards: as B-75. Tone Levers: as B-75, but without Flute $5\frac{1}{3}$, $2\frac{2}{3}$ (upper) and Flute 4 (lower). Special pre-set selectors: as B-75 but without Accordion and Mandolin. Pre-set ensemble selectors: as B-75. Effect levers: as B-75 but without attack $2\frac{2}{3}$ upper. Effect selectors: as B-75. Effect controls: as B-75. Tremolo selectors: as B-75 but without lower flute and lower orchestra, with lower voice. ABV Fun Blocks: as B-75 but without multi-bass. Auto rhythm section: rhythm selectors: as B-75 but without ballad. Rhythm controls: as B-75. Other controls and fittings: as B-75. Speakers: 1 x 30cm, 1 x 5cm. Output: 30W. Dimensions: 114 x 58 x 96cm. Finish: walnut. Price: on application.

C-55

Keyboards: upper 44 keys ($3\frac{2}{3}$ octaves), lower 44 keys ($3\frac{2}{3}$ octaves), pedals 13 keys (1 octave). Tone levers: upper: Flute 16, 8, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, Trombone 16, Clarinet 16, Trumpet 8, Oboe 8, String 8, 4, Wah Brass, String 16, Combination

1, 2: lower: Flute 8, 4, Diapason 8, Horn 8, Cello 8, 4, Rhythmic Wah, Flute 2, pedals: bass 16, 8, bass Guitar, Tuba 16. Special pre-set selectors: Piano, Harpsichord, Guitar, Vibraphone, Accordion, Banjo, Mandolin. Custom voice selectors: Piccolo, Trombone, Trumpet, Clarinet, Violin. Pre-set ensemble selectors: special pre-sets, upper ensemble, upper to lower (special), custom voices. Effect levers: vibrato delay (upper), vibrato depth, attack 4, $2\frac{2}{3}$ (upper), attack length, attack 2 (upper), vibrato speed. Effect controls: manual balance, upper sustain, pedal sustain, reverb. Effect selectors: upper sustain, upper slow attack, glide (foot switch). Tremolo selectors: tremolo, chorus, upper flute, upper orchestra, lower Flute, lower orchestra. Symphonic chorus selectors: upper flute, upper orchestra, lower Flute, lower orchestra. ABC Fun Blocks: normal, single finger chord, fingered chord, custom ABC, multi-bass, constant, memory. Auto rhythms 11. Rhythm controls, start, synchro-start, stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section: voice selector, pattern selectors, volume, sustain. Other controls and fittings: master volume, special pre-set volume, expression pedal, tremolo speed, power switch, custom voice volume, headphone jack, aux in/out jacks, exp. in jack, tone cabinet socket, power light, roll-top fallboard, music rest, matching bench. Speakers: main: 1 x 30cm, 1 x 12cm, 1 x 5cm; tremolo: 1 x 20cm. Output: 2 x 30W. Dimensions: 114 x 58 x 96cm. Finish: walnut. Price: on application.

C-35

Keyboards: as C-55. Tone levers: upper as C-55 but without String 16, combination 1, 2; lower as C-55 but without Flute 2; pedals as C-55 but without Tuba 16. Special pre-set selectors: as C-55. Pre-set ensemble selectors: as C-55 but without custom voices. Effect levers: as C-55 but without attack 2 (upper), vibrato speed. Effect controls: as C-55. Effect selectors: as C-55. Tremolo selectors: as C-55. Symphonic chorus selectors: as C-55. ABC Fun Blocks: as C-55. Auto rhythm section: as C-55. Auto arpeggio section: as C-55. Other controls and fittings: as C-55 but without custom voice volume. Speakers: as C-55. Output: 2 x 30W. Dimensions: as C-55. Price: on application.

D-85

Keyboards: upper and lower 49 keys; pedal: 13 keys. Tone levers: upper: Flute 16, 8, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, 1. String 16, 8, 4, brass 16, 8, Clarinet 16, Oboe 8, Kinura 8, wah Brass Vibraphone, combination 1, 2; lower Flute 8, 4, 2, $2\frac{2}{3}$, Cello 8, 4, Diapason 8, Horn 8, English Horn 8, Wah Guitar; pedal: bass 16, 8, Tuba 16, String bass 8, bass Guitar 8. Upper special pre-set section: selectors: Piano, Harpsichord, jazz Guitar, electric Guitar, Banjo, Mandolin, Marimba, symphonic chorus. Controls: repeat, volume. Upper custom voice section: selectors: vocal ensemble (tenor, soprano), Piccolo, Saxophone, Trombone, Trumpet, Clarinet, Accordion, funny, symphonic chorus. Controls: bright, volume. Pre-set ensemble selectors: special pre-sets, custom voices, upper ensemble, upper to lower (special pre-sets/custom voices). Effect levers: brilliance, attack 4, $2\frac{2}{3}$, 2, length (upper), vibrato delay (upper), depth, speed. Effect controls: manual balance, reverb, upper sustain, lower sustain, pedal sustain. Effect selectors: upper and lower flute response, upper and lower orchestra response, upper sustain, lower sustain, upper flute percussive delay, glide, upper damper (foot switch). Tremolo selectors: tremolo, chorus, upper flute, upper orchestra, lower flute, lower orchestra. Symphonic chorus selectors: upper and lower flute,

upper and lower orchestra, pedal, celeste. ABC Fun Blocks: normal, single finger chord, fingered chord, custom ABC, lower memory, pedal memory, constant, multi-bass 1, 2, 3. Auto rhythms: 16. Rhythm variation selectors: 1, 2, 3, normal; break variation selectors: on, 1, 2, 3, 4, 5, 6; selectors and controls: start, synchro-start, stop (foot switch), tempo, volume, balance; others: digital display (tempo/bar, beat), tempo light. Rhythm sequence programmer: programme on (with light), check, back, forward, reset, record, blank, end, programme 1, 2, 3, 8-bar variation, 16-bar variation, normal, digital display (bar/full/end). Auto arpeggio section: Selectors: up 8th notes, 16th notes turn, 8th notes, 16th notes variation 1, 2, block quarter notes, block var.; controls: voice 1, 2, 3, sustain. Rhythm cord section: Piano 1, 2, Guitar 1, 2, sustain. Other controls and fittings: master volume, expression pedal, foot effect switch, tremolo speed, power switch with pilot light, headphone jack, aux. in/out jacks, exp. in jack, tone cabinet sockets, roll-top fallboard with lock and auto power switch, music rest, matching bench with music storage space. Output: centre channel 60W, tremolo channel 60W, right and left channels 30W each. Dimensions: 119 x 75 x 104cm. Finish: walnut. Price: on application. (Also solo keyboard section).

D-65

Keyboards: as D-85. Tone levers: as D-85 but without Flute 1, Kinura 8 (upper); Flute $2\frac{2}{3}$, English Horn 8 (lower); String Bass 8 (pedal). Upper special pre-set section: as D-85. Upper voice custom section: as D-85 but without soprano voice. Pre-set ensemble selectors: as D-85. Effect levers: as D-85. Effect controls: as D-85. Effect selectors: as D-85. Tremolo selectors: as D-85. Symphonic chorus selectors: as D-85. ABC Fun Blocks: as D-85. Auto rhythm section: as D-85. Rhythm sequence programmer: as D-85. Auto arpeggio section: as D-85. Rhythmic chord section: as D-85. Other controls and fittings: as D-85. Output: as D-85. Dimensions: 115 x 67 x 101cm. Finish: walnut. Price: on application.

E-30

Keyboards: upper: 61 keys (5 octaves); lower: 61 keys (5 octaves); pedals: 25 keys (2 octaves). Tone levers: upper: Flute 16, 8, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, Diapason 8, Bassoon 16, Brass 8, Oboe 8, Kinura 8, String 8, 4; lower: Flute 8, 4, $2\frac{2}{3}$, Diapason 8, Horn 8, Cello 8, 4; pedals: bass 16, 8, Tuba 16, Bass Guitar, String Bass. Upper orchestra section: Trombone, Trumpet, Saxophone, Clarinet, Guitar, Banjo, Accordion, funny, organ orchestra ensemble, cancel, volume, bright. Upper pre-set levers: piano, harpsichord, Hawaiian Guitar, chimes, vibraphone, full ensemble. Upper pre-set pistons: 1-3 cancel. Effect levers: brilliance, vibrato speed, vibrato depth, vibrato delay (upper), touch vibrato (upper), attack 4 (upper), attack $2\frac{2}{3}$ (upper), attack length, attack wah-wah (upper), repeat speed (upper). Effect controls: upper and lower sustain, pedal sustain, reverb, manual balance. Effect selectors: upper and lower sustain, upper piston cancel, upper percussive delay, response (upper and lower), glide (foot switch), damper (foot switch). Tremolo selectors: upper and lower flute (main/rotary), upper and lower voice (main/rotary), tremolo, chorus. ABC Fun Blocks: ABC selectors: normal, single finger chord, fingered chord, custom ABC, constant, memory; bass variation selectors: normal, 1, 2. Auto rhythms: 14. Rhythm controls: rhythm start, rhythm synchro-start, rhythm stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section

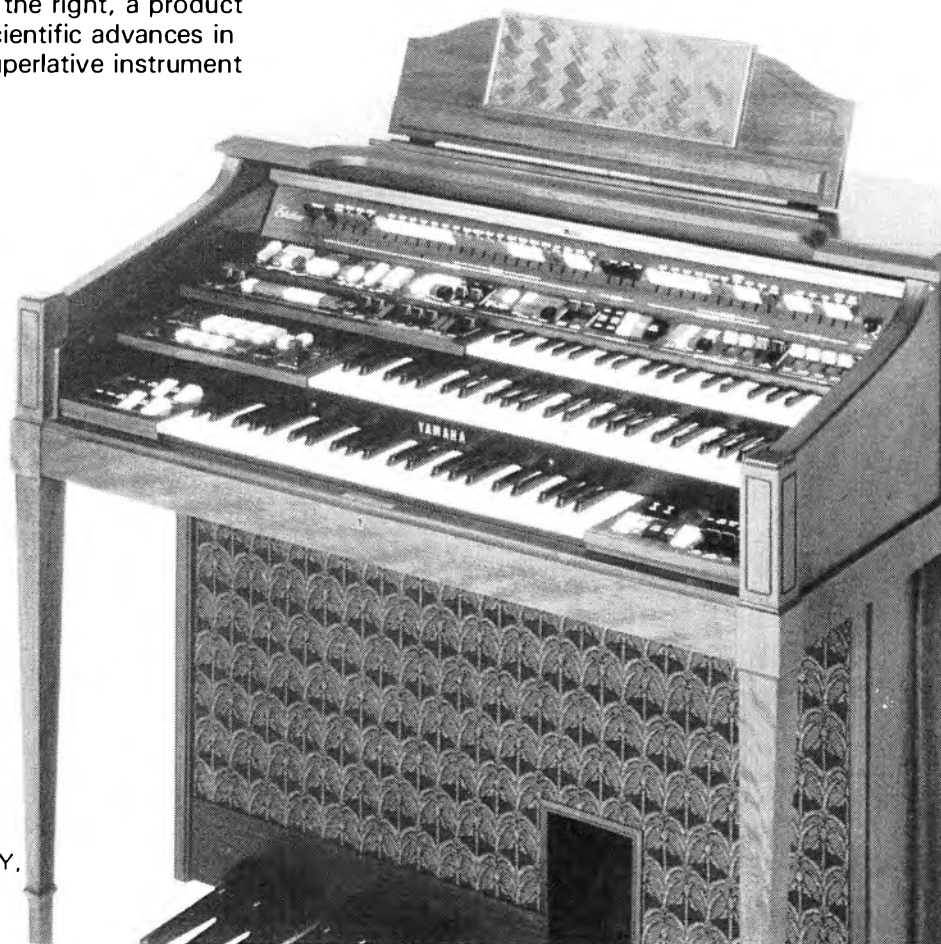
IN TUNE WITH THE TIMES SINCE 1887

For almost a century, Yamaha craftsmen have been refining, developing and producing some of the finest musical instruments the world has ever known. Discerning musicians from five continents have found that Yamaha instruments as well as offering perhaps the best value, also have a quality of workmanship and a richness of tone that have set new standards in this competitive industry.

Take the Yamaha organ on the right, a product of twenty years intensive scientific advances in musical technology. This superlative instrument

contains facilities that an absolute beginner would find engrossing and a professional would find admirably capable of the most demanding piece.

Since 1887, Yamaha have led the music world. For as long as there is music, Yamaha will be in tune with the times.



YAMAHA

KEMBLE/YAMAHA,
MOUNT AVENUE, BLETCHLEY,
MILTON KEYNES,
Tel: 0908 71771

(lower): octave selector, beat selector, start, up/turn, foot switch stop, tempo light. Other controls and fittings: master volume, expression pedal, foot effect switch, knee lever, tremolo speed control, power switch and pilot light, headphone jack, expression in jack, aux, in/out jacks, tone cabinet sockets, roll-top fallboard with auto power switch and lock, panel lights and switch, music rest, matching bench with music storage space. Speakers: 1 x 30cm, 1 x 20cm, 1 x 5cm, 1 x 20cm (tremolo). Output: 60W. Dimensions: 130 x 115 x 108cm. Finish: walnut. Price: on application.

E-50

Keyboards: as E-30. Tone levers: as E-30 but without Diapason; Bassoon, Brass, Oboe, Kinura, Strings (upper); Diapason, Horn, Cellos (lower); Tuba, Bass Guitar, String Bass (pedals). Upper orchestra section: tone selectors: Flute, Trombone, Trumpet, Saxophone, Oboe, Violin, Piano, Harpsichord, jazz Guitar, Harp, funny 1 and 2; controls: bright, repeat speed, transposition, volume. Lower orchestra section: tone selectors: Flute, Horn, Trombone, Cello, Piano, Harp, Guitar, funny; controls: bright, transposition, volume. Pedal orchestra section: tone selectors: Tuba, Trombone, Bowed Bass, String Bass, Bass Guitar; controls: bright, transposition, volume. Upper pre-set positions: as E-30. Vibrato levers: upper: depth, delay, touch; lower: depth; upper and lower: speed. Attack levers (upper): 4, $2\frac{2}{3}$, length, repeat. Percussion levers: lower: brush cymbal, snare brush; pedals: cymbal. Sustain controls: upper and lower selectors; upper, lower and pedal length controls. Attack wah-wah selectors: upper Flute and orchestra. Flute and orchestra celeste controls: upper, lower and pedals. Tremolo selectors: upper flute and orchestra, lower flute and orchestra, tremolo, chorus. Other effect controls: brilliance, reverb, manual balance. Other effect selectors: upper: piston cancel, Flute percussive decay, glide (foot switch); upper and lower: Flute response, damper (foot switch). ABC Fun Blocks: selectors: normal, single finger chord, fingered chord, custom ABC, constant, memory; bass variation selectors: normal, 1, 2. Auto rhythms: 14. Rhythm controls: rhythm start, rhythm synchro-start, rhythm stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section (lower): voice selectors: Flute, orchestra; mode selectors: regular/random, up/turn, synchro-free; octave selector, beat selector, tempo control, foot switch stop, tempo light, stop light. Other controls and fittings: master volume, upper and lower Flute volume, pedal bass volume, expression/effect pedal, knee lever, tremolo speed control, pitch control, power switch with pilot light, headphone jack, expression in jack, aux, in/out jacks, tone cabinet sockets, roll-top fallboard with auto power switch and lock, panel/pedal lights and switch, music rest, matching bench with music storage space. Speakers: 1 x 38cm, 1 x 20cm, 1 x 5cm, 1 x 20cm (tremolo). Output: 60W. Dimensions: 132 x 117 x 113cm. Finish: walnut. Price: on application.

E-70

Keyboards: as E-50. Tone levers: upper: Flute 16, 8, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, $1\frac{1}{3}$, 1, Chimes, Vibraphone; lower: Flute 16, 8, 4, $2\frac{2}{3}$, 2; pedals: bass 16, 8, 4. Upper orchestra section: tone selectors: Flute, Clarinet, Trombone, Trumpet, Post Horn, Saxophone, Oboe, Kinura, Violin, String, Piano, Harpsichord, Jazz Guitar, Electric Guitar, Banjo, Harp, funny; controls: bright, repeat speed, transposition, volume. Lower orchestra section: tone selectors: Flute, Diapason, Trombone, Horn,

Cello, String, Piano, Harp, Guitar, Electric Guitar, funny; controls: bright, transposition, volume. Pedal orchestra section: tone selectors: Flute, Diapason, Bass Clarinet, Tuba, Trombone, Bowed Bass, String Bass, Piano, Harpsichord, Bass Guitar, funny; controls: bright, transposition, volume. Couplers: upper plus lower (orchestra only), lower plus pedals. Pre-set pistons and board: 1-3 general, 4 and 5 upper, 6 general, C cancel, drawer-type pre-set board. Vibrato levers: upper: speed, depth, delay, touch; lower: speed, depth. Attack levers: upper: 4, $2\frac{2}{3}$, 2, length, repeat; lower: 4, 2, length. Percussion levers: brush cymbal (lower), snare brush (lower), cymbal (pedals). Attack pitch controls: selectors: upper (A.P./glide), lower, pedals; time controls: upper, lower, pedals. Sustain controls: selectors: upper, lower; length: upper, lower, pedals. Wah-wah selectors: upper Flute and orchestra (foot switches). Celeste controls: Flute celeste: upper, lower, pedals; orchestra celeste: upper, lower, pedals. Tremolo selectors: upper Flute and orchestra, lower Flute and orchestra, tremolo, chorus. Other effect controls and selectors: brilliance, reverb, manual balance, upper piston cancel, upper Flute percussive decay, upper and lower Flute response, upper glide (foot switch), upper and lower damper (foot switch). ABC Fun Blocks: ABC selectors: normal, single finger chord, fingered chord, custom ABC, constant, memory; bass variation selectors: normal, 1, 2. Auto rhythms: 14. Rhythm controls: start, synchro-start, stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section (lower): voice selectors: flute, orchestra; mode selectors: regular/random, up/turn, synchro/free; octave selector, beat selector, tempo control, foot switch stop, tempo light, stop light. Other controls and fittings: master volume, upper and lower Flute volume, pedal bass volume, expression/effect pedal, knee lever, tremolo speed control, pitch control, power switch with pilot light, headphone jack, expression in jack, aux, in/out jacks, tone cabinet sockets, roll-top fallboard with auto power switch and lock, panel/pedal lights and switch, music rest, matching bench with music storage space. Speakers: 1 x 38cm, 1 x 20cm, 1 x 5cm, 1 x 20cm (tremolo). Output: 60W. Dimensions: 132 x 117 x 113cm. Finish: walnut. Price: on application.

D-80

Keyboards: upper 49 keys, lower 49 keys, pedals 13 keys, solo 37 keys. Tone levers: upper: Flute 16, 8, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, Bassoon 16, Brass 8, Oboe 8, String 8, 4; lower: Flute 8, 4, $2\frac{2}{3}$, 2, Diapason 8, Horn 8, Cello 8, 4; pedals: Bass 16, 8, Tuba 16, String Bass, Bass Guitar. Upper orchestra section: Trombone, Trumpet, Saxophone, Clarinet, Guitar, Banjo, Accordion, funny, organ orchestra ensemble, cancel, volume, bright. Upper pre-set levers: combination 1, 2, Piano, Harpsichord, Hawaiian Guitar, Vibraphone, full ensemble. Effect levers: brilliance, vibrato speed, vibrato depth, vibrato delay (upper), attack 4, $2\frac{2}{3}$ (upper), attack length, attack wah-wah (upper), repeat speed (upper). Effect controls: upper and lower sustain, pedal sustain, reverb, manual balance. Effect selectors: upper and lower sustain, upper percussive delay, response (upper and lower), glide (foot switch), damper (foot switch). Tremolo selectors: upper and lower Flute, upper and lower voice, tremolo, chorus. Solo keyboard section: pre-set tone selectors: Flute, Trombone, Trumpet, Saxophone, Oboe, Violin, Harpsichord, Jazz Guitar, Rock Guitar, solo funny, double Reed, trumute; effect selectors/controls: vibrato, wah-wah, depth, speed;

other controls: transposition, tune, portamento, bright, volume. ABC Fun Blocks: ABC selectors: normal, single finger chord, fingered chord, custom ABC, constant, memory; bass variation selectors: normal, 1, 2. Auto rhythm: 14. Rhythm controls: start, synchro-start, stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section (lower): octave selector, beat selector, start, up/turn, foot switch stop, tempo light. Other controls and fittings: master volume, expression pedal, foot effect switch, tremolo speed control, power switch with pilot light, headphone jack, expression in jack, aux, in/out jacks, tone cabinet sockets, roll-top fallboard with auto power switch and lock, music rest, matching bench with music storage space. Speakers: 1 x 30cm, 1 x 20cm, 1 x 5cm, 1 x 20cm (tremolo). Output: 60W. Dimensions: 119 x 76 x 104cm. Finish: walnut. Price: on application.

EX-1

Keyboards: upper: 61 keys, lower: 61 keys, pedals: 25 keys, solo: 37 keys. Tone levers: upper: Flute 16, 8, $6\frac{2}{3}$, $5\frac{1}{3}$, 4, $2\frac{2}{3}$, 2, $1\frac{1}{3}$, 1, Chimes, Vibraphone; lower: flute 16, 8, 4, $2\frac{2}{3}$, 2, 1; pedals: bass 16, 8, $5\frac{1}{3}$, 4. Upper orchestra section: tone selectors: Flute, Trombone, Post Horn, Oboe, Violin, Piano, Jazz Guitar, Banjo, funny Clarinet, Trumpet, Saxophone, Kinura, String, Harpsichord, Electric Guitar, Harp; controls: bright, speed, transposition, volume. Lower orchestra section: Tone selectors: Flute, Trombone, Cello, Piano, Guitar, funny, Diapason, Horn, String, Harp, Electric Guitar; controls: bright, transposition, volume. Pedal orchestra section: tone selectors: Tuba, Diapason, Bowed Bass, Piano, Bass Guitar, funny, Bass Clarinet, Trombone, String Bass, solid Bass; controls: bright, transposition, volume. Couplers: upper plus lower (orchestra only), lower plus pedals. solo to upper, pedals plus solo. Pre-set pistons and board: 1-3 general, 4 and 5 upper, 6 general, C cancel, drawer-type pre-set board. Vibrato levers: upper: speed, depth, delay, touch; lower: speed, depth. Attack levers: upper: 4, $2\frac{2}{3}$, 2, $1\frac{1}{3}$, length, repeat; lower: 4, 2, length, repeat. Percussion levers: brush cymbal, snare brush (lower), cymbals (pedals). Attack pitch controls: selectors: upper (A.P./glide), lower, pedals; time controls: upper, lower, pedals. Sustain controls: selectors: upper, lower; length controls: upper, lower, pedals. Wah-wah selectors (foot switch): upper flute and orchestra, lower orchestra. Celeste controls: Flute Celeste: upper, lower, pedals; orchestra Celeste: upper, lower, pedals. Tremolo selectors: upper: Flute, orchestra, tremolo, chorus; lower: Flute, orchestra, tremolo, chorus. Other effect controls and selectors: brilliance, upper and lower reverb, solo reverb, upper and lower balance, upper piston cancel, upper and lower Flute percussive decay, upper and lower flute response, upper glide (foot switch), upper and lower damper (foot switch). Solo keyboard section: tone selectors: Flute, Clarinet, Trombone, Trumpet, mute Trumpet, Violin, Flugelhorn, Saxophone, Harpsichord, Jazz Guitar, Electric Guitar, Double Reed, funny; controls: tune, bright, transposition, volume; effect controls: envelope attack time, sustain time, pitch, attack wah-wah, time, touch vibrato, wah-wah, depth, portamento on/off, time; modulation controls: on/off, vibrato, wah-wah, tremolo, waveforms, speed, delay time; sample hold controls: on/off, rhythm source selector, pitch, wah-wah. ABC Fun Blocks: ABC selectors: normal, custom, memory; bass variation selectors: normal, 1, 2. Auto rhythms: 14. Rhythm controls: start, *continued on page 227*

...and now No. 3!

This third book in Wireless World's popular series will be welcomed by all concerned with designing, using and understanding electronic circuits. It comprises information previously included in the third ten sets of Wireless World's highly successful Circards — regularly published cards giving selected and tested circuits, descriptions of circuit operation, component values and ranges, circuit limitations, modifications, performance data and graphs. The book follows on from Circuit Designs Nos. 1 and 2. It is magazine size in hard cover and contains ten sets of Circards plus additional information and an explanatory introduction. Like its predecessors, it may soon be difficult to obtain, so you are advised to order your copy without delay.

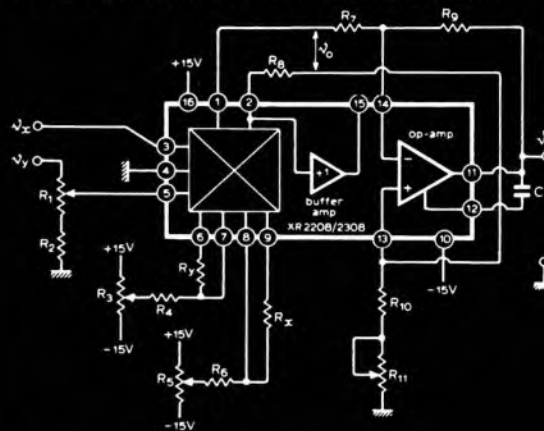
Voltage to frequency converters.
Amplitude modulators.
Reference Circuits.
Voltage regulators.
RC oscillators — part 1.
RC oscillators — part 2.
C.M.O.S. — part 1.
C.M.O.S. — part 2.
Analogue multipliers.
R.m.s./log./ power law circuits.

circuit designs

3

Collected Circards

PWilliams/JCarruthers/JHEvans/JKinsler



A WIRELESS WORLD PUBLICATION

A book from

wireless world

General sales Dept, IPC Business Press Ltd,
Room 205, Quadrant House, The Quadrant, Sutton, Surrey SU12 5AS

ORDER FORM

To: General Sales Department,
IPC Business Press Limited, Room 205, Quadrant
House, The Quadrant, Sutton, Surrey SU12 5AS

Please send me.....copy/copies of
Circuit Designs—Number 3 at £14.50
each inclusive. I enclose remittance value £.....
(cheques payable to IPC Business Press Ltd.)

NAME.....
(please print)
ADDRESS.....

Company registered in England and a subsidiary of Reed International Ltd. Registered
No. 151537. Registered office: Surrey House, 1 Throwley Way, Sutton, Surrey.

COLOUR TELEVISION SETS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ASA

Asaradio Television,
4 Victoria Street, Bristol BS1 6BN.
Tel: Bristol (0272) 25266.

7500

26in. table TV. Touch button controls and remote control facilities. Finish: slimline in walnut, black/white. Special features: green line tuning, digital clock.

■ BEOVISION

Bang & Olufsen (UK) Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

3300

20in. table TV. Controls: 8 pre-set stations, volume, bass, treble, brightness, contrast colour. Special features: remote control, automatic beam cut-off. Finish: teak, rosewood veneer, moulded black with metal grille. Extra slim styling. Dimensions: 62.5 x 40 x 38.5cm. Price: £446.00 (plus VAT).

3802

22in. table TV. Controls: 8 pre-set stations, volume, bass, treble, brightness, contrast colour. Finish: white plastic moulded cabinet. Special features: remote control, automatic beam cut-off. Dimensions: 61 x 41 x 42cm. Price: £466.00 (plus VAT).

4002

26in. table TV with specifications as above except no remote control. Dimensions: 69.5 x 49 x 46cm. Price £475.00 (plus VAT).

4402

As above with remote control. Finish: teak, rosewood veneer, plastic moulded cabinet. Price: £520.00 (plus VAT).

6002

26in. table TV. Controls: 8 pre-set stations, volume, bass, treble, brightness, contrast,

colour. Features: remote control, on-screen channel display, 4-phone socket, extension loudspeaker socket, tambour door. Finish: teak, rosewood, plastic moulded cabinet. Dimensions: 77 x 48 x 48cm. Price: £612.00 (plus VAT).

3800

22in. table TV. Controls: 8 pre-set stations, volume, bass, treble, colour, contrast, brightness. Finish: teak, rosewood. Slim design, black fascia with metal surround. Features: automatic cut-off high bright tube. Dimensions: 67.5 x 43 x 40.5cm. Price: £445.00 (plus VAT).

3900

22in table TV same as 3800 but with remote control. Price: £494.00 (plus VAT).

8800*

26in. table TV. Controls: on/off, programme forward/back, volume, bass, treble, colour contrast, brightness. Remote control of 16 channels, teletext controls, recall programme indicator, reset button, volume, colour, brilliance, sound cut-off/on, programme steps forward/back. Finish: teak, rosewood. Slim style with black fascia and metal surround. Features: self converging tube, auto contrast adjust, easy to add teletext, high-brightness screen, channel identification. 14W amplifier and woofer and tweeter speaker enclosures. Headphone, amplifier, extension speaker, tape recorder sockets. Dimensions: 49 x 77 x 45.5cm. Price: £571.00 (plus VAT).

■ BUSH

Rank Radio International,
PO Box 596, London W4 5PW.
Tel: 01-994 6491.

BC 6482

Viewdata/Teletext receiver. 26in. screen. 37 key infra red remote control for full functions. Built-in delay to avoid accidental entry to Viewdata computer. Reception of both Ceefax and Oracle Teletext services. 6 channel touch control tuner with AFC. Built-in modem, auto-dialer and identifier. Dimensions: 84.5 x 78.6 x 49.5cm. Price: approx. £1,000 (inc. VAT).

■ DECCA

Decca Radio & Television Ltd,
Neachells Lane, Willenhall,
West Midlands WV13 3RW.
Tel: Willenhall 67367.

CZ 1072 Console

26in. tube, 20AX tube system, modular chassis, touch tuning, remote control, slider controls, high brightness tube. Dimensions: 75.5 x 55 x 79cm. Twin loudspeakers. Finish: real teak or walnut with doors. Price on application.

Sovereign Console

26in. tube, 20AX tube system, modular chassis, touch tuning, remote control, slider controls, high brightness tube, extra-large twin loudspeakers. Styled as a piece of Queen Anne furniture. Dimensions: 86.5 x 55 x 81cm. Finish: real walnut or mahogany inlaid veneer cabinet. Price: on application.

■ DORIC

Rediffusion Consumer Electronics,
Fullers Way South, Chessington,
Surrey.
Tel: 01-397 5411.

CU 56308D RC*

22in. table TV. Controls: volume, tone, brilliance, contrast, colour, on/off. Full remote control. Special features: twin speakers, 5 pin DIN audio socket. 110° PIL tube. Finish: soft line cabinet with vinyl foil in teak or walnut. Dimensions: 69.1 x 45.1 x 41.5cm.

CU 67308 DRC

26in. table TV. Controls: on/off, tone, volume, brilliance, contrast, colour. Full function non-sequential remote control. Finish: soft-line cabinet with rounded corners and vinyl foil finish in teak or walnut. Features: tweeter and woofer forward facing loudspeakers, 5 pin DIN audio socket, 110° tube. Dimensions: 78.1 x 52.7 x 46.3cm. Price: £470.00 (plus VAT).

■ DYNATRON

Dynatron Radio Ltd,
Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

Blenheim CTV50

Screen size: 26in. (66cm). Tube: 20AX high brightness. Chassis: Philips G11. Controls: push-button on-off switch, rotary volume, tone, brightness and colour controls, push-button station selection from five station selectors plus a VCR button. LED above panel indicates station selected. Station tuning buttons located behind removable vertical panel at front of set. Standby facility, indicated by light on plinth. Standby light flashes when set receiving signal from remote control handset. Full remote control: channel selection, fine adjustment to volume, colour, brightness. Reset button restores controls to level previously set manually. Mute and standby switch. Cabinet: Queen Anne style, finished in walnut burr veneers. Cabriole legs with shell carvings, ornamental hinges. No rec. retail price. Approx. "going" price: £775.00 (inc. VAT).



Beogram 8800



Doric CU 56308D RC

Regent CTV54

Screen size: 26in. (66cm). Tube: 20AX high brightness. Chassis: Philips G11. Controls: see CTV50. Full remote control: see CTV50. Cabinet: Regency style, finished in cured mahogany veneers, fluted legs. No rec. retail price. Approx "going" price: £775.00 (inc VAT).

Stirling CTV55

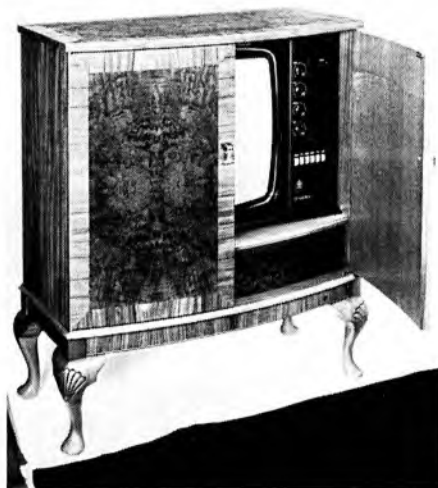
Screen size: 26in. (66cm). Tube: 20AX high brightness. Chassis: Philips G11. Controls: see CTV50. Full remote control: see CTV50. Cabinet: Regency style, finished in yew. Full length double doors, on bracket plinth. Ring handles. No rec. retail price. Approx "going" price: £775.00 (inc. VAT).

Knightsbridge CTV41 *

Screen size: 22in. (56cm). Tube: 20AX high brightness. Chassis: Philips G11. Controls: see CTV50. Full remote control: see CTV50. Cabinet: bow fronted Queen Anne style, finished in burr walnut veneers, with cabriole legs.

Berkeley CTV43

Screen size: 22in. (56cm). Tube: 20AX high brightness. Chassis: Philips G11. Controls: see CTV50. Full remote control: see CTV50. Cabinet: bow fronted Regency style, finished in cured mahogany veneers. Fluted legs, ring handles.



Dynatron Knightsbridge 22in.



Dynatron Hereford 22in.

Conway CTV62

Console TV with 22in. screen. Rotary controls. Infra-red remote control. Finish: mahogany. Dimensions: 77.5 x 69.5 x 31.2cm.

Carisbrooke CTV63

As CTV62 in oak finish.

Hereford CTV64 *

As CTV62 in teak finish.

■ **FERGUSON**

Thorn Consumer Electronics Ltd, 284 Southbury Road, Enfield, Middlesex EN1 1T. Tel: 01-363 5353.

3789

26in. Colourstar with Teletext and remote control. Teletext controls include mode and page selection, reveal, mix, update, page hold and expand, and timed page. Picture controls include 16-channel selection, colour, brightness, contrast, volume, mute, picture mode. 16 channel range covers all likely future needs. 110° tube allows for slim cabinet. Finish: in teak or walnut.

■ **GEC**

GEC (Radio and Television) Ltd, Langley Park, Slough, Bucks. Tel: Slough 22201.

Top quality models include 2260 Prestel, 2639 Prestel, 2259 with reproduction Regency cabinet. Details and prices not available at time of going to press.

■ **GRUNDIG**

Grundig International Ltd, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

8445

26in. tube, full feature remote control, 15W Hi-Fi sound. Dimensions: 76 x 52 x 44cm. Finish: walnut. Price on application.

8632

26in. tube, remote control of up to 16 programmes, 15W Hi-Fi sound. Automatic self-seeking tuning and automatic optimum setting system. Dimensions: 76 x 52 x 44cm. Finish: walnut. Price: on application.



