

# HIFI YEAR BOOK 1976

# HIFI YEAR BOOK 1976

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# HIFI YEAR BOOK 1976

Edited by Kenneth Ellmore

Manager IPC Technical Information

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**Note: VAT rate change**

Where prices are shown as inclusive of VAT readers should contact manufacturers or suppliers before purchase. The VAT rate changed from 8 per cent to 25 per cent just as this book was going to press and it was not possible to ascertain the correct new selling prices in every case.

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# Introduction

This edition of the Hi-Fi Yearbook is the first to be compiled by IPC Technical Information Department, and I am adhering to the existing proven formula which has made the book so successful. It performs a dual function of helping the enthusiast to choose and compare equipment, and at the same time provides an invaluable reference book for trade and professional people.

The main changes are in the Directory Sections at the back of the book. I have introduced a Directory of Brand Names for easy reference, and the Directory of Hi-Fi Dealers has been re-styled under the new county areas. The other new feature is the expansion of the Hi-Fi Headphones section to include headphone accessories.

Wherever possible prices have been quoted exclusive of VAT, but in some cases manufacturers insist on giving VAT inclusive prices. During the compilation of this edition VAT was raised from 8 per cent to 25 per cent and, while every effort was made to ascertain the correct new retail figures, it was not possible to contact every individual firm before going to press. Also, in these days of inflation, prices are constantly changing in the normal course of events. Therefore, prices should be taken as a guide only, and readers should check with manufacturers or suppliers before committing themselves to a purchase.

I would stress that specifications are those supplied by the manufacturers. This department has no facilities for verifying the accuracy of statements or testing equipment. Every effort has been made to ensure the accuracy of the information given in the following pages, but no responsibility can be accepted for any error or omission.

I am grateful to former editor Basil Lane for his help and guidance to the new team, and for editing the feature articles. Also I acknowledge the work of my assistant Richard Bill in compiling the information.

Kenneth Ellmore

# Planning a listening room

by Roger Driscoll\*

The final link in the sound reproducing chain is not the loudspeaker, but the sound field between it and the listener. This distinction may seem unimportant in situations where 'good' listening conditions obtain, though the unobtrusiveness of the listening environment is probably a good recommendation. It is true that acoustic problems of the listening room are not often serious, but they can be avoided or remedied in many situations.

In planning a listening room, one must be concerned with the response of the room to sounds made in it, particularly reproduced sounds. Recorded sound is reproduced over loudspeakers, which must also reproduce the recorded acoustic; they are usually placed near to the boundaries of the room and produce, at the listening position, a high ratio of reverberant to direct sound energy. When, on the other hand, music is played 'live' in the room, only live reverberance is produced, and the positioning of the players with respect to the boundaries and the listener can subjugate many of the room's effects. (These considerations do not necessarily apply, of course, to large concert halls).

In contrast to the propagation of sound outdoors, where reflections are inconsiderable, the sound medium in a listening room is bounded on all sides by walls, ceiling and floor. The boundaries reflect, as well as absorb or extract sound energy from the air. For reverberance or residual sound to exist after direct sounds from the source have ceased, there must be some storage of energy in the room. This storage of sound energy might be seen as a uniform and continuous distribution of sound throughout the entire air volume of the room, which is how Sabine saw it in his classic work at the turn of the century. Such a sound field has a particular definition in

room acoustics; it is said to be diffuse, in which the rate of transfer of sound energy is the same in all directions, at each and every point of the room. It follows that the build-up and decay of sounds in a room supporting a diffuse field is smooth, and takes the same time no matter where it is measured with respect to the sound source. Thus a source signal with a square envelope (Fig.1a) would be reproduced in the room as shown in Fig.1b.

Evidently, such a situation cannot exist in any practical room, unless the sound field is sufficiently random or incoherent, when a statistical approximation to this result might apply. Such a statistical approach to an expression for Reverberation Time was suggested by Eyring, after the pioneering work of Sabine. A diffuse sound field was still assumed in the main body of the room volume, but the precise nature of sound as it reached the boundaries was likened to a wave motion. Hence a discrete, step-like, build-up and decay was envisaged at the boundaries themselves. (Fig.1c). A similar concept is employed in the Millington-Sette formula, except for a difference in computing the effect of room absorption.

Reverberation time for a room is an important quantity and for a listening room of typical domestic size ( $60 \text{ m}^3$ ), its value in the central audible range is about 0.4 seconds, with the characteristic tending to fall slightly in the upper treble register, and rising in the deep bass (Fig.2).

It is desirable for the steady sound field to be random or incoherent, at all frequencies, because changes in sound level in the room will then be smooth and unobtrusive. Although diffusion implies perfect uniformity of absorption at each boundary of the room, and an isotropic sound source (i.e. one which radiates equally in all directions) at all frequencies, this is neither practicable nor

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desirable for normal music and speech production and reproduction. In a well planned listening room, however, efforts must always be made to render all surfaces uniform absorbers and scatterers of sound. If the average absorption coefficient for each wall can be made within about 50% of the average coefficient for the entire room, then acceptable randomness in the middle and lower treble frequency range will be achieved.

Now the reverberation time relates to the build-up and decay of a diffuse sound field, from its steady-state value in a room. If sounds from the source change slowly compared with this time interval, then the sound level in most parts of the room will follow the sound source change. But if the sound source changes abruptly, in a time much shorter than the reverberation time, these fluctuations will not be as clearly transmitted by the room. Hence,

if the room is to transmit transient sounds faithfully, the reverberation time must not be over long. This is of less concern in a domestic listening room, of course, since the direct sound path to the listener is usually only a few feet or so. In a time equal to the reverberation time, a sound ray can travel, over many reflected paths, more than 100 metres. Hence it is possible, long before steady-state conditions are reached in the room, for multiple reflections to take place between, say, two facing walls of the room spaced by only 4 or 5 metres. So it would seem that transient irregularities caused by the room might also be clearly heard, because of the nearness of the boundaries to the listener.

Music and speech are composed of a great many transient sounds, each very brief compared with the reverberation time. In music there are about twenty or so sounds made in every second, with durations varying between about one-tenth of a second to several seconds, depending on the music and the instrument being played. A similar situation exists in normal speech; although fewer sounds per unit time occur, the durations vary between about one-fiftieth and one-third of a second, punctuated by longer time intervals between words and sentences. Steady-state conditions are therefore not often reached in a listening room, the average sound level being, in most cases, far lower than the brief peak levels. Fortunately, the uniformity of absorptive treatment, as required for an incoherent sound field in the upper frequency range, also helps to prevent transient buzzes and rings (or flutters in larger rooms) resulting from discrete reflections occurring in this range between opposite walls or any large untreated areas.

Now the frequency and wavelength ratios involved in sound reproduction, say from 20 Hz to 20 kHz, are large, about 1000:1. When sound reproduction takes place in a room, the objects within the room are small compared with the wavelength at low frequencies, and very large compared with the wavelength at high frequencies.

If, in acoustics, the dimensions of the room and its contents are large compared with the acoustic wavelength, then the wave nature of sound can be ignored and a diffuse sound field can be assumed. The simple reverberation theory of geometric acoustics fails when the

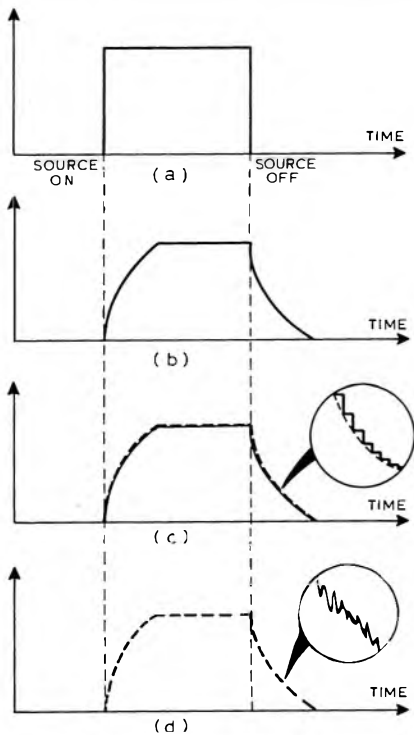


Fig 1 Build-up and decay of a square-wave signal in a room



**Table 1. Distribution of lowest Order modes for two different rooms.**

Mode Order			Mode Frequency	
$n_1$	$n_2$	$n_3$	Room approx 4in cube	Room 3.1 × 4.1 × 4.7
1	0	0	40	35
0	1	0	40	41
0	0	1	40	54
1	1	0	57	55
1	0	1	57	65
0	1	1	57	68
1	1	1	70	77
2	0	0	80	72
0	2	0	80	82
2	1	0	90	83
1	2	0	90	90
2	0	1	90	90
0	2	1	90	99
2	1	1	98	99
1	2	1	98	105
2	2	0	115	110

low frequency response of a listening room is considered. In reality, the decay of sound pressure in a room is never simple, at any frequency, and can only be considered 'smooth' as an approximation. (Fig.1d)

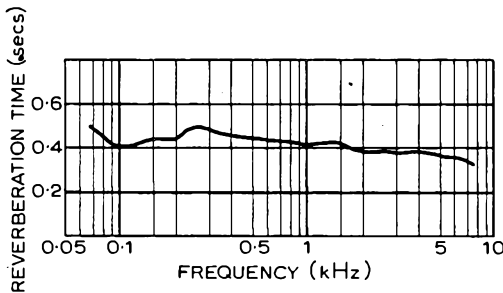
Effects can occur at low frequencies in a room which are not explained by the overall reverberation time of the room, because at low frequencies this quantity can vary considerably for different boundaries. The room behaves as a resonant system, and responds at discrete frequencies, according to the dimensions of the room. The prevalence and bandwidth of each mode or set of modes, associated with a particular dimension of the room, is determined by the acoustic treatment on the boundary spaced by that dimension. At low frequencies in small rooms, the mode density is low and the statistics of a random sound field do not apply. The few discrete modes of the lowest order (i.e. axial modes between any two walls or between floor and

ceiling) are clearly audible because they are widely spaced and fall in the clearly audible upper bass range between about 50 Hz and 150 Hz.

Every mode has high audibility in the corners of a room, as do most near the walls, whilst only about one-eighth have high pressure values in the room centre. It is well known that room dimensions which are in simple ratios give rise to coincident or 'redundant' modes, which is undesirable because it leads to further coherence of the low frequency sound field. (See Table 1.) It has been found that dimensions which are in the ratio,  $L:W:H$  1:1.69:43 or 1:1.82:72 lead to low orders of redundancy.

A well planned listening room must produce an unobtrusive sound field, both under steady-state and transient conditions. If the room is of rectangular shape, it is desirable that at least one of its dimensions is in no simple way related to the other two, even if they are related. If this requirement cannot be met with the basic structural dimensions of the room, then consideration might be given to the fitting of a suspended ceiling, carrying acoustic absorber which is arranged to be most effective at low and middle frequencies. Otherwise, it should be arranged that the sound sources are along one of the shorter sides of the room, so that early reflected sounds from the narrowly spaced walls arrive soon after the direct sound, and so augment it. This will lead to good stereo image stability and sensible size when the source is a reproducer of sound. See Fig.3.