Hitachi CBP 260

■ **HITACHI**

Hitachi Sales (UK) Ltd, Hitachi House, Station Road, Hayes, Middlesex. Tel: 01-848 8787.

CBP 222

Table TV with 22in. tube; full function random access; remote control; trolley stand. VTR playback on any channel. Price: £459.00 (inc. VAT).

CBP 260 *

Table TV with 26in. tube. Remote control; automatic station search and memory; 2-way 10W speaker system; separate bass/treble controls; socket for recording; VTR playback on any channel. Dimensions: 76.7 x 46.5 x 52cm. Trolley stand supplied. £549.00 (inc. VAT).

■ **ITT**

ITT Consumer Products (UK) Ltd, Chester Hall Lane, Basildon, Essex. Tel: Basildon (0268) 3040.

TXV 82

Features both Teletext and Viewdata capability. All functions presented on remote control transmitter. Data terminal features full send and receive Viewdata capability, sockets for external editing keyboard and external tape recorder automatic dialling facility. Teletext capability including page hold and update facilities. TV set features full remote control, 8 pre-set channels and ideal colour button. 26in. screen.

TVX16

Viewdata terminal in two integrated sections. Lower section or plinth contains fully isolated power supply and Viewdata equipment. Upper section is 16in. colour TV which functions as either Viewdata display or normal TV receiver. Terminal features full send and receive Viewdata capability, sockets for editing keyboard and external tape recorder and automatic dialling facility. Price: £731.25 (plus VAT).

■ **JVC**

JVC (UK) Ltd, Eldonwall Trading Estate, Staples Corner, 6-8 Priestley Way, London NW2 7AF. Tel: 01-450 2621.

7875 GB *

20in. table TV with touch tuning and remote control, AFC VTR playback. Finish: mahogany or teak. Dimensions: 43.7 x 62.3 x 46.8cm. Price: £430.00 (inc VAT).



ITT TXV 16

■ KERACOLOR

Group Systems (Keracolor) Ltd,
59a Middlewich Road,
Northwich, Cheshire.
Tel: Northwich(0606) 6762.

B626 *

Floor standing spherical shaped TV with 26in tube. Six push-button controls, remote control. Cassette player. Finish: black, white, teak. Size: 33in. dia.

B 772

As above but with 22in. tube. Size: 30in. dia.

B 520

Spherical TV set which can be floor standing or suspended. Tube size: 20in. 6 push-button controls, remote control. Finish: black, white, teak. Size: 27in. dia.

■ LOEWE

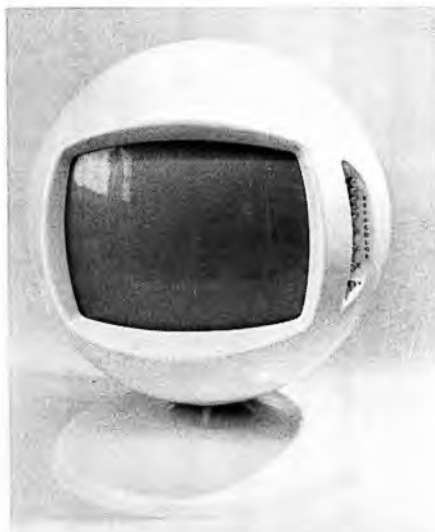
Paul Spring Electronics Ltd,
6 Oasthouse Way, St. Mary Cray,
Orpington, Kent.
Tel: Orpington (0689) 31341.

Profi 2—QD1

26in. colour set with Loewe contrast automatic system, digital station finding device and 16-fold programme storage as per the frequency synthesis system; remote control for 16 programmes and 16 additional functions; QS key for direct and quick station selection; DIN jacks for video, headphone, tape recorder, loudspeaker, Hi-Fi music centre; 10W Hi-Fi final stage with two loudspeakers, separate control of bass/treble and volume control. Dimensions:



JVC 7875 GB



Keracolor B626 TV

75.5 x 45 x 52cm. Finish: wooden cabinet—walnut, black, champagne/brown, metallic/black.

Profi 2—QD7

Details as QD1 except for finish: wooden cabinet—walnut or metallic/black.

■ METZ

Paul Spring Electronics Ltd,
6 Oasthouse Way, St. Mary Cray,
Orpington, Kent.
Tel: Orpington(0689) 31341.

Crete 6981

Table TV with 26in. tube. Sensors for selection of 12 stations. Slider controls. AFC, 12W sound output. Finish: light walnut or silver and graphite.

Panama 6893

Table TV with 26in. tube. Remote control selection of up to 16 stations and volume, brightness, contrast, sound mute, on/off. AFC. Auto switch-off 2½ minutes after transmitter viewed goes off the air. Finish: light walnut or silver and graphite.

Samoa 6869

Table TV with 26in. tube. Automatic self-seeking tuning and electronic storage of up to 16 stations. Digital long-term storage of tuning information. Remote control, programmable quartz clock. Auto switch-off 2½ minutes after transmitter viewed goes off the air. 12W sound output. Finish: light walnut or silver and graphite.

Mallorca 6992

Table TV with 26in tube. Remote control with selection of 16 stations, volume, brightness, colour contrast, sound mute, on/off. AFC. Digital long-term storage of tuning information. 12W sound output, 2-way Hi-Fi speaker system with bass and treble controls. Finish: light walnut or silver and graphite.

Studio DTU 6998

26in. tube TV on stand, as Samoa with 2-way speaker system with bass and treble controls. Finish: metallic bronze, black/silver, or graphite.

Classic 6997

26in. TV on matching stand. Full feature infra-

red remote control. Finish: metallic bronze, black/silver or graphite. Features: Self-seeking tuning, AFC, long term storage of tuning information, LUX contrast sensor, two-way Hi-Fi speakers. Sound output of 12W. Separate bass and treble controls.

■ MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts WD2 8LD.
Tel: Watford 40566.

VS 500 *

50in screen single-unit projection TV. 16-channel infra-red remote control giving programme selection, volume, colour, contrast, sound muting and power on/off. 3-second on-screen visual confirmation of channel selection. Power output 5W through two built-in speakers, 10W using external speakers. Dimensions: 112 x 166.5 x 66.8 (113.7 in viewing mode) cm — (W x H x D). Price: £2,500 (inc. VAT).

■ NORDMENDE

Nordmende (UK) Ltd,
Nordmende House, Rickfords Hill,
Aylesbury, Bucks HP20 2RT.
Tel: Aylesbury (0296) 20501.



Nordmende Prestige SK3



Mitsubishi VS 500



Prestige SK3 color-sonic 2400 *

27in. floor standing TV. Remote control. Hi-Fi sound comes from central sonic pedestal, two drive units providing 15W RMS output. Separate bass, treble controls. Features: auto slumber switch which turns to standby five minutes after transmission closedown, electronic eye adjusts contrast to suit light conditions. Two DIN sockets, integral video socket, TV games facility, mains locking key. Finish: black, white, silver, red, gold, brown, green, blue. Dimensions of pedestal: 63 x 92.5 x 46cm. Price: on application.

■ **PANASONIC**

National Panasonic (UK) Ltd,
101-109 Whitby Road, Slough SL1 3DR.
Tel: Slough (0753) 27516.

TC6200G

Projection TV, floor standing. Three tube system on 60in. screen. Controls: volume, colour, brightness, channel select, normalisation, station memory, volume mute, station search, tone control. Remote control: 26 functions. Finish: walnut. Features: single unit projection TV, self-seek tuning, facility for use with PAL or NTSC video recorder, on-screen channel indication. Dimensions: 132 x 170 x 67cm. Price: £3,551.11 (plus VAT).

■ **PYE**

Pye Ltd,
137 Dittons Walk, Cambridge.
Tel: Cambridge (0223) 2781.

CT 493

26in. Teletext with 31 button infra-red control. Decoder for Ceefax and Oracle. Pre-set tuning controls. Double height characters. Compatible with VCR.

CT 462

22in. high brightness 20AX colour tube system. Controls: separate master on-off switch, 8 programme selector buttons, rotary controls for volume, brightness and colour, pre-set tuning controls: 17 button infra-red remote control compatible with VCR. Castor mounted, teak finish.

CT 492

26in. colour with 17 button infra-red remote control. Pre-set tuning controls and 8-programme varicap tuner. Castor mounted, teak finish. Compatible with VCR.

CT 467

22in. Teletext set. 31 button infra-red remote control. Push-button Varicap tuner. Special feature 'double height' characters for Ceefax and Oracle. Compatible with VCR.

■ **ROBERTS VIDEO**

Roberts Video Ltd,
Molesey Avenue, West Molesey,
Surrey KT8 0RL.
Tel: 01-979 7474.

RCT 2621

26in. floor standing console with full control of all user functions including sound mute and on/off controls: on/off volume, colour, brilliance, treble cut and lift, pre-set contrast, touch-tuning. Finish: teak veneer with tambour door and matching stand on castors. Special features: audio take-off to hi-fi system and headphone socket with switch to mute internal loudspeaker, VCR facility. Dimensions: 86.5 x 50 x 86cm. No recommended retail price.

RCT 262M

26in. floor standing console, as above.

RCT 263 *

26in. floor standing console with sliding doors. Full details on request.

■ **SABA**

Saba Radio and Television Ltd,
10-12 Cornbrook Park Road,
Manchester M15 4EE.
Tel: 061-872 7661.

T5628 *

Table 22in. TV set. Micromatic controls. Finish: light walnut, metallic. Special features: headphone socket, tape recorder output. Dimensions: 65 x 45 x 43cm. Price: £413.33 (plus VAT), extra for metallic.

T5658

Table 22in. TV set. Remote control, 12 channels. Finish: light walnut, metallic. Features: fully remote control of all functions. Headphone socket, tape recorder output. Dimensions: 65.5 x 46 x 43.5cm. Price: £471.33 (plus VAT), extra for metallic.

T6768

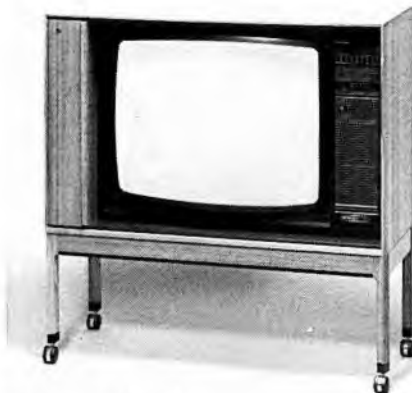
Table TV with 26in. tube. Remote control of 16 channels. Finish: light walnut, white, metallic. Features: fully remote control of all functions, headphone socket, tape recorder socket. Dimensions: 77.5 x 52.5 x 47cm. Price: £589.32 (plus VAT), extra for white and metallic.

■ **SALORA**

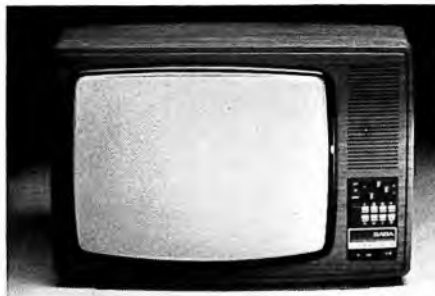
Salora (UK) Ltd,
25A Techno Trading Estate,
Swindon SN2 6EZ.
Tel: Swindon (0783) 46321.

IF8*

Table TV with 26in. screen. Controls for brightness, contrast, volume, treble, bass, normaliser. Full remote control. Finish: rosewood veneers. Features: Add-on Teletext and Viewdata facility. Mains isolated chassis, tuning display, standby and pre-programme indicators. Dimensions: 77 x 51 x 42cm. Price: approx. £509 (plus VAT).



Roberts RCT 263



Saba T5628

IF0

26in. TV. Controls: 16 channel selector buttons for brightness, contrast, colour, saturation, tint volume, treble, bass, normaliser. Remote control as optional extra. Finish: teak or rosewood veneers. Features: Auto electronic tuning and memory, digital channel display, fine tuning, mains isolated chassis, parallel sound circuitry, automatic contrast control, headphones socket, tape/amp socket, extension speaker socket. VCR facility. Dimensions: 77 x 51 x 42cm. Price: approx: £471.00 (plus VAT).

IF8K

26in. remote control de luxe. Modular construction. 110° tube. Hi-Fi quality sound from two 5W or 10W speakers. AFC. Remote control. 16 pre-set channels. Outputs: extra speaker, headphone jack, tape rec. and amp. Adaptable for PAL/SECAM, Teletext, Viewdata. Dimensions: 77 x 51 x 42cm. Finish: teak or rose. Price: £385.00 (teak), £390.00 (rose) (plus VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd,
Toshiba House, Frimley Road, Frimley,
Camberley, Surrey GU16 5JJ.
Tel: Camberley (0276) 62222.

C-2095B

Table model, 20in. tube. 21-function remote control. Teak cabinet, dark silver-grey front. LED channel number, LED clock display. Price: £346.95 (plus VAT).

C-2295B

22in. table model. 21-function remote control. Teak cabinet, dark silver-grey front. LED channel number, LED clock display. Price: £421.74 (plus VAT).

C-2695

26in. with 110cm tube. Full remote control with 21 functions. 12 channel positions. Output: 10W. Headphone socket, sound recording socket, LED digital clock with dimmer. Dimensions: 77.4 x 46.5 x 53.6cm. Supplied with stand. Price: on application.

C-4505B

45in. projection colour television. High brightness 120 FL, full function remote control. Output: 5W + 5W, VTR, microphone and video camera connection possible, 12 channels plus indicators, electronic memory tuning, PAL/NTSC/SECAM compatible. Dimensions: 98 x 106.4 x 152.3cm (in operating position). Price: on application.

■ **WREN**

Wren Electronics Ltd,
Dawson Road, Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

CU 6733

26in. table TV with 12 channel remote control. Finish: walnut veneer. Typical Market Price: £409.00.



Salora IF 8

RADIO AND CASSETTE RECORDERS

A random selection of quality products from the huge range available on the market.

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ACADEMY

Academy Electronics,
KCL Buildings, First Way,
Wembley, Middlesex.
Tel: 01-903 7011.

Giant Radio Cassette

Four-speaker system, operates on mains, battery or car battery. Features: LED right and left power output indicator, twin condenser microphones, twin aerials, CrO₂ facility, tape counter, separate bass and treble controls, auto programme sensor device, pause control, extension speaker sockets, headphone socket, auxiliary right and left input, phono input, external microphone. Finish: silver and black. Price: on application.

Stereo Compact Radio Cassette

Battery or mains operated. Covers MW, LW, VHF, VHF Stereo. Features: twin condenser microphones, tone control, pause control, auto stop, stereo indicator light, LED output display. Finish: silver and black. Price: on application.

Hi-Spec Radio Cassette

High specification model covering MW, LW, VHF, SW. Features: twin speaker system, tape counter, condenser microphone, auto stop, automatic frequency control, loudness switch, sleep switch, separate bass and treble controls, battery condition and tuning indicator, pause control, remote microphone and extension speaker facility, 5-pin DIN socket. Finish: black. Price: on application.

■ ALBA

Alba (Electronics) Ltd,
Bull Lane, Edmonton, London N18 1SD.
Tel: 01-803 4451.

CR 38

Four-waveband stereo radio cassette recorder with LCD clock. Output: 5W per channel. Features: LED indicator for tuning/level monitoring, mic. mixing, stereo wide circuitry, loudness control. Radio section: FM 88-104MHz, SW 5.9-16MHz, LF 150-340kHz, MF 515-1605kHz; switchable AFC on FM; telescopic FM aerial; ext. FM aerial connections. Controls: mic. mixing, tone, balance, volume, tuning (rotary); loudness, normal CrO₂, mono/stereo/stereo wide selector, tape/radio/alarm selector, power on/off auto switch (lever type); waveband selection, AFC, cassette operation, clock setting (push-button); timer selection, clock setting, beat cut (slider). Cassette section: tape counter, cue + review facilities, built-in condenser mics. Clock section: 12-hour LCD display with switchable light; hours, minutes or switchable seconds readout; alarm snooze, sleep delay facilities. Sockets: remote mic., mixing jack, 5-pin DIN, headphone, ex. speaker sockets. Dimensions: 45.5 x 10.5 x 25cm. Finish: black and silver. Price: on application.

CR 40

Three-waveband stereo radio cassette recorder.

Output: 2.5W per channel. Features: FM telescopic aerial, tuning scale/meter. Radio section: FM 87.5-109MHz, LF 140-350kHz, MF 525-1650kHz; stereo FM with red LED indicator; AFC on FM. Cassette section: tape automatic shut-off, automatic record level control ALC, tape counter, pair built-in condenser microphones, tape monitoring facilities whilst recording. Controls: volume, tone, balance, tuning (rotary); waveband, radio/tape, monitor, mono/stereo (slider); cassette operation (push-button). Sockets: 5-pin DIN for auxiliary equipment, L + R extension speaker sockets, L + R microphone sockets, stereo headphones, AC mains input (lead supplied). Dimensions: 39 x 10.5 x 21.5cm. Finish: matt silver and black. Price: on application.

CR 35

Four-waveband stereo radio cassette recorder. Output: 2W per channel. Features: meters for record level/battery condition/tuning, rev. counter, cue and review facilities, loudness control, mic. mixing, stereo expander, CrO₂ switching, mains/battery operation. Radio section: MF 510-1650kHz, LF 140-300kHz, FM 87.5-110MHz, SW 5.8-18.3MHz. Cassette section: tape automatic shut-off, mic. mixing facilities, CrO₂ switching, ALC (Automatic Level Control), built-in condenser microphones, tape counter. Sockets: AC connection, DC connection (for use from car battery with an adaptor—not supplied), 5-pin DIN socket, ext. microphone with remote control facilities, headphone socket, extension speaker sockets. Accessories: mains lead, blank C30 cassette tape. Controls: volume, bass, treble, balance, tuning, mic. volume, waveband switch (rotary); power on/off, lamp switch (to illuminate radio scale and meters) (push-button); tape/radio/bleep switch, AFC stereo expander, mono/stereo switch, CrO₂ switch, loudness, mic. mixing. Dimensions: 42.8 x 12.2 x 24.7cm. Finish: black and silver. Price on application.

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, Tottenham,
London N17 0UF.
Tel: 01-801 4431.

6090

Four-waveband portable stereo radio cassette recorder. Output: 7W. Mains/battery operation. Wavebands: FM, LW, MW, SW. Features: auto chrome switching, power output/tuning LED indicators, integral stereo microphones, dubbing facility. Price: on application.

7090

Four-waveband portable double cassette recorder. Output: 14W. Mains/battery operation. Wavebands: FM, LW, MW, SW. Features: tape-to-tape recording dub, mic. mixing facility, power output/tuning LED indicators, integral stereo microphones, dual cone speakers. Price: on application.

■ CROWN

Sulkin (UK) Ltd,
73 Grosvenor Street, London W1.
Tel: 01-629 8368.

CSC 960 *

Stereo radio cassette with two-way, four-speaker system. Drive units: 160mm, 30mm. Output: 14W. Features: CrO₂/normal tape selector, variable monitoring, sleep and loudness switch, separate bass/treble controls. Special function which enables the user to programme the unit to automatically wind backwards or forwards as many as nine different playing selections. Mains, battery or 12-volt car battery. Price: on application.

CSC 980

Stereo radio cassette with four wavebands. Total output: 20W. Features: Dolby, metal tape facility, FM muting switch, three-way power source, twin VU meters, separate bass/treble controls. Mains or battery. Price: on application.

CSC 820

Stereo radio cassette, three wavebands, output 6W. Features: stereo wide switch, variable monitoring control, automatic level control, four-way VU meter, sleep timer, pause button, digital tape counter. Price: £100.00 (approx.)

CSC 840

Stereo radio cassette, four wavebands, output 6½W. Features: front loading cassette tape deck, sleep timer, four-way LED display, mono / stereo / stereo wide switch, separate bass/treble controls, loudness control switch, auto stop, mechanical pause button, automatic level control, tape counter. Dimensions: 475 x 260 x 127mm. Price: on application.

CSC 850

Stereo radio cassette recorder, four wavebands, output 7½W per channel. Two-way, four-



Crown CSC 960 stereo radio cassette

speaker system with 200mm woofers. Features: twin VU meters, separate bass/treble controls, 150mm tuning scale, telescopic twin antennas, mono/stereo/stereo wide switch, FM muting switch. Fitted with chrome handles and leather carrying strap. Dimensions: 24 x 6 x 13in. Finish: chrome and black. Price: £180.00 (approx).

CSC 656L

Quartz digital clock radio with three wavebands. Drive units: 2 x 130mm, 2 x 40mm. Features: timer, alarm and sleep functions, direct recording from stereo radio, automatic recording system which allows radio programmes to be recorded at any pre-set time. Mains, battery or 12-volt car battery. Price: £180.00 (approx).

CSC 646

Stereo radio cassette with quartz digital clock. Output: 2 x 3W maximum. Features: CrO₂ and normal tape facility, digital tape counter, mono/stereo/stereo wide switch, sound and battery level monitoring meter, automatic recording system (as CSC 656L), automatic timer and sleep alarm. Finish: black. Price: £130.00 (approx).

CSC 615L

Stereo radio cassette, VHF stereo MW/SW/LW. Features: automatic shut-off, CrO₂/normal tape selector, automatic level control, three digit tape counter, three-way meter showing battery power, tuning level and recording/playback levels. OSC switch eliminates interference on MW transmissions. Price: £105.00 (approx).

■ FIDELITY

Fidelity Radio Ltd,
Victoria Road, London NW10 6ND.
Tel: 01-965 8771.

SCR 10

Stereo radio cassette recorder. Four-waveband (LW, MW, SW, FM), mains/battery operation. Output: 8W. Two 5in speakers. Radio section: FM 87.5-104MHz, MW 520-1620kHz, LW 150-300kHz, SW 5.8-18MHz. Wow and Flutter: 0.2% WRMS. Features: ARL recordings, LED indicator tuning and battery level, LED stereo indicator. Controls: volume, balance/tone, mono/stereo/stereo wide (rotary). Built-in twin FET condenser mics, facilities for external mics, oscillator frequency shift. Sockets: DIN input/output, external jack speaker (left and right), stereo headphone jack, AC mains input, DC battery, co-axial FM aerial. Other features: 6 x HP2 battery compartment, auto stop on tape and tape counter, sleep timer, telescopic aerial for use on FM/SW, variable monitor control. Dimensions: 44 x 11 x 24cm. Finish: matt black and brushed aluminium. Price on application.

■ GRUNDIG

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

Satellit 1400

Radio wavebands: MW, LW, VHF, 6 x SW. Mains/battery/accumulator operation. Output: 7.5W. AFC on FM. Double extending telescopic aerial. Built-in ferrite aerial. Tuning meter/battery meter. LCD frequency indicator. Inter-station tuning on FM. Separate bass and treble controls. Fast/fine tuning control. SSB capability. Two loudspeakers with switchable tweeter. Aerial trimmer. Ear/headphone

socket. External aerial socket. Tape recorder/record deck socket. External power supply socket. Integral mains unit. Mains supply: 220/240, 110/127V AC. Foldaway carrying handle. Finish: black. Dimensions: 41 x 27 x 12cm. Price: on application.

Satellit 3400

Radio wavebands: MW, LW, VHF, 18 x SW. Mains/battery/accumulator operation. Output: 7W. AFC on FM. Double extending telescopic aerial. Built-in ferrite aerial. Tuning meter/battery meter. LED frequency indication. LCD frequency indicator. Inter-station tuning on FM. Separate bass and treble controls. SSB capability. Two loudspeakers with switchable tweeter. Aerial trimmer. Ear/headphone socket. External aerial socket. Tape recorder/record deck socket. External power supply socket. Integral mains unit. Mains supply: 220/240, 110/127V AC. Foldaway carrying handle. Finish: black. Dimensions: 52 x 32 x 14cm. Price: on application.

CR 485

Stereo cassette recorder. Output: 1.5W. Battery/mains/accumulator operation. Stereo record and replay when using an external stereo amplifier or mono recording and replay when using built-in amplifier and speaker. Long-life sound head. Built-in mono microphone. Tape selector switch for Fe, FeCr, CrO₂ tapes. Battery condition meter. Slider controls for tone/volume. Electronic end-of-tape stop with motor stop and button release. Finish: black and white. Dimensions: 21 x 8 x 28cm. Price: on application.

■ LOEWE

Paul Spring Electronics Ltd,
6 Oasthouse Way, St. Mary Cray,
Orpington, Kent BR5 3PT.
Tel: Orpington 31341.

TC 424

Stereo radio cassette recorder. Output: 2 x 2.5W. Wavebands: FM, MW, LW, SW. 4 integrated loudspeakers. Bass, treble and balance controls. Stereo base extension. Exact station tuning via 2 indicators and station fine-tuning for all wave ranges and check of battery voltage. Cassette section: Fe/Cr/FeCr selector switch, pause key, automatic recording control, automatic end-of-tape stop, beat frequency switch, sleep circuit for automatic stop of radio and cassette at end of tape, monitoring recording control, two integral microphones, AFC, counter, monitor circuit. Sockets: 2 ext. loudspeakers, 2 microphones, record player, tape recorder, headphone, 75 ohm aerial. 9V mains unit. Finish: black. Dimensions: 46.5 x 10.5 x 29cm. Price: on application.

■ PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough SL1 3DA.
Tel: Slough (0753) 27516.

RF 2600

Transistor radio covering FM, LW, MW, SW. Mains/battery operation. AFC. Telescopic aerial and internal ferrite rod. Speaker: 10cm. Controls: volume, bass, treble. Dimensions: 34.2 x 11.6 x 23.7cm. Features: digital frequency readout, preselector for pitch, tuning meter, bandwidth selector, RF gain. Price: £168.84 (plus VAT).

RF 2900

Transistor radio covering FM, LW, SW, MW. As RF 2600. Dimensions: 38.1 x 12 x 24.6cm. Price: £199.96 (plus VAT).

RF 4900

Transistor radio covering FM, LW, SW, MW. Mains/battery operation. AFC. Telescopic reel aerial. Speaker: 10cm. Controls: volume, bass, treble. Dimensions: 48.2 x 35.4 x 20cm. Features: digital frequency readout, RF gain, bandwidth selector, aerial trimmer, SW calibration, tuning meter, AM mode selector. Price: £345.73 (plus VAT).

DR 26

Portable radio covering FM, LW, SW, MW. Integrated circuits, digital frequency readout. Pre-select tuning on SW. Choice of wide or narrow bandwidth. Dimensions: 34.2 x 23.7 x 11.6cm. Weight: 7lb without batteries. Price: £194.17 (plus VAT).

DR 49

Communications receiver with FM, LW, MW, and eight SW. Five-digit electronic display of all frequencies, wide/narrow bandwidth selector. Aerial trimmer. Dimensions: 48.2 x 20 x 35.4cm. Weight: 17lb without batteries. Price: £397.59 (plus VAT).

RX 5500LE

Four-band stereo radio with stereo cassette recorder and Dolby. Output: 7.5W per channel. 2 x 160mm woofers, 2 x 30mm tweeters. Features: two LED indicators. Rewind auto-play. CrO₂/FeCr/normal tape selector. Review functions. Mechanical pause control. Full autostop. Two integral condenser microphones. Variable sound monitor. AFC on FM. Manual or "Easy-Matic" recording with automatic gain control (AGC) for perfect level control. Sockets: phono-in, external microphones (2), remote tape control, external speakers (2), headphones. Mains input, DC input (12V), external aerial. Price: on application.

RX 5300LE

Portable four-band stereo radio cassette recorder. Output: 6W x 2. Two-way, four-speaker system. AFC on FM. Seven-position TPS (Tape Programme Sensor) allows pre-selection of any tape track up to 7 tracks ahead. Normal/CrO₂/FeCr tape selector. Soft cassette ejection system. Variable sound monitor. Mains/battery. Price: on application.

■ PLUSTRONICS

Plustronics Ltd,
Hempstalls Lane, Newcastle,
Staffs. ST5 0SW.
Tel: Newcastle 615131.

RD 740

Stereo radio cassette recorder. Cassette section: auto shut-off on recording/playback, auto level control, built-in condenser microphone, pause control, variable volume monitor, tape counter. Radio section: VHF, MW, LW, SW, automatic radio shut-off, rotary controls, external microphone socket, auxiliary input socket, external speaker/earphone socket, mono/stereo/stereo wide selector, LED chain indicator for VU meter/battery/tuning, red LED FM stereo indicator, stereo headphone socket. Battery or mains operation (lead supplied). Price: on application.

■ PSE

Paul Spring Electronics Ltd,
6 Oasthouse Way, St. Mary Cray,
Orpington, Kent BR5 3PT.
Tel: Orpington 31341.

TU-3000-FLS

Four-band stereo radio recorder. Features: high

output power; VHF/SW/MW/LW radio; scale illumination on mains operation; two meters fitted for recording level, battery check and field strength; stereo beacon; AFC; loudness switch; two-way speaker system per channel; switchable oscillator; mono/stereo switch; tone and balance controls; telescopic aerial; tape switch for CrO₂; automatic recording; lockable pause button; tape counter with zero re-set; memory counter; delayed shut-off; two integral condenser microphones; sockets for VHF/AM aerials, external microphones, extension speakers, tape/pick-up; mains/battery operation; 2 x 3W output power per channel; 19 transistors, 19 diodes, 3 ics; recorder response 80Hz-10kHz for CrO₂ tapes. Dimensions: 32.9 x 23 x 11cm. Finish: black/silver metallic. Price: on application.

■ **SONY**

Sony (UK) Ltd,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

CFS-F5L *

Four-waveband stereo radio cassette with remote control unit. All controls operated by a logic-controlled feather touch mechanism. Radio: FM 87.5-108MHz, MW 530-1605kHz, LW 150-350kHz, SW 6-18MHz. Output: 2 x 7.5W. Speakers: coaxial two-way, 2 x 16cm, 2 x 5cm. Takes normal/CrO₂/metal tapes. Dolby NR. Mains AC 240V, DC 12V or battery (8 x HP2). Price: £250.00 (inc. VAT) approx.

TCM-280

Mini cassette recorder. FR: 90Hz-10kHz. Speaker: 2in. diameter. Output: 320mW. Features: fast playback, end-of-tape alarm, music/speech selector button, automatic recording. Dimensions: 17.4 x 1.95 x 11.3cm. Takes full-size compact cassettes. Price: £110.00 (inc. VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd,
Toshiba House, Frimley Road, Frimley,
Camberley, Surrey GU16 5JJ.
Tel: Camberley 62222.

RT-8860S

Stereo radio cassette recorder with FM, MW, LW, SW. Output: 2 x 5.5W. Speaker: 2 x three-way. Music track skipping selector (MTSS). Five LED's x 2 for VU meters. LED tuning indicator, battery and FM-ST indicator. Integral microphones. Full ASO. Cue and review. Dimensions: 52 x 14 x 30.5cm. Price: on application.

RT-8900S

Stereo radio cassette recorder with FM, MW, LW, SW. Output: 2 x 5W. Speakers: 2 x two-way. Music track skipping selector (MTSS). Five LED's x 2 for VU meters. Editor. Connection for turntable with MM cartridge. Microphone mixing facility. Two-position tape selector. Dimensions: 48.4 x 15 x 29.4cm. Price: on application.

RT-8710S

Stereo radio cassette recorder with FM, MW, LW, SW. Output: 2 x 4W. Detachable speakers. Phono input. Microphone mixing. Level/battery/tuning meter. Sleep facility. Dimensions: 42 x 15 x 27cm. Price: on application.



York RP 208 TV, stereo radio cassette recorder

RT-9510S

Stereo radio cassette recorder with FM, MW, LW, 2 x SW. Output: 2 x 7.5W. Phase-locked loop synthesizer tuning for each waveband. Full ASO, cue/review, one-touch recording. 6 pre-sets per waveband (30 pre-sets). Frequency and clock LCD readout. Timer/sleep facility. Dolby NR. Metal tape facility. MM turntable connection facility. Price: on application.

■ **YORK**

Sulkin (UK) Ltd,
73 Grosvenor Street, London W1.
Tel: 01-629 8368.

JSC 819

Stereo clock radio cassette recorder. Output: 2 x 1W. Features: snooze and sleep functions, rotary tuning and volume controls, auto recording facility. Price: on application.

JSC 821

As JSC 819, except mono only, output 1W. Price: on application.

JRC 825

Stereo radio cassette recorder. Features: twin integral condenser microphones, stereo broadcast indicator light, rotary tuning, balance and volume controls, digital tape counter, push-button controls for record, play, forward, reverse, pause and stop/eject. Finish: metallic grey. Price: on application.

RP 208 *

Portable TV/radio cassette recorder. Mains, dry cell battery or car/boat battery. Features: built-in telescopic aerial (can be fitted with outdoor aerial), automatic gain and frequency controls, three-band radio with automatic shut-off system, tuning eye and earphone facility. Price: on application.



Sony CFS-F5L stereo radio cassette

SPEAKER ENCLOSURES

continued from page 189

Recommended amplifier output: 70W. Dimensions: 66.5 x 37 x 31.5cm. Finish: walnut. Features: variable roll off mid range and tweeter. Price: on application.

FX-1

Reflex enclosure. Drive units: 325mm, horn pressure mid, Beryllium tweeter. FR: 20Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 250W. Finish: black. Features: variable roll-off on mid-range and tweeter.

NS1000

Infinite baffle speaker. Drive units: 300, 88mm, 30mm. Crossover frequency: 500Hz, 6,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 100W. Dimensions: 71 x 39.5 x 34.9cm. Finish: ebony. Features: variable roll-off midrange and tweeter. Price: on application.

BY POPULAR REQUEST

Demand for reprints of Wireless World constructional projects for audio equipment is so high that we have gathered 25 of the best of them together in High Fidelity Designs. These are the 'most requested' articles which **you** have asked for and all have been fully updated. Hurry for your copy — it's likely to sell out fast!

High fidelity designs

Tape / disc / radio / amplifiers / speakers / headphones

A BOOK FROM WIRELESS WORLD

£2.50 from newsagents and bookshops or £2.75 by post from the publishers

Contents: ● FM tuner design ● Novel stereo FM tuner ● Low-noise, low-cost cassette deck ● Wireless World Dolby noise reducer ● Wideband compander design ● High-quality compressor/limiter ● An automatic noise-limiter ● Modular integrated circuit audio mixer ● The "walltenna" ● Electronic piano design ● Advanced preamplifier design ● High quality tone control ● Multi-channel tone control ● Bailey-Burrows preamplifier ● 30-watt high fidelity amplifier ● 30-watt amplifier modification ● Baxandall tone control revisited ● Active crossover networks ● Electrostatic headphone amplifier ● Class A power amplifier ● An I.C. peak programme meter ● Horn loudspeaker design ● Horn loudspeaker ● Transmission-line loudspeaker enclosure ● Commercial quadrophonic systems

To: General Sales Department, Room 205, Quadrant House, The Quadrant, Sutton, Surrey SU12 5AS.

Please send me.....copy/copies of High Fidelity Designs at £2.75 each inclusive.

I enclose remittance value £.....
(cheques payable to IPC Business Press Ltd.)

NAME.....
(please print)

ADDRESS.....

.....
.....

Company registered in England No. 151537
Regd office Surrey House, 1 Throwley Way, Sutton, Surrey.

ELECTRONIC & TV GAMES

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ACADEMY

Kohli and Co Ltd,
36 Concord Road,
Westwood Park Estate,
Acton, London W3.
Tel: 01-993 5001.

D5996

Programmable cartridge game for use on Colour TV sets. Price: £42.50 (plus VAT), optional cartridge £12.87, mains adaptor £3.24.

Apollo

Programmable video game with four built-in functions: doodle with musical tones, patterns with memory repeat, bowling with two-player scoring, and Blackjack for 1 or 2 players. Optional extra cartridges include, Star Wars, Pinball, Speedway, Concentration match and mathematics. Machine supplied with AC mains adaptor.

■ AMELTONE

Mercantile Electronics Ltd,
Amelton House, 61 Derby Street,
Manchester M8 8HE.
Tel: 061-832 6525.

Stadium

Television game available in three versions C4003 for colour sets, and 4002 and Stadium Mark II. Details on application.

■ ATARI

Ingersoll Electronics Ltd,
202 New North Road, London N1 7BL.
Tel: 01-226 1200.

XK 2600

Video computer system complete with 27 game combat cartridge, mains transformer, aerial switchbox, paddles and joysticks. Price: £179.95. Accessories: Paddles £12.95, keyboard controller £18.95, joysticks £12.95 per pair, aerial switchbox £2.95, mains unit £5.95, mains unit continental 2-pin £8.95, cartridge tray £3.95. Cartridges £15.95, chess cartridge £45.00. All prices inclusive of VAT.



Atari Home Computer

400 Home Computer*

For business and household management, educational applications and home entertainment. Plugged into a standard colour TV it is capable of full colour display, 4 sound "voices", music synthesis, light pen, modem and high speed printers. Business and household management: specialised programs are available on cartridges and cassette tapes, eg. income tax preparation guide. Education applications: over 20 subjects inc. Algebra, Economics, Spanish, World History, Zoology and Statistics. Entertainment: includes chess, backgammon, space adventure, four-player basketball and "Superbug" driving game. System includes TV switchbox, AC power adaptor, channel 2-3 selector, built-in speaker and comprehensive four-colour system operating manual. Price £400.00 or less.

800 Home Computer

Similar to 400 model. Price: £750.00 or less.

■ BINATONE

Binatone International Ltd,
Binatone House, Beresford Avenue,
Wembley, Middlesex HA0 1YX.
Tel: 01-903 5211/8322.

TV Games*

TV games with 4, 5, 8 or 10-game consoles: Tennis, Squash, Football, Basketball, shooting games with photo-electric guns and 'fire' buttons, Ice-Hockey and Gridball. All work with most black and white and colour TV sets and require just six HP2 batteries. Mains adaptor available as optional extra. Prices: Mk4 £11.95 (inc. VAT); Mk 6 £15.95 (inc. VAT); Mk 8 £19.95 (inc. VAT); Mk 10 £21.95 (inc. VAT). All above except the Mk 8 available in full colour for an extra £4.00.

■ COMPUTER GAMES LTD

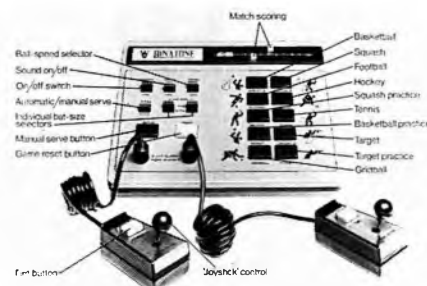
Spectrum Marketing,
48 Cambridge Road, Barking, Essex.
Tel: 01-591 5654.

Chess Challenger 7

Seven levels of play computerised chess board. It will play against you or play itself. It allows you to change sides in mid-game on any move. Price: £89.95 (inc. VAT).

Voice Chess Challenger

A "Think for yourself—play by yourself" chess game that Speaks! Infinite levels of play, large



Binatone Joystick Control and "Fire" Button

repertoire of chess book openings, speaks every move and capture and will repeat board positions on demand. At conclusion of the game, the computer displays the number of moves played. Price: £250.00 (inc. VAT).

Checker Challenger 2

Two levels of play. Selection of offence or defence, position memory by computer memory recall, random computer responses. Price: £49.95 (inc. VAT).

Zodiac Astrology Computer

Computerised astrology! A complete horoscope chart can be built up including planetary positions at time of birth and corresponding personality characteristics, daily preview, advice mode. Price: £29.95 (inc. VAT).

UFO MasterBlaster Station

For children from eight onwards. Idea is to hit enemy UFOs by firing a missile and guiding it by mini joystick to explode on target. Computer keeps the score and game ensures a test of hand and eye co-ordination. Three different speeds. Price: £19.95 (inc. VAT).

Digits

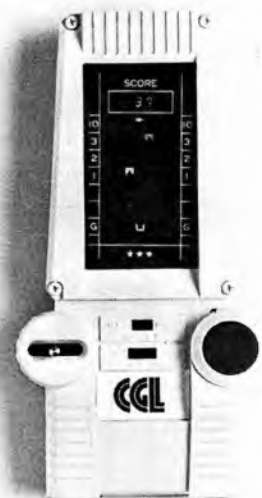
Computer code-breaking game for children using numerals instead of traditional board and colour pegs. Two levels of skill. Price: £9.95 (inc. VAT).

Zap

Electronic missile game for two players designed to test hand and eye co-ordination. Price: £9.95 (inc. VAT).

Amaze-a-Tron

"Magic Box" offering one or two players a choice of eight maze games with over a million variations. A wrong move brings a "raspberry" and a right one a tune. Price: £16.95 (inc. VAT).



Galaxy Invaders from Computer Games Ltd

Electronic Dice

New "uncheatable" electronic dice shows completely random configuration for two dice every time two buttons are touched and released. Price: £9.95 (inc. VAT).

Galaxy Invaders*

Hand-held version of "Space Invaders" arcade game, with full sound and visual effects. Price: £22.95 (inc. VAT).

Exec-U-Play

Range of desk games/electronic toys aimed at the executive wallet. All have realistic sound and visual effects. Roulette £15.95, dice £15.95, problem solver £15.95, one-figured bandit £15.95, bingo £19.95, Crown and Anchor £19.95. All prices inclusive of VAT.

Sensory Chess Challenger 8

8 playing levels, all using new "sensory" keyboard which allows the playing surface to "see" each move. Mains or battery powered. Price: £129.95 (inc. VAT).

Sensory Voice Chess Challenger

Sensory playing surface. The machine talks to you! Price: £249.95 (inc. VAT).

Backgammon Challenger

Dice can be rolled by the human player. Uses all the strategies of the game. Built-in doubling feature, plays offence or defence. Price: £89.95 (inc. VAT).

■ DACOLL

Dacoll Games Ltd,
Dacoll House, Gardners Lane,
Bathgate, West Lothian.
Tel: Bathgate (0506) 56565.

Traka*

Electronic games machine which is the heart of new game "Gotcher". Consists of scan button, evade button, speed control, on/off control, scan control button.

Gotcher*

Game for up to 8 players based on theme of a prison breakout with fugitives attempting to reach freedom before being caught by hunters. A number of chase permutations develop turning into battle between all players, hunters and fugitives alike.

Traka 16*

Compendium of 16 different games suitable for players from 5 years upwards. They include Tug of War, Fishing, Bowling, all with instructions easily understood by children.

■ GRANDSTAND

Adam Imports,
Unit 2a, Ripon Road Industrial Estate,
Harrogate, North Yorkshire.
Tel: 0423 501151.

Grandstand March of the Day 2000

Black and white TV game which plays 4 sports—soccer, tennis, squash, practice. Controls for large/small bat size, auto/manual service, auto/professional speed. Powered by 6 HP7 batteries (not supplied) or from Grandstand Mains Adaptor (extra). Integral/remote hand controllers included. Built-in speaker. TV system—black and white UHF 625 line. Weight: 0.5kg (approx). Dimensions: 9½ x 8 x 2½in. (approx).

2600

Plays soccer/tennis/squash/practice/pistol 1/

pistol 2 in black and white. Supplied with pistol and two remote handsets. Controls for large/small bat size, auto/manual service, amateur/professional speed. Powered by 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). TV system—black and white UHF 625 line. Weight: 1.2kg (approx). Dimensions: 9 x 8 x 2½in. (approx).

3600 Colour

TV game with 6 sports and pistol shooting. Supplied with 2 remote control hand sets and electronic pistol. Plays soccer/tennis/squash/practice/pistol 1/pistol 2. Controls for large/small bat size, auto/manual serve, amateur/professional speed. Powered by 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). TV system—PAL colour UHF 625 line colour. Also plays in black and white on black and white TV. Weight: 1.2kg (approx). Dimensions: 9 x 8 x 2½in. (approx).

4600 Colour

Supplied with rifle which converts into a pistol. Plays soccer/tennis/squash/practice/target 1/target 2. Controls for large/small bat size, auto/manual service, amateur/professional speed. Takes 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). Two integral/remote hand controls and sound comes from an integral speaker. TV system—PAL colour UHF 625 line. Also plays in black and white on black and white TV. Weight: 1.4kg (approx). Dimensions: 10 x 7½ x 2½in.

5000 Colour

10 games in one unit—supplied complete with pistol which converts into rifle and a throttle control. Games include soccer/tennis/squash/practice/target 1/target 2/motor cross/enduro/drag race/stunt cycle. Controls for large/small bat size, auto/manual service, auto/professional speed. Powered by 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). Built-in speaker TV system—PAL colour UHF 625 line. Also plays in black and white on black and white TV. Weight 1.4kg (approx). Dimensions: 10 x 7½ x 2in. (approx).

6000 Colour

Soccer/tennis/squash/practice/gridball/hockey/basketball/practice/target 1/target 2. Integral/remote handsets with x-y movements. Controls for large/small bat size, auto/manual service, auto/professional speed and handicapping between left- and right-handed players. 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). Built-in speaker. TV system—PAL UHF 625 line. Also works in black and white on black and white TV. Weight: 1.4kg (approx). Dimensions: 10 x 7½ x 2½in. (approx).

Colour Programmable

Plays by plug-in cartridges. Super-sporting cartridge included with kit—includes soccer/tennis/soccer/practice/gridball/hockey/basketball/target 1/target 2. Other cartridges available include Stunt Cycle/Car Race/Submarine/Superb Wipeout/Shooting Gallery. Controls for large/small bat size, auto/manual serve, amateur/professional speed. Powered by 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). 2 detachable remote handsets with x-y movements. Sound from integral speaker and TV receiver. TV system—PAL UHF 625 line colour. Also plays in black and white on black and white TV. Weight: 1.4kg (approx). Dimensions: 10 x 7½ x 2½in. (approx).

Video Entertainment Computer

Plugs into the TV and features Fairchild F8 central processing unit with memory bank of 16,000. Plays with plug-in pre-programmed memory cartridges called videocarts, No. 1 being included with the unit. Two 12-way plug-in remote handsets. Option selections include 4 time periods, 4 speed selections, "hold" for stopping and re-starting game. Sound from TV receiver. TV system—PAL UHF 625 line colour. Also operates in black and white on black and white TV. Thousands of game variations, including Noughts and Crosses, Shooting Gallery, Video Blackjack, Robot War (for 1 or 2 players).

Electronic Soccer

Hand-held game for 1 or 2 players—1 has to beat electronic defenders, 2 try to beat each other. Full field-effect pitch, amateur/professional skill, action sound effects including referee. Timer simulates 90 minutes—actual time 5 minutes. Home and away scores displayed. Micro-processor controlled. Powered by 4 penlight batteries (not included) or Grandstand mains adaptor (extra). Dimensions: 4 x 7¾ x 1½in. (approx).

Solitaire

Remove lights on the display by process of leap-frogging. Winner is player who remains with only one light on the board in the shortest possible time. Amateur/professional status switching. Powered by 9 volt PP3 battery (not included). Dimensions: 3¼ x 6½ x 1in. (approx).

4-in-1

Handheld game with 4 functions—speedway, brain drain, blackjack and calculator. Speedway: red LED's travel along the display—play against the clock. Brain Drain: computer generates 4 hidden numbers—guess them in least number of tries. Blackjack/pontoon: the bank automatically takes losses or adds winnings. Calculator: full 4-key memory calculator incorporated with division, multiplication, addition and subtraction. Powered by 5 HP11 batteries (not included) or Grandstand mains adaptor (extra). Dimensions: 3½ x 6¼ x 1½in. (approx).

Auto-Race

Drive on an electronic track against the computer. Avoid collisions with other cars which are controlled to slow you down. Hand-held game which features 3-lane track with twin digit timer and lap timer, gear speed control. Winner completes 4 laps in shortest time with least number of collisions. Dimensions: 3 x 5½ x 1½in. (approx).



Selection of Dacoll Games

Super Eleven

Table-top electronic game for up to 4 players —4 different games with 11 variations. Ditto: players try to repeat light and sound sequence. Four levels of skill, for up to 4 players. Bounce: defend against moving light attacks. Defend double corners with 2 players or play opponents with 3 or 4 players. Memory tune: programme a 30-note tune, complete with light patterns, and the game plays in back. Pathfinder: escape from an electronic maze with the help of lights and sound. Takes 6 HP11 batteries (not included) or Grandstand mains adaptor (extra). Dimensions: 9 x 9 x 2½in. (approx).

HANIMEX

Hanimex (UK) Ltd,
Hanimex House, Faraday Road,
Dorcan, Swindon, Wilts.
Tel: Swindon (0793) 26211.

TVG7771/TVG666S

Television games. Prices and details on application.

INGERSOLL

Ingersoll Electronics,
202 New North Road, London W1.
Tel: 01-226 1200.

Strike Command

Programmable video game with central console in grey, two hand-held controls with joystick levers and serve/shoot buttons. Varied colour backgrounds. DC battery operation or AC with optional XK9 powerpack. Automatic on-screen scoring, realistic sounds for each game. Tennis, Hockey, Football, Squash, Gridball, Basketball, Basket Practice, two-player target, one-player target. Price: £39.95 (inc. VAT). Additional cartridges at £11.95. Stunt cycle £14.95 (inc. VAT).

XK600B

6-game black and white model complete with gun. Attack buttons secretly increase ball speed or vary angle of play. Price: £19.95 (inc. VAT).

XK500C

Hand-held 6-game colour unit complete with gun. On-screen auto scoring, variable bat size and unique attack buttons for competitive play. Price: £24.95 (inc. VAT).

XK410C

10-game full colour unit with different screen background colours. 8 ball games for two players and 2 target shooting games for one or two players all with individual joystick control movements. Individual bat sizes, ball speed automatically increases for "rallies" after the seventh consecutive hit. Price: £29.95 (inc. VAT).



Battle Command from Ingersoll

XK1010 Battle Command*

Dedicated programmable video game including 10 game "Super Star" cartridge. Price: £42.95 (inc. VAT). Additional cartridges at £11.95. Stunt cycle £14.95, Shooting gallery £22.95 (inc. VAT).

MICRO ELECTRONICS

Micro Electronics Ltd,
Consumer Products Division,
766 Finchley Road, London NW11 7TH.
Tel: 01-458 9844.

Baseball game*

Said to simulate all the functions of a real game in a battery operated unit. Three speeds of play. When player has scored a hit a simulated crowd cheer is heard. Players can introduce offensive or defensive options in form of hitters or pitchers respectively. LED displays simulate movements of players and ball and show score. In addition, an event counter shows the score of the present batter. The game is housed in sturdy plastic case and input is provided for an external 9V DC supply. Price: on application.

RADOFIN

Radofin Electronics UK Ltd,
91-93 King Street, London W6 9HW.
Tel: 01-741 2401.

962

10 game colour, including football, tennis, hockey, basketball, target, gridball, squash and practice. Price: £25.00 (approx).

1082

Low-cost programmable video game complete with 10 game cartridge. Two joystick controls, sound from TV speaker. Choice of 3 different colour backgrounds. Dimensions: 24.5 x 15.5 x 6cm. Price: £34.00. Additional cartridges available at £9.95.

1292

Micro-processor video game. Complete with Pro Sport cartridge (60 game variation), AC adaptor, TV antenna switch and two remote player controls each with keypad and joystick. Price: £89.95. Up to 30 cartridges available.

SUPERSPORT

Bruce Kaberry Marketing Ltd,
43 Broomfield, Leeds LS16 6AE.
Tel: Leeds (0532) 67618.

TV Games

SA £7.56; S2 £5.25; S3 £11.02; TUG £15.85; TVG £22.50. (All plus VAT). Details on application.



Electronic Baseball from Micro Electronics

VIDEOMASTER

Waddington Videomaster Ltd,
36-44 Tabernacle Street, London EC2A 4DT.
Tel: 01-253 9366.

Star Chess*

TV game for 2 players. Both players command a fleet of spaceships, and aim is to annihilate the opposing flagship and at all times protect your own from destruction. Fleet consists of Starfighters, Supercruisers, Superfighters, Starcruisers and Destroyers, all capable of blasting enemy forces off the screen. A novel introduction to the classic game of chess, and a new dimension for the experienced chess player. Price: £59.95 (inc. VAT).

Chess Champion

Electronic micro-computer in form of compact console programmable to six levels of ability. LED read-out shows moves clearly. Price: £89.50 (inc. VAT).

All Star

TV game comprising solo, squash, football and tennis. Each can be varied by changing either bat sizes, ball speeds, or both. Two remote hand controls and socket for Shooting Star, an electronic rifle which provides two extra target shooting games. Price: £14.95, rifle £5.49 (inc. VAT).

Colourscore II

Choice of four TV games with attractive console: Solo, Squash, Football, Tennis. Each can be varied by changing bat sizes and ball speeds. Socket for Shooting Star giving another two target shooting games. Price: £16.95 (inc. VAT).

Sportsworld

Ten TV games in one console: tennis, squash, hockey, solo 1, football, basketball, gridball, solo 2 and two target games. Two joystick hand controls enabling player to move bat over whole field of play. Features include independent handicapping, action sound effects. Price: £29.95 (inc. VAT).

Colour Cartridge

Ten TV games free with Colour Cartridge, which has facility to accept a multitude of different games by addition of another cartridge. Cartridge provided has Tennis, Squash, Hockey, Solo 1, Football, Basketball, Gridball, Solo 2 and two target shooting games. All can be varied by changing individual bat sizes and altering ball speed. Three additional cartridges give Road Race, Super Wipeout, Stunt Rider. Future developments may include a tactical war game, target shooting, and a submarine chase. Price: £43.95 (inc. VAT). Extra cartridges range from £9.58 to £17.27.



Videomaster Star Chess

Database*

Fully programmable TV Games Computer for home entertainment. Up to 14 different cartridges available, including horse racing, circus, air-sea battle and blackjack—each cartridge offers up to 60 different game variations. Also 2 mathematics cartridges. Complete with hand-held controls and sound effects. Unit comes with mains transformer and one cartridge plus aerial switch. Price: £89.95. Additional cartridges from £12.95 to £14.95 each.

Enterprise

Battery-operated, hand-held electronic game offering three games of Speedway, Brain Drain and Pontoon. Keeps a record of gains and losses. Includes a four-function calculator and memory key. Price: £22.50 (plus VAT).

VOLTMACE

Voltmace Ltd,
Church Street, Baldock, Herts.
Tel: 0462 894410.

Mercury Commander

Chip programmable colour TV game with 10 game cartridge and AC mains adaptor. Other cartridges available are Road Race, Stunt Rider, Tank Battle, Wipeout. Available soon will be a Two Rifle/Pistol Target game, submarine warfare and others. Price: £36.99 (plus VAT). Cartridges range from £10.14 to £22.18 (plus VAT).

TV Game/Aerial Combiner

Enables a TV game to be permanently connected, or coupled and uncoupled without disturbing the input aerial to the TV set, and without needing access to rear of the set. Filter circuit avoids use of a switch, eliminating moving parts. Price: £2.66 (plus VAT).

Mercury Commander Mk III

Dedicated chip programmable colour TV game complete with AC mains adaptor and 10 game cartridge. Price: £36.99 (plus VAT). Additional cartridges available include Car Race, Motorcycle and Wipeout. To come—two-rifle target game and submarine warfare. Cartridges from £8.65 to £13.00 (plus VAT).



Videomaster Database

TAPE ACCESSORIES

continued from page 196

TDK

TDK Tape Distributor (UK) Ltd,
Pembroke House, Wellesley Road,
Croydon, Surrey.
Tel: 01-688 7372.

Accessories*

HCI cassette head cleaner. HCO3 TDK head cleaning kit. HD11 TDK head demagnetiser. EL 40 TDK cassette labels. EX25 TDK cassette index cards. All prices on application.

WEIRCLIFFE

Amos of Exeter Ltd,
Weircliffe Court, Exwick, Exeter, Devon.
Tel: Exeter (0392) 72132.

Magnetic Tape Bulk Eraser*

Capable of erasing any saturated tape or film up to 2in. video on any tape or reel up to 14½in. dia. to a level of better than -80dB in 10-14 seconds. Price: on application.

ZEEPA

Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

Tape Head and Stylus Cleaner

Aerosol spray for cleaning both tape heads and styli also video heads. Price: £1.55 (inc. VAT).

Magnetic Head Demagnetiser*

Suitable for both 240V and 110V with built-in pilot light. Price: £10.85 (inc. VAT).

Tape Head/Rubber Cleaner

Two bottles of cleaning fluid, one for tape heads and one for pinch wheels. Price: £2.75 (inc. VAT).

Total Cassette/Tape Recorder Care Kit

Containing rubber and head cleaning fluid, four angled stalks and inspection mirror. Price: £3.10 (inc. VAT).



Weircliffe Bulk Eraser



Zeepa Magnetic Head Demagnetiser

VIDEO CASSETTE RECORDERS

* Indicates entry is illustrated. Abbreviations used in this section are given on page 4.

■ ACTION VIDEO

Action Video Ltd,
45 Great Marlborough Street,
London W1V 1DB.
Tel: 01-734 6942.

Micro 2000

VHS video recorder with 7 day timer. Audio dub. RF and video inputs. Channel programmable. Playing time: 3 hours. Price: £795.00 (plus VAT).

■ AGFA-GEVAERT

Agfa-Gevaert Ltd,
Great West Road, Brentford, Middlesex.
Tel: 01-560 2131.

Agfa Videochrom

Low-noise cassettes. chromium dioxide tape for magnetic video recording.
Philips—VC30/65 (60+10) £11.66½; VC45/100 (90+10) £12.96½; VC60/130 (120+10) £17.19½; LVC150 £19.61½.
Sony—KCA30 £11.76; KCA £16.47.
Grundig—SVC1 (60) £12.52; SVC1.5 (90) £14.30; SVC2 (120) £15.99; SVC3 (180) £18.50; SVC4 (240) £21.45.
VHS—E30 £7.06½; E60 £8.30; E120 £11.15; E180 £13.41.

■ AKAI

Akai (UK) Ltd,
12 Silver Jubilee Way,
Haslemere, Heathrow Estate,
Hounslow, Middlesex TW4 6NF.

VS9700

VHS video recorder with 8 day timer plus everyday modes. RF and Video inputs. 3 hours playing time. Price: £650.00 (plus VAT).

VS9800

VHS video recorder as above. Features: remote fast forward, freeze, variable slow motion. Price: £725.00 (plus VAT).

■ BUSH

Rank Radio International Ltd,
P.O. Box 196, Power Road, London W4 1PW.
Tel: 01-994 6491.

BV6900

Betamax format video recorder. 7 day timer. RF & video inputs. Features: three separate programmes settable with channel changing. Maximum playing time: two x 4 hours. Price: £650.00 (plus VAT).

■ FERGUSON

Thorn Consumer Electronics Ltd,
284 Southbury Road,
Enfield, Middlesex.
Tel: 01-363 5353.

3VO0*

VHS video cassette recorder. Colour/mono record playback. up to 3 hours play/record time. 8 light action channel selectors with LED indicator, pre-select timer for automatic unattended recording, tape counter with memory. Mic socket for sound dubbing during or after recording. Selection keys with safety

latching for pause, audio, dubbing, record, fast rewind, stop, play, fast forward. Cabinet finished in black and silver grey. Cabinet dimensions: 45.3 x 14.7 x 31.4cm. Price: on application.

3VO1

Portable Videostar battery/mains operation. Rechargeable battery with built-in battery supplied. AC mains adaptor unit doubles as battery charger. 12V DC connection. Memory rewind. When coupled to optional tuner/timer model 3VO3 can be used to record TV programmes. 3VO1 comprises recorder, AC mains adaptor/battery charger, carrying case, rechargeable battery, RF converter, E30 VHS cassette. Pluggable mains lead and TV connecting lead. Price: on application.

3VO3 tuner/timer*

To be used in conjunction with 3VO1 portable Videostar. 12 TV channel pre-set selectors. 8-day timer for automatic recording. Timed recordings can be programmed for both start and finish. Price: on application.

3V16*

VHS video recorder with playing time of 3 hours. 8-day/24 hour digital clock timer. Auto pre-programming, remote control, digital tape counter with memory. Heated head to safeguard tapes and prolong head life, safety latching keys, video camera input facility. Records TV programmes while you watch another channel, or while you are out with TV switched off.

■ GRUNDIG

Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.



Ferguson 3VO0 Videostar



Ferguson 3V16 Videostar deluxe

SVR4004GB

SVR video recorder with a 10 day timer. RF input. Features: self-seeker tuner, full remote control, transport logic. Playing time: 4 hours. Price: £635.00 (plus VAT).

SVR4004AV

As above but with RF and video inputs. Features: video dub via DIN socket. Price: £655.00 (plus VAT).

VR2 x 4*

Flip-over Video cassette recorder with Video 2000 format. 10 day timer. RF and video inputs. Maximum playing time: 2 x 4 hours. Features: four separate programmes settable with channel changing. Price: £650.00 (plus VAT).

SVR4004EL

SVR video recorder with 10 day timer. RF inputs. Playing time: 4 hours. Features: as SVR4004GB, two programmes can be set. Price: £655.00 (plus VAT).

■ HITACHI

Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes, Middlesex.
Tel: 01-848 8787.

VT 5000ER

VHS video recorder. 10 day timer. RF and Video inputs. Playing time: 3 hours. Features: Random time recording control, clear still picture, frame by frame advance, remote control, audio dubbing, head life claimed to be 2,000 hr. Price: £649.00 (inc. VAT).

VT 5500

VHS video cassette recorder. Automatic programme search, clear still picture, frame by frame advance, air damped soft eject mechanism, remote pause, audio dubbing, five programme, one week preset. Price: £729.00 (inc. VAT).

■ ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane, Basildon,
Essex SS14 3BW.
Tel: Basildon (0268) 3040.

240

SVR system, 2 rotating video heads. Sloping track recording with a 180° wrap around. Power consumption: approx. 75W max. Dimensions: 59 x 15.1 x 32cm. Playing time: with cassette SVC1: approx 60 min. With cassette SVC2: approx 120 min. With cassette SVC3: approx



Grundig 2 x 4 flip-over recorder

180 min. With cassette SVC4: approx 240 min. Remote control socket: 10-pin multiple socket for the functions: recording, playback, stop, fast wind, fast rewind and "cassette" (threading back of tape into cassette). Microphone socket: input: contacts 1 + 4:1 ... 135mV (1kHz), input impedance: 47kΩ. Price: £635.00 (plus VAT).

■ **JVC**

JVC (UK) Ltd,
Eldonwall Trading Estate, Staples Corner,
6-8 Priestley Way, London NW2 7AF.
Tel: 01-450 2621.

■ **HR-3300EK***

VHS video recorder with 24 hours timer, on only. RF and video inputs. Playing time: 3 hours. Built-in 8 day LED clock timer. Price: £500.00 (plus VAT).

■ **HR-333-EK**

VHS video recorder. 8 day timer. RF and Video inputs. Audio dub. Playing time: 3 hours. Features: remote pause switch, signal generator, automatic function switch. Price: £590.00 (plus VAT).

■ **HR-3660 EX***

VHS video recorder. 8 day timer. Audio dub. RF and video inputs. Playing time: 3 hours. Features: built-in 8 day LED digital clock timer, variable slow-motion, double-speed, still frame, remote pause. Price: £678.00 (plus VAT).

■ **MITSUBISHI**

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts WD2 8LD.
Tel: Watford (0923) 40566.

■ **HS 300***

VHS system. Feather-touch switching, full function infra-red remote control, picture search (7 x normal speed in both directions), slow motion (half normal forward speed), freeze frame, single frame advance, automatic rewind, air-damped cassette housing. Easy-to-use programming section enables user to record each night until the tape runs out and also to record unattended, six programmes of varying length on any station over a period of a week.

Digital station indicators, digital clock and timers. Cabinet with tape storage facilities available at £51.00 (inc. VAT). HS 300 price: £698.00 (inc. VAT).

■ **NORDMENDE**

Nordmende (UK) Ltd,
Rickford House, Rickfords Hill,
Aylesbury, Bucks.
Tel: Aylesbury (0296) 20501.

■ **V200***

VHS format recorder with built-in tuner and recording time of 180 min. 24 hour digital clock timer with LED display, programmable up to 8 days. Remote control operates freeze frame, slow motion, double speed and start/pause.

■ **PANASONIC**

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough SL1 3DR.
Tel: Slough (0753) 27516.

■ **NV-7000***

VHS video recorder with microprocessor timer control, picture search, multi-speed playback and Dolby noise reduction system. Up to 8 separate items can be pre-set irrespective of channel. Any combination of day/time/channel can be operated during a 14 day period. Built-in rechargeable batteries maintain computer memory for an hour in event of power failure or unplugging. Playing time: 3 hours. Price: £700.00 (inc. VAT).

■ **PHILIPS**

Philips Electrical Ltd,
19 Commerce Way, Purley Way,
Croydon CR9 4JA.
Tel: 01-688 7766.

■ **N1700**

VCR-LP video recorder with 3 day timer. RF input. Playing time: 3 hours. Price: £480.00 (plus VAT).

■ **N1702**

VCR-LP video recorder with 10 day timer. RF input. Remote pause control. Playing time: 3 hours. Price: £535.00 (plus VAT).

■ **PYE**

Pye Ltd, 137 Ditton Walk,
Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

■ **N1700***

VCR-LP recorder fitted with UHF/VHF tuner. Modulator for playback through a 625 line UHF TV set. Playing time: up to 150 min. Cabinet: moulded grey top cover with black base. Dimensions: 56 x 37 x 16cm. Power requirements 220 or 240V ±10%. Automatic fine tuning switched off when pre-selector button is completely depressed. Price: £480.00 (plus VAT).

■ **N1702**

Video cassette recorder fitted with UHF/VHF tuner. Modulator for playback through a 625 line UHF TV set. Playing time: 180 mins. Cabinet finished in moulded grey with black base.

■ **SANYO**

Sanyo (UK) Ltd,
8 Greycaine Road, Watford WD2 4UQ.
Tel: Watford 46363.

■ **Betacord VTC-9300**

Betamax video recorder. Timer: 3 days plus everyday mode. RF and video inputs. Playing time: 3¼ hours. Features: remote pause. Price: £510.00 (plus VAT).



Mitsubishi HS300



Pye N1700 video cassette recorder



JVC HR 3330 EK



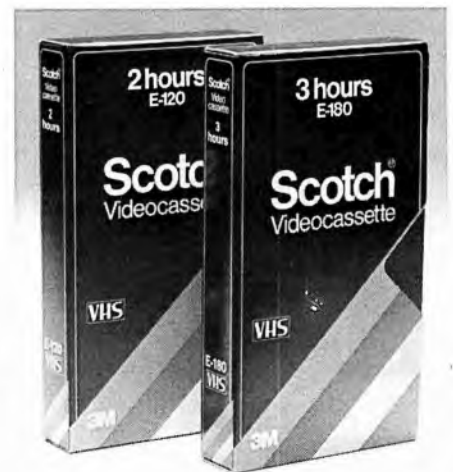
Nordmende Spectra V200 Video-vision



JVC HR 3660 EX



Panasonic NV-7000 VTR



Scotch VHS Videocassettes

■ SCOTCH

3M United Kingdom Ltd,
3M House, P.O. Box 1, Bracknell,
Berks RG12 1JU.
Tel: Bracknell (0344) 26726.

VHS Format *

Videocassettes for the VHS format recorder, manufactured from dimensionally-stabilised polyester. The tape can hold "stop motion" for over one hour and tape life can exceed 2,000 passes. Oxide coating gives excellent signal-to-noise ratio. E-30 (30 min); E-60 (60 min); E-120 (120 min) £9.00; E-180 (180 min) £11.00.

Beta Format

Videocassettes for the Beta format cassette recorder. Tape has stop motion capability exceeding one hour and life exceeding 2,000 passes. L-250 (65 min); L-500 (130 min) £8.50; L-750 (195 min) £11.00.

VCR and VCR-LP Format

Videocassettes for VCR and VCR-LP format recorders. Tape life is capable of exceeding 1,000 passes and recordings are virtually free of dropouts. Tapes are also back-coated to reduce static attraction of airborne dust and debris. Quality of the oxide coating gives low head-wear characteristics. VC 30/65 (30/65 min); VC 45/100 (45/100 min); VC 60/130 (60/130 min); LVC 120 (55/120 min) £13.00; LVC 150 (70/150 min) £15.00.

U-matic Format

Videocassettes specially designed for the U-matic format. Tape is also back-coated to reduce static attraction. UCA 5 (5 min); UCA 10 (10 min) £7.00; UCA 30 (30 min) £9.00; UCA 60 (60 min) £12.00.

■ SHARP

Sharp Electronics (UK) Ltd,
Sharp House, 107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

VC6300

VHS video recorder with 7 day timer. Audio

dub, RF and video inputs. Playing time: 3 hours. Features: 7 separate programmes. Price: £600.00 (plus VAT).

■ SONY

Sony (UK) Ltd,
Pyrene House, Sunbury-Cross,
Sunbury-on-Thames, Middlesex.
Tel: (093 27) 87644.

SL8000UB*

Betamax recorder with 8-channel tuner and record/playback facilities. Digital timer pre-select panel gives a choice within a 72 hour period. Max. recording time: 3hrs. 15min. with L-750. 2hrs. 10min. with L-500. 1hr. 5min. with L-250. 30min. with L-125. Pause: available with still picture. Supplied wired remote control unit. Auto tape stop: available at Fwd, FF and Rwd mode. Timer: electronic digital display timer with 0.00-23:59 display. Programmed recording: automatic recording within a 72 hour period using the built-in digital timer. Programme length can be 15, 30 or 60 min. switch or any combination of the above three lengths or to the tape end. Tuner: Built-in available 8 position E.T. tuner with British TV standard UHF CH 21-68. Dimensions: 522 (W) x 189 (H) x 394 (D)mm, 20½ (W) x 7½ (H) x 15½ (D) inches. Price: £511.00 (plus VAT).

SL-8080UB

Betamax video recorder with 3 day timer. Audio dub, RF and video inputs. Playing time: 3¼ hours. Features: fast-play, pulse controlled search, still-frame, remote pause. Price: £550.00 (plus VAT).

■ TOSHIBA

Toshiba (UK) Ltd,
Toshiba House, Frimley Road,
Frimley, Camberley, Surrey.
Tel: Camberley (0276) 62222.

V-5470B

Beta system. Playing time: 3hr. 15min. Features: visual cue/review, 7 day timer, audio dub, wired remote pause, variable playback speed control from freeze to double speed, facility for pre-setting three separate recording programmes, electronic memory tuning, picture quick select (PQS), antenna booster for improved signal, 10-position tuner. Price: on application.