Acoustic treatment in the room should never be unevenly distributed on the walls, ceiling or floor; this would mean a net flow of energy away from the reflecting surfaces and towards the absorbing ones, which must



*Fig 2 Typical reverberation characteristics*

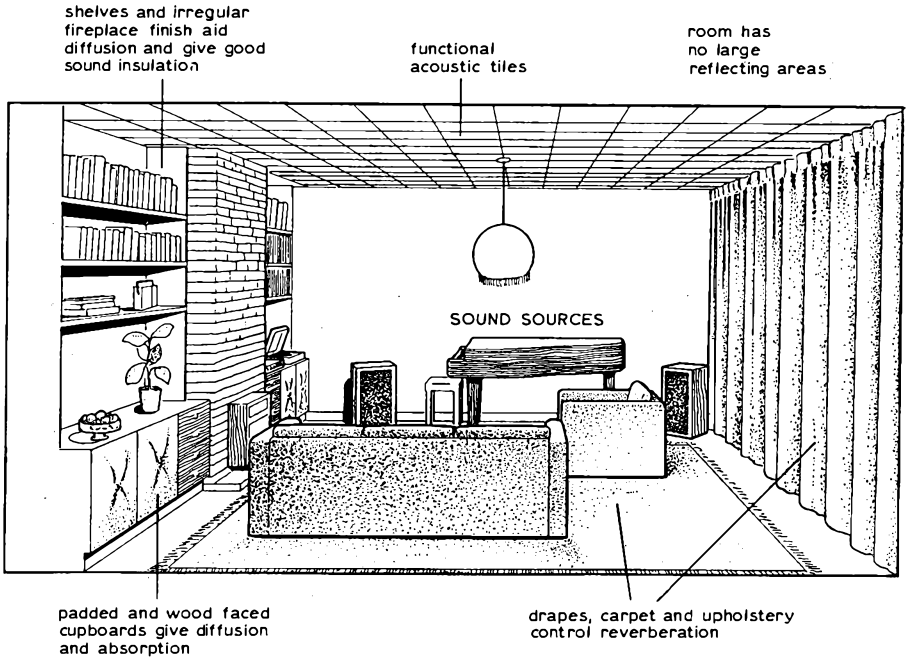


Fig 3 Irregular surfaces contribute to good stereo

detract from good diffusion. Also, such irregular acoustic treatment could make transient phenomena or modal discreteness, associated with the untreated surfaces, even more noticeable than if the room had not been treated at all.

The randomness of the sound field can be controlled, not only by uniform absorption, but by wall furniture etc. which aids diffusion by scattering the incident sound. These items, bookcases (which must not be too tightly packed) or reflective lower cupboards, will also help to isolate sounds in the listening room from neighbouring rooms in the house. Windows will perhaps require a heavier drape to conceal large reflecting surfaces while listening, whilst the ceiling could be finished with functional, perforated tiles, which will contribute a little useful absorption in the middle range. The absorption coefficients of almost every material used in furnishing to-day are available from the raw material manufacturers; the absorption which the drapes, carpet, ceiling tiles and furniture provide will control the reverberation time at upper frequencies to within the 0.35 — 0.45

secs. required to give the correct liveness for recorded acoustics to benefit.

Some wall surfaces may be left untreated, but these should be nearer the sound sources and should not extend more than a few feet along the room. Normally, the listening area will be near the room centre, but if the room is fairly long it may be necessary to move this area a little nearer the sound sources. If the acoustic is on the dull side (with considerable deadening absorption), then the listening conditions will be quite neutral at most points of the room, which is a useful general pointer. In small rooms of regular shape, the best solution will be to treat the room heavily, so removing much of its rather coloured reverberance and hardness. This might be done with curtains, or wall tapestries, thick carpet and upholstered furniture. A neutral or even 'dead' listening environment will always be preferable to the rings and boom that are otherwise heard in small untreated rooms.

# Turning the tables

by Donald Aldous

Turntable is a very loose term applied to the entire motor and drive system used for rotating a disc record, including the flat platter on which the gramophone record is placed.

Before examining the seemingly simple requirements for such a unit — forming part of a record deck when fitted with a pickup cartridge and arm — a backward glance at the early form of propulsion will put the recent electronic developments in perspective.

Ignoring the hand-cranked devices of the 'talking machine' pioneers, we can jump to around 1919, when the gramophone had ceased to be a parlour novelty and was beginning to be taken seriously as a source of domestic entertainment. The acoustic reproducers of this period employed turntables driven by clockwork or hand-wound spring motors.

Spring motors were being imported from the Continent, of course, but it is worth noting that the performance and reliability of the first British Garrard model (with its heavy construction, cast-iron frame, silent ratchet wind and spoked teeth on the winding pinion and gear) soon captured much of the market. The complete motor, with turntable, speed indicator, winding crank, escutcheon and fixing screws could be bought for 17s.4d!

During the era of the 'clockwork' motor, many new ideas were introduced to improve its performance. Among these innovations were a silent wind, non-racing centrifugal governors, easily replaceable spring cases, various types of folding winding cranks, spun steel turntables and automatic stop mechanisms.

The Garrard Company, incidentally, in the early 1920s manufactured a mechanism associated with the gramophone, called the 'World Record Controller'. Its object was to provide variable record speed, but constant linear groove velocity beneath the stylus. It

had two rubber wheels, one of which was driven by the turntable rim and operated a lead screw, which in turn slowly fed the other wheel, which was governor controlled, across the face of the disc being played, thus regulating its speed.

The device slowed up the speed of the record while playing the outer grooves and accelerated the speed as the playback stylus approached the centre of the disc, so keeping the groove speed constant. This was probably the first attempt to increase the playing time of the conventional disc record — the largest of which was 12 in. in diameter and revolved at 78 rpm, playing for some 3½ minutes or so. The constant linear speed record played for five to six minutes.

Bell and Tainter covered this idea in their original patents, and Pemberton-Billing devised the World Record Controller, of which many thousands were made by Garrard. They never achieved any real popularity, however, because no major record company adopted the method, and so no record repertoire was available in the catalogue.

So much for the historical development of turntables. In our progress towards the present-day models, we must take a look at 'automatic turntables', which, in the early days of electrical reproduction, could be classified as a record changer. Perhaps the most sophisticated record changers in general use are fitted in 'juke-boxes', and the ingenuity of the designers is shown in the change cycle mechanism.

It might help to get our terminology right; in today's language, a 'manual' unit refers to a model that handles one disc at a time (single play) and has no automated features. An 'automated single-play' covers a similar type design, but with degree of automation, for example, arm lift off at end of disc, or automatic set down of pickup at start. A model

that allows stacking of discs and playing several records in sequence automatically can be called an 'auto-changer' or 'automatic multiple play'. Many of these latest models can be operated manually or in varying degrees of automation.

Before leaving 'automatics', as the careful audiophile is unlikely to use any type of record changing unit in his hi-fi system, a note on the several types of trip mechanism employed may appeal to anyone who has gazed in awe at the cams and levers and slides located underneath the base plate of a changer.

In the 'velocity' trip, the changer mechanism is triggered by an abrupt change in groove pitch. Its merit is that no adjustment is required for different inside diameters, but its disadvantage is that, in most models, the pickup and arm have to operate a spring tension device as they move inwards, with attendant wear and distortion effects. Another type of trip works when the pickup reaches a specified inner diameter, but with different inside diameters on makes of record, an adjustable or even continuously variable control is required, the method mainly used on 45 rpm changers only. Thirdly, the familiar closing eccentric groove.

As mentioned at the beginning of this survey, the requirements for a good turntable are apparently simple, but in fact the designers have quite a task on their hands. Let's list a few of these conditions: it must revolve at a specified, constant rotational speed; its speed must remain constant even if the mains supply voltage fluctuates; it must run without detectable vibration with no up and down movements; it must not produce any stray magnetic flux leakage likely to introduce unwanted signals in the pickup; it must have powerful torque to overcome any changes in its load and be able to bring the turntable platter quickly to its indicated speed; and it must be able to run for many hours without distress.

One can add to these requirements such features as the ability to switch from one of the standard speeds (78, 45, 33½ or 16⅞ rpm) to another, with perhaps a fine speed control, and some means (usually optical) of checking the running speed.

### Playing 78s

Mention of various speeds draws attention to the growing interest in the last few years to

playing 78s, either for copying to tape or for immediate replay with suitable styli tip sizes and filters. The name that springs to mind at once for a good modern turntable capable of playing 78s is, of course, Goldring-Lenco. This ingenious design offers continuously variable speeds between 30 and 80 rpm, with 'click-in' stops, by means of a conical pulley

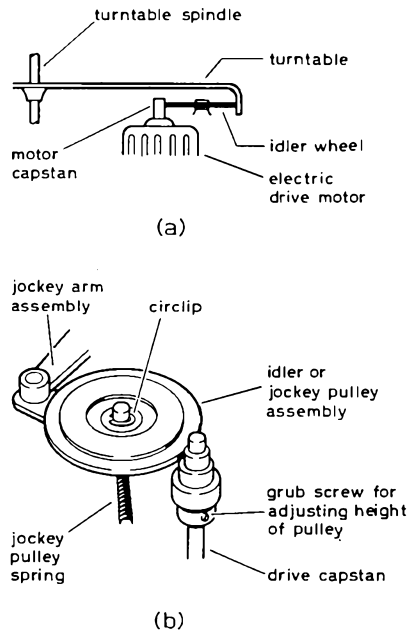


Fig. 1 Turntable drives: (a) in cheaper models, direct from motor capstan, via idler. (b) speed change, via stepped pulley, and jockey or idler wheel assembly

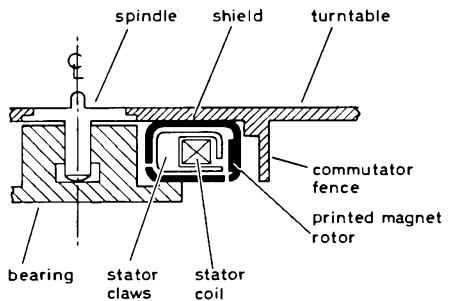


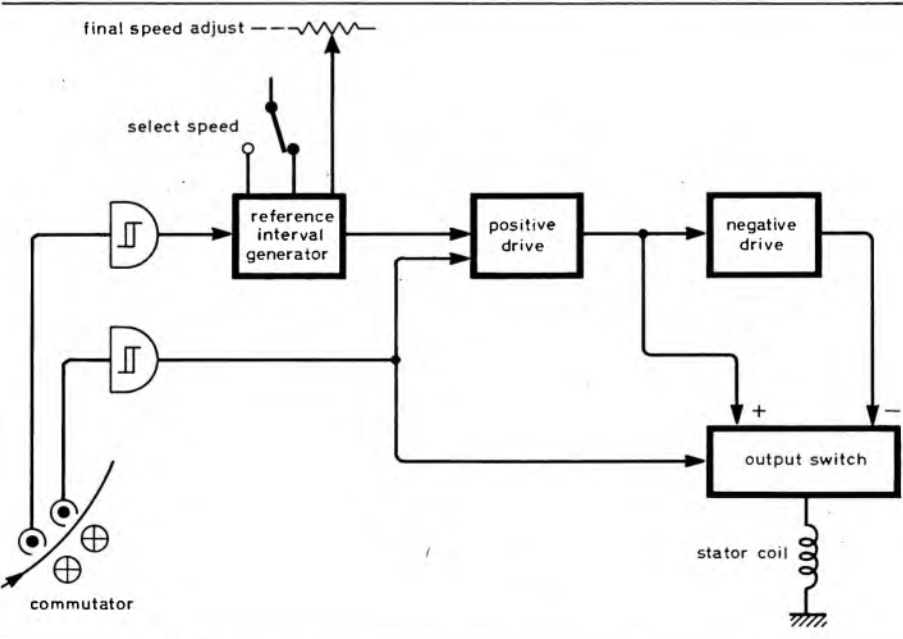
Fig. 2 Strathearn Audio direct drive turntable, showing the arrangement of bearing, motor and commutator ring

on the motor shaft over which the idler wheel can be traversed. Garrard, too, have several turntables (including the famous 301 and its successor, the 401 transcription design) providing multiple speeds, including 78 rpm.

On so-called 'transcription' turntables, a range of speed control — usually of the order of 2½% of nominal — is provided by means of an eddy current brake. This is a thin aluminium disc attached to the motor shaft so that it revolves between a U-shaped permanent magnet. The magnet exerts a pull on the disc, thus acting as a drag or brake. Speed alteration is through a knob and lever which moves the magnet over the disc surface. When playing old 78s, pitch conscious listeners often like to tune the replay speed to their piano, and so speed adjustment is valuable.