Sony Betamax SL8000UB



Sony videocassettes

ELECTRONIC ORGANS AND SYNTHESISERS

continued from page 211

synchro-start, rhythm stop (foot switch), tempo, volume, tone balance, tempo light. Auto arpeggio section (lower): voice selectors: flute, orchestra; mode selectors: up/turn, regular/random, synchro/free; octave selector, beat selector, tempo control, foot switch stop, tempo light, stop light. Other controls and fittings: master volume, upper and lower Flute volume, pedal bass volume, pedal dynamic range control piston, solo dynamic range control piston, expression/effect pedal, knee lever, pitch control, power switch and pilot light, headphone jack, expression in jack, aux. in/out jacks, ex. reverb jacks, tone cabinet sockets, panel/pedal lights and switch, music rest, matching bench. Output: 195W. Dimensions: 155 x 121 x 114cm. Finish: FRP Urethane. Price: on application.

STOP PRESS

The following information was received after the main body of the book was passed for press.

■ ASC

Audio Systems Components Ltd,
32 Crown Lane,
Theale, Berks.
Tel: 0734 302108.

ASC 6002 Open-reel Tape Recorder

Speeds: 38, 19, 9.5 cm/s. Full logic control, built-in head monitoring, NAB/IEC replay, mike mixing and line inputs, echo, switchable sound-on-sound. Other details not yet available. Price: £599.00 (plus VAT).

■ AUDAN

Audan Audio Ltd,
18B Mill Trading Estate,
Acton Lane, London NW10 7NP.
Tel: 01-961 4300.

Audan 8

Double Cavity vented enclosure with single 203mm drive unit. FR: 90Hz-16kHz \pm 5dB on Axis. Impedance: 150 ohms. Power handling: 15W. Dimensions: 31.2 x 25.7 x 44.8cm. Finish: teak, walnut, mahogany, oak veneer. Price per pair: £199.00 (inc. VAT).

Audan 2

Treble Cavity vented enclosure with single 203mm drive unit. FR: 40Hz-16kHz \pm 5dB on Axis. Impedance: 150 ohms. Power handling: 15W. Dimensions: 49.5 x 38.1 x 91.4cm. Finish: teak, walnut, mahogany, oak veneer. Price per pair: £125.00 (inc. VAT).

Audan 3

Treble Cavity vented enclosure with single 203mm drive unit. FR: 50Hz-16kHz \pm 5dB on Axis. Impedance: 15 ohms. Power handling: 15W. Dimensions: 43.2 x 38.1 x 67.9cm. Finish: teak, walnut, mahogany, oak veneer. Price per pair: £328.00 (inc. VAT).

Audan 7

Double Cavity vented enclosure with single 203mm drive unit. FR: 70Hz-16kHz \pm 5dB on Axis. Impedance: 15 ohms. Power handling: 15W. Dimensions: 31.7 x 26 x 54.6cm. Finish: teak, walnut, mahogany, oak veneer. Price per pair: £208.00 (inc. VAT).

■ D. W. LABS

D. W. Labs Ltd,
88-90 Grays Inn Road,
London WC1X 8AA.
Tel: 01-404 5140.

Gale GS401A Loudspeaker

Infinite baffle enclosure consisting of 2 bass drivers, mid range and tweeter. Crossovers: 475 and 5,000Hz. FR: 55Hz-20kHz. Output: 40-200W. Impedance: 4-8 ohms. Fuse protected, balance controls for mid band and treble. Compact speaker designed for use as bookshelf unit or can be placed on Gale speaker stands. Dimensions: 33 x 27 x 60.5cm. Seven year guarantee. Finish: matt black and chrome. Features: matching chrome stands £60.00 per pair. Price per pair: £245.00 (inc. VAT).

Gale GS401C

As above with walnut cabinet. Matching black stand £50.00 per pair. Price per pair: £225.00 (inc. VAT).

■ DENON

Eumig (UK) Ltd,
14 Priestley Way,
London NW2 7TN.
Tel: 01-450 8070.

DX Metal Tapes

Metal cassette tape with wide dynamic range. Denon claim excellent frequency characteristics at high recording levels, due to good linearity over entire frequency range, produced by high magnetic force. Stable and smooth magnetic coating with low drop-out by new binder system. High precision cassette shells and matrix sheets.

■ LENNARD

Lennard Developments Ltd,
206 Chase Side,
Enfield, Middlesex EN2 0QX.
Tel: 01-363 8238.

Record Accessories

Stylus timers, stylus cleaners, antistatic cleaning pads, antistatic fluid, dusters, record care kits, record cleaners, cleaning arms, conductive fibre record brush, carbon fibre record cleaning arms, Hi-Fi care compendium, record sleeves, carrying cases.

Styli

Micro-diamond, micro-sapphire. Most comprehensive range of replacement styli including many Japanese types. Micro-diamond re-tipping service.

Tape Heads

From Woelke Magnetbandtechnik, Germany: cassette heads, $\frac{1}{4}$ in. studio heads, $\frac{1}{2}$ -3in. studio heads, film heads, mini-cassette heads.

■ MITSUBISHI

Mitsubishi Electric (UK) Ltd,
Otterspool Way, Watford, Herts WD2 8LD.
Tel: Watford 40566.

MC8000 Music Centre

Vertical format music centre with amplifier output 2 x 20W into 8 ohms. THD: 0.5%. Automatic loudness compensation. Facilities for mic mixing and additional speakers. Belt drive record deck with straight pipe tonearm fitted with AT-71 cartridge. Fully automatic with manual over-ride. Records are placed on a vertical platter and held in position by a spring loaded clamp. Cassette section will take metal tape. FR: 30Hz-16kHz. S/N ratio: 52dB with Dolby in. Radio tuner provides FM, L, M. LED tuning indication, six preset FM stations. Finish: brushed aluminium. Dimensions: 50.5 x 64 x 29cm. Speakers: two two-way SS 08. Approx. retail price: £411.00 (inc. VAT). Optional extras include floor standing walnut finish cabinet, smoked glass doors, storage space for accessories, cassettes and discs. Price: approx. £55.00 (inc. VAT).

■ PIONEER

Pioneer High Fidelity (GB) Ltd,
Pioneer House,
The Ridgeway,
Iver, Bucks SL0 9JL.
Tel: Iver (0753) 652222/7.

PC135 Stereo Cartridge

Stereo cartridge with 0.5 mil weld type diamond stylus. Playing weight: 2.3g. Compliance: 10×10^{-6} cm/dyne. FR: 10Hz-25kHz. Output: 3mV. Recommended load: 50K.

PC150 Stereo Cartridge

Stereo cartridge with 0.5 mil weld type diamond stylus. Playing weight: 2.2g. Compliance: 8.5×10^{-6} cm/dyne. FR: 10Hz-25kHz. Output: 2.5mV. Recommended load: 47K.

PC-110-II

Moving magnet cartridge. Playing weight: 2.2g. Compliance: 8.5×10^{-6} cm/dyne at 100Hz. FR: 15Hz-25kHz. Output: 3.5mV. Recommended load: 47K. Features: ABS resin frame, super permalloy shield case.

■ VOLT LOUDSPEAKERS LTD

88-90 Grays Inn Road,
London WC1X 8AA.
Tel: 01-404 5140.

B220 Speaker Drive Unit

Ultra linear dual-suspension, high power 8in. bass unit. Nominal impedance: 4, 8, or 16 ohms. FR: 30Hz-2kHz. Power handling: 75W RMS.

Change of Address:

Ariston Acoustics Ltd—moving to: Unit 176, Brieryside, Prestwick Airport, Prestwick, Ayrshire KA29 2RB. Tel: 0292 76933/4.

Sharp Electronics (UK) Ltd moved to: Sharp House, Thorp Road, Manchester M10 9BE. Tel: 061-205 2333.

Klark-Teknik Research Ltd moved to: Walter Nash Road West, Kidderminster, Worcs. Tel: 0562 741515.

Nightingale moved to: School Road, Bracon Ash, Norwich NR14 8HG. Tel: 0508 70829.

Additional Address:

Lennard Developments Ltd, 206 Chase Side, Enfield, Middlesex EN2 0QX. Tel: 01-363 8238.

Directory of Brand Names

Where the brand is the same as the name of the supplier please refer to the Directory of Manufacturers and Suppliers.

- A**
ACOUSTAT. Transonic Imports (Acoustical) Ltd.
ACUTEX. Natural Sound Systems.
ADC. BSR Ltd.
ALBERT HESMER. Leesanne Overseas.
ALLISON. Audio Pro (Hi-Fi) Ltd.
APPOLLO. Amilplan Co Ltd.
AR. Teledyne Acoustic Research.
A & R. Amplification and Recording (Cambridge) Ltd.
ARC. Audio Reproduction Company.
ARISTON ROLLS. Ariston Acoustics Ltd.
ARNOLD. Janorhurst Ltd.
ASA. Asaradio Television.
ATARI. Ingersoll Electronics.
ATC. Acoustic Transducer Co Ltd.
AUDIO LINEAR. Wilmex Ltd.
AUDIOLOGIC. Network Marketing Ltd.
AUDIO PACKS. Tape Recorder Spares Ltd.
AVF. Audio & Vision Furniture.
- B**
BEOCENTER. Bang & Olufsen (UK) Ltd.
BEOCORD. Bang & Olufsen (UK) Ltd.
BEOGRAM. Bang & Olufsen (UK) Ltd.
BEOMASTER. Bang & Olufsen (UK) Ltd.
BEOVISION. Bang & Olufsen (UK) Ltd.
BEOVOX. Bang & Olufsen (UK) Ltd.
B.I.C. Cambridge Audio Ltd.
B.I.C./AVNET. Cambridge Audio Ltd.
BUSH. Rank Radio International.
- C**
CAVENDISH. Boosey & Hawkes (Electronics) Ltd.
CELESTION. Rola Celestion Ltd.
CHARTWELL. Swisstone Electronics Ltd.
CHEKITS. Chromasonic Electronics.
CORAL. Videotone Ltd.
CROWN. Sulkin UK Ltd.
- D**
DENON. Eumig (UK) Ltd.
DISC-A-VAC. Janorhurst Ltd.
DUAL. Hayden Laboratories Ltd.
DYNAVECTOR. Condor Electronics Ltd.
- E**
EKO. John Hornby Skewes & Co. Ltd.
ELAC. Paul Spring Electronics Ltd.
ELECTROLUBE. QED Audio Products Ltd.
ELECTROPHONIC ORGANS. Cape Electrophonics Ltd.
ELGAM. J. T. Coppock (Leeds) Ltd.
EMPEROR. MMG Associates.
EMPIRE SCIENTIFIC. Hayden Laboratories Ltd.
ENCORE. Artifact Designs Ltd.
ESOTERIC. Marantz Audio UK Ltd.
EXATOR. Audio Workshops Ltd.
- F**
FAITAL. Armon Products Ltd.
FERGUSON. Thorn Consumer Electronics.
FERROGRAPH. North East Audio.
- FIDELITY RESEARCH. Wilmex Ltd.
FUBA. Audio Workshops Ltd.
FUJI. Pysier Ltd.
- G**
GALE, D. W. Labs Ltd.
GRADO. Transonic Imports (Acoustical) Ltd.
GRANDSTAND. Adam Imports Ltd.
GROOVAC. R. I. Audio.
- H**
HAFLE. Howland-West.
HARKSOUND. Uher Sales & Services Ltd.
HARMAN/KARDON. Harman UK.
HARRISON-CHAPMAN. Gimar Ltd.
HEYBROOK. Mecom Acoustics.
HMV. Intersound Electronics Ltd.
- I**
IAS. Integrated Audio Systems.
INTAGLIO. SKS Products.
ISOPHON/WERKE. Hayden Laboratories Ltd.
- J**
JBE. Janorhurst Group.
JBL. Harman UK.
- K**
KERACOLOR. Group Systems (Keracolor) Ltd.
KOSS. Tape Music Distributors Ltd.
- L**
LOEWE. Paul Spring Electronics Ltd.
LOWREY ORGANS. Norlin Music (UK) Ltd.
LUVAN. A. Mears & Co Ltd.
LUX. Howland-West.
LUXMAN. Howland-West.
LYRICHORD. N. Miers & Co Ltd.
- M**
MAGNETIC RESEARCH LABORATORY. F. W. O. Bauch.
MATRIX. Acoustic Fidelity Speakers.
MAXELL. Natural Sound Systems.
McLAREN. GR International Electronics Ltd.
MELODIUM. Amdio Ltd.
MERIDIAN. Boothroyd Stuart Ltd.
METROCARE. Cambrosound Ltd.
METROSOUND. Cambrosound Ltd.
METZ. Paul Spring Electronics Ltd.
MICRO-ACOUSTICS. Welsland Int.
MICRO-SEIKI. Harman UK.
MINIMIXER. Allen & Heath Ltd.
MOTOROLA. Pulsar Developments Ltd.
MURPHY. Rank Radio International.
MUSONIC. S & B Trading.
- N**
NAGRA. Hayden Laboratories Ltd.
NAKAMICHI. Natural Sound Systems Ltd.
NAMCO. Shadow Audio.
- NEAL. North East Audio Ltd.
NEAL-FERROGRAPH. North East Audio Ltd.
NEUMANN Gmb.H F. W. O. Bauch Ltd.
NION. Roy Martin Freeman (RTB) Ltd.
- O**
OPTONICA. Sharp Electronics (UK) Ltd.
ORTOFON. Harman UK.
- P**
PANASONIC. National Panasonic (UK) Ltd.
PASO. Amdio Ltd.
PEERLESS. Ross Electronics.
PICKERING. Sound Source.
PIEZO. Pulsar Developments Ltd.
PIONEER. Shrirro (UK) Ltd.
PLUSTRON. Plustronics Ltd.
- Q**
QAS. Quality Audio Supplies.
QUAD. Acoustical Manufacturing Co Ltd.
- R**
RED PROFESSIONAL. Red Acoustics.
REVOX. F. W. O. Bauch Ltd.
ROGERS. Swisstone Electronics Ltd.
- S**
SAE TWO. Cambridge Audio Ltd.
SATIN. Osawa Ltd.
SCHNEIDER. Wren Electronics Ltd.
SCOTCH. 3M United Kingdom Ltd.
SCOTT. Clement Electronics Ltd.
SEAC. Zeepa Instruments Ltd.
SEAS. Radio Components Ltd.
SENNHEISER. Hayden Laboratories Ltd.
SEOUM. Videotone Ltd.
SHAPE. Bandridge Ltd of London.
SIGNET. Audio Technica Ltd.
SITCO. R. Sitlani & Co Ltd.
SONOTONE. Vernitron Ltd.
SONUS. C. E. Hammond & Co Ltd.
SOUNDS PROFESSIONAL. F. W. O. Bauch Ltd.
STANTON. Wilmex Ltd.
STAX. Wilmex Ltd.
STD. C. W. & J. Walker Ltd.
STUDIOCRAFT. Bose (UK) Ltd.
SUPEREX. Goldring Product Ltd.
SUPERSCOPE. Marantz Audio UK Ltd.
SUPERSPORT. Bruce Kaberry Marketing Ltd.
SYNCHROTAPE. Adastra Electronics Ltd.
- T**
TANTRAK. Tantrak Ltd.
TAPLEY. Beaver and Tapley Ltd.
TEAC. Harmon UK.
TECHNICS. National Panasonic (UK) Ltd.
TENOREL. Condor Electronics.
TENSAL. Wren Electronics Ltd.
THORENS. Cambrosound Ltd.
TRIO. B. H. Morris & Co (Radio) Ltd.
TRISTAN. Danil Engineering Co.

continued on page 250

Directory of Makers and Suppliers

A

Acoustical Manufacturing Co Ltd.
St. Peters Road,
Huntingdon PE18 7DB.
Tel: Huntingdon (0480) 52561.

Acoustic Fidelity Speakers,
The Oaks, Tysea Hill,
Stapleford Abbots, Essex.
Tel: Ingrebourne (45) 45329.

Acoustic Transducer Co Ltd,
Worton Hall Estate,
Isleworth, Middlesex TW76ER.
Tel: 01-568 6633.

Action Video Ltd,
45 Great Marlborough Street,
London W1V 1DB.
Tel: 01-734 6942.

Adam Imports Ltd,
Unit 2a, Ripon Road Industrial Estate,
Harrogate, North Yorkshire.
Tel: Harrogate (0423) 501151.

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road,
London NW2 1TU.
Tel: 01-452 6288/9.

AEG-Telefunken (UK) Ltd,
217 Bath Road,
Slough, Bucks SL1 4AW.
Tel: Slough (2) 872101.

Aerialite Aerials Ltd,
Whitegate, Broadway,
Chadderton, Oldham,
Lancs OL9 0QE.
Tel: 061-656 1111.

Agfa-Gevaert Ltd,
27 Great West Road,
Brentford, Middlesex.
Tel: 01-560 2131.

Aiwa Sales & Service (UK) Ltd,
Aiwa House, 30-32 Concord Road,
Westwood Park Trading Estate,
London W3 0TH.
Tel: 01-993 1672.

Akai (UK) Ltd,
Video: 12 Silver Jubilee Way,
Headrow Estate, Hounslow,
Middlesex TW4 6NF.

Akai (UK) Ltd,
82-106 Cricklewood Lane,
London NW22 2DP.
Tel: 01-450 2011.

AKG Acoustics Ltd,
191 The Vale,
London W3 7QS.
Tel: 01-749 2042.

Alba Electronics Ltd,
Bull Lane,
London N18 1SD.
Tel: 01-803 4451.

Richard Allan Radio Ltd,
Bradford Road,
Gomersal, Cleckheaton,
West Yorkshire BD19 4AZ.
Tel: Cleckheaton (0274) 872442.

Allen and Heath Ltd,
Pembroke House,
Campbourne Road,
London N8.
Tel: 01-340 3291.

Amdio Ltd,
26 Reading Road South,
Fleet, Aldershot,
Hampshire.
Tel: Fleet (025 14) 20567.

Amilplan Co Ltd,
Fort Works, Pelham Street,
Wolverhampton WV3 0DE.
Tel: (0902) 773531.

Amos of Exeter Ltd,
Wiercliffe Court,
Exwick, Exeter EX4 2AG.
Tel: Exeter (0392) 72132.

Ampex Great Britain Ltd,
Acre Road, Reading,
Berkshire RG2 0QR.
Tel: Reading (0734) 85200.

Amplification and Recording (Cambridge),
French's Mill, French's Road,
Cambridge CB4 3NP.
Tel: Cambridge (0223) 34507.

Amstrad Consumer Electronics Ltd,
1-7 Garman Road,
London N17 0UF.
Tel: 01-801 4431.

Antiference Ltd,
Bicester Road,
Aylesbury, Bucks HP19 3BJ.
Tel: Aylesbury (0296) 82511.

Ariston Acoustics Ltd,
Unit 176, Brieryside,
Prestwick Airport,
Monkton, Ayrshire.

Armon Products Ltd,
Cottrell House,
53-63 Wembley Hill Road,
Wembley, Middlesex HA9 8HH.
Tel: 01-902 4321/3.

Armstrong Audio Ltd,
Warlters Road,
London N6 0RZ.
Tel: 01-607 3213.

Artifact Designs Ltd,
35 Queen Street,
Henley-on-Thames, Oxon RG9 1AR.
Tel: Henley (049 12) 6037/8.

Asaradio Television,
4 Victoria Street,
Bristol, Avon BS1 6BN.
Tel: Bristol (0272) 25266.

Audiokits,
6 Mill Close,
Borrowash, Derby.

Audio Magnetics Incorporated (UK) Ltd,
121 Loverock Road,
Reading, Berks RG3 1J2.
Tel: Reading (0734) 598036.

Audio Pro (Hi-Fi) Ltd,
Brook House, Crewe Road, Wheelock,
Sandbach, Cheshire CW11 9HT.
Tel: Sandbach (093 67) 7520.

Audio Reproduction Company Ltd,
Horton House, 2 Urmston Lane,
Stretford, Manchester M32 9BP.
Tel: 061-865 6494.

Audio-Technica Ltd,
Unit 6, Hunslet Trading Estate,
Low Road, Hunslet,
Leeds LS10 1BL.
Tel: Leeds (0532) 771441.

Audio & Vision Furniture Ltd,
Dixon Street,
Wolverhampton, Staffs WV2 2BX.
Tel: Wolverhampton (0902) 53464.

Audio Workshops Ltd,
Draper Street,
Tunbridge Wells, Kent TN4 0PB.
Tel: Tunbridge Wells (0892) 39222.

B

Badger Sound Services Ltd,
46 Wood Street,
Lytham St. Annes, Lancs FY8 1QG.
Tel: St. Annes (0253) 729247.

Baker Loudspeakers Ltd,
337 Whitehorse Road,
Croydon, Surrey.
Tel: 01-684 1665.

Baldwin Piano & Organ Co,
Rainham Road South,
Dagenham, Essex.
Tel: 01-595 1212.

Bandridge Ltd of London,
1 York Road,
London SW19 8TP.
Tel: 01-543 3633.

Bang & Olufsen (UK) Ltd,
Eastbrook Road,
Gloucester GL4 7DE.
Tel: Gloucester (0452) 21591.

BASF United Kingdom Ltd,
Audio/Video Tape Division,
4-5 Fitzroy Square,
London W1P 5AH.
Tel: 01-388 4200.

F. W. O. Bauch Ltd,
49 Theobald Street,
Borehamwood, Herts WD6 4RZ.
Tel: 01-953 0091.

Beaver and Tapley Ltd,
Scotts Road,
Southall, Middlesex UB2 5JD.
Tel: 01-574 4311.

Beyer Dynamic (GB) Ltd,
1 Clair Road,
Haywards Heath, Sussex.
Tel: Haywards Heath (0444) 51003.

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood End Lane,
Hemel Hempstead, Herts HP2 4RH.
Tel: Hemel Hempstead (0442) 61291.

Boosey & Hawkes (Electronics) Ltd,
Brick Knowle Park, Ashley Road,
St. Albans, Herts AL1 5PP.
Tel: St. Albans 60191.

Boothroyd Stuart Ltd,
13 Clifton Road,
Huntingdon, Cambs PE18 7EJ.
Tel: Huntingdon (0480) 57339.

Bose (UK) Ltd,
Trinity Trading Estate,
Milton Regis, Sittingbourne,
Kent ME10 2PD.
Tel: Sittingbourne (0795) 75341/2.

Bruce Kaberry Marketing Ltd,
43 Broomfield, Leeds LS16 6AE.
Tel: Leeds (0532) 67618.

BSR Ltd,
Powke Lane, Cradley Heath,
Warley, W. Midlands B64 5QH.
Tel: Cradley Heath (0384) 65191.

B & W Loudspeakers
Meadow Road,
Worthing BN11 2RX.
Tel: Worthing (0903) 205303.

C

Cambra International Ltd,
4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

Cambrasound Ltd,
4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

Cambridge Audio Ltd,
105-109 Oyster Lane,
Byfleet, Surrey KT14 7JH.
Tel: Byfleet S1051.

Camford Productions,
4 Cambridge Drive, Eastcote,
Ruislip, Middlesex HA4 9JS.
Tel: 01-866 3790.

Cape Electrophonics Ltd,
56 Bedford Place,
Southampton.
Tel: Southampton (0703) 21265.

Castle Acoustics Ltd,
Park Mill, Short bank Road, Skipton,
North Yorkshire.
Tel: Skipton (0756) 5333.

Catronics Ltd,
Communications House,
20 Wallington Square,
Wallington, Surrey.
Tel: 01-669 6700.

Ceol Products Ltd,
Swanville Place,
Rathmines, Dublin 6.
Tel: Dublin (0001) 808276.

Chromosomic Electronics
56 Fortis Green Road,
Muswell Hill, London N10 3HN.
Tel: 01-883 3705.

Clark Speakers,
122 Hull Road, Anlaby,
North Humberside HU10 6UV.
Tel: Hull (0482) 656706.

Clement Electronics Ltd,
Unit 8, Road 3,
Winsford Industrial Trading Estate,
Winsford, Cheshire.
Tel: Winsford (06065) 57131.

Coles Electroacoustics Ltd,
Pindar Road, Hoddesdon EN11 0B2.
Tel: Hoddesdon 66685/60060.

Computer Games Ltd,
Spectrum House,
48 Cambridge Road,
Barking, Essex.
Tel: 01-591 5654.

Condor Electronics Ltd,
Woodman Works,
204 Durnsford Road,
Wimbledon Park, London SW19.
Tel: 01-947 9511.

Court Acoustics Ltd,
35-39 Britannia Row,
London N1 8QH.
Tel: 01-359 0956.

Crimson Elektrik,
1a Stamford Street,
Leicester LE1 6NL.
Tel: Leicester (0533) 553508.

D

Dacoll Games Ltd,
Dacoll House,
Bathgate, West Lothian.
Tel: Bathgate (0506) 56565.

Danil Engineering Co,
Old Teme Bridge, Lower Wick,
Worcester WRS 4BY.
Tel: Worcester (0905) 425595.

Decca Record Co Ltd,
Decca House, Albert Embankment,
London SE1 7SW.

DSC (Consumer Products) Ltd,
Colwyn Bay, North Wales LL8 5HD.
Tel: 0492 40202/3.

Doric Radio Ltd,
Rediffusion Group of Companies,
Fullers Way South,
Chessington, Surrey.
Tel: 01-397 5411.

Dorking Audio Systems Ltd,
23 South Street,
Dorking, Surrey.
Tel: Dorking (0306) 882897.

Dynatron Radio Ltd,
Ditton Walk,
Cambridge CB5 8QD.
Tel: Teversham (02205) 2781.

E

Eagle International,
Precision Centre,
Heather Park Drive,
Wembley HA0 1SU.
Tel: 01-902 8832

Elite Electronics Ltd,
33 Station Avenue,
Walton-on-Thames, Surrey KT12 1NF.
Tel: (09322) 46850.

Elka-Orla (UK) Ltd,
2-3 Bluebridge Industrial Estate,
Halstead, Essex CO9 2EX.
Tel: Halstead (07874) 5325.

E.M.I. Tape Ltd,
Tape House, Dawley Road,
Hayes, Middlesex.
Tel: 01-573 3888.

Eumig (UK),
14 Priestley Way,
London NW2 7TN.
Tel: 01-450 8070.

Expert Pickups Ltd,
PO Box 3, Ashtead,
Surrey.
Tel: Ashtead 76604.

Exposure Electronics,
Richardson Road,
Hove, Sussex.
Tel: Brighton (0273) 777912.

F

Fidelity Radio Ltd,
Victoria Road, Willesden,
London NW10 6ND.
Tel: 01-965 8771.

Roy Martin Freemans (RTB) Ltd,
141a London Road, Camberley,
Surrey GU15 3JY.
Tel: Camberley (0276) 20572.

G

Gale Electronics,
23 Burton Place,
London W1.
Tel: 01-499 9966.

Gardeners Transformers Ltd,
Christchurch,
Dorset BH23 3PN.
Tel: Christchurch (0202) 482284.

Garrard Engineering Ltd,
Factory 103,
Cheney Manor Industrial Estate,
Swindon, Wilts.
Tel: Swindon (0793) 35381.

GEC (Radio and Television) Ltd,
Langley Park, Slough,
Bucks SL3 6DP.
Tel: Slough 22201.

Goldring Products Ltd,
Anglian Lane,
Bury St. Edmunds,
Suffolk IP32 6SS.
Tel: Bury St. Edmunds (0284) 64011.

Goodmans Loudspeakers Ltd,
Downley Road,
Havant, Hants PO9 2NL.
Tel: Havant (0705) 486344.

GR International Electronics Ltd,
Inveralmond Industrial Estate,
Perth, Tayside.
Tel: Perth (0738) 34771.

Grant Lumley Audio,
Unit C, Paulagrove Industrial Estate,
Southampton Road,
Cosham, Hants.
Tel: Cosham (07018) 89923.

H. K. Griffin & Co (Electronics),
Siddons Factory Estate,
Howard Street, West Bromwich,
West Midlands B70 0S4.
Tel: 021-556 6823.

Group Systems (Keracolor) Ltd,
59a Middlewich Road,
Northwich, Cheshire.
Tel: Northwich (0606) 6762.

Grundig International Ltd,
Newlands Park,
London SE23 5NQ.
Tel: 01-659 2468.

Guildford Hi-Fi,
270 High Street,
Guildford, Surrey.
Tel: Guildford (0483) 71534.

H

G.K.C. Hadcock,
Audio Division, The Old Vicarage,
Doveridge, Derby DE6 5NN.
Tel: Uttoxeter (08893) 2452.

Hammond Organ (UK) Ltd,
19 Denbigh Hall, Bletchley,
Milton Keynes, Bucks MK3 7QT.

Harbeth Acoustics,
2a Nova Road, West Croydon,
Surrey CR0 2TL.
Tel: 01-681 7876.

Harman UK,
St. John's Road, Tyler's Green,
High Wycombe, Bucks.
Tel: 049-481 5331.

Harrison-Chapman,
95 Gray's Inn Road,
London WC1X 8TX.
Tel: 01-405 9665.

Hayden Laboratories Ltd,
Churchfield Road, Chalfont St. Peter,
Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

Hitachi Sales (UK) Ltd,
Hitachi House, Station Road,
Hayes, Middlesex UB3 4DR.
Tel: 01-848 8787.

Hohner International,
39-45 Coldharbour Lane,
London SE5 9NR.
Tel: 01-733 4411.

Holder Pearce Ltd,
66 Grove Road,
Eastbourne, Sussex BN21 4UH.
Tel: Eastbourne (0323) 26565.

Howland West Ltd,
3-5 Eden Grove,
London N7 8EQ.
Tel: 01-609 0293/5.

I

IMF Electronics Ltd,
Westbourne Street,
High Wycombe, Bucks.
Tel: High Wycombe (0494) 35576.

Ingersoll Electronics,
202 New North Road,
London N1 7BL.
Tel: 01-226 1200.

Integrated Audio Systems,
18 High Road,
Swaythling, Southampton.
Tel: Southampton (0703) 553473.

Integrex Ltd,
Portwood Industrial Estate,
Church Gresley, Burton-on-Trent,
Staffs DE11 9PT.
Tel: Burton-on-Trent (0283 21) 5432.

Intersound Electronics Ltd,
Victoria Road,
London NW10 6ND.
Tel: 01-965 6834.

ITT Consumer Products (UK) Ltd,
Chester Hall Lane,
Basildon, Essex SS14 3BW.
Tel: Basildon (0268) 3040.

J

Janorhurst Ltd,
Century House, Shortmead Street,
Biggleswade, Beds.
Tel: Biggleswade (0767) 314252.

Jaybeam Ltd,
Sandfield Close,
Moulton Park Industrial Estate,
Northampton NN3 1QQ.
Tel: Northampton (0604) 46611.

Jensen Brothers (Furniture) Ltd,
Hillside Works, Livesey Fold,
Darwen, Lancs BB3 1QG.
Tel: Darwen (0254) 772837.

E. J. Jordan Ltd,
Stonyway, Bovingdon Green,
Marlow-on-Thames, Bucks SL7 2JH.
Tel: Marlow (062 84) 2526.

Jordan Watts Ltd,
Benbow Works, Silverdale Road,
Hayes, Middlesex UB3 3BW.
Tel: 01-573 6928.

JPW Loudspeakers Ltd,
PO Box 31,
Plymouth, Devon PL1 1YH.
Tel: Yelverton (082 285) 4374.

JR Loudspeakers Ltd,
114 Ashley Road,
St. Albans, Herts.
Tel: St. Albans 64337.

JVC (UK) Ltd,
Eldonwell Trading Estate,
Staples Corner, 6-8 Priestly Way,
London NW2 7AF.
Tel: 01-450 2621.

K

Kef Electronics Ltd,
Eccleston Road, Tovil,
Maidstone, Kent ME15 6QP.
Tel: Maidstone (0662) 672261.

Kemble (Organ Sales) Ltd,
Mount Avenue, Bletchley,
Milton Keynes, Bucks MK1 1JE.
Tel: Milton Keynes (0908) 71771.

Klark-Teknik Research Ltd,
Walter Nash Road West,
Kidderminster, Worcs DY11 7HJ.
Tel: Kidderminster (0562) 741515.

Knowin (UK) Ltd,
Knowin House,
37 Churchill Way,
Fleckney, Leics LE8 0UD.
Tel: Leicester (0533) 403331.

L

Leda Audio Accessories Ltd,
16 Tewin Court,
Welwyn Garden City,
Herts AL7 1AU.
Tel: Welwyn Garden 27666.

Leesanne Overseas,
54 Mortimer Street,
Herne Bay, Kent.
Tel: Herne Bay (022 73) 67363.

Legend Electronics Ltd,
25 East Street,
Bromley, Kent BR1 1QE.
Tel: 01-460 3313.

Lentek Audio Ltd,
Edison Road Industrial Estate,
St. Ives, Cambs PE17 4LF.
Tel: St. Ives (0480) 62225.

L.N.B. Audio Ltd,
Duke Street,
Loughborough, Leics.
Tel: Loughborough (0509) 61229.

Lynwood Electronics,
20 Stourcliffe Avenue,
Bournemouth,
Dorset BH6 3PT.
Tel: Bournemouth (0202) 426299.

M

Maplin Electronic Supplies Ltd,
284 London Road,
Westcliffe-on-Sea, Essex.
Tel: 0702 554155.

Marantz Audio (UK) Ltd,
Debmarc House,
193 London Road,
Staines, Middlesex.
Tel: Staines 50132.

Maxview Aerials Ltd,
Setch,
King's Lynn, Norfolk.
Tel: King's Lynn (0553) 810591/810376.

Mayware Ltd,
PO Box 58,
Edgware, Middlesex HA8 9UH.
Tel: 01-958 9421.

A. Mears & Co Ltd,
40c Queen Street,
Hitchin, Herts.
Tel: Hitchin (0462) 2468.

Mecom Acoustics Ltd,
Knighton Hill, Wembury,
Plymouth, Devon.
Tel: (0752) 863188.

Memorex (UK) Ltd,
Memorex House,
96 Church Street,
Staines, Middlesex.
Tel: Staines 51488.

N. Miers & Co Ltd,
28 Piercing Hill,
Theydon Bois, Epping,
Essex CM16 7LE.
Tel: 037-881 2611.

Mission Electronics Ltd,
PO Box 65,
London SW7 1PP.
Tel: 01-589 0048.

Mitsubishi Electric (UK) Ltd,
Otterspool Way,
Watford, Herts WD2 8LD.
Tel: Watford 40568.

M.M.G. Associates,
19 St. Andrews Road,
Great Malvern, Worcs WR14 3PR.
Tel: Great Malvern (068 45) 63555.

Monitor Audio Ltd,
347 Cherry Hinton Road,
Cambridge (0223) 42898.

Keith Monks (Audio) Ltd,
26-28 Reading Road South,
Fleet, Aldershot, Hants.
Tel: Fleet (02514) 20568/20569.

Monogram Professional Audio,
281 Balmoral Drive,
Hayes, Middlesex.
Tel: 01-573 1566.

Mordaunt Short Ltd,
Durford Mill,
Petersfield, Hants GU31 5AZ.
Tel: Rogate (073 080) 721/2.

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

Mustang Communications,
Nelson Street, Scarborough,
North Yorks YO12 7SZ.
Tel: Scarborough (0723) 63298.

N

Naim Audio Ltd,
Southampton Road,
Salisbury, Wilts SP1 2LN.
Tel: Salisbury (0722) 3746.

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough, Berks SL1 3DR.
Tel: Slough 34522.

Natural Sound Systems Ltd,
10 Byron Road, Wealdstone,
Harrow, Middlesex HA3 7TL.
Tel: 01-863 8622.

Network Marketing Ltd,
29-45 High Street,
Edgware, Middlesex HA8 7HH.
Tel: 01-952 6225/6.