Although users cannot do anything about correcting the fixed speeds of their turntables (when driven by synchronous motors, for example), if one is able to check the

*Fig. 3 Block diagram of electronics design of the Strathearn Audio turntable. The stable and jitter-free reference time interval enables a wow and flutter figure better than ±0.05½ (peak DIN weighted) to be achieved.*



speed visually, a measure of reassurance is obtained. This usually means a stroboscope of some kind, which is illuminated from an AC mains source, although in the newest design (from Strathearn Audio) it was considered necessary for any strobe device working with the turntable to have much better stability than the mains. Hence a phasitron-like stroboscope display was devised, which consists of a number of LEDs in a circular configuration, which needs no adjustment to the unit whether the power supply is 50Hz or 60 Hz. In operation, the LEDs are illuminated successively in such a way that if the platter

is being rotated at its correct nominal speed, a stationary spot of light is visible. If speed is greater or less, the light spot appears to rotate around the display circle.

The old-fashioned stroboscope can range from a printed card or plastic disc to elaborate marked turntables with built-in neon lamp for illumination. For reference, in case you plan to make your own strobe, 180, 133, and 77 equidistant black spots or lines are necessary for the three standard speeds — 33½, 45 and 78 rpm. In countries with 60 Hz mains, the segments must be 216, 160 and 92 respectively.

### Drive systems

Two types of motor are widely employed — the induction and the synchronous. The former has an electromagnet rotor and runs typically at 1,320 rpm, dependent on the current induced. The latter has its speed locked to the AC mains frequency, and a more expensive version is the hysteresis synchronous motor, which may be a 16 pole type or even have DC drive to lower the rumble frequency.

As all these models run at speeds much higher than the standard record speeds, the coupling to the platter must be through a speed reduction linkage. This must be done in such a way as to minimise rumble. The drive can be direct from a motor capstan, via idler wheel, or from a stepped pulley for speed change, through a jockey pulley assembly.

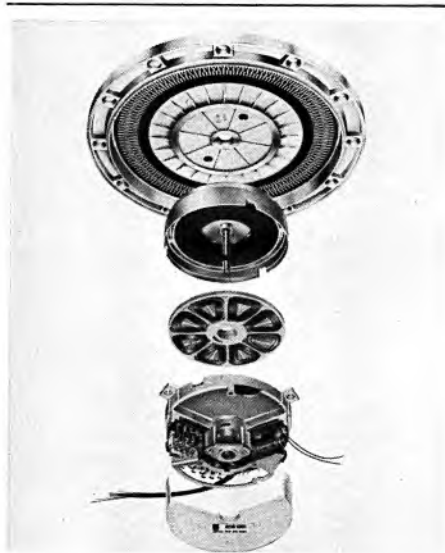
Another popular method of driving the turntable is through stepped or ratio pulleys on the motor shaft, coupled via a belt. Speed change with a belt is less convenient, but it does improve rumble rejection. The belt is often made of polyurethane plastic, rather than rubber, with claimed advantages of resistance to heat, humidity, and low elasticity.

Lately, several advanced designs of turntable have appeared with slow running motors coupled directly to the platter. In other words, the motor shaft is also the turntable axle, and the speeds are controlled by electronic servo mechanisms. In the best units, the platters are turned from a casting and are balanced by drilling holes, just like a car wheel is dynamically balanced.

A widely used motor is the Papst, which is designed to be 'inside out', so that the armature is on the outside thus, acting as a large flywheel. To obtain the desired speed constancy, when using a lower mass turntable, a smaller motor is driven from an electronic circuit. For instance, the Thorens TD.125. Mk.II is based on a Wien bridge oscillator, which is power amplified to drive the motor. Speed change is achieved by a small change in oscillator frequency.

### Electronic control

The expensive turntables today incorporate electronic circuits with 'servo' speed control. In designs marketed by Philips, Pye and Ekco, a small tachometer generator is coupled to the drive motor, thereby sensing any speed drifting and

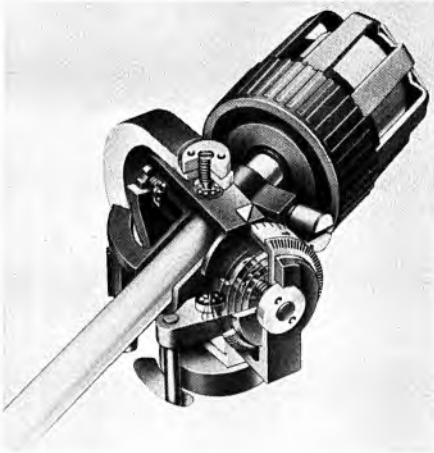


*Fig. 4 Exploded view of Dual 701 motor, showing the elements of its design*

then introducing appropriate correction in the electronics. Speed change is obtained by switched potentiometer circuits. Another ingenious electronic technique is employed in the Philips designs (GA.212 and later models), whereby a light beam operates the automatic switch-off, which avoids any mechanical loading on the pickup arm.

No updated review of turntables and decks can omit references to the elegant engineering incorporated in the latest Beogram 4000 audio system from Bang & Olufsen, and the remarkable motor/direct drive system of the Dual 701 unit. Each is worthy of an article by itself. The B & O player offers true tangential (parallel) arm tracking and full automation. The arm is servo-controlled to avoid imbalance of loading on groove walls, the drive motors are electronically controlled, turntable speed is switched automatically according to record size, starting, stopping and pickup set down are automatic. Cue-in is possible as a selected spot on the disc by servo control.

Turning to the Dual 701, its motor is a DC type energised from a regulated power supply and thus independent of variations in mains voltage or frequency. A pair of Hall effect devices, built into the motor, trigger four



*Fig. 5 Cut-away view of pickup arm on Dual turntable, showing elastically damped counter balance and gimbal suspension with needle-point bearings.*

switching semiconductors which produce a rotating field in the motor's magnetic field coil. The magnetic rotor rotates with this field, carrying the turntable resting directly on rotor assembly.

A feedback control circuit provides instantaneous self-correction by monitoring variations and then introducing an increase or decrease of motor supply current as demanded. Overlapping field coils eliminate the successive pulses of magnetic flux present in other motor designs. This in turn means that a major source of vibration and rumble is avoided, and, because of the low motor speed, it can be mounted directly to the chassis without risk of transmitting vibrations to the pickup arm.

Strathearn Audio's new direct drive turntable, with parallel tracking arm, incorporates some advanced thinking in its torque motor, speed sensor and controlling electronics. For example, a single coil claw-type stator surrounds the bearing assembly, and rests within a permanent magnet rotor. This has 36 pole-pairs printed on to a cylindrical plastic ribbon, which lies inside on the inside surface of a ferromagnetic cup. The controlling variable is drive voltage, with reversals

determined by opto-electronics inspection of a vertically-toothed ring.

Encompassed in the design desiderata listed earlier in this survey were factors like rumble levels, wow and flutter, etc.. all of which can be measured with the necessary equipment and know-how. Test records are available for this purpose, and evaluation methods favoured vary from using a 1kHz datum frequency at 10 cm/sec. feeding the signal from the pickup, through an RIAA equalised pre-amplifier, and then comparing this level with the LF signal from the pickup (after low-pass filtering) when it is playing a 'silent' groove, with appropriate weighting through to the CBS ARLL (Audible Rumble Loudness Level) rating.

#### **Novel features**

Two 'planetoidal' designs must be mentioned: the Transcriptors Saturn self-standing turntable unit, with its belt drive to a 12 in. diecast aluminium platter fitted with five raised discs, and the Rega model, which has three raised discs on the platter giving, the designer claims, maximum mass with lower total weight. Formerly marketed by Acos, it is now available from Rega Research Ltd., Rochford, Essex. Another exclusive feature on a British belt-drive turntable is the spherodynamic damped suspension (viscous balls) which isolate the deck against external shock and acoustic feedback. This is part of the Leak 2001 turntable deck.

A thought in closing: with these sophisticated and expensive designs, and rising costs of electricity, it might be worth re-examining the possibility of fitting a gravity drop motor, using a weight on a chain, as was employed in the pioneer equipment days, as well as in recording studios!

# Systems vs separates

by Vivian Capel

Seekers of good quality sound reproduction at one time had no other choice than to use a radiogram; the audio circuits were little different from the table radio, but the larger speaker and baffle area gave something extra in the way of bass response. As the demand for high quality audio grew, so the standards improved, and the bad effects of putting the loudspeaker in the same cabinet as the pickup were soon realized. Thus separate speakers became the vogue. Different manufacturers specialized in the various audio links; pickups, motors, amplifiers and speakers, and so commenced the era of audio separates. The audiophile had therefore to make his own selection of individual items according to his own judgment, aided by his local dealer, in order to build a complete system.

While this choice still exists today, there is evidence that the wheel is coming full circle. Most of the larger dealers offer complete systems assembled from the products of different makers, at a cost rather less than that of the individual units bought separately. Some manufacturers supply complete installations of units all of their own make, and there is an increasing trend toward integrated units such as tuner/amplifiers, player/amplifiers, while the once separate pre-amp and power amplifier have ceased their separate entities in all but a few cases. Now, the latest idea is the "music centre" which combines a tuner/amplifier with either a gram unit, cassette deck, or even both. In other words we are back to the radiogram but with separate speakers. The speakers may be left to the purchaser's choice, but with many music centres, these too are supplied.

So the would-be purchaser not only has to choose between manufacturers and their various models, but he has to decide whether to go for separate units of his own selection, a dealer's system, or integrated units by a single

manufacturer, a perplexing situation indeed! Here then, we will try to assist by discussing the pros and cons of this latter choice.

## Music Centres

Music centres have an obvious appeal in being compact and tidy, and therefore more likely to receive approval from the distaff side of the family. They are more convenient to operate because controls and switching are not duplicated as they may be with a collection of individual units. A further fact in their favour is that the inter-connections between the various sections are all made internally, and so we do not have a profusion of leads sprouting in all directions. It is a well-known fact that a multiplicity of leads equals trouble, as every lead is a potential source of a number of maladies. There can be loose fitting plugs, oxidized contacts, 'dry' soldered joints in the plug, intermittent breaks in the wire, to say nothing of being pulled out, tripped over, or being chewed up by the dog!

Yet another factor is that vulnerable input leads are kept short, being restricted to inside the instrument, and thereby minimising noise, hum, and in the case of magnetic pickup leads, loss of h.f. response or even resonance conditions due to the capacitance of a long screened lead.

What though of the quality of the sections within the music centre, are they comparable to separate units? Technically there is no reason why they should not be identical in performance. Now that transistors and integrated circuits have taken the place of valves, space is no longer a limiting factor. There is enough room for all the electronics, and even the heat-sinks required for higher powered output stages can be adequately ventilated in such instruments by judicious design and layout.

While this is true in theory, it will be found in practice that the standards of most music centres are rather lower than their unit



counterparts. For example the specifications for the power amplifier sections range mostly between 5 to 20 watts with just a few exceeding 30 watts; a large number are below 10 watts per channel. Unit power amplifiers on the other hand run from 8 to 70 watts and even higher, but the majority lie between 15 to 50 watts. Of course very high powers are not essential for high fidelity, but a comparison of harmonic distortion specifications can be more revealing. While a number go down to 0.1%, most music centres are between 0.5 to 1.0%, and a few are higher. In the case of unit amplifiers, the range runs from 0.03 to 0.6%, with the majority falling within 0.1 to 0.3%.

As the other sections of a music centre will be compatible in quality with the amplifier, these too will not be in the upper performance bracket. It may be noted that some makers use their own decks and pickups while others use those of the specialist manufacturers. Thus they are equivalent to a package system being literally in one physical package minus, of course, the speakers.

So, for the highest possible standards, we would not look to a music centre, but rather to a carefully selected system of separates; however, this does not mean that a unit installation will always be better than a combination outfit. As can be seen from the above figures, there is an overlapping of specifications, and the better music centres will give a higher standard of performance than some of the budget systems of separates.

Undoubtedly there is a lot to be said for the combination unit; in addition to the advantages already mentioned, the cost is usually less than for individual comparable separates. For anyone who wants all the facilities but without separate pieces, these are a good buy.