Nightingale Acoustics Ltd,
School Road, Bracon Ash,
Norwich, Norfolk.

Normende (UK) Ltd,
Normende House, Rickfords Hill,
Aylesbury, Bucks HP20 2RT.
Tel: Aylesbury (0296) 20501.

Norlin Music (UK) Ltd,
114 Charing Cross Road,
London WC2 0JS.
Tel: 01-379 6400.

North East Audio Ltd,
Simonside Works,
South Shields,
Tyne and Wear NE34 4NX.
Tel: South Shields (0632) 566321.

O

Omar Skinner and Sons,
Warfield Park Workshops,
Warfield Park, Bracknell,
Berks RG1 6RG.
Tel: Bracknell (0344) 2207.

Osawa and Co (UK) Ltd,
10 Forge Court, Reading Road,
Yateley, Camberley, Surrey GU17 7RX.
Tel: Yateley (0252) 87912.

Osmabet Ltd,
46 Kenilworth Road,
Edgware, Middlesex HA8 8YG.
Tel: 01-958 9314.

P

Pageantry Radio & TV Co Ltd,
104 Felsham Road, Putney,
London SW15 1DQ.
Tel: 01-788 5588.

Period High Fidelity Ltd,
Clivemont Road,
Cordwallis Trading Estate,
Maidenhead, Berks.
Tel: Maidenhead (0628) 21221.

Philips Electrical Ltd,
City House, 420-430 London Road,
Croydon, Surrey CR9 3QR.
Tel: 01-689 2166.

Video Division,
19 Commerce Way,
Purley Way, Croydon, Surrey.
Tel: 01-688 7766.
Service,
604 Purley Way,
Waddon, Croydon, Surrey CR9 4DR.
Tel: 01-688 0505.

Pioneer High Fidelity (GB) Ltd,
Pioneer House, The Ridgeway,
Iver, Bucks SL0 9JL.
Tel: Iver (0753) 652222.

Plustronics Ltd,
Hempstalls Lane,
Newcastle, Staffs ST5 0SW.
Tel: Newcastle (0782) 615131.

Portwood Furniture Ltd,
Mersey Street, Stockport,
Cheshire SK1 2JA.
Tel: 061-480 2428.

Powerton Electronics,
Portway Industrial Estate,
Andover, Hants SP10 3NN.

Premier Industries Ltd,
343-345 High Street,
Cheltenham, Glos GL50 3HS.
Tel: Cheltenham (0242) 511511.

Pulsar Developments Ltd,
Spracklen House, Dukes Place,
Marlow, Bucks SL7 2QH.
Tel: Marlow (062 84) 73555.

Pye Business Communications Ltd,
Cromwell Road,
Cambridge CB1 3HE.
Tel: Cambridge (0223) 45191.

Pye Ltd,
137 Ditton Walk,
Cambridge CB5 8QD.
Tel: Teversham (022 05) 2781.

Pyser Ltd,
Fircroft Way, Edenbridge,
Kent TN8 6HA.
Tel: Edenbridge (0732) 864111.

Q

Quadramail Ltd,
5 Fellows Road,
London NW3.
Tel: 01-222 4009.

Quality Audio Supplies,
Wollaton Road, Beeston,
Notts RG9 2PB.
Tel: Nottingham (0602) 256141.

Quantum Electronics,
8 Albion Street,
Leicester.

QED Audio Products Ltd,
Unit 12, Ashford Industrial Estate,
Shield Road, Ashford, Middlesex.
Tel: Ashford (078 42) 46236.

R

Radford High Fidelity International Ltd,
4 Sommerville Road, Bristol BS7 9AA.
Tel: Bristol 40878.

Radio Components Ltd,
Hunton Bridge Works, Bridge Road,
Hunton Bridge, Watford, Herts.
Tel: Watford (0923) 68399.

Radofin Electronics (UK) Ltd,
91-93 King Street,
London W6 9HW.
Tel: 01-741 2401.

Rank Audio Visual,
PO Box, 70,
Great West Road,
Brentford, Middlesex TW8 9HR.
Tel: 01-568 9222.

Rank Hi-Fi,
Highfield Road, Idle,
Bradford, West Yorkshire.
Tel: Bradford (0274) 611131.

Rank Radio International Ltd,
PO Box 596, London W4 5PW.
Tel: 01-994 6491.

Red Acoustics,
Chelsea Wharf, 15 Lots Road,
London SW10 0QH.
Tel: 01-351 1394.

Rega Research Ltd,
Swaines Industrial Estate,
Ashingdon Road, Rochford, Essex.
Tel: Southend (0702) 546674.

R.I. Audio,
Kerrick Road, Penryn,
Cornwall TR10 9QD.
Tel: Penryn (0326) 72753.

Roberts Video Ltd,
Molesey Avenue,
West Molesey, Surrey KT8 0RL.
Tel: 01-979 7474.

Rola-Celestion Ltd,
Ditton Works, Foxhall Road,
Ipswich, Suffolk IP3 8JP.
Tel: Ipswich (0473) 73131.

Ross Electronics Ltd,
32 Rathbone Place,
London W1P 1AD.
Tel: 01-580 7112.

Rotel Hi-Fi Ltd,
2-4 Erica Road, Stacey Bushes,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 317707.

R.T.J. (Electro Mechanical) Ltd,
PO Box 67,
Barnet, Herts EN5 1LF.

S

Salora (UK) Ltd,
25a Techno Trading Estate,
Swindon, Wilts SN2 6EZ.
Tel: Swindon (0793) 46321.

Sansui Audio Europa NV,
Unit 10a, Lyon Industrial Estate,
Rockware Avenue,
Greenford, Middlesex UB6 0AA.
Tel: 01-575 1133.

Sanyo Marubeni (UK) Ltd,
Sanyo House,
8 Greycaine Road,
Watford, Herts WD2 7UQ.
Tel: Watford 46363.

S. & B. Trading,
Stylus House, 34-38 Verulam Road,
St. Albans, Herts AL3 4DF.
Tel: St. Albans 5061/2.

Selmor Engineering Industries Ltd,
24 Mulburry Street,
Tower Hamlets, London E1 1EH.
Tel: 01-247 3344.

Shadow Audio,
Lumen Road,
Royston, Herts SG8 6EL.
Tel: Royston (0763) 46631.

Sharp Electronics (UK) Ltd,
107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

Charles Sheraton Cabinets Ltd,
Charles Sheraton House,
Wellington Road, Leeds LS12 1DZ.
Tel: Leeds (0532) 793388.

Shriro (UK) Ltd,
Shriro House, The Ridgeway,
Iver, Bucks SL10 9JL.
Tel: Iver (0753) 652222/7.

Shure Electronics Ltd,
Eccleston Road,
Maidstone, Kent ME15 6AU.
Tel: Maidstone (0622) 59881.

R. Sitlani & Co Ltd,
487-489 Commercial Road,
London E10 0HA.
Tel: 01-790 8797/0326.

John Hornby Skewes & Co Ltd,
Salem House, Garforth,
Leeds, West Yorks LS25 1PX.
Tel: Leeds (0532) 865381.

SKS Products,
Cannington Farm, High Street,
Nailsea, Avon.
Tel: (0272) 857419.

SMC Loudspeakers,
76 Bedford Road,
Kempston, Beds MK42 8BB.
Tel: Bedford (0234) 854133.

SME Ltd,
Steyning, Sussex BN4 3GY.
Tel: Steyning (0903) 814321.

Solus Products,
37 Churchill Way,
Fleckney, Leics LE8 0UD.
Tel: Leicester (0533) 403332.

Sonaudax Loudspeakers Ltd,
Woodside Avenue,
Eastleigh, Hants SO5 4YD.
Tel: Southampton (0703) 611444.

Sony (UK) Ltd,
Head Office: Pyrene House,
Sunbury Crescent,
Sunbury-on-Thames, Middlesex TW16 7AT.
Tel: Sunbury 87644.

Consumer Information:
Sony Showroom,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

Sound Source,
Station Approach,
Rickmansworth, Herts.
Tel: Rickmansworth 75242.

Spendor Audio Systems Ltd,
Unit 12,
Station Road Industrial Estate,
Hailsham, Sussex BN27 2ER.
Tel: Hailsham (0323) 843474.

Paul Spring Electronics Ltd,
6 Oasthouse Way,
St. Mary Cray, Orpington, Kent.
Tel: Orpington (0689) 31341.

Stereosound Productions,
Capital Works, 12-14 Wakefield Road,
Brighouse, Yorks HD6 1PQ.
Tel: Brighouse (0484) 714355.

J. E. Sugden & Co Ltd,
Carr Street,
Cleckheaton, West Yorks BD19 5LA.
Tel: Cleckheaton (0274) 872501.

Sulkin UK Ltd,
73 Grosvenor Street,
London W1X 9DD.
Tel: 01-629 8368.

Swallow Acoustics,
The Old School, St. Anns Lane,
Godmanchester,
Huntingdon, Cambs.
Tel: Huntingdon (0480) 59910.

Swisstone Electronics Ltd,
4-14 Barmeston Road,
London SE6 3BN.
Tel: 01-697 8511.

T

Tandberg (UK) Ltd,
81 Kirkstall Road,
Leeds LS53 1HR.
Tel: Leeds (0532) 35111.

Tangent Acoustics UK Ltd,
4 Viking Way, Bar Hill,
Cambridge CB3 8EL.
Tel: Crafts Hill (0954) 81377.

Tantrak Ltd,
7 Kiln Lane, Brockham,
Betchworth, Surrey RH3 7LX.

Tape Music Distributors Ltd,
114 Ashley Road,
St. Albans, Herts AL1 5JR.
Tel: St. Albans 64337.

TDK Tape Distributor (UK) Ltd,
Pembroke House, Wellesley Road,
Croydon, Surrey.
Tel: 01-688 7372.

Teledyne Acoustic Research,
1 High Street,
Houghton Regis,
Dunstable, Beds LU5 5QJ.
Tel: Dunstable (0582) 603151.

Teleradio Co (Edmonton) Ltd,
325 Fore Street,
London N9.
Tel: 01-807 3719.

Teleton Electro (UK) Ltd,
Somerton Works, Prince Avenue,
Westcliff-on-Sea, Essex SS0 0HU.
Tel: Southend (0272) 337681.

Thomas Musical Instruments Ltd,
Unit 6, Abercorn Trading Estate,
Manor Farm Road, Alperton,
Wembley, Middlesex HA0 1YG.
Tel: 01-903 3081.

Thorn Consumer Electronics Ltd,
284 Southbury Road,
Enfield, Middlesex EN1 1TJ.
Tel: 01-363 5353.

3M United Kingdom Ltd,
PO Box 1,
Bracknell, Berkshire.
Tel: Bracknell (0344) 58357.

Toshiba UK Ltd,
Toshiba House, Frimley Road,
Frimley, Camberley, Surrey.
Tel: Camberley (0276) 62222.

Transonic Imports (Acoustical) Ltd,
Brooks Court,
Stamford, Lincs.
Tel: Stamford (0780) 55551/2.

U

Uher Ltd,
24 Market Place,
Fallosen Way,
London NW11.
Tel: 01-455 1771/01-458 8491.

V

Van der Molen Ltd,
101 Hainault Lane,
Romford, Essex RM7 7NU.
Tel: Romford 22018/9.

Vernitron Ltd,
Thornhill,
Southampton SO9 5QF.
Tel: Southampton (0703) 444811.

Videotone,
98 Crofton Park Road,
London SE4.
Tel: 01-690 1914/5.

Viscount Organs Ltd,
Hulleys-Lyon Industrial Estate,
Hartspring Lane,
Watford, Herts.
Tel: Watford 47437/41345.

Volt Loudspeakers,
Westwood House,
Great West Trading Estate,
Brentford, Middlesex.
Tel: 01-568 1185.

Voltmace Ltd,
Church Street,
Baldock, Herts.
Tel: Baldock (0462) 894410.

W

Waddingtons Videomaster Ltd,
36-44 Tabernacle Street,
London EC2A 4DT.
Tel: 01-253 9366.

C. W. & J. Waller Ltd,
Brentford, Red Lane,
Frodsham, Warrington, Cheshire.
Tel: Frodsham (0928) 33326.

Waltham Electronics (UK) Ltd,
155-159 Queens Road,
Watford, Herts WD1 2QH.
Tel: Watford 24543.

Cecil E. Watts Ltd,
Darby House,
Sunbury-on-Thames, Surrey.
Tel: Sunbury-on-Thames 83252.

Wilmex Ltd,
Crompton House,
New Malden, Surrey KT3 4DE.
Tel: 01-949 2345.

Wilson Stereo Library Ltd,
104 Norwood High Street,
London SE27.
Tel: 01-670 6394.

Wolsey Electronics,
(A Division of A.B. Electronic
Components Ltd),
Cymmer Road, Porth,
Rhondda, Mid Glam CF39 9BT.
Tel: Porth (044 361) 2711.

Wren Electronics Ltd,
Dawson Road,
Mount Farm Estate,
Milton Keynes, Bucks.
Tel: Milton Keynes (0908) 71611.

Wurlitzer Ltd,
Parkgate Industrial Estate,
Knutsford, Cheshire WA16 8DU.
Tel: Knutsford (0565) 52621/2.

Wye Electronics Ltd,
27 Station Road, Brimington,
Chesterfield, Derbyshire.
Tel: Chesterfield (0246) 70297.

Y

York Electronics Ltd,
73 Grosvenor Street,
London W1X 9DD.
Tel: 01-629 8368.

Z

Zeeper Instruments Ltd,
15 Richmond Grove,
Surbiton, Surrey.
Tel: 01-399 0966.

Zerostat Components Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon,
Cambs PE17 4CF.
Tel: St. Ives (0480) 62225.

NOTES

Directory of Hi-Fi Dealers

Important Note: The following list is of shops where stocks of equipment are kept, and where facilities for demonstration exist. It is not necessarily a complete list, and we invite new dealers to submit details for future publications.

ABERDEEN (GRAMPIAN)

ELENA MAE LTD
209 Union Street.
Tel: Aberdeen 20774.

HOLBURN HI-FI
445 Holburn Street.
Tel: 0224 25713.

TELEMECH
23-29 Marschal Street.
Tel: 0224 28817.

ADDLESTONE (SURREY)

COSMIC RADIO
248 Station Road.

ALDERSHOT (HAMPSHIRE)

BERKSHIRE HI-FI & VIDEO
179 Victoria Road.
Tel: Aldershot 312151.

BRYANTS HI-FI
81 High Street.

ALTRINCHAM (CHESHIRE)

SIGHT & SOUND ELECTRONICS
162-164 Ashley Road, Hale Village.
Tel: 061-928 7665.

SOUND CENTRE
2 Bold Street, Hale Road.
Tel: 061-928 3195.

ARBROATH (TAYSIDE)

ELENA MAE LTD
96 High Street.
Tel: Arbroath 73677.

AMERSHAM (BUCKINGHAMSHIRE)

AUDIO VISUAL SYSTEMS
16 Hill Avenue.

ASHFORD (KENT)

ASHFORD AUDIO
34 Tufton Walk.
Tel: 0233 29119.

PHOTOCRAFT HI-FI
40 High Street.
Tel: Ashford 24441.

AYLESBURY (BUCKINGHAMSHIRE)

AUDIO VISUAL SYSTEMS
8 Bourbon Street.

AYR (STRATHCLYDE)

ELENA MAE LTD
39 High Street.
Tel: Ayr 65719.

VENNAL AUDIO VISUAL
115 High Street, Central Arcade, KA7 1QL.
Tel: Ayr 64124.

BAKEWELL (DERBYSHIRE)

AUDIO VISUAL SERVICES
Water Street.
Tel: Bakewell 3664.

BANBURY (OXFORDSHIRE)

BLINKHORNS
5 South Bar.
Tel: 0295 59859.

BANGOR (CLWYD)

RADFORD HI-FI LTD
Wellfield Centre.

BARKING (ESSEX)

HI-FI MARKETS
7 Station Parade.
Tel: 01-594 3626.

HYPERFI
30-32 Longbridge Road.

BARNET (HERTFORDSHIRE)

PORTOGRAM R.E.I. LTD
212 High Street.
Tel: 01-449 4183.

175 High Street.
Tel: 01-449 6476.

BARNSLEY (YORKSHIRE)

BARNSLEY HI-FI CENTRE
40 Sheffield Road.
Tel: 0266 5549.

BARROW-IN-FURNESS (CUMBRIA)

BARROW HI-FI CENTRE
122 Dalton Road.
Tel: Barrow 20473.

BARROW HI-FI VIDEO CENTRE
50 Dalton Road.
Tel: 0229 28734.

KELLYS OF BARROW LTD
70 Dalton Road, LA14 1JD.
Tel: Barrow 20308.

SEARLE AUDIO SERVICE
229 Rawlinson Street.

BASILDON (ESSEX)

KELLYS RADIO LTD
82 Town Square.
Tel: Basildon 21638.

BASINGSTOKE (HAMPSHIRE)

HERBERTS
2 New Market Square.

BATH

PAUL GREEN HI-FI LTD
Harper Furnishings,
Kensington Showrooms, London Road.
Tel: Bath 316197.

RYLAND HUNTLEY & CO
15 Old Bond Street.

VIDEO SOUTH LTD
5 Kingsmead Square.
Tel: Bath 61985.

BECKENHAM (KENT)

HI-FI CONNECTIONS
51 Beckenham Road.
Tel: 01-658 3450.

S.M. ELECTRONICS
68 Croydon Road.
Tel: 01-650 4701.

BEDFORD

ANGLIA AUDIO
32 St. Loyes Street.

AUDIO & VISUAL SYSTEMS

29 St. Peters Street.
BEDFORD AUDIO SUPPLIES
76 Bedford Road, Kempston.

Tel: Bedford 854133.

TAVISTOCK HI-FI
21-23 Tavistock Street.
Tel: Bedford 56323.

BEVERLEY (HUMBERSIDE)

SIMPLY HI-FI
9 Flemingate.
Tel: Beverley 882696.

BEXHILL-ON-SEA (EAST SUSSEX)

RADIOVISION
22 Sackville Road.
Tel: 0424 219443.

BEXLEYHEATH (KENT)

WHOMES LTD
240 Broadway.

BICESTER (OXFORDSHIRE)

H.J. WADLEY
30 Market Square.

BIRKENHEAD (MERSEYSIDE)

PETERS HI-FI OF CHESTER
11 St. Werburgh Square, Grange Precinct.
Tel: 051-647 5626.

BIRMINGHAM

BELMONT RECORDING CO
25 Belmont Road, Bearwood, Warley, B66 4EL.
Tel: 021-429 4463.

L. BULLOCK & SON
880 Washwood Heath Road.
Tel: 021-783 2809.

DISCOSCENE
55 Hurst Street.
Tel: 021-622 1652.

NORMAN H. FIELD HI-FI
Albany House, 33-37 Hurst Street, B5 4BJ.
Tel: 021-622 2323.

23a Hurst Street, B5 4BJ.
Tel: 021-622 3619.

FIVE WAYS HI-FI
12 Islington Row, Edgbaston.
Tel: 021-455 0667.

FORUM HI-FI CENTRES
Unit 26-28, Tivoli Centre, Coventry Road,
South Yardley.
Tel: 021-707 3640.

GRATISPOOL
10 Martinea Way, B2 4UN.
Tel: 021-236 1024/7312.

GRIFFIN RADIO
Bristol Street.
Tel: 021-692 1359.

HARDMANS
19-21 Corporation Street.
Tel: 021-632 6303.

HOCKEN SOUND
1195 Pershore Road.
Tel: 021-459 4242.

HORNTONS ELECTRONICS
Lower Temple Street.
Tel: 021-643 0972.

LASKYS
116 Corporation Street.
Tel: 021-236 3503.
RSC
30-31 Great Western Arcade.

BISHOP AUCKLAND (DURHAM)
MCKENNA & BROWN
134 Newgate Street.
Tel: Bishop Auckland 2266.

BLACKBURN (LANCASHIRE)
HOLDINGS PHOTO AUDIO CENTRE
39-41 Mincing Lane, BB2 2AF.
Tel: Blackburn 59595/6.

BLACKPOOL (LANCASHIRE)
F. BENFELL LTD
78 Westend Road, Ansdell Road.
Tel: 0253 49625.
TAPE RECORDER CENTRE
(C. BRADDOCK LTD)
266 Waterloo Road, FY4 3AF.
Tel: Blackpool 45049.

WHITELEYS OF DEANS GATE
4 Deansgate.
Tel: Blackpool 28357.

JOHN F. WIGNEY LTD
Cleveleys Hi-Fi Centre, Orion Buildings,
Cleveleys FY3 1AB.
Tel: Cleveleys 852627.

BOGNOR REGIS (WEST SUSSEX)
SPORTS & RADIO LTD
25-29 Aldwick Road, PO21 2LW.

BOLTON (LANCASHIRE)
CLEARTONE HI-FI
156-158 Blackburn Road.
Tel: Bolton 22636.
H.D. KIRK (STEREOELECTRICS) LTD
203 St. Georges Road.
R. WARD
61 Plodder Lane, Farnsworth.

BOSTON (LINCOLNSHIRE)
ADDYS (BOSTON) LTD
9 Wide Bargate, PE21 6RB.
Tel: Boston 62454.
PAUL TAYLOR BTE LTD
27 Market Place.
Tel: Boston 64647.

BOURNEMOUTH (DORSET)
MANAGEMENT ELECTRONICS
254-256 Old Christchurch Road.
SUTTONS
10 Gervis Place.
Tel: Bournemouth 25512.

BRADFORD (WEST YORKSHIRE)
ERRICKS OF BRADFORD
Fotosonic House, Rawson Square.
Tel: Bradford 22972.
CHRISTOPHER PRATT & SONS LTD
33 North Parade, BD1 3JJ.
Tel: Bradford 25894.
RSC
10 North Parade.
VALLANCE & DAVISONS LTD
Arndale House, Market Street, BD1 1LS.
Tel: Bradford 31596.

J. WOOD & SONS LTD
28 Sunbridge Road.
Tel: Bradford 20014.

BRAINTREE (ESSEX)
KELLYS RADIO LTD
25 Bank Street.
Tel: Braintree 25930.

BRENTWOOD (ESSEX)
KELLYS RADIO LTD
8 High Street.
Tel: Brentwood 215519.

BRIDGEWATER (SOMERSET)
P. TAYLOR (BRIDGEWATER) LTD
5 Eastover.
Tel: Bridgewater 2142.

BRIDLINGTON (HUMBERSIDE)
QUAY T.V.
31 Prospeece Road.
Tel: 0262 72870.

BRIGHTON (EAST SUSSEX)
BRIGHTON CASSETTE & HI-FI CENTRE
1 York Place, London Road.
Tel: Brighton 695776.
KEN DEAN
112 St. James Street.
JOHN KING (FILMS) LTD
Film House, 71 East Street, BN1 1NZ.
Tel: Brighton 202671.
42 Bond Street.
Tel: Brighton 25042.

All the best makes of Hi-Fi are at:-

A. T. Laboratories Ltd

191 Chase Side, Enfield, Middlesex EN2 0QZ

Telephone: 01-363 7981

also at

442-444 Cranbrook Road, Gants Hill, Ilford, Essex IG2 6LL

Telephone: 01-518 0915

Monday - Saturday 10.00 - 18.00

Competitive prices — Comparator Demonstrations — Direct & Personal Export

Audio T

The Audio Consultants

190 West End Lane
London NW6 1SQ
Tel. 01-794 7848.

Mon-Wed 11-6 Thurs-Fri 11-7 Sat 10-5

Stockists of ● A & R ● ARISTON ● AUREX ● CELEF ● DUAL ● EEI ● HADCOCK ● HAFLER ● JVC ● KEF ● LENTEK ● LINN ● MERIDAN ● MISSION ● NAKAMICHI ● OPTONICA ● PROAC ● QUAD ● REFERENCE ● REVOX ● ROGERS ● SANSUI ● SPENDOR ● STD ● SUGDEN ● SYSTEMDEK ● THORENS ● YAMAHA and many others.

● DIRECT AND PERSONAL EXPORT ● COMPREHENSIVE AFTER SALES SERVICE ● DEMONSTRATIONS BY APPOINTMENT ● FULL TESTING AND SERVICE FACILITIES ● ACCESS — BARCLAYCARD ● CREDIT SALE FACILITIES TO CALLERS ONLY

BRISTOL (AVON)

GRATISPOOL INT LTD
83 The Horsefair, BS1 3JP.
Tel: Bristol 20666.
HI-FI MARKETS
36 Union Street.

LASKYS

16-20 Penn Street.
Tel: 0272 20421.

RADFORD HI-FI

52-54 Gloucester Road, BS7 8BH.
Tel: 0272 44593/422709.

SKS PRODUCTS

Cannington Frm, High Street, Nailsea.
Tel: 0272 857419.

TAPE & HI-FI

82 Stokes Croft, BS1 3RP.
Tel: 0272 49677.

BRIXHAM (DEVON)

UPTON ELECTRONICS
2 Churchill Court, Bolton Street.
Tel: Brixham 51893.

BROADSTAIRS (KENT)

THANET MOBILE VISION
78 High Street.
Tel: Thanet 61587.

BROMLEY (KENT)

HALYCON
38 Widmore Road.
HERMLYN HI-FI LTD
14 Elmfield Road.
Tel: 01-464 2666.

MR CAD

12/14 High Street.
Tel: 01-460 2113.

SOUND SYSTEMS

218 High Street.

BURNLEY (LANCASHIRE)

H. GARLICK THE T.V. CENTRE
10 Howe Walk.

BURY (LANCASHIRE)

H. PLUMB & SON
18-20 Crompton Street.
Tel: 061-764 1242.

BURY ST. EDMUNDS (SUFFOLK)

ANGLIA AUDIO
Hessett Hi-Fi Centre, Nr. Beyton, IP30 9AZ.
Tel: Beyton 70212.

B.G. AUDIO & TELEVISION

9-10 Hatter Street, IP33 1LZ.
Tel: Bury St. Edmunds 5227.

CAMBRIDGE

ANDREW McCULLOCH HI-FI GALLERY
24 King Street.
Tel: Cambridge 64420.

A & R

French's Mill, French's Road, CB4 3NP.
Tel: Cambridge 354507.

CAMPKINS

19 Market Street.
HI-FI FOR PLEASURE
62 King Street.

REMU

4 Mill Road, CB1 2AD.
Tel: Cambridge 69235.

RENBRO LTD

30 Mill Road.
Tel: 0223 51234.

SPEECHLY

1 Hawthorne Way, Chesterton.
Tel: 0223 58611/312120.

UNIVERSITY AUDIO

1-2 Peas Hill.
Tel: 0223 54237.

CANTERBURY (KENT)
CANTERBURY HI-FI

1-2 The Friars.
Tel: 0227 65315.

RICEMANS OF CANTERBURY

St. Georges Lane.

WESTGATE HI-FI CO

2 Station Road West.
Tel: Canterbury 69329.

CARDIFF (SOUTH GLAMORGAN)
CITY RADIO (CARDIFF) LTD

8 Oxford House, Hills Street.
Tel: Cardiff 28169.

HOULDEN HI-FI

The Morgan Arcade, The Hayes.
Tel: 0222 44011.

LASKYS

122 Queen Street.
Tel: Cardiff 374893.

MUSIC LAND LTD

148-152 North Road.
Tel: 0222 394217/8/9.

RADIOCRAFT LTD

251-253 Cowbridge Road East, Canton.
Tel: Cardiff 31166/7/8.

CARLISLE (CUMBRIA)

G.D. & M. DUNLINGTON
Victoria Viaduct.
Tel: Carlisle 24918.

CARMARTHEN (DYFED)

KEN DAVIS HI-FI
7 John Street.

CASTLEFORD (WEST YORKSHIRE)

ERIC WILEY
64-85 Beacroft Road, WF10 5BS.
Tel: Castleford 53066.

VALLANCE & DAVISON LTD

64 Carlton Street, WF10 1DB.
Tel: Castleford 552240.

CHANDLERS FORD (HAMPSHIRE)
HAMPSHIRE AUDIO LTD

8-12 Hursley Road.
Tel: Chandlers Ford 2827/65232.

CHATHAM (KENT)
SEVENOAKS HI-FI

4 Railway Street.
Tel: 0643 46859.

LASKYS

8 The Pentagon.
Tel: 0643 407104.

CHELMSFORD (ESSEX)
CANTELEC HI-FI CENTRE

190 Moulsham Street.
Tel: Chelmsford 84444.

KELLYS RADIO LTD

16-18 New London Road.
Tel: Chelmsford 66764.

RUSH HI-FI CENTRE

6 Cornhill Road.
Tel: Chelmsford 57593.

CHELTENHAM (GLOUCESTERSHIRE)

RALPH HALES
24 Pittville Street.
Tel: Cheltenham 41171.

RAY ELECTRICAL LTD

287 High Street.
Tel: Cheltenham 22317.

WILLIAM ROBB

170-172 Bath Road.
Tel: Cheltenham 53195.

SPA VISION LTD

271 High Street.
Tel: 0242 23439.

CHESTER
CHARLESWORTHS

112 Foregate Street, CH1 1HB.
Tel: Chester 25075.

LASKYS

The Forum, Northgate Street.
Tel: 0244 317667.

NEWDOWN HI-FI

1 Castle Street.
Tel: 0244 24179.

PETERS (ELECTRICAL) LTD

2 Charles Street, Hoole.
Tel: Chester 22063/24895.

PETERS HI-FI OF CHESTER

24 St. Michaels Square, Grosvenor Precinct.
Tel: Chester 21568/9.

CHESTERFIELD (DERBYSHIRE)
THE HI-FI HABITAT

135 Sheffield Road.
Tel: Chesterfield 34923.

CHICHESTER (WEST SUSSEX)

MALCOLM AUDIO & T.V. LTD
12 South Street.
Tel: Chichester 787562.

CHORLEY (LANCASHIRE)
MONITOR SOUND

64 Chapel Street.
Tel: 025 72 71935.

CHRISTCHURCH (DORSET)

H.A.T.V.
183 Barrack Road.
Tel: 020 15 73901.
45 Bargates.

CIRENCESTER (GLOUCESTERSHIRE)

T.V. & HI-FI CENTRE
37 Castle Street, GL7 1QD.
Tel: Cirencester 4756.

COLCHESTER (ESSEX)

K.A. CHEESEMAN LTD
Shewell Road, CO1 1JH.
Tel: Colchester 73792.

FORDHAM'S AUDIO & HI-FI

9 Crouch Street, CO3 3EN.
Tel: Colchester 73288.

LASKYS

13 Trinity Square.
Tel: Colchester 62636.

D.T. WICKS

49-55 North Station Road.

COLWYN BAY (CLWYD)

OWENS HI-FI
38 Station Road.

COVENTRY
ELECTRONIC SERVICES

33 City Arcade, CV1 3HX.
Tel: Coventry 24632.

FORUM HI-FI CENTRE
Unit 9, Longfellow Road.
Tel: Coventry 451651.
78 Lower Precinct.
Tel: Coventry 21218.
RSC
17 Shelton Square, The Precinct.

CRANHAM (ESSEX)
CRANHAM HI-FI CENTRE
99 Front Lane.
Tel: 86 29937.

CRAWLEY (WEST SUSSEX)
CAPITOL CAMERAS LTD
24-26 The Boulevard.
Tel: Crawley 25068.
KIRKMAN
40 The Broadway, RH10 1HG.
Tel: Crawley 26670.

CREWE (CHESHIRE)
CHARLESWORTHS OF CREWE LTD
14 Hightown, CW1 3BT.
Tel: Crewe 56344.

CROYDON (SURREY)
THE CAMERA CENTRE
96 Whitgift Centre.
Tel: 01-686 8393.
K.J. LEISURE SOUND LTD
89 London Road.
Tel: 01-686 1343.
LANDAU RADIO LTD
Grants of Croydon.

Tel: 01-688 4400.
MR CAD
1034-1035 Whitgift Centre.
Tel: 01-681 7922/3.
SARAYS
43 Church Street.
Tel: 01-681 3344.
SPALDINGS
352 Lower Addiscombe Road.
Tel: 01-654 1231.
WOODBURY TEMPO GROUP
21 Lansdowne Road.
Tel: 01-680 0700.

CWMBRAN (GWENT)
HI-FI WESTERN LTD
6 The Arcade.
Tel: Cwmbran 64834.

DARLINGTON (DURHAM)
GILSON AUDIO
11 Skinnergate.
Tel: 0325 61922.
MCKENNA & BROWN
11 Bondgate.
Tel: Darlington 659900.
RSC
19 Northgate.

DARTFORD (KENT)
LASKYS
39 The Armdale Centre.
Tel: 0322 73481.

DARWEN (LANCASHIRE)
DARWEN HI-FI CENTRE
219 Duckworth Street.
Tel: Darwen 75201.

DERBY
BUCKLANDS LTD
41-49 London Road.
Tel: 0332 48425.
LASKYS
69 St. Peters Street.
Tel: 0332 372575.
GRAHAM NALTY
80 Curzon Street.
R.F. POTTS & CO
66-68 Babington Lane.
RSC
97 St. Peters Street.
STUART WESTMORELAND
67 St. Peters Street.
Tel: Derby 367546.

DEREHAM (NORFOLK)
R.F. EDWARDS & SON (DEREHAM) LTD
8-10 Norwich Street, NR19 1BX.
Tel: 0362 2323.

DEWSBURY (YORKSHIRE)
RSC
9 Kingsway.

DIDSBURY (CHESHIRE)
BSM RADIO
681 Wilmslow Road.

SHANNONS
SHANNONS
SHANNONS
SHANNONS

**for expert
Hi-Fi advice**

Talk to Shannons first—where expert and personal advice is cheerfully given. Where your pounds stretch farther. Where the range is wide and varied. Where there's a comparator studio for you to choose in comfort. And where your satisfaction is always assured.

Stockists of:
TANDBERG, QUAD, A & R, SPENDOR, K.E.F., S.T.D., SUGDEN, TECHNICS, HITACHI, SONY, J.V.C., etc.

061 748 2339



Shannons Sound & Video
25/29 Station Road, Urmston,
Manchester,
M31 1JG.



PETERS
HI-FI OF CHESTER

Bang & Olufsen, Sony, Aurex, ITT
Technics, Panasonic, JVC, Celestion

24 St Michaels Square, Chester
Telephone: Chester 21568

11 St Werburgh Square, Birkenhead
Telephone: 051-647 5626

Mostyn Avenue, Craig-y-don, Llandudno
Telephone: 0492 76788

Erricks'
OF BRADFORD

Video

HI-FI

SONY — JVC VIDEO CENTRE
BETAMAX — PANASONIC
VHS — PHILIPS —
MITSUBISHI

**CAMERAS BIG
SCREEN TV
DISCOUNT
TAPES**

A&R, AR, BEYER,
BOSE, B&W, CASTLE,
CORAL, CRIMSON
ELEKTRIK, DENON, DUAL,
ELITE, ENTRE, FORMULA 4,
GALE, GRACE, GRADO,
HADCOCK, HEYBROOK; KEF,
LINN, LENTEK, MITSUBISHI, PICKERING,
PIONEER, QUAD, REVOX, ROGERS, SANSUI,
SONY, SPENDOR, STUDIOCRAFT, SUGDEN,
SYSTEMDEK, TANGENT, TANNOY, TEAC,
TECHNICS, THORENS, WHARFEDALE

Fotosonic House, Rawson Square, Bradford
Telephone: (0274) 22972

DONCASTER (SOUTH YORKSHIRE)

TOM JAQUES LTD
16 Wood Street, Waterdale.
QUADRAPHENIA
19 Bradford Row, off Hallgate.
Tel: Doncaster 21215.
RSC
3 Queensgate, Waterdale Centre.
VALLANCE & DAVISON LTD
41 High Street, DN1 3PF.
Tel: Doncaster 23424.