### **Tuner/amplifiers**

If the limiting factor in your case is hard cash, but you are prepared to do without some facilities in order to achieve a better standard of performance, a good plan is to start with some separate items, then add others as the finances permit. At one time the recommended purchase would have been a gram unit, amplifier and speakers, leaving radio and tape to be added later. There is now though much to be said for the purchase of a tuner/amplifier plus speakers as an initial step. One reason for this is the widespread coverage

of high-quality stereo broadcasts, many of which give a more natural result than the average stereo disc.

The question is, though, are combined tuner/amplifiers as good as separate units or do we have a similar state of affairs to the music centre? With early tuner/amplifiers this was indeed the case and the range was limited. Of recent years the situation has changed. There is now an extensive range from the modest unit right up to the expensive high-specification job. Comparing powers and distortion levels between tuner/amps. and single amplifiers reveals no significant differences, and similarly the tuner sections are of comparable specifications.

So, there is nothing to be lost in opting for a tuner/amp, except the welcome loss of two leads, the tuner output and mains leads. Costwise there should be a saving over two separate units of similar specification.

Few people have very positive views as to the best type of tuner or amplifier circuit (other than engineers), so any given tuner/amplifier combination is not likely to prove controversial. Matters are rather different where pickups, motors and speakers are concerned.

### **Pickups, Motors and Tape decks**

There is quite a diversity of opinion as to the preferred type of pickup cartridge. Among the magnetics there is the variable-reluctance, induced-magnet and moving-magnet in addition to others, each with its faithful band of devotees. Similarly there are the belt-drive and idler-drive motor protagonists, while others acclaim the virtues of direct drive. Pickup arms also have their finer points over which the enthusiasts like to argue.

This being so it is unlikely that the knowledgeable enthusiast would be happy with any combination of units arbitrarily assembled into a complete system. He may well be prepared to accept a particular tuner/amplifier as before mentioned, but beyond that personal opinion and preference will take over. Not for him the music centre, or the maker's or dealer's packaged system, he desires to make his own choice.

This may seem to be nothing more than a fad, but not necessarily so. Most items of audio equipment are a compromise between con-

flicting requirements, one type of distortion against another, frequency response against noise and so on. The individual must therefore decide which is the most important parameter to him, and then choose his equipment accordingly. He will have formed his opinion perhaps over a considerable period of reading informative articles in the technical magazines and listening to demonstrations at hi-fi exhibitions, and so will have some positive basis for his preferences. His system will be an individual one, made up of units of his choice.

For those with less positive views, but who would like some element of choice, the dealer's packaged system may be the answer. Every dealer wishes to make his customers happy for obvious reasons. His choice of units for a system will therefore be those which he believes to be the best value and best performers in that price range. If he is independent, he can, unlike the manufacturer assembling a system from his own products, choose from a wide range of maker's goods. He may not always be right, experts differ in all fields, but he has a lot of experience and technical knowledge behind him, so his choice will very likely be as good as any. An exception may be the smaller dealer who makes a selection from a limited number of stock lines. The buyer has the advantage of favourable terms for the chosen system, and he has a choice of the many package systems on offer from different firms and in different price ranges.

There is a pitfall into which the free-lance system assembler might fall, and that is choosing items that are incompatible with the others. With a dealer's packaged system, such

matters are taken care of, and the purchaser need have no qualms providing the dealer has done his job properly. So, for someone who is not technically knowledgeable enough to choose his own units, yet does not want a music centre, the package system has much to commend it.

### Compatibility

What exactly do we mean by compatibility as applied to audio units? There are two forms; one is electrical and the other is quality compatibility. Both are very important and must be considered by anyone assembling an outfit from separates.

Electrical compatibility is fairly straightforward, and refers to the ability of the circuits in each of two units to match and work together efficiently. Thus the output of a pickup cartridge must approximately equal the specified input sensitivity of the amplifier input socket. A cartridge rated at 1 mV at a recorded velocity of 1 cm/Sec, will on average be delivering some five times that signal from a musical record. The amplifier input sensitivity should be 5 mV therefore. Some cartridges are rated at 5 cm/Sec, so the rating should then equal the amplifier sensitivity. Input impedance is more or less standard at 47 kV, which is the same for most cartridges, so there is no problem there except for moving-coil pickups which need a matching transformer because of their very low impedance. If the pickup output is much lower than the amplifier sensitivity rating, the maximum power will not be obtained and the volume control will have to be turned well up to get sufficient volume with a corresponding increase in noise. If it is appreciably higher, the input stage may be driven into distortion on loud recorded passages. The volume control will not affect this condition because it comes after the first stage in the circuit.

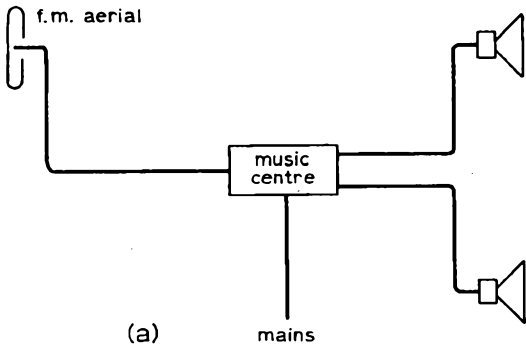
Sensitivities of tape and tuner sockets range from around 30 mV to 500 mV, while the outputs from those units is usually 1V (1,000 mV). As the gain control for these sockets comes before the amplifying stage, there is no problem from too large a signal. Thus most tuner and tape units will serve the majority of input circuits. Impedance is fairly standard at around 100-250 kV.

Suitability of the loudspeakers is the next point to check. Most are now rated at 4-16

Table 1

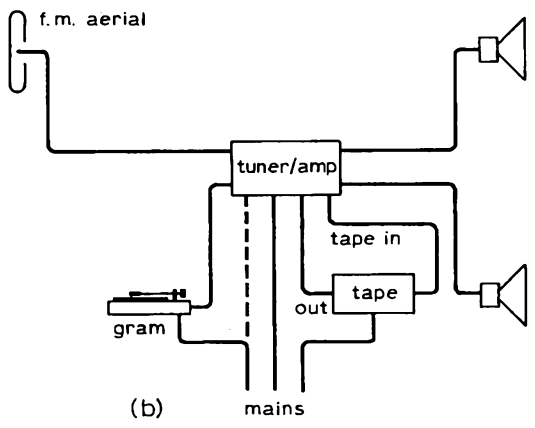
Item	Percentage cost		
	Basic Gram System	Gram with tuner/amp	Radio only
P.U. Cartridge	10%	8%	—
Arm and Motor	20%	16%	—
Amplifier	35%	—	—
Tuner/Amp	—	48%	62%
Loudspeakers	35%	28%	38%

Note: With higher cost systems amplifier proportion will be less and speakers more.

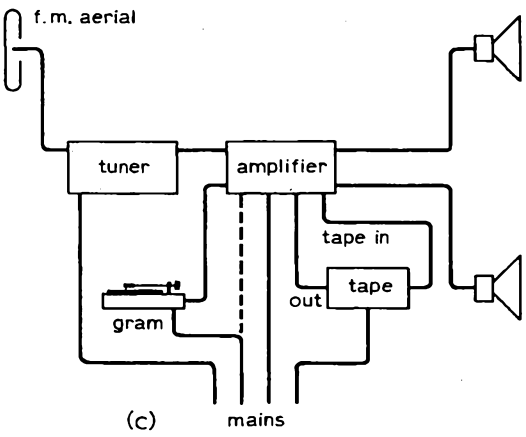


*The simplest and neatest type of system – cheaper and tending towards a lower performance than (b) and (c), but still very acceptable.*

*A system made up of "separates", and therefore affording a greater degree of choice. The use of the tuner/amp avoids some interconnection without any decrease in performance.*



*The greatest degree of choice of components is given by a complete system of "separates". No compromises need be made.*



ohms impedance, and the output impedance of the amplifiers is in the same range. Higher power is developed if a speaker impedance at the lower end of the specified range is chosen, but distortion is usually higher. The main consideration is to match the power handling capability of the speaker to the rated output of the amplifier. If the speaker has a limited power capacity, it will be driven into distortion and may even be damaged by too large an output from the amplifier. Some speakers are designed to give low distortion, but at the expense of efficiency, and so they need a high power to give sufficient sound volume. Thus if used with a low-power amplifier, the volume control may have to be turned up high resulting in the amplifier itself running into distortion. While exact matching of power ratings between speakers and amplifiers is not necessary, they should be in the same area.

Quality or class compatibility is rather more subtle, and so needs more thought. The saying: "the strength of a chain is in its weakest link" is certainly true of the hi-fi chain. If one item is below the standard of the others, the performance as a whole will be limited by that unit. Conversely if any item is better than all the others, the performance of which it is capable will be lost, and so the extra money spent will be wasted. So, each unit should be carefully chosen to be within the general quality range of all the others.

Particular points to watch are the cartridge and the arm; a top rate, high-compliance cartridge needs a first-class arm with low mass and friction, yet such an arm would be unnecessary with a lower-grade cartridge. Other units needing quality matching are the turntable and the loudspeakers. This may seem surprising, but speakers with an extended low-frequency response will show up any rumble in a low-cost turntable. On the other hand, if the speakers are small with restricted bass, a modest turntable unit will serve quite well, as the rumble it may produce will be greatly attenuated.

Similarly a top-flight amplifier with distortion less than 0.1% would be pointless and an unnecessary expense if used with a cheap cartridge generating distortion levels of several percent. The general idea can be seen then, of the effect the various units have and their respective performance standards.

How though can we determine whether a

Table 2

Type of system	Advantages	Disadvantages
<b>Music Centre</b>	Compact Tidy specification Minimum leads Short input leads Convenient Good cost value	No choice units Limited
<b>Maker's Package System</b>	Fully compatible Leads supplied Cost saving	No choice units Limited specification Units not by specialist maker Numerous leads Numerous units
<b>Dealer's Package System</b>	Compatible Leads supplied Some choice units Wide price range Some cost saving Various makers Dealer's experience	Numerous leads Numerous units Choice limited
<b>Own System</b>	Maximum choice of make, type & price Unique system Satisfaction of results of own judgement	Numerous leads Obtain leads or make up Numerous units Possibility compatibility errors No cost savings

given unit is in the same general class as the others in the proposed system? As the better items are more expensive, obviously requiring better materials, and a higher standard of skill in the assembling, it follows that price can give a rough indication as to the quality. Rough it must be thought, as some units are overpriced compared to other makes of similar performance, while others are underpriced; furthermore, the cost/performance curve is by no means linear.

Even so, the following approximation will prove a basic guide in the assessment of compatibility of quality. Each item is expressed as a cost percentage of the total outlay. Cartridge, 10%; gram-unit (motor and arm) 20%; amplifier, 35%; speakers, 35%. If a tuner/amplifier is required in addition to the gram-unit, the proportions should be something like: cartridge, 8%; gram unit, 16%; tuner/amp, 48%; speakers 28%. Where a

tuner/amplifier is to take the place of the gram facility for the time being, the ratio would be: tuner/amp, 62%; speakers 38%.

Another factor which must not be overlooked is that of the assembling and wiring of the individual units, if one's own selection has been made. Very likely a motley selection of plugs and sockets will be required, as some units will have DIN sockets, others phono, and yet others jacks. While connecting leads are available that will match any one type of socket to any other, it does add another complication, and of course when you go to get a suitable lead locally you find that the very one you want is the one that is out of stock! If you are good at soldering and fiddling with plugs and know the correct pin connections, you can make up your own, but if not, there are delays while the necessary lead is being obtained. This problem does not arise with music centres, and dealer's package systems are usually supplied with all connecting leads.

Assembly, especially mounting pickup arms on motor deck-plates and fitting cartridges is not without its problems too. In most cases it is straightforward enough for those with some mechanical aptitude if the maker's instructions are followed, but snags can arise. For example, there is a cartridge which is too deep for the fixing screws supplied with a certain arm. Although the screws supplied with the cartridge are long enough, they are of the wrong thread for fitting to the arm. So, one has two sets of screws, one set of the correct thread but too short, and the other of the right length but with the wrong thread!