DORKING (SURREY)

ALAN LAURENSEN & CO
2 South Street.
Tel: Dorking 2430.

DOVER (KENT)

HI-FI SHOP (DOVER) LTD
43 High Street.
Tel: Dover 207562.

DUMFRIES (DUMFRIES & GALLOWAY)

ELENA MAE LTD
14 Queensbury Street.
Tel: Dumfries 2859.

DUNDEE (TAYSIDE)

ELENA MAE LTD
35 Reform Street.
Tel: Dundee 27592.
8 Wellgate Centre.
Tel: Dundee 28822.

DUNFERMLINE (FIFE)

ANDREW THOMPSON LTD
6-8 Bonnar Street.
Tel: Dunfermline 2451/2.
ELENA MAE LTD
42 East Port.
Tel: Dunfermline 24467.

DUNSTABLE (BEDFORDSHIRE)

TARGET ELECTRICAL
45 Katherine Drive.
Tel: Dunstable 67750.

DURHAM

MUSICORE
88 North Road.
Tel: 0385 991 63347.

EASTBOURNE (EAST SUSSEX)

BRYANTS HI-FI CENTRE
118 Terminus Road.
Tel: Eastbourne 29389.
COMPLETE AUDIO SYSTEMS
32 Grove Road.
JEFFRIES HI-FI
4 Albert Parade, Green Street.
Tel: Eastbourne 31336.

EASTCOTE (MIDDLESEX)

EASTCOTE HI-FI
112 Field End Road.
Tel: 01-868 2946.

EAST GRINSTEAD (SUSSEX)

JOHN REES HI-FI
2 High Street.
Tel: 0342 27787.

EAST MOLESEY (SUSSEX)

EDWIN P. FOX
87 Walton Road.
Tel: 01-979 2721.

EDGWARE (MIDDLESEX)

PLANET HI-FI & VIDEO
88 High Street, HA8 7HE.
Tel: 01-952 3238.

EDINBURGH (LOTHIAN)

RUSS ANDREWS
34 Northumberland Street.
Tel: 031-557 1672.
AUDIO AIDS
52 George Street, EH2 2LE.
Tel: 031-226 3979/3970.
43 South Clerk Street, EH8 9NZ.
Tel: 031-667 2877.

EDINBURGH AUDIO
57 Lothian Road, EH1 3DW.
Tel: 031-229 1729.

ELENA MAE LTD
89 Princes Street.
Tel: 031-225 7582.

GRAMAPHONE SHOP
Rose Street Pedestrian Precinct.
Tel: 031-225 9535.

HI-FI CORNER
1 Haddington Place.
Tel: 031-556 7901.

LASKYS
4 St James Centre.
Tel: 031-556 2914.

RSC
101 Lothian Road.

EGHAM (SURREY)

RUNNYMEDE HI-FI
172 High Street.
Tel: Egham 5036/3400.

EIRE

AUDIO SYSTEMS LTD
Northside Shopping Centre, Coolock, Dublin 5.
Tel: Dublin (0001) 318270.
NOEL CLONEY HI-FI
154 Leinster Road, Rathmines, Dublin 6.
Tel: Dublin (0001) 961316.

ELGIN (GRAMPIAN)

ELENA MAE LTD
76 High Street.
Tel: Elgin 44305.

ELLESMERE PORT (SOUTH WIRREL)

SOUND ADVICE
494 Overpool Road, L66 2JJ.
Tel: 051-355 2833.

ENFIELD (MIDDLESEX)

A.T. LABORATORIES
191 Chase Side, EN2 0QZ.
Tel: 01-363 7981.

TEMPO DISCOUNT WAREHOUSE
Unit No 13, Ponders End Industrial Estate,
Mollison Avenue.
Tel: 01-804 8425.

EPPING (ESSEX)

CHEW & OSBORNE LTD
148 High Street.
Tel: Epping 74242.

EXETER (DEVON)

EXON AUDIO
164 Sidwell Street, EX4 6RJ.
Tel: Exeter 50802/75048.
GULLIFORD HOUSE LTD
Gulliford House, Kenton.
Tel: Dawlish 863604.
(By appointment only).

HOMESOUND

145 Sidwell Street.
Tel: 0392 72814.
HOWARDS (EXETER) LTD
90-91 Sidwell Street.
PETER SCOTT LTD
76 South Street, EX1 1EH.
Tel: Exeter 73309/56633.

FALKIRK (CENTRAL)

ELENA MAE LTD
138 High Street.
Tel: Falkirk 25462.

FAREHAM (HAMPSHIRE)

SOUNDS OF FAREHAM
135 West Street.
Tel: Fareham 233544/232876.
T.V. PARLOUR
15 West Street.

FARNHAM (SURREY)

LLOYD & KEYWORTH LTD
26-28 Downing Street, GU9 7PE.
Tel: Farnham 715534.

FLEET (HAMPSHIRE)

KEN ROSE (AUDIO) LTD
283 Fleet Road.
Tel: Fleet 5053.

FOLKESTONE (KENT)

KENT AUDIO-VISUAL
33 Guildhall Street.
Tel: Folkestone 55881.

FROTTON (HAMPSHIRE)

HOPKINS HI-FI
40 Fratton Road.

GALASHIELS (SELKIRKSHIRE)

WAVERLEY STUDIOS
23-24 Bank Street.

GATESHEAD (TYNE & WEAR)

LINTONE AUDIO
9 Park Lane.
Tel: 0632 774167.

GILLINGHAM (DORSET)

BLACKMORE VALE ENGINEERING
The Square.
Tel: Gillingham 2474/2728.

GILLINGHAM (KENT)

AUDIO HYPOMARKETS LTD
16 Canterbury Street.
Tel: 0634 52703.
D.E. HADAWAY & SON LTD
95-97 Watling Street.

GLASGOW (STRATHCLYDE)

ALEXANDER BIGGAR LTD
273 Sauchiehall Street.
Tel: 041-332 8676.
ELENA MAE LTD
153 Sauchiehall Street.
Tel: 041-332 2526.
GRATISPOOL INT LTD
66 Queen Street.
Tel: 041-221 8290.
ERIC M. HAMILTON
136-138 Queen Margaret Drive.
LASKYS
22-24 West Nile Street.
Tel: 041-226 3349.

NEIL MCCORMACK HI-FI

1050 Pollockshaws Road.
Tel: 041-649 4164.

MCCORMACKS MUSIC

33 Bath Street.
Tel: 041-332 6644.

VICTOR MORRIS

340 Argyle Street.

THE MUSIC ROOM

221 St. Vincent Street, G2 5QY.
Tel: 041-221 2527.

ORPHEUS HI-FI

141 St. George Road.

RSC

326 Argyle Street.

GLOUCESTER

WILLIAM ROBB

15 Worcester Road.
Tel: Gloucester 23051/20518.

GODALMING (SURREY)

BARTONS

72 High Street.
Tel: Godalming 6113.

JIM PARK AUDIO

46 High Street.
Tel: Godalming 223300.

GOSPORT (HAMPSHIRE)

W.F. WAITE SOUND & VISION CENTRES

11a North Cross Street.
Tel: Gosport 25822.

T.V. PARLOUR

79 Stoke Road.

GRANTHAM (LINCOLNSHIRE)

STUART WESTMORELAND

3 Watergate.
Tel: Grantham 66969.

GREENFORD (MIDDLESEX)

BEVANS RADIO LTD

311 Greenford Road.
Tel: 01-578 9699/1925.

GRIMSBY (HUMBERSIDE)

GRIMSBY HI-FI CENTRE

71 Cartergate.
Tel: Grimsby 43539.

G. & E. MANDERS

2-4 Edward Street.
Tel: 0472 51391.

GUERNSEY (CHANNEL ISLANDS)

ALPINA LTD

24 Smith Street, St. Peter Port.

GUILDFORD (SURREY)

GUILDFORD HI-FI

270 High Street.
Tel: 0483 71534.

MERROW SOUND

21-22 Tunsgate.
Tel: Guildford 33224.

PJ EQUIPMENT

3 Bridge Street.
Tel: 0483 504801.

HADLEIGH (ESSEX)

ESSEX HI-FI CENTRE

210 London Road.
Tel: Southend 558339.

KELLYS RADIO LTD

265 London Road.
Tel: Southend 556815.

HALIFAX (WEST YORKSHIRE)

TREVOR FAWTHROP

31 Kings Cross Street.

NEWSHAM-DALBY

238 Kings Cross Street.
Tel: Halifax 68562.

TAPE RECORDER CENTRE (HALIFAX)

3-5 Kings Cross Street.
Tel: Halifax 66832.

J. WOOD & SONS LTD

13 George Street.
Tel: Halifax 62751.

HAMILTON (STRATHCLYDE)

TOM DICKSON CAMERAS

8 Cadzow Street.

HARLOW (ESSEX)

LOUGHTON PHOTOGRAPHIC

2 Westgate.
Tel: 0279 26155.

HARPENDEN (HERTFORDSHIRE)

STUDIO 99 LTD

82 High Street.
Tel: Harpenden 64246.

FOR SOUND QUALITY

Linn — Naim — Meridian — T.V.A. — Revox —
Nytech — A&R — Nightingale — Neal — Ferrograph
— Pioneer — Sansui — Celef — Ram —
Audiomaster — Dual — Lentek — HK — Entre —
Rega — Michell — Syrinx — Tandberg — Elite —
Systemdeck — Exposure — Teac — S.M.C. —
Castle — Aurex — Black Tulip — J.B.E. — Sony,
Ram, Thorens, Nakamichi, etc

**Three years parts and labour
guaranteed Late night demos
Wednesday 6-9**

JEFFRIES HI-FI

4 Albert Parade, Green Street, Eastbourne
Tel: (0323) 31336



**Dealers for Technics:
Leak**

JVC : Trio : JR

Rogers : National

Toshiba : Hitachi

Wharfedale

Shure : Tannoy

Ortofon



Dealers for:

Bowers & Wilkins

Philips VCR

National VHS

JVC VHS

Home Video

Recorders

56-58 OLD SNEDDON STREET

PAISLEY

Under Paisley Gilmour St. Station

**The Cotswolds leading Hi-Fi
equipment specialists**

S.T.D.

Most leading brands stocked.

QUAD

Full demonstration facilities.

ROGERS

Friendly assistance from experienced staff.

SUGDEN

Instant credit available.

TV & HI-FI CENTRE

35 CASTLE STREET, CIRENCESTER. TEL: 4756

HARROW (MIDDLESEX)
AUDIOCRAFT (HARROW SOUND SYSTEMS) LTD
 54 St. Anns Road.
 Tel: 01-863 3400.
GREENE & COOPER LTD
 211 Kenton Road, Kenton.
 Tel: 01-907 8006.

K.J. LEISURESOUND LTD
 340 Station Road.
 Tel: 01-863 8690.
LONDON SOUND
 70 West Street, Harrow-on-the-Hill.
RAYSONIC
 10 Weald Lane, Harrow Weald.
 Tel: 01-427 1227.

HARTLEPOOL (CLEVELAND)
REGENT STUDIOS
 7 The Shopping Centre.

HARWICH (ESSEX)
FORDHAM'S AUDIO & HI-FI
 141 High Street, Dovercourt.
 Tel: Harwich 3551.

HASTINGS (EAST SUSSEX)
C.P. ABRAHAM LTD
 192 Queens Road.
 Tel: Hastings 429231.
 484 Old London Road.
 Tel: Hastings 429231.
BRYANTS HI-FI CENTRE
 16 Queens Parade.
 Tel: Hastings 422530.

HATFIELD (HERTFORDSHIRE)
STEWART CAMERAS
 9 The Arcade.
TEMPO DISCOUNT WAREHOUSE
 74 Town Centre.
 Tel: Hatfield 71187.

HAVANT (HAMPSHIRE)
HA VANT RADIO CENTRE
 6 North Street Arcade.

HELSTON (CORNWALL)
HYDROVOLT LTD
 32 Meneage Street.
 Tel: Helston 2545.

HEREFORD
WILLIAM ROBB
 15 High Town.
 Tel: Hereford 56648.

HIGH WYCOMBE (BUCKINGHAMSHIRE)
B. & B. HI-FI
 Liverpool Victoria Buildings, Priory Road.
 Tel: High Wycombe 35910.
HUGHES HI-FI
 7 High Street.

HITCHIN (HERTFORDSHIRE)
RECORD SHOP
 31 Hermitage Road.
 Tel: Hitchin 4537.
SPECTRUM
 106 Bancroft Road.
 Tel: 0462-52248.

HORSHAM (SUSSEX)
MERROW SOUND LTD
 28 Queen Street.
 Tel: Horsham 69329.

HOUNSLOW (MIDDLESEX)
DELTA RADIO
 50 Bell Street.
NAZ ELECTRONICS
 82 Kingsley Road.
TEMPLETON T.V. LTD
 72-74 Staines Road.

HOVE (EAST SUSSEX)
SOUNDS SUPREME
 136-138 Portland Road.
 Tel: Brighton 723399.

HUDDERSFIELD (WEST YORKSHIRE)
HUDDERSFIELD HI-FI
 2-4 Cross Church Street.
 Tel: Huddersfield 44668.
 8 Bryam Street.
 Tel: 0484 44668.
KENNETH LEVELL
 13 Market Street.
LOVELL LEISURE
 2-8 Westgate.
 Tel: Huddersfield 44136.
J. WOOD & SONS LTD
 67 New Street.
 Tel: Huddersfield 27455.

HULL (HUMBERSIDE)
A-Z RADIO
 758 Spring Bank West.
 Tel: Hull 508021.
RSC
 7 Whitefriargate.
SIMPLY HI-FI
 9 Mill Street.
 Tel: 0482 29240.

HUNTINGDON (CAMBRIDGESHIRE)
SUBJECTIVE AUDIO
 The Old School, St. Annes Lane,
 Godmanchester.
 Tel: Huntingdon 59910.

ILFORD (ESSEX)
A. & T. LABORATORIES
 442-444 Cranbrook Road, Gants Hill.
 Tel: 01-518 0915.
NUSOUND
 87-100 Pioneer Market, Ilford Lane.
 Tel: 01-478 2291.
PROT ENTERPRISES
 1 Centre Way, High Road.
 Tel: 01-553 0144.

ILKLEY (WEST YORKSHIRE)
ALLEN & WALKER
 2 Cowpasture Road.
 Tel: Ilkley 609112.
VALLANCE & DAVISON LTD
 14 Brook Street, LS29 8DE.
 Tel: Ilkley 608909.

INVERNESS (HIGHLAND)
ELENA MAE LTD
 58 Academy Street.
 Tel: 0463 222859.

IPSWICH (SUFFOLK)
EASTERN AUDIO
 87 Norwich Road.
 Tel: 0473 217217.

FORDHAM'S AUDIO & HI-FI
 43 Buttermarket.
 Tel: Ipswich 53252.

Lloyds Chambers, Cornhill.
 Tel: Ipswich 210738.
F.A. PAGE LTD
 10 Dial Lane.
RCS
 17 St. Nicholas Street, IP1 1TW.
 Tel: Ipswich 55140.

KEIGHLEY (WEST YORKSHIRE)
KEIGHLEY CAMERA & HI-FI CENTRE LTD
 30-40 Cavendish Street, BD21 3RG.
 Tel: Keighley 602933.
J.S. RAMSBOTTOM & CO LTD
 Coney Lane.
 Tel: Keighley 605444.
 10-14 High Street.
 Tel: Keighley 605444.
VALLANCE & DAVISON LTD
 37-39 Queensway, BD21 3PY.
 Tel: Keighley 606123.

KEMPSTON (BEDFORDSHIRE)
BEDFORD AUDIO
 76 Bedford Road.
 Tel: Bedford 854133.

KENDAL (CUMBRIA)
DERHAMS OF KENDAL
 Kent Street.
 Tel: Kendal 21995.
 Stramongate.
 Tel: Kendal 21995.
KENDAL HI-FI CENTRE
 185 Highgate.
 Tel: Kendal 25728.
WHITESIDES
 20 Blackhall Road.
 Tel: Kendal 21953.

KETTERING (NORTHAMPTONSHIRE)
RODGER & GREEN HI-FI LTD
 68 Stamford Road.
 Tel: Kettering 515266.
SOUND QUALITY
 8 The Mall, Cold Street, NN16 8JL.
 Tel: Kettering 83833.

KILMARNOCK (STRATHCLYDE)
ELENA MAE LTD
 138 King Street.
 Tel: Kilmarnock 28318.
VENNAL AUDIO VISUAL
 The Foregate.
 Tel: Kilmarnock 34826.

KIRBY LONSDALE (CUMBRIA)
ROBINSONS ELECTRIC
 The Old Market Hall.

KIRKALDY (FIFE)
ELENA MAE LTD
 87 High Street.
 Tel: Kirkaldy 62227.

KINGSTON-UPON-THAMES (SURREY)
GRATISPOOL INT LTD
 Church Street.
 Tel: 01-546 6196.
LASKYS
 38-40 Eden Street.
 Tel: 01-546 1271.
SURBITON PARK RADIO LTD
 48 Surbiton Road, KT1 2HT.
 Tel: 01-546 5549.

KNARESBOROUGH (NORTH YORKSHIRE)

VALLANCE & DAVISON LTD
5 Market Place, HG5 8AL.
Tel: Harrogate 863236.

LANCASTER

KENNETH GARDNER LTD
30-32 New Street.
Tel: Lancaster 64328.

LEAMINGTON SPA (WARWICKSHIRE)

C.T.S.
3 Regent Grove.
Tel: 0926 29265/6.

LEEDS (WEST YORKSHIRE)

AUDIO PROJECTS
45 Headingley Lane, LS6 1DP.
Tel: Leeds 789115.

GOFF JACKSON
14 Hyde Park Corner.

RSC
County Arcade.

SUPERFI
34-36 Queen Victoria Street.
Tel: Leeds 449075.

VALLANCE & DAVISON LTD
46 Henconner Lane, Bramley, LS13 4ER.
Tel: Leeds 328392.

20 Market Street, LS1 6DF.
Tel: Leeds 36831.

Headrow House, The Headrow, LS1 8EP.
Tel: Leeds 33213.

LEICESTER

LASKYS
44 Market Place.
Tel: 0533 537678.

LEICESTER HI-FI
215-219 Melton Road.
Tel: Leicester 667801.

MAYS (HI-FI) LTD
27 Churchgate.
Tel: 0533 58662.

RSC
32 High Street.

LEIGH-ON-SEA (ESSEX)

KELLYS RADIO
1725 London Road.
Tel: Southend 78258.

SOUNDTRACK (AUDIO VISUAL) LTD
149 Leigh Road, SS9 1UG.

LEYLAND (LANCASHIRE)

ELECTRA CENTRE

72 Hough Lane.
Tel: Leyland 24372.

LINCOLN

CRITICS CHOICE
64a High Street.
Tel: Lincoln 38718.

LINCOLN HI-FI CENTRE
271a High Street, LN2 1JG.
Tel: Lincoln 20265.

LIVERPOOL

ACE AUDIO
St. John's Centre.
Tel: 051-709 9258.

AINTREE HI-FI
4 Walton Vale.

BEAVER RADIO LTD
20-22 Whitechapel, L1 6EH.
Tel: 051-709 9898.

W.A. BRADY & SON
401 Smithdown Road, L15 3JJ.
Tel: 051-733 6859.

C.B.S.
St. John's Centre.
Tel: 051-709 0388.

HARDMAN/LASKYS
33 Dale Street.
Tel: 051-236 2828.

LLANDUDNO (GWYNEDD)

PETERS HI-FI OF CHESTER
Victoria Buildings, Mostyn Avenue,
Craig-y-aon.
Tel: Llandudno 76788.

LONDON

ANALOG AUDIO
849 High Road, N12.
Tel: 01-445 1443.

AUDIO FACTORS LTD
305 Edgware Road, W2 1BN.
Tel: 01-723 0233.

AUDIOKRAFT
70 Brewer Street, W1.
Tel: 01-439 4597.

AUDIO T
190 West End Lane, NW6 1SQ.
Tel: 01-794 7848.

AZAT (LONDON) LTD
61 Charlotte Street, W1A 4DN.
Tel: 01-580 4632.

R. BARDEN LTD
42 Wigmore Street, W1.
Tel: 01-486 6380.

BARTLETTS HI-FI & AUDIO CENTRE
175-177 Holloway Road, N7.
Tel: 01-607 2296.

BILLY VEE SOUND SYSTEMS
68 Lee High Road, SE13.
Tel: 01-318 5755.

CANONBURY RADIO
185 Upper Street (opp. Town Hall), N1 1RQ.
Tel: 01-226 9392.

CAVENDISH SALES
317 Whitechapel Road, E1.
Tel: 01-247 3453.

CENTRE OF SOUND
120 Notting Hill Gate, W11 3QE.
Tel: 01-727 0511.

CHAPPELLES
50 New Bond Street, W1.
Tel: 01-629 3451.

CHELSEA RECORD CENTRE
Kings Road, SW3.

CLOUD 7
90 High Street, SW15.
Tel: 01-785 7128/01-988 9421.

CRAIG HI-FI LTD
47 Tottenham Court Road, W1.
Tel: 01-580 9951.

CUSTOM HI-FI CENTRE
82 High Holborn, WC1.
Tel: 01-242 8354.

EALING T.V. & HI-FI LTD
The Paddocks, Popes Lane, W5 4PA.
Tel: 01-579 3718.

ELLIS MARKETING LTD
5-7 Arlington Parade, Brixton Hill, SW2.
Tel: 01-733 6708.

79 High Street, South Norwood, SE25.
Tel: 01-653 4224.

FRANCIS OF STREATHAM
169-173 Streatham High Road, SW16.
Tel: 01-769 0466.

G.E.M. HI-FI DISCOUNT
313-319 High Road, Leytonstone, E11.
Tel: 01-556 0223/4.

GOODWINS T.V. & HI-FI
7 The Broadway, High Road,
Wood Green, N22.
Tel: 01-888 0077.

GRAHAMS ELECTRICAL LTD
86-88 Pentonville Road, N1 9HS.
Tel: 01-837 4412.

THOMAS HEINITZ
35 Moscow Road, Queensway, W2 4AH.
Tel: 01-229 2077.

HERMLYN HI-FI LTD
230-232 Eltham High Street, SE9 1BA.
Tel: 01-850 9548.

Bang & Olufsen Centre

**Birmingham's Main Dealer
for all Bang & Olufsen Hi-Fi & T.V.**



Tel: 021-382 1312

W.J. Taylor (Music) Ltd.
126/130 Hawthorn Road.
Kingstanding,
Birmingham B44 8QA.

Millwards (W'ton) Ltd

Hi-Fi Consultants

Stockists of: B & W, Kef, Ram, Castle, etc. All
speaker on Dem plus: most leading makes of
separates inc Quad, Sugden and B & O.

Equipment repairs a speciality.
All new Hi Fi purchases inc 2 year guarantee
Part exchange welcome.

11 Salop Street, Wolverhampton

(0902) 23980

HI-FI CARE

245 Tottenham Court Road, W1.
Tel: 01-637 8911.

7 Tottenham Court Road, W1.
Tel: 01-637 0371.

231 Tottenham Court Road, W1.
Tel: 01-580 3459.

227 Tottenham Court Road, W1.
Tel: 01-580 7383.

HI-FI & COMPONENTS LTD
84 Battersea Rise, SW11 1EH.
Tel: 01-223 1110.

27 Leigham Court Road, SW16.
Tel: 01-769 3763.

HI-FI GENERAL
39 Bedford Hill, Balham, SW12.
Tel: 01-673 3614.

HI-FI MARKETS
48 London Wall, EC2.

34-36 Lime Street, EC3.

38 Edgware Road, W2.

IMHOFS

112-116 New Oxford Street, W1 CA 1HJ.
Tel: 01-636 7878.

JUPITER AUDIO CENTRE
76 Tooting High Street, SW17.
Tel: 01-767 1006.

K.J. LEISURESOUND
48 Wigmore Street, W1.
Tel: 01-486 8263.

53 Fleet Street, EC4.
Tel: 01-353 7935.

KNIGHTSBRIDGE AUDIO
15 Holbein Place, SW1.
Tel: 01-589 9300/01-730 2417.

KUMAR CAMERA & HI-FI

56-61 The Mall, W5.
Tel: 01-567 6031.

LAND OF HI-FI
242 Tottenham Court Road, W1.
Tel: 01-636 5975.

LASKYS
311 Edgware Road, W2.
Tel: 01-262 0387.

346 Edgware Road, W2.
Tel: 01-723 4453.

380 Edgware Road, W2.
Tel: 01-723 4194.

152 Fleet Street, EC4.
Tel: 01-353 2833.

10 Tottenham Court Road, W1.
Tel: 01-637 2232.

42 Tottenham Court Road, W1.
Tel: 01-636 0845.

257 Tottenham Court Road, W1.
Tel: 01-580 0670.

LEWIS RADIO LTD
100 Chase Side, N14 SPL.
Tel: 01-886 3733/9666.

LP STEREO
207 Eltham High Street, SE9.
Tel: 01-859 0115.

MARTINS HI-FI CENTRE
125 Stoke Newington High Street, N16.
Tel: 01-249 8246/01-254 5053/01-249 0591.

MASON RADIO
255 Seven Sisters Road, N4.

384 Uxbridge Road, W12.
Tel: 01-743 3698.

MASSEY RADIO LTD

121 High Road, Chiswick, W4.
Tel: 01-994 1317.

MULTI PRODUCE LTD
Lion House, 227 Tottenham Court Road, W1.
Tel: 01-637 1601.

MYERS AUDIO
7 Central Parade, Hoe Street, Walthamstow,
E17 9PP.
Tel: 01-520 7277.

199 Hoe Street, Walthamstow, E17 9PP.
Tel: 01-520 3625.

NANDOS RADIO
328 Edgware Road, W2.
Tel: 01-723 6809.

NASHUA CAMERA CENTRE LTD
28 Golders Green Road, NW11.
Tel: 01-455 8215.

NUSOUND
228 Bishopsgate, EC2.
Tel: 01-247 2609.

376-378 Edgware Road, W2.
Tel: 01-724 0454.

82 High Holborn, WC1.
Tel: 01-242 7401.

252 Hoe Street, E17.
Tel: 01-520 1906.

36 Lewisham High Street, SE13.
Tel: 01-852 2399.

242 Pentonville Road, N1.
Tel: 01-837 8200.

191-193 Plashet Road, E13.
Tel: 01-472 2185.

M. O'BRIEN HI-FI
95 High Street, Wimbledon Village, SW19.
Tel: 01-946 1528/0331.

Norman H. Field
Hi-Fi
HI-FI MARKETS
THE PLACE WHERE PEOPLE CARE ABOUT HI-FI
Birmingham's largest Independent for
Personal Service and Home Demonstrations
ESTABLISHED OVER 25 YEARS
THREE PRIVATE STUDIOS
FOR DEMONSTRATIONS OF
ALL LEADING MAKES OF
HI-FI, VIDEO & ELECTRONICS
MEMBERS OF RETRA
Norman H. Field
OF HURST ST, BIRMINGHAM
TEL: 021-622 2323

FORUM
HI-FI CENTRES
Midlands Leading Hi-Fi Specialists

Main Agents For:
ADC • AIWA • ALLISON
A&R • B&W
CAMBRIDGE AUDIO
CASTLE • CELESTION
CERWIN-VEGA • CORAL
DBX • ENTRE • GALE
GRADO • HADCOCK
GRACE • HAFLER
HITACHI • JR • JVC
KOSS • LEN TEK
MISSION • M.A.
ORTOFON • LINN-
SONDEK • PHILIPS
PIONEER • MERIDIAN
QUAD • ROGERS • SEAS
SYRINX • SUPEX • SME
STD • SUGDEN
TANNOY • TEAC
THORENS • CELEF • IMF
LECSON • NAKAMICHI
STAX • SONY
TANGENT • SPENDOR
YAMAHA • M.S. • AZAK
BAS • JBE
HEYBROOK • TVA • JR
RAM

Forum Hi-Fi Centres at:
COVENTRY
Unit 9, Longfellow Road
Tel: (0203) 451651 & 452919

78 Lower Precinct
Tel: (0203) 21218

BIRMINGHAM
Unit 26 to 28, The Tivoli
Centre
Coventry Road, South
Yardley
Tel: 021-707 3640

NOTTINGHAM
600-602 Mansfield Road,
Sherwood
Tel: (0602) 622 150

LEICESTER
Hi-Fi Centre,
215-219 Melton Road,
Tel: (0533) 667801 (4 lines)

MANSFIELD
238 Chesterfield Road
South
Tel: (0623) 23716

PARK VIEW ELECTRONICS LTD

5-7 Malden Road, NW5.
Tel: 01-485 8709.

PIERCYS (ELECTRONICS) LTD

62 Lupus Street, SW1.
Tel: 01-821 0333.

THE RECORDER CO

186-188 West End Road,
West Hampstead, NW6.
Tel: 01-794 4977.

W. REDFERN LTD

798 Holloway Road, N19.
Tel: 01-272 2183.

R.E.W. AUDIO VISUAL CO

114 Charing Cross Road, WC2.
Tel: 01-240 3386/7.

10-12 High Street, SW19.
Tel: 01-540 9684.

230 Tottenham Court Road, W1.
Tel: 01-687 2624/5.

RICHER SOUND & VISION LTD

2 London Bridge Walk, SE1.
Tel: 01-403 1201.

SAKSONS

1 Brunswick Centre, Bernard Street, WC1.

SARAYS

92 Stoke Newington High Street, N16.
272-336 Edgware Road, W2.

Tottenham Court Road, W1.
131 King Street, W6.

SEVENOAKS HI-FI

162 Powis Street, SE16.
Tel: 01-855 8016.

SIGNAL PROCESSING SYSTEMS

16 Vivian Avenue, NW4.
Tel: 01-202 5551.

SIMONS HI-FI

185 Tottenham Court Road, W1.
SONIC SOUND AUDIO

248 Tottenham Court Road, W1.
Tel: 01-637 1908/9.

SOUND SENSE

350 Edgware Road, W2.
Tel: 01-402 2100.

SOUND VIDEO CENTRE

132 Balham High Road, SW12.
Tel: 01-673 3398.

SOUTH LONDON HI-FI VIDEO

210 Brixton Hill, SW2.
Tel: 01-674 4433/2033.

344 Coldharbour Lane, SW2.
Tel: 01-733 6893.

S.P.I. SOUNDVISION

359 Green Lanes, N13.
Tel: 01-882 5888.

49 West Green Road, N15.
Tel: 01-802 4466.

STUDIO 99 LTD

81 Fairfax Road, NW6 4DY.
Tel: 01-624 8855.

SUBJECTIVE AUDIO (CONSULTANTS)

59 Grovelands Road, N13.
Tel: 01-886 7289.

TATRAS (ELECTRONICS) LTD

98 White Hart Lane, N22.
TELESONIC

92 Tottenham Court Road, W1 0HR.
Tel: 01-636 8177.

TELETAPE

33 Edgware Road, W2.
Tel: 01-723 1942/2924.

84-88 Shaftesbury Avenue, W1.
Tel: 01-437 1651.

T.V. & HI-FI STUDIO

56 Cricklewood Lane, NW2.
Tel: 01-450 3508.

UNILET

14 Bute Street.

WALLY FOR WIRELESS LTD

317 Whitechapel Road, E1.
Tel: 01-247 3453.

WOODBURY TEMPO GROUP

380-382 Bethnal Green Road, E2.
Tel: 01-739 3577.

813 High Road, North Finchley, N12.
Tel: 01-445 6392/01-446 3132.

190-192 Kensington High Street, W8.
Tel: 01-937 5166.

LOSSIEMOUTH (GRAMPIAN)

MUNRO HI-FI

26 Seatown.
Tel: Lossiemouth 2340.

LOUGHBOROUGH (LEICESTERSHIRE)

SOUND ADVICE CONSULT.

18 Cooper Court.
Tel: 0509 218254.

STUART WESTMORELAND

33 Cattle Market.
Tel: Loughborough 30465.

LOUGHTON (ESSEX)

LOUGHTON PHOTOGRAPHIC LTD

152 High Road.
Tel: 01-508 0247/4838.

LOUTH (LINCOLNSHIRE)

A. KIRBY

11-13 Aswell Street.
Tel: Louth 2494.

LOWESTOFT (SUFFOLK)

JOHN WELLS PHOTO & AUDIO LTD

44 London Road North.
Tel: 0502 3742.

LUTON (BEDFORDSHIRE)

B & B HI-FI

49 Wellington Street.
Tel: Luton 27758.

TECHNOSOUND

3 The Gallery, Arndale Centre.
Tel: 0582 30919.

LYMINGTON (HAMPSHIRE)

RUSS ANDREWS CONSULT.

11 White Barn Crescent, Hordle.
Tel: 0425 617343.

LYTHAM ST. ANNES (LANCASHIRE)

BADGER SOUND SERVICES

46 Wood Street, FY8 1QG.
Tel: St. Annes 729247.

BADGER TRACKS LTD

46 Wood Street, FY8 1QG.
Tel: St. Annes 729247.

G.D. FORTUNE LTD

62 Woodlands Road, Ansdell.

MAIDENHEAD (BERKSHIRE)

BERKSHIRE HI-FI & VIDEO

125 Bridge Road.
Tel: Maidenhead 27760.

D. COLES & SON

9-11 St. Marks Crescent.
Tel: 0628 26755.

MAIDSTONE (KENT)

MAIDSTONE HI-FI

77 King Street.
Tel: Maidstone 61882.

SLOMAN & PETTITT

Pudding Lane.

MALVERN (HEREFORD & WORCESTER)

RALPH HALES LTD

154 Worcester Road, Malvern Link.
Tel: Malvern 4433.

MANCHESTER

EULIPION AUDIO LTD

81-83 Wilmslow Road, Rusholme.
Tel: 061-225 4448.

LASKYS

Unit 61, Arndale Centre, Market Street.
Tel: 061-834 4381.

12-14 St. Mary's Gate, Market Street.
Tel: 061-832 6087.

LLOYD PATON LTD

34 Moorfield Walk, Urmston, M31 1TT.
Tel: 061-747 9722/9949.

RSC

60a Oldham Street.
SHANNONS OF URMSTON

25 Station Road, Urmston.
Tel: 061-748 2339.

MANSFIELD (NOTTINGHAMSHIRE)

SYD BOOTH

9-11 Booth Street.
Tel: Mansfield 26315.

FORUM HI-FI CENTRE

238 Chesterfield Road South.
Tel: Mansfield 23716.

VALLANCE & DAVISON LTD

10 Four Seasons Centre, NG18 1SN.
Tel: Mansfield 26936.

MARGATE (KENT)

LONGPLA YER HI-FI

118 High Street.
Tel: Thanet 293477.

MARLOW (BUCKINGHAMSHIRE)

CHILTERN SOUND

27 Spittal Street.
Tel: Marlow 71588.

MELTONMOWBRAY (LEICESTERSHIRE)

STUART WESTMORELANDS LTD

9-10 Cheapside.
Tel: Melton Mowbray 4741.

MIDDLESBROUGH (CLEVELAND)

GILSON AUDIO

234 Linthorpe Road.
Tel: 0642 248793.

MCKENNA & BROWN

190 Linthorpe Road.
Tel: Middlesbrough 248345.

RSC

103 Linthorpe Road.

MILFORD HAVEN (DYFED)

MILFORD AUDIO CENTRE LTD

90 Robert Street.
Tel: Milford Haven 4078.

MILTON KEYNES (BUCKINGHAMSHIRE)

TECHNOSOUND

55 Silbury Arcade, Secklow Gate West.
Tel: 0908 604949.

MINEHEAD (SOMERSET)

P. TAYLOR (MINEHEAD) LTD
7 Park Street.
Tel: Minehead 2294.

NELSON (LANCASHIRE)

HAYHURST CAMERA SHOP LTD
56 Manchester Road.

NEW ALRESFORD (HAMPSHIRE)

DEREK GEDYE
5 Broad Street.

NEW MALDEN (SURREY)

UNILET
35 High Street.
WOODBURY TEMPO GROUP
Unit No. 1, 161 Kingston Road.
Tel: 01-949 3166.

NEWARK ON TRENT (NOTTINGHAMSHIRE)

PETER ELLIS AUDIO
27-29 Kirkgate.
Tel: Newark 704571.

NEWBURY (BERKSHIRE)

HERBERTS
62 Northbrook Street.

NEWCASTLE UNDER LYME (STAFFORDSHIRE)

CLEMENT WAIN LTD
42 Merrial Street.
Tel: 0782 613119.
HI-FI STUDIO
19 Hassel Street.
Tel: Newcastle 613902.

NEWCASTLE UPON TYNE

HI-FI OPPORTUNITIES
33 Handyside Arcade, off Percy Street.
Tel: Newcastle 27791.

QUALITY VIDEO RENTERS LTD

Handyside Arcade.
Tel: Newcastle 20537.

RSC

59 Grainger Street.

SAXONS (PHOTO MARKETS & HI-FI) LTD

144 Grainger Street.
Tel: Newcastle 21922.

J.G. WINDOWS LTD

1-7 Central Arcade, NE1 SBP.
Tel: Newcastle 21356.

NEWPORT (GWENT)

HI-FI WESTERN LTD
52 Cambrian Road.
Tel: Newport 62790.

NORTHAMPTON

AUDIOCRAFT
23-25 Derngate, NN1 1TY.
Tel: Northampton 36291.

LASKYS

78 Abingdon Street.
Tel: 0604 35753.

LISTEN INN

32a Gold Street.
Tel: 0604 37871.

H. G. RAPKIN

11 Kettering Road.
Tel: Northampton 37515.

RICHARD REEVES
174 Kettering Road.

NORTHERN IRELAND

ASTONS AUDIO
Dundonald.

AUDIO TIMES
85 Royal Avenue, Belfast.

49 Broughshane Street, Ballymena.

THE HI-FI SHOP
21 Railway Road, Coleraine.
Tel: Coleraine 52843.

RAC HOUSE, Chichester Street, Belfast.
Tel: Belfast 40644.

9 Belmont Road, Belfast.
Tel: Belfast 671594.

23 Shaftesbury Square, Belfast.
Tel: 0232 40644.

RADIO RENTALS LTD
57 High Street, Newtownards.
Tel: Newtownards 813179.

29 Market Square, Lisburn.
Tel: Lisburn 5060.

97 Royal Avenue, Belfast 1.
Tel: Belfast 27684.

214-216 Lisburn Road, Belfast.
Tel: Belfast 660512.

McGready Buildings, High Street, Belfast.
Tel: Belfast 35255.

NICHOLL'S HI-FI CENTRE
15 Church Street, Ballymena.
Tel: Ballymena 6878.

NORWICH (NORFOLK)

R.F. EDWARDS, BONDS (NORWICH) LTD
9 Allsaints Green.
Tel: Norwich 60021.

MARTINS
85-87 Ber Street.
Tel: 0603 27010.

NORWICH HI-FI CENTRE
22 St. John Maddenmarket.
Tel: 0603 22792/6.

NOTTINGHAM

PETER ANSON LTD
523 Alfreton Road, Bobbers Mill, NG7 5QZ.
Tel: Nottingham 783312.

NICK DAKIN HI-FI
45 Radford Road.
Tel: 0602 783862.

FORUM HI-FI CENTRE
600 Mansfield Road, Sherwood.
Tel: Nottingham 622150.

JOHN KIRK HI-FI SPECIALISTS
138 Attenborough Lane, Attenborough.

LASKYS
5-7 Lower Parliament Street.
Tel: 0602-48987.

JOHN MCSHANE ELECTRONICS
346 Carlton Hill, Carlton.
Tel: Nottingham 875872.

NOTTINGHAM HI-FI CENTRE
116-118 Alfreton Road, NG7 3NR.
Tel: Nottingham 786919.

NSE
Peveerill Street.
Tel: Nottingham 785756.

RSC
19 Market Street.

SUPERFI
15 Market Street.
Tel: Nottingham 412137.

OAKHAM (LEICESTERSHIRE)

STUART WESTMORELAND
2 High Street.
Tel: Oakham 55600.

OXFORD

HORNS
6 South Parade, Summertown.
Tel: Oxford 511241.

LASKYS
16 Westgate.
Tel: 0865 722870.

RIOCRAFT/OXFORD ELECTRICAL
RENTALS LTD
256 Banbury Road.
Tel: 0865 53072.

SUPERFI
19 Old High Street, Headington.
WESTWOOD & MASON (OXFORD) LTD
46 George Street, OX1 2AN.
Tel: Oxford 47783.

OXTED (SURREY)

ALAN LAURENSEN & CO
70 Station Road East.
Tel: Oxted 4592.

PAIGNTON (DEVON)

UPTON ELECTRONICS
31 Torquay Road, TQ3 3DT.
Tel: Paignton 551329.

PAISLEY (STRATHCLYDE)

JOHN MCCACHLAN TELEVISION LTD
56-58 Old Sneddon Street.
Tel: 041-889 0101/3026.

PENZANCE (CORNWALL)

HYDROVOLT LTD
91 Market Jew Street.
Tel: Penzance 5075.

PERTH (TAYSIDE)

THE CONCORDE HI-FI CENTRE
St. John's Square.

ELENA MAE LTD
46 High Street.
Tel: Perth 24488.

K.K. PEDDIE HI-FI STUDIO
71 Kinnoull Street, PHI 5EZ.
Tel: Perth 35611.

PETERBOROUGH (CAMBRIDGESHIRE)

HI-FI CONSULTANTS
27 Long Causeway.
Tel: Peterborough 51007.

42 Cowgate.
Tel: Peterborough 41755.
13a Whitsed Street.

PAUL TAYLOR BTE LTD
11-13 Cowgate.
Tel: Peterborough 44059.
New Road.
Tel: Peterborough 54217.

PLYMOUTH (DEVON)

FRAMPTON CAMERAS
90-92 Cornwall Street.
Tel: Plymouth 60264.

PETER RUSSELL LTD HI-FI ATTIC
58 New George Street, PL1 1RR.
Tel: Plymouth 69511.

TOM HOLLAND LTD
110 Cornwall Street, PL1 1HF.
Tel: Plymouth 69282.

POOLE (DORSET)

POOLE CAMERA CENTRE
91 Arndale Centre, BH15 1SR.
Tel: Poole 6289.

<p>QUALITY HI-FI 55 North Road. Tel: Parkstone 742706.</p> <p>PORTSMOUTH (HAMPSHIRE) W.F. WAITE SOUND & VISION CENTRE 84 London Road. Tel: Portsmouth 9623622/9693321. PORTSMOUTH HI-FI CENTRE 350 Fratton Road.</p> <p>PORT TALBOT (WEST GLAMORGAN) ELECTROPHONIC HI-FI LTD 10 Forge Road, SA13 1NU. Tel: Port Talbot 2068.</p> <p>PRESTON (LANCASHIRE) ELECTRA CENTRE 58 Lancaster Road. Tel: Preston 58488. LASKYS Guildhall Arcade. Tel: Preston 59264. NORMAN HI-FI 51 Fishergate. NORTH WEST AUDIO VISUAL 130 Church Street.</p> <p>PUDSEY (WEST YORKSHIRE) PUDSEY HI-FI 201 Richardson Lane, LS28 6AA. Tel: Pudsey 567067.</p> <p>RAYLEIGH (ESSEX) RAYLEIGH HI-FI 44a High Street. Tel: Rayleigh 779762.</p> <p>READING (BERKSHIRE) B & B HI-FI 16 Gun Street. Tel: 0734 583730. 36 Minster Street. BERKSHIRE HI-FI & VIDEO 8 Meadway Precinct, Honey End Lane. Tel: Reading 582988. THE GRUNDIG CENTRE 66-68 King's Road, RG1 3BJ. Tel: Reading 51046/51062. HERBERTS Butts Centre, Upper Level. LASKYS 6 Friars Walk, Friars Street. Tel: 0734 595459. READING CASSETTE & HI-FI CENTRE 6 Harris Arcade, Friar Street. Tel: Reading 585463.</p> <p>REDCAR (CLEVELAND) MCKENNA & BROWN LTD 135-137 High Street. Tel: Redcar 483829.</p> <p>REIGATE (SURREY) ALAN LAURENSEN & CO 9 Bell Street. Tel: Reigate 46494.</p> <p>RICHMOND (SURREY) LASKYS 32 Hill Street.</p> <p>ROCHDALE (LANCASHIRE) CLEARSTONE HI-FI 52 Drake Street. Tel: Rochdale 524652.</p>	<p>J. KOCZUR 185 Yorkshire Street. Tel: Rochdale 42107.</p> <p>ROMFORD (ESSEX) CRAIG HI-FI 13 South Street, RM1 1NJ. Tel: Romford 28902. KELLYS RADIO LTD 8-9 Swan Walk. Tel: Romford 40818. LASKYS 86 South Street. Tel: 0708 20218. RUSH HI-FI CENTRE 38 North Street. Tel: Romford 26840. WOODBURY TEMPO GROUP 66 South Street. Tel: Romford 61911.</p> <p>ROSSENDALE (LANCASHIRE) JOE CRYER (ROSSENDALE) LTD 87 Bank Street, Rawtenstall.</p> <p>ROTHERHAM (SOUTH YORKSHIRE) VALLANCE & DAVISON LTD 14-16 Barnsley Road, Goldshooper. Tel: Rotherham 893250.</p> <p>ROTTINGDEAN (EAST SUSSEX) STINSONS 36 High Street, BN2 7HR. Tel: Brighton 31082/232738.</p> <p>RUDGELEY (WEST MIDLANDS) RUDGELEY RADIO 33 Horsefair.</p> <p>RUISLIP (MIDDLESEX) T.A.S. HI-FI & T.V. 84 Victoria Road, Ruislip Manor. Tel: Ruislip 32217.</p> <p>RUSHDEN (NORTHAMPTONSHIRE) RUSHDEN HI-FI CENTRE 14 Church Street. Tel: Rushden 2342.</p> <p>SAFFRON WALDEN (ESSEX) CHEW & OSBORNE 26 King Street. Tel: Saffron Walden 23728.</p> <p>SALE (CHESHIRE) HI-FI STEREO 51 Washway Road. Tel: 061-973 5577.</p> <p>SALISBURY (WILTSHIRE) BLACKMORE VALE ENGINEERING 17 Butchers Row. Tel: Salisbury 22766. SUTTONS 50 Blue Boar Row. Tel: Salisbury 27171.</p> <p>SCUNTHORPE (HUMBERSIDE) VALLANCE & DAVISON LTD 12 Broadway, Ashby, DW16 2SW. Tel: Scunthorpe 2564. 53 High Street, DW15 6SB. Tel: Scunthorpe 2991.</p> <p>SEVENOAKS (KENT) SEVENOAKS HI-FI 118 London Road. Tel: 0372 59555/6.</p>	<p>SHAFTESBURY (DORSET) BLACKMORE VALE ENGINEERING 33 High Street. Tel: Shaftesbury 2649.</p> <p>SHEFFIELD (SOUTH YORKSHIRE) AUDIO CENTRE SHEFFIELD 284 Glossop Road, S10 2HS. Tel: Sheffield 737893/730064. LASKYS 98 The Moor. Tel: 0742 79595. 58 Leopold Street. Tel: 0742 750971. MICRON AUDIO LTD 172 Baslow Road, Totley, S17 4DR. Tel: Sheffield 360295. QUADRAPHENIA 10 Nursery Street. Tel: Sheffield 77824. RSC 13 Exchange Street. SOUNDS 70's LTD 3 Berkeley Precinct, Ecclesall Road, S11 8PN. Tel: Sheffield 667628. TELEMAINTENANCE 61 Middlewood Road. Tel: 0742 344468. VALLANCE & DAVISON LTD Chapel Walk, Fargate S1 1GJ. Tel: Sheffield 29225.</p> <p>SHIPLEY (WEST YORKSHIRE) ERRICK'S OF BRADFORD 2 Westgate. Tel: Shipley 581597. J.S. RAMSBOTTOM & CO LTD 3 Westgate. Tel: Shipley 581808.</p> <p>SHREWSBURY (SHROPSHIRE) AVON HI-FI LTD 13 Wyle Cop, SY1 1XB. Tel: Shrewsbury 55166. SEVERN SOUND STUDIO Claremont Hill, SY1 1RD. Tel: Shrewsbury 57684.</p> <p>SLOUGH (BERKSHIRE) LASKYS 75 Queensmere Centre. Tel: Slough 24401.</p> <p>SOMERTON (SOMERSET) WATTS RADIO (G. J. & D. BRADMAN) 1 West Street, TA11 7PS. Tel: Somerton 72440.</p> <p>SOUTHAMPTON (HAMPSHIRE) HAMILTON ELECTRONICS LTD 35 London Road. Tel: Southampton 28622. PARKERS HI-FI 11 West End Road, Bitterne. Tel: Southampton 445926. SEXTONS 37 Bedford Place. VIDEO SOUTH 9 Bedford Place, SO1 2DB. Tel: Southampton 36648.</p> <p>SOUTHEND-ON-SEA (ESSEX) KELLYS RADIO LTD 92 High Street. Tel: Southend 63991.</p>
---	--	--

LASKYS
205 Churchill West, Victoria Circus.
Tel: 0702 612241.

SOUTHPORT (LANCASHIRE)

AUDIO CORNER
117 Portland Street.
Tel: 0704 37332.

SOUTHPORT HI-FI CENTRE
6 Princes Street.
Tel: Southport 36901.

SOUTHSEA (HAMPSHIRE)

EXPRESS RADIO
105-107 Fawcett Road.
Tel: Portsmouth 22721.

SPALDING (LINCOLNSHIRE)

PAUL TAYLOR BTE LTD
19-21 Winsover Road.
Tel: Spalding 2780.

ST. HELENS (LANCASHIRE)

COBALT HI-FI
54 Bridge Street.

ST. HELIER (CHANNEL ISLANDS)

CHANNEL T.V. AT DE GRUCHY
King Street.
SOUND ENGINEERING LTD
69 King Street.
Tel: 0534 21735.

ST. IVES (CAMBRIDGESHIRE)

ST. IVES T.V. CENTRE
14 The Broadway. Tel: 0480 66380.

ST. LEONARDS-ON-SEA (EAST SUSSEX)

B & K HI-FI MARKETS
3 Marine Court, TN38 0DX.
Tel: Hastings 439150.

BRYANTS HI-FI CENTRE
369 London Road.
Tel: Hastings 42317.

ST. NEOTS (CAMBRIDGESHIRE)

A.N. AUDIO
66 Huntingdon Street.

STAFFORD

T.A. ROWNEY
8 Bridge Street.

STAMFORD (LINCOLNSHIRE)

STAMFORD HI-FI CENTRE
9 Red Lion Square.
Tel: Stamford 2128.

STEVENAGE (HERTFORDSHIRE)

ANGLIA SOUND
23 Queensway.

STOKE ON TRENT (STAFFORDSHIRE)

HI-FI STUDIO
20-22 Lonsdale Street.
Tel: Stoke 47125.

KEITH RATHBONE
97 High Street, Biddulph.

RSC
44 Piccadilly, Hanley.

STOCKPORT (CHESHIRE)

REGUS
68 Lower Hill Gate.

STOCKTON-ON-TEES (CLEVELAND)

MCKENNA & BROWN LTD
Castle Centre.
Tel: Stockton 6995.

STONEHOUSE (GLOUCESTERSHIRE)

R. LEWIS & CO
Lewis Audio, The Green.
Tel: Stonehouse 2176.

STRATFORD-ON-AVON (WARWICKSHIRE)

JVC ORGANISATION LTD
8-9 Sheep Street.
Tel: Stratford 68874.

STROUD (GLOUCESTERSHIRE)

WILLIAM ROBB
55 High Street.
Tel: Stroud 2753.

STUBBINGTON (HAMPSHIRE)

SOUND & VISION CENTRE
27 The Green.
Tel: Stubbington 4335/6144.
2 Mays Lane.
Tel: Stubbington 61413.

SUDBURY (SUFFOLK)

SYSTEM SOUND
91 North Street.
Tel: 078 73 72348.

SUNBURY-ON-THAMES (SURREY)

MASSEY RADIO LTD
8 Sunbury Cross Centre.
Tel: Sunbury 88963.

SUNDERLAND (TYNE & WEAR)

**RED RADIO SHOP & STEREO
SOUND SHOP**
11 Olive Street, Sa Park Lane.
Tel: Sunderland 72087.

SAXONS LTD
20-22 Waterloo Place.
Tel: Sunderland 57578.

SUTTON (SURREY)

LANDAU RADIO LTD
195 High Street.
Tel: 01-643 0027.

SUTTON COLDFIELD (WEST MIDLANDS)

JOHN FROST LTD
111-115 Parade, B72 1PT.
Tel: 021-354 4206.

SWANSEA (WEST GLAMORGAN)

F.W. HAINES LTD
31 Oxford Street.
Tel: Swansea 54747/50269.

JOHN HAM LTD
75-76 Mansel Street.
Tel: 0792 50968.

HOLT HIGH FIDELITY

8 Portland Street.
Tel: Swansea 41032.

RADIOCRAFT LTD
231-232 High Street.
Tel: Swansea 460255.

SWINDON (WILTSHIRE)

DUCK SON & PINKER
13-19 Milford Street.

T.V. & HI-FI CENTRE
91-92 Commercial Road.
Tel: Swindon 28383.

TAUNTON (SOMERSET)

GRAYS
1 St. James Street.
Tel: Taunton 2986.

P. TAYLOR (TAUNTON) LTD
2 St. James Street.
Tel: Taunton 2638.

TONBRIDGE (KENT)

STANDENS LTD
92a High Street.
Tel: 0732 353540.

TORQUAY (DEVON)

FRAMPTON CAMERAS
14 Fleet Street.
PETER SCOTT (TORBAY) LTD
2 Tor Hill House, 162 Higher Union Street.
Tel: Torquay 22884.
RICHLow ELECTRONICS
20 Roundhill Road, Livermead.
Tel: Torquay 65028.

TUNBRIDGE WELLS (KENT)

GORDON FARRANCE
67 Grosvenor Road.
Tel: Tunbridge Wells 21069.
GOULDEN & CURRY LTD
59-61 High Street.
Tel: Tunbridge Wells 30151.

LASKYS

52-57 Camden Road.
Tel: 0892 23242.

SEVENOAKS HI-FI
34 Mount Ephraim.
Tel: 0892 31543.

UCKFIELD (EAST SUSSEX)

THE MUSIC SHOP
82 High Street.
Tel: Uckfield 2316.

UTTOXETER (STAFFORDSHIRE)

JOHN COOPER
1 Church Street.

UXBRIDGE (MIDDLESEX)

K.J. LEISURESOUND
278 High Street.
Tel: Uxbridge 33474.

WAKEFIELD (WEST YORKSHIRE)

J. WOOD & SONS LTD
20 Cross Street.
Tel: Wakefield 74446.

WALLASEY (MERSEYSIDE)

ARMSTRONG SMITH ELECTRONICS
65 King Street.
Tel: 051-639 9257.

WALLINGTON (SURREY)

THORNE HOWELL
15 Woodcote Road.

WALSALL (STAFFORDSHIRE)

RAY CHARLES AUDIO
83 Bridge Street.

WARLEY (WEST MIDLANDS)

SAM RILEY (BLACKHEATH) LTD
Kings Theatre Buildings, Long Lane,
Rowley Regis.

WARRINGTON (CHESHIRE)

COBALT HI-FI
106 Erdge Street.
HI-FI SYSTEMS
118 Buttermarket Street.
Tel: Warrington 32981.

WARWICK

J.C.V. HI-FI CENTRES
44 Emscote Road.
Tel: Warwick 43796.

WATERLOOVILLE (HAMPSHIRE)

W.F. WAITE SOUND & VISION CENTRE
The Precinct.
Tel: Waterlooville 2624.

WATFORD (HERTFORDSHIRE)

HERTS HI-FI
166 St. Albans Road.
Tel: Watford 34644 Ext. 27.

131 The Parade.
Tel: Watford 34644.

LASKYS
18 Charter Place.
Tel: Watford 47488.

K.J. LEISURESOUND
101 St. Albans Road.
Tel: Watford 45250.

33 Brindle Path.
Tel: Watford 33011.

RUSSELLS AUDIO
318a St. Albans Road.
Tel: Watford 32717.

WEDNESBURY (WEST MIDLANDS)

WOODS RADIO & T.V.
1 George Buildings, Upper High Street.
Tel: 021-556 0473.

WELLING (KENT)

H. C. & C. COPPINS
131-137 Bellgrove Road, DA16 3QS.
Tel: 01-303 5341.

40 Park View Road.
Tel: 01-303 1211.

**WELLINGBOROUGH
(NORTHAMPTONSHIRE)**

ALPHA-MU PRODUCTS
83 Brook Street, Raunds. NN9 6LL.
Tel: Wellingborough 622004.

TIMMS
39 Cambridge Street.
Tel: 0933 224211.

VISUAL SOUNDS
47 Midland Road.

WELLINGTON (SOMERSET)

P. TAYLOR LTD
21 South Street.
Tel: Wellington 2189.

WEMBLEY (MIDDLESEX)

WEMBLEY HI-FI CENTRE
412-414 High Road.
Tel: 01-903 9506.

WETHERBY (WEST YORKSHIRE)

VALLANCE & DAVISON LTD
1 Westgate, LS22 4CL.
Tel: Wetherby 64036.

WHITEHAVEN (CUMBRIA)

H.L. ELLIOTT
29 Lowther Street.

WIGAN (LANCASHIRE)

SOUTHPORT HI-FI CENTRE
12 Woodcock Street.
Tel: Wigan 37977.

WILMSLOW (CHESHIRE)

THE HI-FI CENTRE

Green Lane, SK9 1LW.
Tel: Wilmslow 524766.

SWIFT
5 Swan Street.
Tel: Wilmslow 526213.

WILMSLOW AUDIO
Swan Works, Bank Square.
Tel: Wilmslow 529599.

WINCANTON (SOMERSET)

BLACKMORE VALE ENGINEERING
High Street.
Tel: Wincanton 32234.

WINCHESTER (HAMPSHIRE)

STONES
30 St. Thomas Street.

WINDSOR (BERKSHIRE)

RADFORD HI-FI
43 King Edwards Court.

WIRRAL (MERSEYSIDE)

PETERS (ELECTRICAL) LTD
6 Allport Lane, Bromborough Cross.
Tel: 051-334 1874/2825.

WISBECH (CAMBRIDGESHIRE)

BARDELLS LTD
Market Place.
Tel: Wisbech 4639.

CLARKE'S MUSIC SERVICES
5 Market Place.
Tel: Wisbech 3363.

WISHAW (STRATHCLYDE)

TOM DICKSON CAMERAS
36 Caledonian Road.

WITNEY (OXFORDSHIRE)

WITNEY AUDIO
29 Corn Street.

WOKING (SURREY)

HI-FI MARKETS
27 Chobham Road.
Tel: Woking 4926.

WOLVERHAMPTON (STAFFORDSHIRE)

LASKYS
30 Wulfrun Way.
Tel: 0902 23384.

MIDLAND HI-FI STUDIO
1 Old Hall Street.
Tel: 0902 771774.

MILLWARDS (WOLVERHAMPTON) LTD
11 Salop Street, WV3 0RX.
1 Lichfield Road, Wednesfield.
Tel: 0902 732755.

RSC
6 Wulfrun Way.
SOUNDS
17 Bargate, Avion Centre, Newhampton Road.
Tel: 0902 21126.

WORCESTER

JOHNSONS SOUND SERVICE
43 Friar Street, WR1 2NA.
Tel: Worcester 25740.

WORKSOP (NOTTINGHAMSHIRE)

BASKILLS
26-28 Bridge Place.
Tel: 0909 81800.

WORTHING (WEST SUSSEX)

BOWERS & WILKINS LTD
1 Becket Buildings, Littlehampton Road.
Tel: Worthing 64141.

JOHN KING FILMS LTD
Guildbourne Centre.
Tel: Worthing 35416.

WREXHAM (CLWYD)

T.E. ROBERTS
26 King Street.
Tel: Wrexham 4404/4527.

YEOVIL (SOMERSET)

YEOVIL AUDIO
3 Princes Street.
Tel: Yeovil 25430.
8 Wyndham Street.

YORK

YORK PHOTO & AUDIO CENTRE
51 Fossgate.
Tel: York 56176.

MULTISOUND HI-FI
7 Davygate Arcade.
Tel: York 51712.

SAVILLE PHOTO HI-FI LTD
7 Goodramgate.
Tel: York 25755.

VICKERS
12 Gillygate.

DIRECTORY OF BRAND NAMES

continued from page 229

U

ULTRA. Thorn Consumer Electronics Ltd.
ULTRACRAFT. Osawa & Co (UK) Ltd.
UNISOUND. Condor Electronics Ltd.

V

VIDEOMASTER. Waddington Videomaster Ltd.
VISONIK. Uher Ltd.
VOGEL. Condor Electronics Ltd.
VORTA. Premier Industries (Cheltenham) Ltd.

W

WEIRCLIFFE. Amos of Exeter Ltd.
WESTRAK. Howland West.
WHARFDALE. Rank Hi-Fi.
WIFONA. Paul Spring Electronics Ltd.

Y

YAMAHA. Kemble (Organ Sales) Ltd.
YAMAHA HI-FI. Natural Sound Systems Ltd.
YORK. Sulkin UK Ltd.

Directory of Organ Dealers

ABERDEEN (SCOTLAND)
BRUCE MILLER & CO LTD
 22-26 Loch Street.
 Tel: Aberdeen 55924.

BRUCE MILLER & CO LTD
 55 Molburn Street.
 Tel: Aberdeen 573338.

ABERYSTWYTH (DYFED)
WALKERS MUSIC CENTRE
 30 Eastgate.
 Tel: Aberystwyth 617955.

ANDOVER (HANTS)
ANDOVER ORGAN CO
 10 Chantry Way, Town Centre.
 Tel: Andover 62791.

MODERN MUSIC (READING) LTD
 10 Chantry Way, Town Centre.
 Tel: Andover 62791.

AYR (STRATHCLYDE)
CRANES MUSIC LTD
 72 Sandgate.
 Tel: Ayr 63574.

THE MUSIC SHOP & KEYBOARD CENTRE
 Sandgate.

BANBURY (OXON)
STOCKER JENNINGS (BANBURY) LTD
 20 High Street.

BANGOR (GWYNEDD)
CRANES MUSIC LTD
 156 High Street.
 Tel: Bangor 4563.

BARNSELEY (S. YORKS)
AURA SOUNDS
 17 Upper Charter Arcade.
 Tel: Barnsley 5248.

BARNSTAPLE (DEVON)
NICKLIN & SON
 45 High Street.
 Tel: Barnstaple 2005.

BARROW-IN-FURNESS (CUMBRIA)
NORTHERN SOUND
 113 Duke Street.
 Tel: Barrow-in-Furness 27100.

BASINGSTOKE (HANTS)
BASINGSTOKE ORGAN CENTRE
 Chelsea House, New Town Centre.
 Tel: Basingstoke 64663.
MODERN MUSIC (READING) LTD
 Chelsea House, New Town Centre.
 Tel: Basingstoke 64663.

BATH (AVON)
DUCK SON & PINKER
 Pulteney Bridge.
 Tel: Bath 65975.
WESTSIDE MUSIC CENTRE
 4 Railway Street.
 Tel: Bath 64199.

BATLEY (W. YORKS)
PETER BROCKLEHURST ORGAN CENTRE

13 Commercial Street.
 Tel: Batley 471430.

BEDFORD (BEDS)
MR. MUSIC
 7 St. John's Street, MK42 0AH.
 Tel: Bedford 50861.
TREASURE MUSIC LTD
 20a Allhallows.
 Tel: Bedford 211865.

BEESTON (NOTTS)
KESTON ORGANS
 129 High Road.
 Tel: Beeston 258347.

BELFAST (NORTHERN IRELAND)
CRANE MUSIC LTD
 45 Fountain Street.
 Tel: Belfast 21908.

BEVERLEY (N. HUMBERSIDE)
BEVERLEY MUSIC CENTRE
 14 Norwood.
 Tel: Beverley 881584.

BIRKENHEAD (MERSEYSIDE)
RUSHWORTHS MUSIC HOUSE
 c/o Robb Bros. Grange Road.
 Tel: 051-647 7723.

BIRMINGHAM (W. MIDLANDS)
CRANES MUSIC LTD
 102 Corporation Street.
 Tel: 021-236 3734.

JONES & CROSSLAND LTD
 8 Smallbrook, Queensway, B5 4EN.
 Tel: 021-643 4655/6.

MIDLAND ORGAN STUDIOS
 2-5 Suffolk Street,
 Queensway, B1 1LT.
 Tel: 021-643 0232/2056.

MINNS MUSIC
 Unit 67, Birmingham Shopping Centre,
 New Street. B2 4XJ.
 Tel: Birmingham 6575.

THE SMALLWOOD PIANO CO LTD
 82 Smallwood, Queensway, B5 4EG.
 Tel: 021-643 7791.

W. J. TAYLOR LTD
 126-130 Hawthorn Road, Kingstanding.
 Tel: 021-382 1312.

BLACKBURN (LANCS)
E. D. BROWN (ORGANS) LTD
 55 Darwin Street.
 Tel: Blackburn 54681.

BLACKPOOL (LANCS)
CRANES MUSIC LTD
 6-10 Queens Square.
 Tel: Blackpool 24059.

E. D. BROWN
 62/64 Devonshire Road.
 Tel: Blackpool 34352.

BLAYDON (TYNE & WEAR)
GEORGE HARRISON ORGAN & AUDIO REPAIRS
 7 The Precinct.
 Tel: Blaydon 444333.

BOLTON (GREATER MANCHESTER)

E. D. BROWN (ORGANS) LTD
 115-117 Tonge Moor Road.
 Tel: Bolton 24530.

HARKER & HOWARTH
 Folds Road, BL1 1UN.
 Tel: Bolton 26623.

WALKER-GEARS MUSIC LTD
 5 Wigan Road, Westhoughton.
 Tel: Bolton 812547.

WOODS (PIANOS & ORGANS) LTD
 15-17 Manchester Road.
 Tel: Bolton 27171/2.

BOSCOMBE (HANTS)
EDDIE MOORS MUSIC
 679 Christchurch Road.
 Tel: Boscombe 35135.

BOSTON (LINCS)
KESTEVEN ORGANS
 8 High Street.
 Tel: Boston 61658.

BOURNEMOUTH (DORSET)
MINNS MUSIC
 5/7 Gervis Place, BH1 2AL.
 Tel: Bournemouth 291277/8.

BRADFORD (W. YORKS)
KITCHENS
 26 North Parade.
 Tel: Bradford 23577.
J. WOOD & SONS LTD
 28 Sunbridge Road.
 Tel: Bradford 20014.

BRIDGEND (MID GLAMORGAN)
CRANES MUSIC LTD
 20 Dunraven Place.
 Tel: Bridgend 61095.

BRIDGEWATER (SOMERSET)
WESTSIDE MUSIC CENTRE
 7 Fore Street.
 Tel: Bridgewater 2812.

BRIGHTON (E. SUSSEX)
CHINGFORD ORGAN STUDIOS LTD
 6/7 Station Road, Portsade.
 Tel: Brighton 412877.

MINNS MUSIC
 66 North Street, BN1 1RH.
 Tel: Brighton 29400.

BRISTOL (AVON)
DUCK SON & PINKER
 6-9 The Arcade.
 Tel: Bristol 211596.

JOHN HOLMES MUSIC & ORGAN CENTRE
 219-223 Cheltenham Road.
 Tel: Bristol 48119.

BROMLEY (GREATER LONDON)
SHARON MUSIC LTD
 422 Downham Road.
 Tel: 01-698 0915.

BURNLEY (LANCS)
WOODS (PIANOS & ORGANS) LTD
 1a-1b Manchester Road.
 Tel: Burnley 33709.

BURTON-ON-TRENT (STAFFS)

BURTON ORGAN CENTRE
86 High Street.
Tel: Burton-on-Trent 65869/65086.

BURY (GREATER MANCHESTER)

THE MERRION CENTRE
49 The Rock.
Tel: 061-764 2846.

THE ORGAN LOFT
49 The Rock.
Tel: 061-764 2846.

READ FRANKLIN & HAYWOOD LTD
Viscount Specialists
56 The Rock.
Tel: 061-764 4624.

BURY ST. EDMUNDS (SUFFOLK)

JACK WHITE ORGANS
63 St. John Street.
Tel: Bury St. Edmunds 64991.

BUSHEY (HERTS)

CITY ELECTRONICS ORGAN CENTRE
5 Park Avenue, Greatham Road.
Tel: Watford 24245.

CAMBRIDGE (CAMBS)

CAMBRIDGE ORGANS
196 Hill Road.
Tel: Cambridge 45410.

MILLERS MUSIC CENTRE
12 Sussex Street.
Tel: Cambridge 354452.

CANTERBURY (KENT)

SHARON MUSIC LTD
5 St. Margaret Street.
Tel: Canterbury 54848.

CARDIFF (S. GLAMORGAN)

CRANES MUSIC LTD
7-13 Castle Arcade.
Tel: Cardiff 20859.

GAMLIN PIANOS
St. Mary's Street.
Tel: Cardiff 20828.

CARLISLE (CUMBRIA)

RAY MOORE ORGAN CENTRE
6 London Road.
Tel: Carlisle 26742.

NORTHERN SOUNDS
15 Botcherigate.
Tel: Carlisle 39945.

CASTLEFORD (YORKS)

CASTLEFORD MUSIC CENTRE
36-38 Albion Street.
Tel: Castleford 554304.

CHATHAM (KENT)

HODGES & JOHNSON
291 High Street.
Tel: Chatham 408989.

CHELMSFORD (ESSEX)

HODGES & JOHNSON
20 Exchange Way.
Tel: Chelmsford 66247.

CHELTENHAM (GLOS)

JOHN HOLMES MUSIC & ORGAN CENTRE
3 Queens Circus.
Tel: Cheltenham 27017/30600.

CHESTER (CHESHIRE)

DA WSONS
5 The Forum.
Tel: Chester 48606.

CHESTERFIELD (DERBYSHIRE)

MA DINS ORGAN CENTRE
3 West Barrs.
Tel: Chesterfield 71737.

CHOBHAM (SURREY)

ARTHUR LORD ORGAN STUDIOS LTD
Station Road, GU24 8AQ.
Tel: Chobham 6363/7044.