We can sum up then by saying that if you want the convenience, space-saving and tidiness of an 'instant system', but have no dogmatic ideas as to which type of pickup or amplifier is best, and further that although you naturally want good quality, you are not fussy about attaining the very highest of fi, the music system will be your best buy. If though, you do have one or two preferences as to available units but are not over-concerned with others, and are prepared to accept the combination assembled by someone with experience, look out for the units of your choice among the package systems of the dealers. You will save yourself a lot of problems and some cash too.

If you are a real hi-fi enthusiast, and follow the equipment reviews and articles assiduously, taking a keen interest in all the

technical points, nothing will satisfy you other than planning and assembling your own personal system. You may spend a bit more and you may encounter a few problems in the process, but you will have a unique system, the product of your judgement which you will be (it is hoped) proud to own and show off to others.

Just a final word now about loudspeakers. Whether a music centre or dealer's package is chosen, one should retain the option of a choice of loudspeakers. Speakers can sound very different in one's listening room than elsewhere, individual room acoustics can considerably modify the results. If at all possible, the final choice should be made at home, and most dealers will agree to this. Beware of loudspeakers that are part of a manufacturer's system, and therefore are not made by a recognized loudspeaker manufacturer. Some general equipment makers think that there is nothing to making up loudspeakers, just fitting a woofer and tweeter into a wooden box with a cross-over network and some wadding for damping.

Nothing could be further from the truth. Loudspeaker assemblies may look simple, but there are many subtleties of design and inter-related factors that the established makers have discovered over many years of research and experience, and naturally are not making public knowledge of. This does not mean that some of the models by the newer specialist speaker manufacturers are not good; some are very good, but they are specialists and have put a lot into their designs. It is the speakers made by manufacturers who make everything else in the system as well, that one should be wary of. Loudspeakers probably affect the ultimate results more than any other link in the chain, so whatever else you choose, choose them well.

# Microphones

by John Dwyer

The perfect microphone doesn't exist. The type the recording angel uses in that great studio in the sky is probably noise free, has a high output, well above any amplifier noise, a uniform frequency response, produces no distortion and has a constant polar pattern throughout that frequency range. Unhappily his supplier doesn't have an agency down here yet.

It's more likely that you'll buy a microphone after buying the equipment into which it plugs than the other way round, so it makes sense to make sure your microphone is suited to what you already have before considering the more subtle differences between the various types.

## Impedance and Sensitivity

Two quantities are important where mic inputs and outputs are concerned: impedance and sensitivity. Some microphones have fixed and others adjustable impedances. The choice is usually low, (25 ohms) line, (600 ohms) and high, (50 kilohms) the last a hangover from the days when microphones fed valve input stages. In theory, to avoid signal reflections and provide a flat frequency response the microphone must see its own impedance at the

input stage. In practice this halves the sensitivity of the microphone and it is usual for the amplifier input impedance to be from twice to five times the impedance of the microphone.

Low impedance microphones allow long lengths of cable to be used without the risk of introducing stray fields and noise into the signal, but a low impedance microphone often needs a transformer to match into following equipment and usually has low sensitivity.

A higher impedance microphone, conversely, may be more sensitive and match into following equipment more easily. But the capacitance of the cable may now be of the same order as the input impedance, and some of the microphone signal may be lost as a result, by the short-circuiting action of this capacitance as frequency increases.

The sensitivity of a microphone is a measure of the electrical signal output for a given sound input. There is a bewildering variety of ways this can be expressed: mW/10 dynes/cm<sup>2</sup>; mV/dyne/cm<sup>2</sup>; mV/N/m<sup>2</sup>; mV/microbar; mV/Pa or any combination of these, all of which represent electrical output for a given level or change in sound pressure. Sensitivity may also be expressed in decibels relative to a given output. The microbar is the same as the dyne/cm<sup>2</sup>, and ten of these is the same as a newton/m<sup>2</sup> which is sometimes called a pascal (Pa). The microbar (0.1 N/m<sup>2</sup>) is roughly the peak level of a normal speaking voice one metre from the microphone.

The manufacturer will show the sensitivity of his microphone at its best, so he will measure the voltage output of the microphone without any load across the terminals. If the microphone has a high impedance option he will quote the sensitivity at the higher impedance.

The sensitivity should be at least that of the input into which it is working, preferably two to five times that value, otherwise the

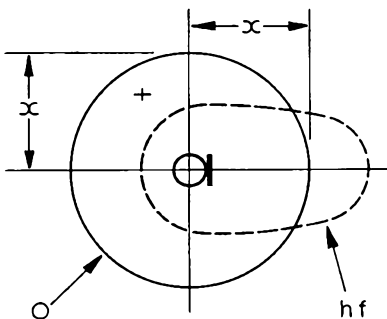


Fig 1 Polar plot for an omni mic

microphone signal will not be much greater than the system noise. If it is too high the microphone signal will overload the input but at least if this happens you can lower the output of the microphone with suitably chosen resistors.

As an example, some Revox machines have a 6 kilohm input at 0.15 mV. Thus the microphone needs to have an impedance of between 1 and 2 kilohms and an output of between 0.4 and 0.8 mV/microbar, or between -68 and -62 dB relative to 1V/dyne/cm<sup>2</sup>.

**Polar patterns**

The polar pattern is an indication of the way the output or response of the microphone varies as the microphone is rotated relative to a fixed sound source. The polar pattern depends on microphone construction. Some microphones allow sound to reach the front of the diaphragm but the space behind it is enclosed. The diaphragm thus moves with variations in air pressure relative to atmospheric pressure. These variations can affect the diaphragm from any direction and so the polar pattern is omnidirectional (Fig 1).

Other microphones have diaphragms exposed on both sides and they respond to the difference in pressure between the sound wave that reaches the front of the diaphragm and the one that has reached the back, having had to travel a little further. This is called a pressure gradient microphone. It can be seen that the diaphragm will respond to sounds from the front or back of the microphone but that a sound 90° off axis will reach each side of the diaphragm simultaneously and so the

diaphragm will not move. The result is the bidirectional or figure of eight pattern shown in Fig 2. Although responses to sounds from back and front are equal, the diaphragm moves in the opposite direction in response to sounds from the front as it does to sounds from the back, and for this reason the microphone is said to have a positive lobe at the front and a negative one at the back. A sound producing +V volts from the microphone at the front will produce -V volts at the back.

Fig. 3 shows the result of superimposing suitable omnidirectional and bidirectional patterns. Clearly the two positive lobes at the front of the microphone will add but those at the back will cancel, producing the cardioid or unidirectional pattern shown. If, instead of adding the two patterns, the bidirectional were subtracted, this would have the effect of pointing the cardioid the other way, as -C in Fig. 3.

The addition of an omni and a bidirectional pattern can be achieved acoustically by a combination of pressure and pressure gradient operation: that is, by only partly enclosing the rear of the diaphragm. Variable polar patterns can be achieved mechanically by varying the degree to which the back of the diaphragm is exposed to the sound waves.

Electrically a variable pattern microphone can be obtained by enclosing a pressure and a pressure gradient unit in the same case and using either or both to obtain the three patterns. This method has its difficulties, however, and in many variable pattern capacitor microphones, for example, the

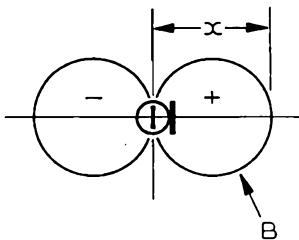


Fig 2 Bi-directional mic

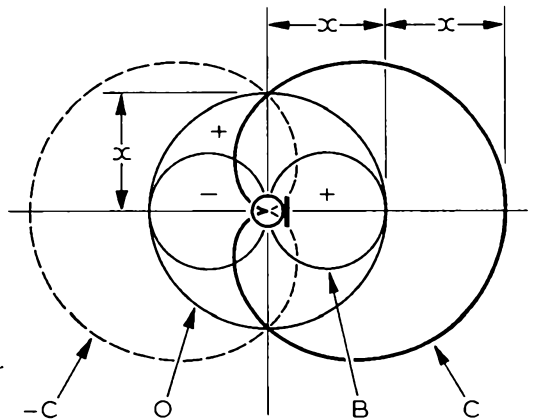


Fig 3 Derivation of a switchable polar pattern

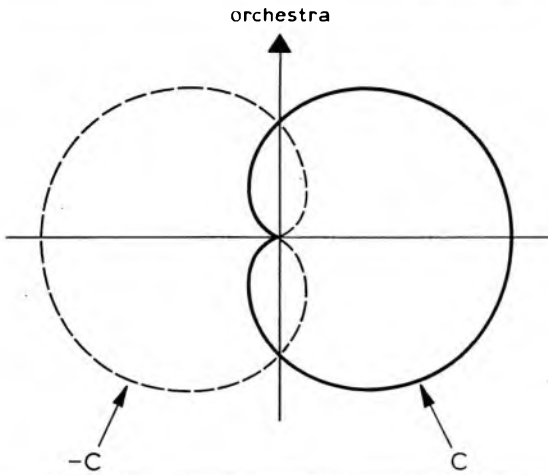


Fig 4 "Back-to-back"  
mic arrangement



approach is to combine two cardioid units; if the cardioid is a combination of omni and bidirectional patterns it follows that the two cardioid patterns, *C* and *-C* in figure three, can be added or subtracted to obtain the other two. An addition gives the omnidirectional pattern, a subtraction the figure of eight pattern, and using one at a time gives a cardioid in either of two directions.

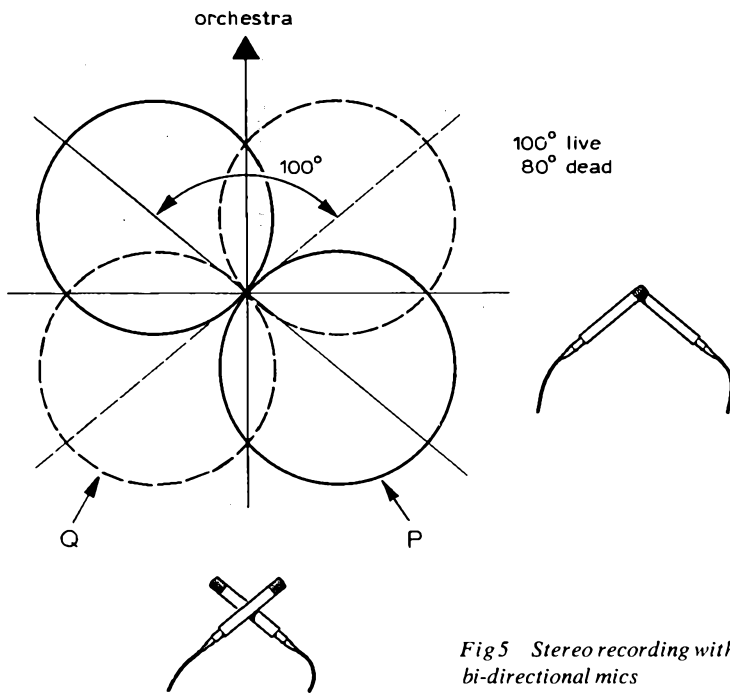
The cardioid is a very versatile microphone, the only one of the three basic patterns which, when combined with others of the same pattern and sensitivity, can obtain the other patterns. The combination of patterns is of more than academic interest since one method of recording an orchestra, shown in Fig. 4, is to place two cardioids back to back. This will, provided that the off-axis response of the microphone is satisfactory, produce a fair stereo recording in the right conditions but the effect in mono when the recording is heard is as if the two cardioids had been replaced by an omnidirectional mono microphone.

Good quality recordings are usually made with moving coil, ribbon or capacitor microphones. The moving coil or dynamic microphone is best suited to omnidirectional operation but can be used as a cardioid. As with all omnis the moving coil tends to become more directional at high frequencies. The directional properties can be improved in the omnidirectional microphone if it is made smaller, but this tends to reduce the sensitivity. The moving coil is very robust, has

a frequency response up to 12 kHz or so, more if a double element is used as in the AKG series, and gives a fair output level. Its natural impedance is often around 20 to 30 ohms, and sometimes a transformer is needed to match it into an input. This will also step up the output voltage. Moving coil cardioids vary between being more omnidirectional at low frequencies and more directional at high. Many polar patterns show only what happens at around 1 kHz, so it's as well to check at other frequencies.

The ribbon is another good bet for the amateur or semiprofessional. Unlike the dynamic microphone it can't take a lot of rough handling, but the off axis response of the ribbon microphone is usually better and the frequency response, though not as good, is usually smoother than that of the moving coil. The ribbon is best suited to bidirectional operation and the old STC 4033 used a moving coil and a ribbon element in the same microphone to give a cardioid pattern. The ribbon is ideal for recording such sounds as an orchestra or choir in a hall where, as I shall explain, the cardioid might make the recording rather starved of reverberation. The ribbon is not suited to outdoor work. The impedance and sensitivity are low; typically the ribbon has an impedance of less than an ohm, and a transformer is always needed to match it to the input and step up the output voltage. Usually the transformer is built into the microphone housing. At the highest audio frequencies the polar response of the ribbon, which is only





*Fig 5 Stereo recording with crossed bi-directional mics*

near perfect in the horizontal plane, tends to become more omnidirectional.

The best quality of all is offered by a good capacitor, condenser, or electrostatic microphone. The diaphragm is one plate of a parallel plate capacitor. If the charge on the plates is kept constant by a high polarising voltage fed through a large resistor then as the diaphragm vibrates, and the capacitance of the plates varies with the distance between them, then the voltage on the plates will vary accordingly. The output can be fed to the input via a capacitor, or the charging capacitance can be used to modulate an r.f. signal. Often, the back plate is perforated to allow part access to the back of the diaphragm, producing cardioid operation, but sometimes a variable pattern capacitor will have a diaphragm on either side of the back plate, and the pattern can be varied from a remote point. Not only that, but the output from the capacitor can be varied with the polarising voltage, so that a continuous variation between omni, cardioid and bidirectional is possible.

The frequency response can extend to 15 kHz and the 3 dB point can be as high as 18 or

20 kHz. The output can be high, anything from 10 to 30 dB higher than for a ribbon or moving coil, even though the microphone itself is small — laboratory probe capacitor microphones have heads not much bigger than a matchstick.

It isn't all good, of course. The capacitor may have a metal flashed plastic diaphragm which can distend under the heat of television lighting. Moist conditions will increase microphone noise. The source impedance of the capacitor is very high and has to be matched by a buffer amplifier. A separate power supply is needed to polarise the plates and supply the amplifier which must be placed right next to the diaphragm. Multicore cables are necessary to carry audio and power supply voltages.

The complexity of the capacitor microphone means that it tends to be more expensive and can be less reliable than other types. The electret microphone has been developed in the last few years to the point where it offers comparable quality with the best moving coil designs. An electret is a permanently polarised crystal which supplies the high voltage to the plates without the need for a power supply.

Electrets may be susceptible to heat and moisture and estimates of the life of the 'permanent' voltage have varied from a few months to a thousand years. Some capacitor types are fitted with dc to dc convertors, which transform a low battery voltage to a level high enough to polarise the plates. In any case all condenser microphones need batteries for the buffer amplifier. These need to be replaced from time to time; they may be low, in which case you have no recording, or they may leak, which means you have a permanently damaged microphone.

The next question is to what use the microphone will be put. Apart from the constructional variations, the various polar patterns have advantages and disadvantages. The omnidirectional microphone is the least susceptible to breath popping and handling noise, but room reverberations come from all round the microphone, are faithfully picked up by it, and may drown the direct sound, as shown in Fig. 6.

The directional properties of the sound source also have to be taken into account. A wind instrument will at least tend to throw all its sound in the same general direction, but a percussion instrument, such as a piano, will cause reflections from A as well as from B and C. Thus if an omnidirectional microphone is to be any use it has to be used close to the

instrument, as in Fig. 7, and mixed into the stereo picture, a skilful procedure.

The omnidirectional microphone also has the disadvantage that it may pick up the sound from auditorium loudspeakers and reamplify it, causing howl round. To use an omnidirectional microphone successfully on stage the sound of the auditorium loudspeakers must be inaudible from that stage. Omnidirectional microphones tend to pick up more rumble.

They can be used for stereo if the correct spacing technique is adopted and although the overall sound picture may be satisfactory individual instruments may not be accurately placed. This of course may be the desired effect but the output of each individual omnidirectional microphone needs to be accurately pan-potted into the overall sound picture, which is ironic since our ears are two spaced pressure operated (omnidirectional) microphones.

One of the most popular arrangements for recording stereo orchestral and choral work is the crossed figure of eight microphone arrangement shown in Fig. 5. This is also known as the Blumlein or coincident pair. The diaphragms of the two microphones, often ribbons, are placed one above the other at an angle, somewhere around 90°, determined by the angle over which the microphones

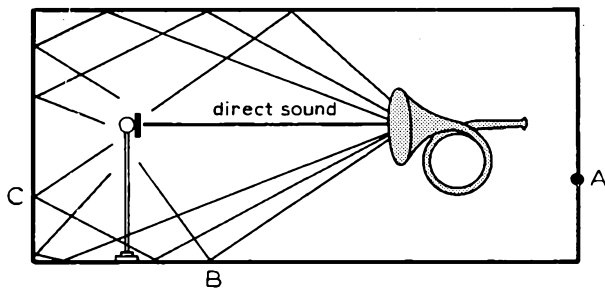
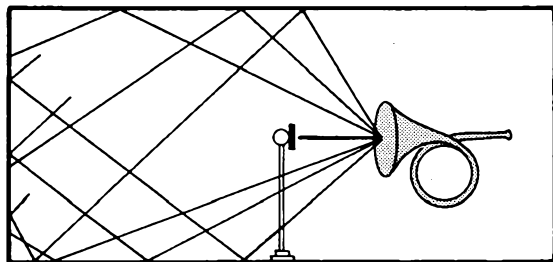


Fig 6 *Omni-mics are susceptible to reverberation*

Fig 7 *Minimising reverberation by moving closer*



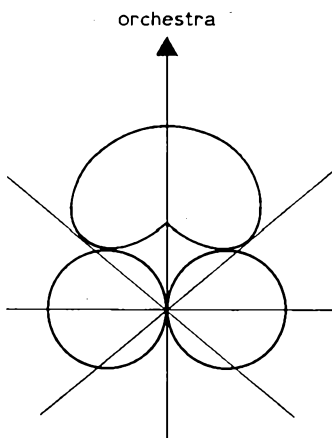
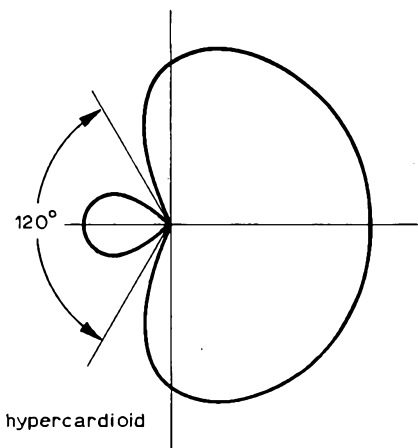


Fig 8 Combination of cardioid and bi-directional pattern

respond. This can vary between 60 and 100 degrees. The bidirectional microphone picks up little sound from the sides and an instrument that you don't want the microphone to register can be placed in the non-active angle of the microphone while the active side picks up that which you want to record.

A single bidirectional microphone can be useful in a discussion, one speaker each side of the microphone. In drama recording a character can move away, seemingly, merely by moving round towards the dead side of the microphone. But bidirectional microphones are prone to proximity effect, which means that as a speaker gets closer the microphone exaggerates the bass content of his voice. Some microphones are fitted with a bass cut switch so that they can be used for speech work.

Sometimes two microphones are used in a crossed pair which do not have a perfect figure of eight pattern but have a smaller lobe at the back to reduce the amount of reverberation without producing the dry sound of the cardioid. The pattern is called hypercardioid or cottage loaf and is shown in Fig. 8.

The cardioid microphone can be used, as already described, back to back with another cardioid for a stereo recording. The cardioids can also be used at an angle of 90° to 110° like the ribbons, and this will improve the high frequency response and sound localisation.

The cardioid can be used in discussions by pointing the microphone to the ceiling and having the talkers in a discussion speak over the top of it. This will also reduce sound reflections from the table and the noise from shuffling papers. A cardioid can also be used for interview work with a portable tape recorder, where there may be a lot of external noise that would otherwise drown the sound of the person being interviewed. The use of the monitor socket on the tape recorder with a small earpiece plugged into it is advised so that the interviewer continually adjusts the position of the microphone to suit the conditions. The cardioid suffers from proximity effect, though less so than the ribbon and other bidirectional mics, and is often fitted with a bass cut switch.

The cardioid does not respond well to sounds coming from behind, so it can be used in an auditorium with less risk of feedback or howl-round. Against this, the cardioid suffers from handling noise, and many cardioid microphones have had to have complicated cushioning and suspension devices included in the design to overcome this. Another danger with it, as with the bidirectional, is that it suffers from breath popping if used close to the mouth, and a windshield may have to be placed over the top. If the microphone has ports near the bottom of the microphone, as in some of the AKG designs, then these too should be shielded. A windshield may cause some loss of high frequencies.

# Abbreviations

A	- - ampere	m	- - metres	VAT	- - Value added tax
A-B	- - comparison test	M	- - megohms (millions of ohms)	VHF	- - very high frequency (VHF radio approx 88-108MHz, VHF TV approx 174-216MHz)
AC	- - alternating current	mA	- - milliamps (0-001A)	V	- - volts or voltage
AFC	- - automatic frequency control	mag	- - magnetic	VA	- - volt/ampere
AGC	- - automatic gain control	ME	- - magic eye	vci	- - voice coil impedance
AM	- - amplitude modulation	MC	- - moving coil	VU	- - volume units
ASA	- - Acoustical Society of America	mg	- - milligram	W	- - watts
aux	- - auxiliary	MHz	- - megahertz (see Hz)	W and F	- - wow and flutter
BAF	- - bonded acetate fibre	mic	- - microphone	x1l	- - crystal (pickup or microphone)
CCIR	- - International Radio Consultative Committee	MOS	- - metal oxide semiconductor	Z	- - impedance
char	- - characteristic	mpx	- - multiplex	Miscellaneous	
cm	- - centimetre	mV	- - millivolts (0-001V)	%	- - per cent
c/o	- - cut-off frequency	MW	- - medium waves (approx 185-570m)	<	- - greater than
coax	- - coaxial	N	- - newton (SI unit of force).	>	- - less than
dB	- - decibel	NAB	- - National Association of Broadcasters (see also NARTB)	±	- - plus or minus
dBm	- - decibel/milliwatt	NARTB	- - National Association of Radio and Television Broadcasters (USA)	≧	- - equal to or greater than
DC	- - direct current	NL	- - noise level	≦	- - equal to or less than
deg	- - degrees	Pat	- - power available for tuner	μ	- - mu (micro or millionth)
det	- - detector	pF	- - picofarad (10 <sup>-12</sup> farad)	μA	- - microamp
DIN	- - Deutscher Industrie Normen (German audio standards)	PPM	- - peak programme meter	μV	- - microvolt
disc	- - discriminator	Psn	- - power supply needed	μbar	- - microbar (air pressure equal to 1 dyne/cm <sup>2</sup> )
FET	- - field effect transistor	PU	- - pickup cartridge		
fss	- - full frequency stereo sound (Decca)	Pw	- - playing weight		
fl oz	- - fluid oz	Q	- - Q-factor (quality of tuned circuit)		
FM	- - frequency modulation	rcf	- - recommended crossover frequency		
FR	- - frequency response	rec load	- - recommended load		
gm	- - gramme	Replay			
HC	- - handling capacity	char	- - replay characteristic		
HD	- - harmonic distortion	RIAA	- - Record Industry Association of America		
HF	- - high frequency	RMS	- - root mean square (0-707 peak value of AC)		
H & N	- - hum and noise	rpm	- - revolutions per minute		
Hz	- - hertz (cycles per second)	sec	- - second (time)		
IC	- - integrated circuit	sel	- - selector switch		
IEC	- - International Electro-technical Commission	S/N	- - signal-to-noise ratio		
IF	- - intermediate frequency	SW	- - short waves (approx 10-60m)		
IHF	- - Institute of High Fidelity (USA)	THD	- - total harmonic distortion		
imp	- - impedance	thou	- - thousandths of an inch (0-001 in)		
in	- - inches	tpi	- - turns per inch (screw threads)		
ind	- - indicator	UHF	- - ultra high frequency (approx 470-854MHz)		
i/s	- - inches per second				
K	- - kilohms (thousands of ohms)				
kHz	- - kilohertz (see Hz)				
lb	- - pound (weight)				
L/C	- - inductance/capacitance				
LP	- - long play (records or tape)				
LW	- - long waves (approx 1100-2000m)				