CLIPSTONE (NOTTS)

DUCKFERIES ORGAN CENTRE
151 Mansfield Road.
Tel: Mansfield 35327.

COLCHESTER (ESSEX)

HODGES & JOHNSON
37 St. Botolph Street.
Tel: Colchester 77463.

COLWYN BAY (CLWYD)

THE MUSIC CENTRE
22 Penrhyn Road.
Tel: Colwyn Bay 33298.

CORB Y (NORTHANTS)

TREASURE MUSIC LTD
5 Spencer Court.
Tel: Corby 66189.

COVENTRY (W. MIDLANDS)

COVENTRY MUSIC CENTRE
3/4 White Friars Street.
Tel: Coventry 58571.

WARWICKSHIRE MUSICAL INSTRUMENTS LTD

14 City Arcade.
Tel: Coventry 58240.

CRAIGAVON (CO. ARMAGH)

CRANE MUSIC LTD
6 Shopping Centre.
Tel: 076-243 458.

CRAWLEY (W. SUSSEX)

RIVERSIDE ORGAN STUDIOS LTD
8 The Boulevard.
Tel: Crawley 25362.

CROYDON (SURREY)

WESTERN MUSIC LTD
53 High Street.
Tel: 01-688 1248.

MINNS MUSIC LTD
c/o Allders Ltd, North End.
Tel: 01-681 2577.

DARLINGTON (CO. DURHAM)

G. A. WILLIAMS & SON
Blackwellgate.
Tel: Darlington 66224.

DERBY

DERBY ORGAN CENTRE
62 Babington Lane.
Tel: Derby 361343.

INTERNATIONAL ORGANS
6 East Street.
Tel: Derby 32005.

J & K INTERNATIONAL ORGANS
6 East Street.
Tel: Derby 32005.

DINNINGTON (SOUTH YORKS)

DINNINGTON MUSIC CENTRE
96 Loughton Road.
Tel: Dinnington 2591.

DOUGLAS (ISLE OF MAN)

J. R. MITCHELL
56 Strand Street.
Tel: Douglas 22540.

DUNDEE (TAYSIDE)

HOUSE OF CLYDESDALE,
LARG & CO
16 Whitehall Street.
Tel: Dundee 26061.

EASTBOURNE (E. SUSSEX)

CHINGFORD ORGAN STUDIOS
11 Lismore Road.
Tel: Eastbourne 36831.

EASTBOURNE ORGAN STUDIOS

68 High Street.
Tel: Eastbourne 761943.

MINNS MUSIC

11 Lismore Road, BN21 3BA.
Tel: Eastbourne 36831.

PETER BONNER MUSICAL

6-7 Ivy Terrace.
Tel: Eastbourne 639335.

EDINBURGH (LOTHIAN)

EDINBURGH ORGAN STUDIOS
98 Canongate, The Royal Mile.
Tel: 031-556 3005.

ELGIN (GRAMPIAN)

BRUCE MILLER & CO LTD
142 High Street.
Tel: Elgin 2236.

EXETER (DEVON)

CITY ELECTRONICS ORGAN CENTRE
4 Station Crescent, Queen Street.
Tel: Exeter 51846.

MINNS MUSIC

19 Paris Street, EX1 2JN.
Tel: Exeter 50068.

FALKIRK (SCOT. CENTRAL)

FORTH VALLEY MUSIC
3-7 Cow Wynd.
Tel: Falkirk 31477.

FAREHAM (HANTS)

MINNS MUSIC
Unit 45, Fareham Shopping Centre.
Tel: Fareham 33234.

FOLKESTONE (KENT)

SHARON MUSIC LTD
Victoria House, Bouverie Road West.
Tel: Folkestone 41616.

GAINSBOROUGH (LINCS)

THE RON WOODHALL ORGAN CENTRE
Bridge Street.

GLASGOW (STRATHCLYDE)

HOUSE OF CLYDESDALE,
WILLIAM THOMPSON & SON
97 West George Street.
Tel: 041-248 6516.

GLOUCESTER

CRANES MUSIC LTD
47 Northgate Street.
Tel: Gloucester 415518.

DUCK SON & PINKER LTD
52-56 Southgate Street.
Tel: Gloucester 21061.

GRANTHAM (LINCS)
GRANTHAM ORGANS
21a Wharf Road.
Tel: Grantham 71582.

GRAVESEND (KENT)
HODGES & JOHNSON
160 Windmill Street.
Tel: Gravesend 66766.

GRAYS (ESSEX)
THE MUSIC SHOP
123 Derby Road.
Tel: Grays Thurrock 32182.

GREAT YARMOUTH (NORFOLK)
ALLENS MUSIC SHOP
24 Broad Street.
Tel: Great Yarmouth 2887.

GRIMSBY (S. HUMBERSIDE)
GOUGH & DAVY
47 Victoria Street.
Tel: Grimsby 42365.

MIDDLETONS MUSIC STORES LTD
17 Freeman Street.
Tel: Grimsby 54959.

GUERNSEY (CHANNEL ISLANDS)
GILROY (TV ELECTRICS) LTD
Les Barras Lane, Vale.
Tel: Guernsey 56828.

GUILDFORD (SURREY)
ANDERTONS MUSICAL INSTRUMENTS
North Street.
Tel: Guildford 38214.

THE SOUND OF MUSIC
6-8 London Road.
Tel: Guildford 76835/6.

HALESOWEN (W. MIDLANDS)
PIED PIPER (MUSIC) LTD
19 Peckingham Street.
Tel: 021-550 5947.

HALIFAX (W. YORKS)
ALBERT HIND
16 Waterhouse Street.
Tel: Halifax 53879.
J. WOOD & SON LTD
13 George Street.
Tel: Halifax 67251.

HARROW (MIDDLESEX)
CITY ELECTRONICS ORGAN CENTRE
Broadwalk Pinner Road,
North Harrow.
Tel: 01-863 1841/2130.

HAVERFORDWEST (DYFED)
CRANES MUSIC LTD
8 Old Bridge.
Tel: Haverfordwest 4777.

HAVERHILL (SUFFOLK)
MILLERS MUSIC CENTRE LTD
3 Jubilee Walk.
Tel: Haverhill 2044.

HELSTON (CORNWALL)
TOTTLES MUSIC SHOP

6 Meneage Street.
Tel: Helston 2888.

HEMEL HEMPSTEAD (HERTS)
MR. MUSIC
24 Bridge Street.
Tel: Hemel Hempstead 61812.

HEREFORD
WESTERN ORGANS
7 St. Owen Street.
Tel: Hereford 50277.

HIGH WYCOMBE (BUCKS)
THE SOUND OF MUSIC
6 Thames House, Castle Street.
Tel: High Wycombe 27413/28260.

HITCHIN (HERTS)
HERMITAGE ORGAN CENTRE LTD
35-37 Hermitage Road.
Tel: Hitchin 59925.

HORNCHURCH (ESSEX)
KARL BRENT ORGAN STUDIOS LTD
7 High Street.
Tel: Hornchurch 54862.

HORSHAM (W. SUSSEX)
JIMMY SMITH ORGAN STUDIO
4 Queen Street.
Tel: Horsham 67038.

HUDDERSFIELD (W. YORKS)
MUSIC WORLD
John William Street.
Tel: Huddersfield 25355.
THE ORGAN LOFT
1-7 John William Street.
Tel: Huddersfield 43418/25355/28397.

J. WOOD & SONS LTD
67 New Street.
Tel: Huddersfield 27455.

HULL (HUMBERSIDE)
GOUGH & DAVY
13-14 Savile Street.
Tel: Hull 26525.

BEVERLEY MUSIC CENTRE
9-11 Wright Street.
Tel: Hull 225187.

HUNSTANTON (NORFOLK)
TREASURE MUSIC LTD
2 Northgate Precinct.
Tel: Hunstanton 33825.

ILFRACOMBE (DEVON)
FRED JONES ORGAN CENTRE
1-5 Market Square.
Tel: Ilfracombe 64118.

INVERNESS (HIGHLAND)
BRUCE MILLER & CO LTD
2 Queensgate Arcade.
Tel: Inverness 33374.

IPSWICH (SUFFOLK)
JACK WHITE ORGANS
92 Fore Hamlet.
Tel: Ipswich 57223.

ISLE OF WIGHT
TEAGUES
69 Union Street, Ryde.
Tel: 0983 62316.
31 High Street, Newport.
Tel: Newport 523460.

KEIGHLEY (W. YORKS)
MUSICIANS CENTRE
20 Cavendish Street.
Tel: Keighley 62629.

KENILWORTH (WARWICKS)
WARWICKSHIRE MUSICAL INSTRUMENTS LTD
5 Abbey End.
Tel: Kenilworth 58771.

KESWICK (CUMBRIA)
BROOKS MUSIC CENTRE
6 Herries Thwaite.
Tel: Keswick 73933.

KETTERING (NORTHANTS)
TREASURE MUSIC LTD
64 Gold Street.
Tel: Kettering 2031.

KINGSTON-UPON-THAMES (SURREY)
ALLEN ORGAN STUDIOS (LONDON) LTD
175 Clarence Street.
Tel: 01-549 0076/7.
MINNS MUSIC LTD
3 Alderman Judge Mall, KT1 1BS.
Tel: 01-546 5161.
RIVERSIDE ORGAN STUDIOS LTD
4 Richmond Road.
Tel: 01-546 1231.

KNOWLE (W. MIDLANDS)
W. J. TAYLOR LTD
4 Station Road.
Tel: Knowle 45 6188.

LANCASTER (LANCS)
HARKER & HOWARTH
Kings Arcade, Kings Street.
Tel: Lancaster 69456.

LAUNCESTON (CORNWALL)
TOTTLES MUSIC SHOP
30 West Gate Street.
Tel: Launceston 2512.

LEAMINGTON SPA (WARWICKS)
R. B. MEW
1 Park Street.
Tel: Leamington Spa 24949.
WARWICKSHIRE MUSICAL INSTRUMENTS LTD
37 Bath Road.
Tel: Leamington Spa 30648.

LEEDS (W. YORKS)
KEYBOARDS
54-58 The Headrow.
Tel: Leeds 468939.

KITCHENS
22 King Edward Street.
Tel: Leeds 446341.

THE MERRION CENTRE
Leeds.
Tel: Leeds 449094.

LEICESTER (LEICS)
CHAPLIN & SONS LTD
266 Humberstone Road.
Tel: Leicester 21868.
TREASURE MUSIC LTD
Siddons Walk, Haymarket Centre.
Tel: Leicester 23004.

LEIGH-ON-SEA (ESSEX)

HODGES & JOHNSON
37-43 Broadway West.
Tel: Southend-on-Sea 712911.

LINCOLN (LINCS)

MIDDLETONS MUSIC STORES
55 Clasketgate.
Tel: Lincoln 27789.

JOHN C. NEWMAN
21-23 Monks Road.
Tel: Lincoln 26880.

LIVERPOOL (MERSEYSIDE)

CRANES MUSIC LTD
Crane Building, Hanover Street.
Tel: 051-709 0321.

HESSY'S MUSIC CENTRE
62 Stanley Street.
Tel: 051-236 1418.

RUSHWORTHS MUSIC HOUSE LTD
Rushworth Corner, Whitechapel.
Tel: 051-709 9071.

LLANDUDNO (GWYNEDD)

CRANES MUSIC LTD
125 Mostyn Street.
Tel: Llandudno 79151.

LONDON

CHAPPELL & CO LTD
50 New Bond Street, W1.
Tel: 01-629 7600.

CHINGFORD ORGAN STUDIOS LTD
230 Chingford Mount Road, E4 8JL.
Tel: 01-524 1446/7/8.

38 Ballards Lane, Finchley, N3.
Tel: 01-346 3059/8948.

FREEDMANS
629-631 High Road, Leytonstone
E11 4PA.
Tel: 01-539 0288.

HARRODS
Knightsbridge.
Tel: 01-730 1234.

LEWISHAM ORGAN CENTRE LTD
324-328 Lewisham High Street, SE13.
Tel: 01-690 2161.

MINNS MUSIC
Unit A4, Brent Cross Shopping Centre,
Hendon NW4 3FP.
Tel: 01-202 4433.

25 Riverdale Centre, Lewisham
SE13 7EP.
Tel: 01-318 4211/2.

MUSICAL INSTRUMENTS LTD
262-266 Lewisham High Street,
SE13 6JY.
Tel: 01-690 2958.

ORGAN LAND
398 Lewisham High Street, SE19.
Tel: 01-690 3600.

THE SOUND OF MUSIC
147 Chiswick High Road, W4.
Tel: 01-994 6561/3.

WESTERN MUSIC LTD
132 King Street, Hammersmith.
Tel: 01-748 5824.

50 The Broadway, Wimbledon.
Tel: 01-540 0494.

LOUGHBOROUGH (LEICS)

LOUGHBOROUGH MUSIC CENTRE
18 The Rushes.
Tel: Loughborough 30398.

LOWESTOFT (SUFFOLK)

MORLINGS LTD,
THE HOUSE OF MUSIC
149-151 London Road, N. Lowestoft.
Tel: Lowestoft 65491.

JACK WHITE ORGANS
127 London Road South.
Tel: Lowestoft 4802.

MACCLESFIELD (CHESHIRE)

MACCLESFIELD ORGAN CENTRE
15 Mill Lane.
Tel: Macclesfield 27062.

MAIDENHEAD (BERKS)

THE SOUNDS OF MUSIC
45 Nicholsons Walk.
Tel: Maidenhead 20117/31765.

MAIDSTONE (KENT)

HODGES & JOHNSON LTD
248 Water Lane, Stoneborough Centre.
Tel: Maidstone 58586.

SHARON MUSIC LTD
65 High Street.
Tel: Maidstone 61649.

MANCHESTER

CRANES MUSIC LTD
c/o Kendal Milne, Deansgate.
Tel: 061-834 8891

Unit 167, Arndale Centre.
Tel: 061-833 0941.

ERIC LORD
54 Gloucester Road, Urmston.

MANSFIELD (NOTTS)

DUKRIES ORGAN CENTRE
151 Mansfield Road, Clipstone.
Tel: Mansfield 33962.

MELROSE (BORDERS)

CLINKSCALE ORGAN STUDIOS
Abbey Street.
Tel: Melrose 2525.

MERTHYR TYDFIL (MID GLAMORGAN)

CRANES MUSIC LTD
67 High Street.
Tel: Merthyr Tydfil 5271.

MIDDLESBROUGH (CLEVELAND)

HAMILTONS OF TEESIDE
26 Newport Road.
Tel: Middlesbrough 247314.

MILTON KEYNES (BUCKS)

MINNS MUSIC LTD
164 Midsummer Arcade, Secklow Gate E.
Tel: Milton Keynes 604471.

MORECAMBE (LANCS)

E. D. BROWN (ORGANS) LTD
25 Pedder Street.
Tel: Morecambe 421183.

NELSON (LANCS)

E. D. BROWN (ORGANS) LTD
131 Leeds Road.
Tel: Nelson 65976.

NEWCASTLE-UPON-TYNE (TYNE & WEAR)

WILLIAM (TYNESDALE PIANO &
YAMAHA ORGAN STUDIOS)
The Square, Front Street, Whickham.
Tel: Newcastle-upon-Tyne 887773.

NEW MALDEN (SURREY)

MOORE-RANDALL ORGAN
SERVICE CENTRE
167a High Street.
Tel: 01-942 8766.

NEWPORT (GWENT)

CRANES MUSIC LTD
5 Emlyn Street.
Tel: Newport 58043.

NORTHAMPTON

CHINGFORD ORGAN STUDIOS
35 Horseshoe Street, NN1 1TB.
Tel: Northampton 22936/7.

MINNS MUSIC
Unit 38, Grosvenor Centre.
Tel: Northampton 33804/5.

NORWICH (NORFOLK)

JACK WHITE ORGANS
48-50 St. Benedicks Street.
Tel: Norwich 613678.

SUTTONS MUSIC
16, 18, 20 Exchange Street.
Tel: Norwich 25783.

NOTTINGHAM (NOTTS)

H. FARMER & CO LTD (PEARSONS)
57 Long Row.
Tel: Nottingham 45761.

KESTON ORGANS
129 High Road, Beeston.
Tel: Nottingham 258347.

MINNS MUSIC LTD
13 Broad Walk, Broadmarsh Centre.
Tel: Nottingham 59920.

NUNEATON (WARWICKS)

TAYLORS MUSICAL OF
NUNEATON LTD
118-119 Abbey Street.
Tel: Nuneaton 382645.

OAKDALE (GWENT)

CRANES MUSIC LTD
1 Commercial Buildings.
Tel: Blackwood 224752.

OXFORD (OXON)

JOHN HOLMES MUSIC &
ORGAN CENTRE
268 Banbury Road.
Tel: Oxford 57923.

PETERBOROUGH (CAMBS)

PETERLEC (SALES & SERVICE) LTD
8 Cowgate.
Tel: Peterborough 69363.

TREASURE MUSIC
86 Bridge Street.
Tel: Peterborough 60508.

PLYMOUTH (DEVON)

CITY ELECTRONICS ORGAN CENTRE
29-31 Eastlake Street, Drake Circus.
Tel: Plymouth 23011.

MINNS MUSIC
14 Cornwall Street, PL1 1LT.
Tel: Plymouth 20991.

TODDLES MUSIC SHOP
2/4 Coombe Park Lane, Westpark.
Tel: Plymouth 631779.

PONTYPRIDD (MID GLAMORGAN)

VISCOUNT ORGANS
22 Taff Vale Precinct.

POOLE (DORSET)

MINNS MUSIC
18 Arndale Centre.
Tel: Poole 70470.

PORTSMOUTH (HANTS)

MINNS MUSIC
34 Palmerston Road, Southsea
PO5 3QH.
Tel: Portsmouth 22864.

POTTERS BAR (HERTS)

POTTERS BAR MUSIC LTD
14 Barnet Road.
Tel: Potters Bar 57764.

PRESTON (LANCS)

JOHN ADAMSON ORGAN CENTRE
87 Moor Lane.
Tel: Preston 50430.

E. D. BROWN
336 Blackpool Road.
Tel: Preston 718747.

51-53 Friargate.
Tel: Preston 51403.

CRANES MUSIC LTD
85a Fishergate.
Tel: Preston 54990.

WOODS (PIANOS & ORGANS) LTD
84 Church Street.
Tel: Preston 52865.

PURLEY (SURREY)

AURA SOUNDS
14-15 Royal Oak Shopping Centre.
Tel: 01-668 9733.

READING (BERKS)

KEYBOARDS HOUSE
St. Martins Centre, Caversham.
Tel: Reading 476831.

MINNS MUSIC
59 Butts Centre (Unit 33), RG1 7QE.
Tel: Reading 595865.

MODERN MUSIC CENTRE
(BERKS) LTD
4 Oxford Road.
Tel: Reading 581320.

REDDITCH

PIED PIPER MUSIC
1-2 Market Place.
Tel: Redditch 64333.

REDHILL (SURREY)

KEYBOARD HARMONY LTD
82 High Street, RH1 1SG.
Tel: Redhill 68821.

RETFORD (NOTTS)

THE RON WOODHALL ORGAN
CENTRE
89-91 Carolgate.
Tel: Retford 703767.

RIPON (YORKS)

THE ORGAN LOFT
3 Park Street.
Tel: Ripon 700877.

ROCHDALE (GREATER MANCHESTER)

SHORROCK & SHORROCK
Drake Street.
Tel: Rochdale 44030.

ROMFORD (ESSEX)

GIDEA PARK PIANO & ORGAN
STUDIOS LTD

81 & 85 Main Road, Gidea Park.
Tel: Romford 42248.

HODGES & JOHNSON
19 Laurie Walk.
Tel: Romford 85403.

RUISLIP (MIDDLESEX)

CITY ELECTRONICS ORGAN
CENTRE
89 High Street.
Tel: Ruislip 33930.

RUSHDEN (NORTHANTS)

TREASURE MUSIC LTD
12b High Street.
Tel: Rushden 59059.

SALISBURY (WILTS)

MODERN MUSIC (READING) LTD
4b Enless Street, SPL 1DL.
Tel: Salisbury 25562.

STANGERS THE MUSIC PEOPLE
5 Catherine Street.
Tel: Salisbury 22278.

SCARBOROUGH (HUMBERSIDE)

GOUGH & DAVY
27 Huntress Row.
Tel: Scarborough 74610.

SCUNTHORPE (S. HUMBERSIDE)

MIDDLETONS MUSIC STORES LTD
5-7 Oswald Road.
Tel: Scunthorpe 65208.

SHEFFIELD (S. YORKS)

CRANES MUSIC LTD
125 The Moor.
Tel: Sheffield 24831.

THE MERRION CENTRE
212/218 West Street.
Tel: Sheffield 738808.

THE ORGAN LOFT
212/218 West Street.
Tel: Sheffield 738808.

WILSON PECK LTD
64-70 Leopold Street.
Tel: Sheffield 24123.

SHOREHAM (SUSSEX)

SHOREHAM MUSIC CENTRE
20 High Street.
Tel: Shoreham 3142.

SHREWSBURY (SALOP)

SABRINA ORGAN CENTRE
Riverside.
Tel: Shrewsbury 4101.

SOUTHAMPTON (HANTS)

MINNS MUSIC
158 Above Bar, SO1 0DU.
Tel: Southampton 25388/9.

UNIVERSAL KEYBOARDS
56 Commercial Road.
Tel: Southampton 27851.

SOUTHEND (ESSEX)

HODGES & JOHNSON
MUSIC CENTRES
216 Churchill Square, Victoria Circus.
Tel: Southend 613184.

SOUTHSEA (HANTS)

MINNS MUSIC LTD
34 Palmerston Road.
Tel: Southsea 22864.

ST. HELIER (CHANNEL ISLANDS)

AIME'LA MUSIQUE (CI) LTD
King Street, Jersey.
Tel: Jersey 73821.

STIRLING (CENTRAL)

WILLIAM THOMSON & SON
73-75 Barnton Street.
Tel: Stirling 64432.

**STOCKPORT
(GREATER MANCHESTER)**

NEILD & HARDY
The Precinct, Mersey Way.
Tel: 061-480 6611.

STOCKTON-ON-TEES (CLEVELAND)

TEESSIDE OCEAN CENTRE
25 Brus House,
Thornsley New Town Centre.
Tel: Stockton-on-Tees 66614.

STOKE-ON-TRENT (STAFFS)

KEITH BADDELEY
121 Church Street.
Tel: Stoke-on-Trent 411401/720128.

SHERWINS
Market Square, Hanley.
Tel: Stoke-on-Trent 21621.

STREET (SOMERSET)

WESTSIDE MUSIC CENTRE
4 Farm Road, Street.
Tel: Street 42859.

STROUD (GLOS)

THE BENTLEY ORGAN CO LTD
Woodchester GL5 5NW.
Tel: Amberley 3243.

STROUD MUSIC CENTRE
48-50 London Road.
Tel: Stroud 3587.

SUTTON (SURREY)

WESTERN MUSIC LTD
125 High Street.
Tel: 01-661 1167.

SUTTON-IN-ASHFIELD (NOTTS)

HARDY SMITH
2 Outram Street.
Tel: Mansfield 56242.
THE ORGAN HOUSE
52-54 Outram Street.
Tel: Mansfield 53305/54353.

**SUTTON COLDFIELD
(W. MIDLANDS)**

SUTTONS MUSIC CENTRE
31 Birmingham Road.
Tel: 021-355 1868.

SWANSEA (W. GLAMORGAN)

DUCK SON & PINKER
11 Union Street.
Tel: Swansea 50468.

SWINDON (WILTS)

DUCK SON & PINKER
13-17 Milford Street.
Tel: Swindon 22018.
JOHN HOLMES MUSIC &
ORGAN CENTRE
21-23 Farringdon Road.
Tel: Swindon 26393.

TAMWORTH (STAFFS)
TAMWORTH ORGAN CENTRE
 62 Church Street.
 Tel: Tamworth 51171.

TAUNTON (SOMERSET)
MINNS MUSIC
 14 The Bridge, TA1 1UG.
 Tel: Taunton 75919.

THORNABY (CLEVELAND)
G. A. WILLIAMS & SON LTD
 25-26 Brus House, New Town Centre.
 Tel: 0642 66614.

TORQUAY (S. DEVON)
CITY ELECTRONICS ORGAN CENTRE
 65 Market Street.
 Tel: Torquay 25488.

MINNS MUSIC
 73a Union Street.
 Tel: Torquay 28876.

TUNBRIDGE WELLS (KENT)
SHARRON MUSIC
 Kenwood House, 40 Grosvenor Road.
 Tel: Tunbridge Wells 39096.

TRURO (CORNWALL)
MINNS MUSIC
 114 Kenwyn Street, TR1 3DJ.
 Tel: Truro 3268.

UXBRIDGE (MIDDLESEX)
CITY ELECTRONICS ORGAN CENTRE
 9 Chequers Square, Uxbridge Town Centre.
 Tel: Uxbridge 30127.

WAKEFIELD (W. YORKS)
J. WOOD & SONS LTD
 20 Cross Street.
 Tel: Wakefield 74446.

WALLASEY (MERSEYSIDE)
RUMBELOWS OF WALLASEY
 Coronation Buildings,
 Wallasey Road.
 Tel: 051-638 3622/9871.

R. A. STROTHER & SONS LTD
 Coronation Buildings,
 Wallasey Road.
 Tel: 051-638 3622.

WALSALL (W. MIDLANDS)
MIDLAND ORGAN STUDIOS
 2a Bradford Street.
 Tel: Walsall 614763.

H. TAYLOR & SON
 29 Bridge Street.
 Tel: Walsall 27288.

WARE (HERTS)
WARE MUSIC
 8 Baldock Street.
 Tel: Ware 5939.

WARRINGTON (CHESHIRE)
DAWSONS
 65 Sankey Street.
 Tel: Warrington 32591.

WATFORD (HERTS)
CITY ELECTRONICS ORGAN CENTRE
 13 Queens Road.
 Tel: Watford 23644.

HAMMONDS OF WATFORD LTD
 161 High Street.
 Tel: Watford 39733.

UNIVERSAL KEYBOARDS
 48 Charter Place.
 Tel: Watford 20832.

WELLING (KENT)
HOME COUNTIES ORGAN CENTRE LTD
 Embassy Court, High Street.
 Tel: 01-304 5907.

WEMBLEY (MIDDLESEX)
CITY ELECTRONICS ORGAN CENTRE
 25 Central Square, High Road.
 Tel: 01-902 2832.

WEYMOUTH (DORSET)
MINNS MUSIC
 22 St. Mary Street, DT4 8PN.
 Tel: Weymouth 5000.

WHICKHAM (TYNE & WEAR)
WILLIAMS OF WHICKHAM
 Tyneside Piano and Yamaha Organ Studio,
 The Square.
 Tel: Whickham 887773.

WHITEHAVEN (CUMBRIA)
BROOKS MUSIC CENTRE
 97 Duke Street, Whitehaven.
 Tel: Whitehaven 2116.

WIGAN (GREATER MANCHESTER)
DAWSONS
 24 King Street.
 Tel: Wigan 44680.

WINCHESTER (HANTS)
KEYBOARD HOUSE
 15 Southgate Street.
 Tel: Winchester 68402.

WIRRAL (MERSEYSIDE)
WIRRAL ORGAN CENTRE
 The Mount, Heswall.
 Tel: 051-342 5586.

WISBECH (CAMBS)
CLARKES MUSIC SERVICES
 5 Market Place.
 Tel: Wisbech 3363.

WOLVERHAMPTON (W. MIDLANDS)
JOHN HOWL ORGAN STUDIOS
 58 Griffiths Drive, Ashmore Park,
 Wednesfield.
 Tel: Wolverhampton 732039.
MIDLAND ORGAN CO LTD
 1-2 Security House, Cleveland Road.
 Tel: Wolverhampton 711454.

UNIVERSAL KEYBOARDS
 13 Central Arcade.
 Tel: Wolverhampton 22699.

WORCESTER (HEREFORD AND WORCS)
CRANES MUSIC LTD
 19 Blackfriars Square.
 Tel: Worcester 23023.
ROY JEVONS ORGANS & PIANOS
 10 College Street.
 Tel: Worcester 20397.

WORKINGTON (CUMBRIA)
NORTHERN SOUNDS
 41 Jane Street.
 Tel: Workington 4797.

WORKSOP (NOTTS)
WORKSOP MUSIC CENTRE
 60 Bridge Street.
 Tel: Worksop 474008.

WORTHING (W. SUSSEX)
TEVILLE ORGANS LTD
 22 Teville Gate.
 Tel: Worthing 206833.

WREXHAM (CLYWD)
CRANES MUSIC LTD
 40 Regent Street.
 Tel: Wrexham 262487.

YEOVIL (SOMERSET)
MINNS MUSIC
 9 Glovers Walk, BA20 1LH.
 Tel: Yeovil 5780.
WESTSIDE MUSIC CENTRE
 17 Vicarage Street.
 Tel: Yeovil 23290.

YORK (NORTH YORKS)
GOUGH & DAVY
 7 Davygate.
 Tel: York 32421.

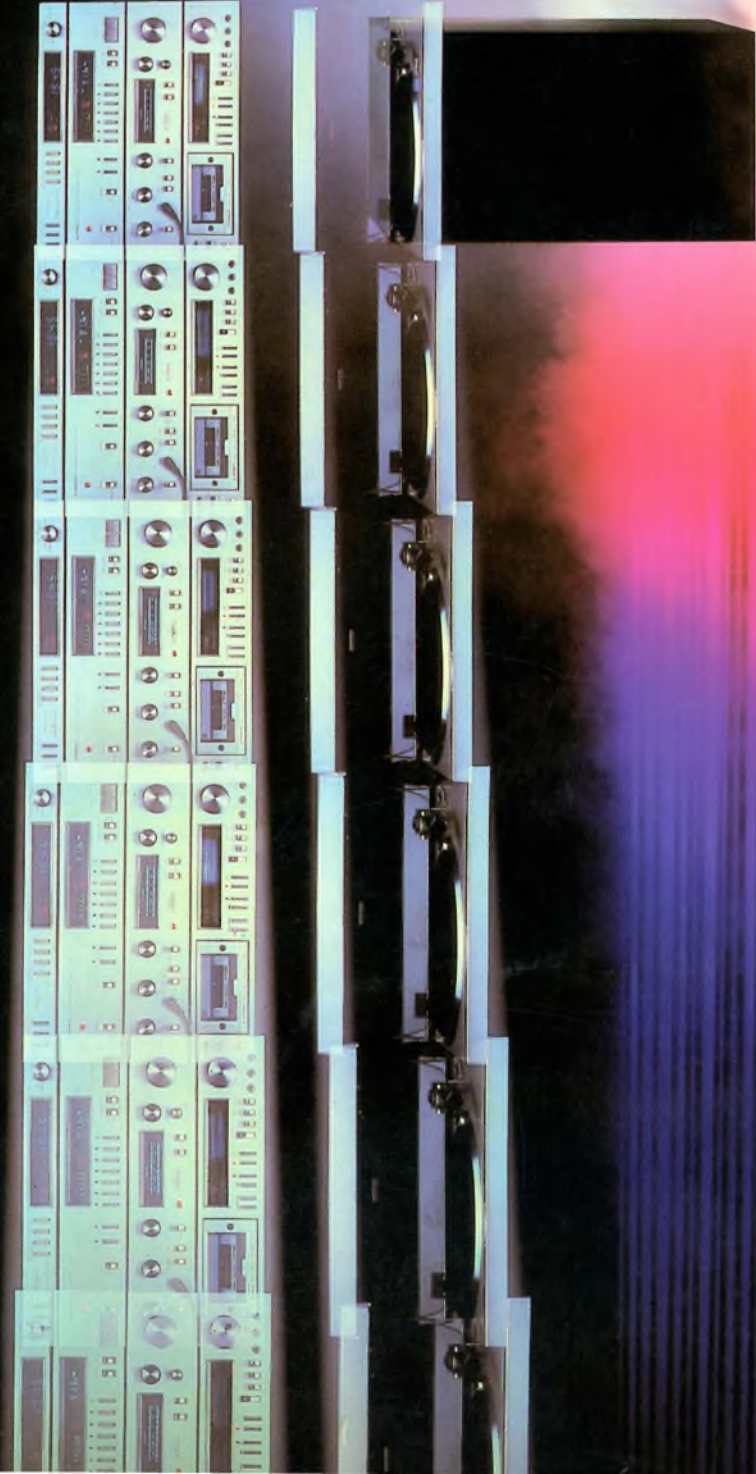


Complete Hi-Fi system, 30 watts per channel, AM/FM stereo tuner, stereo cassette deck with Dolby* Noise Reduction, direct drive stereo turntable with separate remote control track selection, two-way stereo speaker system featuring carbon cone woofers, all encompassed within a specially designed, moveable rack with separate speaker stands. Phew!

SEE SANYO, THEN DECIDE

SANYO MUSIC SYSTEMS FROM £139.95 (INC. SPEAKERS) TO £1,294.90 (EX. SPEAKERS) AT MAR MODEL SHOWN H880 SYSTEM £599.95 INCLUDING CABINET, SPEAKERS AND SPEAKER STANDS. FOR A FULL DEMONSTRATION CONTACT YOUR NEAREST SANYO DEALER.

THE ULTIMATE IN HI-FI INTEGRATION.



Looking at the X-900 pictured above, gives you the impression that it's something out of the ordinary. And out of the ordinary it most certainly is; it's the ultimate hi-fi system.

One of a range of four Pioneer hi-fi systems called the X-Series: X-900, X-700, X-500, X-300.

Slim, matched component separates that are fully integrated to produce the very best in sound. And in style. Each separate measures under 10 cms in height and has uncomplicated controls that are clearly laid out and easy to use. Stacked one above the other they create a neat, uniformity of design.

But there's more to integration than meets the eye. Technically, every separate matches every other perfectly. Leaving all problems of compatibility and ill-matched separates with other systems.

In effect, what you can't see of the X-Series integration, you can hear. From 65 Watts (78 Watts DIN) per channel with the X-900 amplifier to 20 Watts (27 Watts DIN) per channel with the X-300.

On all the amps, except on the X-300, there are bright blue, multi-peak Fluorescan™ meters which give accurate level readings.

But across the range, every cassette deck boasts metal tape compatibility and IC logic tape transport control.

The first allows you the pleasure of listening to recordings at the highest standard yet achieved, through the invention of metal tape cassettes. Which give a wider dynamic range and less distortion than any other tape.

The other, maximum safety in tape movement. An electronic memory control virtually eliminates any breakage or jamming when switching from one function to another, i.e. 'fast forward' to 'play'.

All the tuners have three wave bands (LW, AM and FM Stereo). And additionally, the two top systems are digital with pre-set station selection across all wave bands, giving instant recall with feather-touch controls.

On every system, the turntable has a specially designed Co-axial Suspension system that prevents un-

wanted vibration. And is either Quartz accurate direct drive or belt driven.

There is also a 24-hour digital audio timer with an automatic on/off for unsupervised recordings and a sleep-time cut off.

Even the purpose built cabinets laminated to a sleek black finish, are designed as an integral part of the total system.

There's a choice of three, giving up to two alternatives to the racking layout, depending on the system. The two larger cabinets also have an external plug for listening through headphones with the glass door shut.

Integration beyond anything you've experienced. But not beyond your reach.

 **PIONEER®**
X-SERIES

Pioneer High Fidelity (GB) Ltd., The Ridgeway, Iver, Buckinghamshire SL0 0JL.