When only the best will do

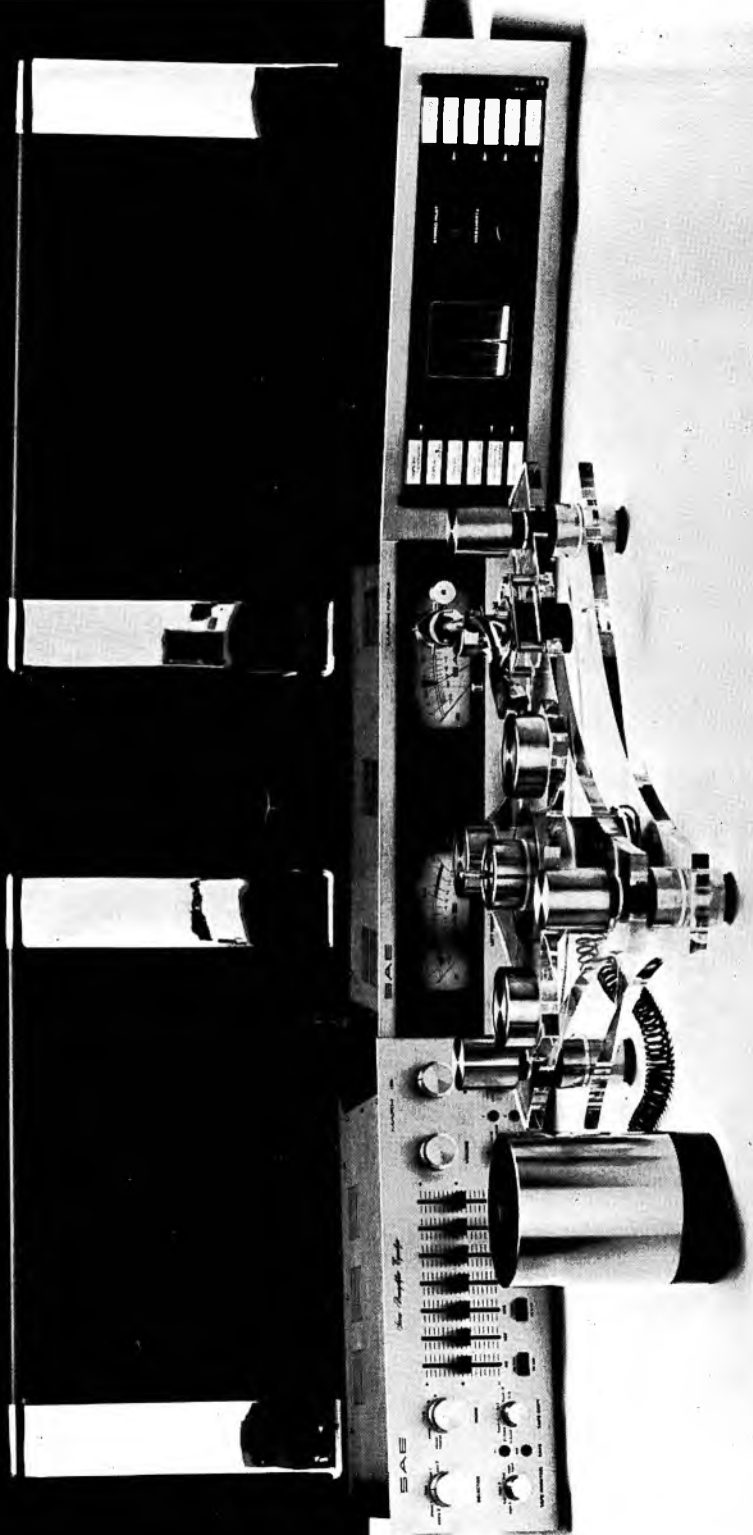
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23 Bruton Place London W1X 7AB 01-499 9966





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# Directory of Amplifiers and Control Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ACOUSTICAL MANUFACTURING

See Quad.

## ■ ACCUPHASE

Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent, TN8 6HA. Tel: Edenbridge 4116.

### P-250

Dual channel power amplifier. 36 transistors, 34 diodes. Power output: 100W RMS continuous per channel into 8 ohms (both channels operating simultaneously at any frequency from 20Hz-20kHz). THD: not more than 0.1% at rated power output. Intermodulation distortion: 0.1% at rated power output. FR: 20Hz-20kHz +0dB, -0.2dB at rated power output. Slewing rate: more than 15V/ $\mu$ S. Damping factor: 20 at 8 ohms load, 20Hz-20kHz. Input sensitivity and impedance: IV 100K for rated output at maximum level control. Hum and noise: 94dB below rated output. Output load impedance: 4, 8 and 16 ohms. Cut-off frequency: low 17Hz 18dB/Oct; high 24kHz 18dB/Oct. Mains: 100, 117, 220 240V AC 50/60Hz. Power consumption: 70W at zero signal output. Size: 445 x 152 x 355mm. Weight: 19.5kg. Price: £320 (plus VAT).

### E-202★

Integrated stereo amplifier. 53 transistors, 4 FET's, 44 diodes, 2 thermistors. Power output: 100W RMS continuous per channel into 8 ohms (both channels operating simultaneously at any frequency from 20Hz-20kHz). THD: not more than 0.1% at rated power output. Intermodulation distortion: 0.1% at rated power output. FR: 20Hz-20kHz +0dB, -0.2dB. Damping factor: 20 at 8 ohms load, 20Hz-20kHz. Headphone jack: for listening with low impedance (4-32 ohms) dynamic stereo headphones. Hum and noise: 94dB below rated output. Controls: 10-step rotary switch

for both channels with on/off switch. Tone is varied in 2dB steps. Bass turnover frequency: 400Hz,  $\pm$ 10dB at 100Hz; treble turnover frequency: 2.5kHz,  $\pm$ 10dB at 10kHz. Volume control: less than 1dB tracking error. Output load impedance: 4, 8 and 16 ohms. Mains: 110, 117, 220, 240V AC 50/60Hz. Power consumption: 70W at zero signal output. Size: 455 x 152 x 355mm. Weight: 19.5kg. Price: £375 (plus VAT).

### P-300★

Dual channel power amplifier. 73 transistors, 1 IC, 88 diodes, 2 thermistors. Power output: 150W RMS continuous per channel into 8 ohms (both channels operating simultaneously at any frequency from 20Hz-20kHz). THD: not more than 0.1% at rated power. Intermodulation distortion: not more than 0.1% at rated output. FR: 20Hz-20kHz +0dB, -0.2dB. Slewing rate: more than 15V/ $\mu$ S. Damping factor: 20 at 8 ohms load. Input sensitivity and impedance: IV 100K for rated output at the maximum level control. Hum and noise: 100dB below rated output. Output load impedance: 4, 8 and 16 ohms. Mains: 100, 117, 220, 240V AC 50/60Hz. Power consumption: 100W at zero signal output. Size: 445 x 152 x 355mm. Weight: 25kg. Price: £450 (plus VAT).

### C-200

Stereo pre-amplifier. 80 transistors, 35 diodes. FR: 20Hz-20kHz +0dB, -0.2dB. Distortion: lower than 0.05% at rated output level. Inputs: disc (i) 2-6mV 30K, 47K, 100K; disc (2) 2-6mV 47K, mic 2mV 47K, tuner 200mV 130K, aux (1 & 2) 200mV 130K, tape



Accuphase E-202



Accuphase P-300



★ Indicates entry is illustrated

play (1 & 2) 200mV 130K. Maximum output level: 10V at 0.05% distortion. Hum and noise: tuner, aux tape play 90dB below rated output; disc. mic 74dB below 10mV input. Tone controls: 10-step rotary switch for each channel with turnover frequency switches. Volume control: less than 1dB tracking error control down to -60dB. Mains: 100, 117, 220, 240V AC 50/60Hz. Power consumption: 36W. Size: 445 × 152 × 55mm. Weight: 14kg. Price: £330 (plus VAT).

#### ■ ADASTRA

Adastra Electronics Ltd, Unit N22,  
Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

#### H67/61320

Headphone amplifier. Output: sufficient to drive two pairs of stereo headphones, 8-16 ohms impedance. Inputs: phono 5mV, radio 100mV. Finish: wood cased, free standing. Power supply: one 9V battery. Price: £13.75 (plus VAT).

#### ■ AKAI

Rank Audio Visual Ltd, PO Box 70,  
Great West Road, Brentford TW8 9HR.  
Tel: 01-568 9222.

#### AA5810

Integrated stereo amplifier. Inputs: phono 2.5mV 50K, tuner 150mV 60K, aux 150mV 60K, tape (DIN/pin) 150mV 60K, mic 2.5mV 50K. Rated output power: 50W RMS per channel, both channels driven at 8 ohms. THD: 0.3% from 1-4W to rated output, 8 ohms. Power bandwidth: (IHF) 15Hz-35kHz at 8 ohms, both channels fully driven. FR: 7Hz-100kHz +0dB, -3dB. S/N ratio: phono better than 81dB, mic better than 80dB, aux, tuner, tape better than 90dB. Channel separation: better than 50dB. Equaliser (phono): ±1dB. Tone controls: bass 100Hz ±10dB, treble 10kHz ±10dB, loudness 100Hz +7dB, 10kHz +4.5dB. Low filter 50Hz -8dB, high filter 10kHz -8dB. 45 transistors, 21 diodes. Mains: 100-240V AC 50/60Hz. Size: 450 × 118 × 285mm. Weight: 10.2kg. Price: £150.46 (plus VAT).

#### AA5510

Integrated stereo amplifier. Rated output power: 30W RMS per channel, both channels driven into 8 ohms. THD: 0.5% from 1-4W to rated output, 8 ohms. Power bandwidth: (IHF) 10Hz-60kHz at 8 ohms. FR: 7Hz-100kHz +0dB, -3dB. Inputs: phono 3mV 50K, tuner 150mV 70K, aux 150mV 70K, tape (DIN/pin) 150mV 70K, mic 2.5mV 50K. Main amp 650mV 50K. S/N ratio: (phono) better than 82dB, aux better than 90dB.

Channel separation: better than 50dB (phono at rated output). Equaliser (phono): RIAA ±1dB. Tone controls: bass 100Hz ±10dB, treble 10kHz ±10dB, loudness 100Hz +7dB, 10kHz +5dB. Low filter 50Hz -10dB, high filter 10kHz -10dB. 30 transistors, 6 diodes. Mains: 100-240V AC 50/60Hz. Size: 450 × 115 × 290mm. Weight: 9.3kg. Price: £119.35 (plus VAT).

#### AA5210

Rated output power: 15W RMS per channel, both channels driven into 8 ohms or 18W RMS per channel, both channels driven into 4 ohms. Harmonic distortion: 0.8% from 1-4W to rated output (8 ohms). Power bandwidth: (IHF) 15Hz-90kHz at 8 ohms, both channels fully driven. FR: 8Hz-100kHz -3dB. Input sensitivity and impedance: phono 3mV 50K, tuner 150mV 80K, aux 150mV 80K, tape (DIN/pin) 150mV 80K, mic 3mV 50K. Main amp: 600mV 50K. S/N ratio: (IHF) phono better than 78dB, aux better than 80dB. Channel separation: better than 45dB (phono at rated output). Equalizer (phono): RIAA ±1dB. Tone controls: Bass 100Hz ±10dB, treble 10kHz ±10dB. Low filter 50Hz -8dB, high filter 10kHz -9dB. 23 transistors, 10 diodes. Mains: 100/240V AC 50/60Hz. Power consumption: 120W. Size: 450 × 108 × 290mm. Weight: 7.2kg. Price: £91.90 (plus VAT).

#### AA5210DB

Incorporates a dolby noise reduction circuit which facilitates dolby recording and playback with an ordinary tape recorder or tape deck. Rated output power: 15W RMS per channel, both channels driven into 8 ohms or 18W RMS per channel, both channels driven into 4 ohms. Harmonic distortion: 0.8% from 1-4W to rated output (8 ohms). Power bandwidth: (IHF) 15Hz-90kHz at 8 ohms, both channels fully driven. FR: 8Hz-100kHz -3dB. Input sensitivity and impedance: phono 3mV 50K, tuner 150mV 80K, aux 150mV 80K, tape (DIN/pin) 150mV 80K, mic 3mV 50K. Main amp: 600mV 50K. S/N ratio: (IHF) phono better than 78dB, aux better than 80dB. Channel separation: better than 45dB (phono at rated output). Equalizer (phono): RIAA ±1dB. Tone controls: Bass 100Hz ±10dB, treble 10kHz ±10dB. Low filter 50Hz -8dB, high filter 10kHz -9dB. 43 transistors, 2 FET's, 26 diodes. Mains: 100/240V AC 50/60Hz. Power consumption: 150W. Size: 529 × 108 × 340mm. Weight: 9.6kg. Price: £119.35 (plus VAT).

#### ■ ALBA (RADIO & TELEVISION) LTD

Bull Lane, Edmonton, London N18 1RA.  
Tel: 01-803 4451.



Alba UA700

**UA700 ★**

Integrated stereo amplifier. Inputs: mic 2.3mV 50K, aux (1) 2V 3M, aux (2) 375mV at 500K, radio 100mV 150K, magnetic PU 5mV 50K, ceramic PU 60mV. Controls: volume, bass  $\pm 15$ dB at 60Hz, treble  $\pm 15$ dB at 14kHz, loudness, balance, input selector pushbuttons. Output: 15W per channel (20W per channel IHF rating). HD:  $< 0.1\%$  up to rated output. FR: 30Hz–18kHz  $\pm 1$ dB. Noise level: (magnetic PU) –55dB (aux and radio) –63dB. Crosstalk: better than –38dB. Output impedance: 8–15 ohms. AC mains 240V 50–60Hz. Size:  $16\frac{1}{2} \times 4 \times 7\frac{1}{8}$ in. Finish: teak end pieces, black leathercloth top and brushed aluminium front panel. Price: on application.

**UA900**

Stereo integrated amplifier. Inputs: phono 2.7mV 47K, tuner, tape, quad adaptor 150mV/1M ohm. S/N: phono 77dB, all others 82dB referred to full power. Output: 40W/channel into 4 ohms. Damping factor better than 200 at 50Hz. THD: 0.02% at 1kHz at 40W. FR: 20Hz–20kHz at 40W. Mains: 110V, 127V, 220V, 240V. Size:  $18 \times 4 \times 9\frac{1}{2}$ in. Price: on application.

**■ ALPHA**

Hightage Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

**FA400**

Integrated stereo amplifier incorporating 17 transistors and two ICs. Inputs: mag PU 3mV 50K, crystal PU 250mV 1M, aux 200mV 22K, radio 200mV 22K, tape 200mV 22K. Noise level: (mag PU) 60dB, (other inputs) 70dB. Output: 20W RMS per channel. Output impedance: 8 ohms. Tone controls: bass slider +14dB–12dB at 50Hz, treble slider +12dB–14dB at 10kHz, loudness switch +12dB at 50Hz and +3dB at 10kHz. Low filter –10dB at 50Hz. High filter –12dB at 10kHz. HD: 0.5% at 15W. FR: 20Hz–30kHz  $\pm 3$ dB at 15W. Finish: teak and brushed aluminium. Size:  $14\frac{3}{8} \times 4 \times 9\frac{1}{2}$ in. Mains: 110, 240V AC. Price: £49.50 (plus VAT).

**Executive 0030**

Integrated stereo amplifier. Inputs: mag PU 5mV 47K, radio 150mV 47K, tape 300mV 47K. Overload capability: 26dB on all inputs. Output: 15W RMS per channel. Output impedance: 8 ohms. Controls: volume, balance +6dB–infinity, bass  $\pm 12$ dB at 50Hz, treble  $\pm 12$ dB at 15kHz, scratch filter –8dB at 15kHz, loudness +8dB at 50Hz and +6dB at 15kHz. HD: better than 0.5% at full power, better than 0.1% at 75 per cent power. FR: 20Hz–20kHz  $\pm 1$ dB. Size:  $16\frac{1}{2} \times 6 \times 3\frac{1}{8}$ in. Finish: teak veneer. Output for tape recorder: 150mV 47K. Headphone socket: 1W into 8 ohms. Hum and noise: (mag PU) –60dB. (other inputs) –70dB. Mains: 110 or 240V AC 50/60Hz. Fully protected output circuits. Price: £42.50 (plus VAT).

**AX500**

Stereo amplifier. Power output: 25W per channel into 8 ohms, both channels driven. FR: 30Hz–40kHz  $\pm 1$ dB, 20Hz–60kHz +1dB, –3dB. Power bandwidth: –3dB at 20Hz and 50kHz, –1dB at 40Hz and 30kHz. THD: 0.15% at rated output. Input sensitivity: mag 2.5mV, overload 75mV, 3V and 5V, radio 100mV, tape 150mV. Tape output: 100mV. Damping factor: 30dB. Crosstalk: 60dB at 1kHz, –15dB at 10kHz. Controls: volume (log), balance, bass  $\pm 12$ dB at 50Hz, treble  $\pm 12$ dB at 10kHz, scratch –10dB at 10kHz, loudness +8dB/+4dB at 50Hz/10kHz. Size:  $210 \times 440 \times 100$ mm. Finish: teak veneered with brushed satin anodised fascia. Price: £59.50 (plus VAT).

**FA-200**

Stereo amplifier. Power output: 10W RMS per channel. Harmonic distortion: less than 0.4% at 8W. FR: 20Hz–25kHz. Power bandwidth: 20Hz–20kHz. IHF distortion 0.4%. H and N: mag better than 60dB, aux better than 70dB. Tone controls: bass 50Hz +14dB –12dB, treble 10kHz +12dB –14dB. Input sensitivity: mag 3mV, aux 200mV, tuner 200mV. Tape output: 100mV. Input voltage: 240V 50/60Hz. Size:  $13\frac{1}{2} \times 9\frac{1}{2} \times 5$ in. Price: on application.

**FA-600**

Stereo amplifier. Output: 32W per channel into 8 ohms. Harmonic distortion: 0.5%. Power bandwidth: 20Hz–30kHz. FR: 15Hz–40kHz. S/N ratio: mag 60dB, aux 70dB. Channel separation: 40dB. Input sensitivity: mag 3mV, aux 260mV, tape in 260mV. Tone controls: bass  $\pm 12$ dB at 50Hz, treble  $\pm 12$ dB at 10kHz, loudness 14dB at 50Hz, 4dB at 10kHz. Power supply: 240V. Size:  $410 \times 300 \times 130$ mm. Price: on application.

★ Indicates entry is illustrated

## ■ AMCRON

Macinnes Laboratories Ltd,  
Macinnes House, Carlton Park  
Industrial Estate, Saxmundham,  
Suffolk IP17 2NL.

Tel: Saxmundham 2262/2615.

### D60 ★

Stereo power amplifier. Output: 62W RMS per channel into 4 ohms, 42W RMS per channel into 8 ohms, 100W RMS into 8 ohms mono. HD: <0.05%. Intermodulation distortion: <0.05% from 10mW to 30W. FR: 5Hz–30kHz  $\pm$  1dB at 30W. Damping factor: >200 from 0–1kHz. H and N: –106dB at 30W. Input: 0.775V for 30W into 8 ohms. Mains: 117, 234V 50Hz. Size: 17  $\times$  8 $\frac{1}{2}$   $\times$  1 $\frac{1}{2}$ in. Weight: 10lb. Fully protected against short circuit or mismatch. Outlet socket for headphones on front panel. Price: £165 (plus VAT).

### D150

Stereo power amplifier. Output: 140W RMS per channel into 4 ohms, 100W RMS per channel into 8 ohms, 330W RMS into 8 ohms mono. HD: <0.05% at 75W. Intermodulation distortion: <0.05% from 10mW to 75W. FR: DC to 20kHz  $\pm$  1dB at 75W. Damping factor: >200 from 0–1kHz. H and N: –110dB at 75W. Input: 1.19V for full output. Mains: 117, 234V 50Hz. Size: 17  $\times$  5 $\frac{1}{4}$   $\times$  9in. Weight: 22lb. Price: £270 (plus VAT).

### DC300A

Stereo power amplifier. Output: 500W RMS per channel into 2.5 ohms, 350W RMS per channel into 4 ohms, 200W RMS per channel into 8 ohms, 650W RMS into 8 ohms or 4 ohms mono. HD: <0.05% from 0–20kHz. Intermodulation distortion: <0.05% 10mW to 150W into 8 ohms. FR: DC to 20kHz  $\pm$  0.1dB. Damping factor: >200 from DC to 1kHz. H and N: –110dB at 150W. Input: 1.75V for 150W output. Mains: 117, 234V 50Hz. Size: 19  $\times$  7  $\times$  9 $\frac{3}{4}$ in. Price: on application.

### IC-150 ★

Stereo preamplifier and tone control unit incorporating IC circuitry. Inputs: 2 phono, 1 tuner, 2 aux, 2 tape. Output: rated 2.5V, max 10V into 600 ohms. H and N: 90dB below rated output. FR: high-level onto high impedance load, 3Hz–100kHz  $\pm$  0.6dB; into IHF load, 10Hz–20kHz  $\pm$  0.1dB. Volume, loudness, stereo panorama, bass and treble controls. Rumble and scratch filters. Mains: 120, 240V 50-400Hz AC. Size: 17  $\times$  5 $\frac{1}{4}$   $\times$  8 $\frac{1}{2}$ in. Price: £209 (plus VAT).

## ■ AMSTRAD

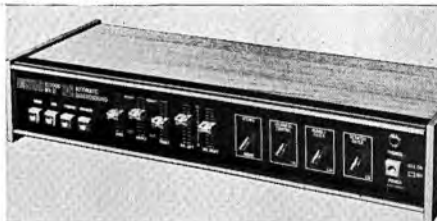
AMS Trading (Amstrad) Ltd, 89 Ridley Road,  
London, E8. Tel: 01-249 5237.



Amcron D60



Amcron IC-150



Amstrad IC2000 Mk 11

### 8000 Mk 11

Stereo transistor amplifier. Inputs: magnetic PU 4mV 47K, ceramic PU 80mV, crystal PU 350mV, radio 100mV, tape 100mV. Noise level: –55dB on all inputs. Overload capability: 25dB on all inputs. Output: 10W RMS per channel. Controls: bass, treble, volume, scratch filter, mono/stereo. HD: 0.5% at 5W. Output impedance: 8 ohms. FR: 25Hz–20kHz  $\pm$  3dB. Mains: 220-240V 50Hz. Size: 13  $\times$  3  $\times$  7in. Finish: teak cabinet with black trim. Price: £35.40 (plus VAT).

### IC 2000 Mk 11 ★

Stereo amplifier incorporating integrated circuits. Inputs: magnetic PU 3mV 47K, ceramic PU 60mV, tape 100mV, radio 100mV. Noise level: all inputs –60dB. Overload capability 33dB on all inputs. Output: 25W RMS per channel. Controls: bass, middle treble, volume, scratch filter, loudness, rumble filter, mono/stereo. HD: 0.1% at 25W. Output impedance: 8 ohms. FR: 20Hz–25kHz  $\pm$  3dB. Mains: 220-240V 50Hz. Size: 17  $\times$  3  $\times$  7in. Finish: teak cabinet with black fascia and silver trim. Price: £59.40 (plus VAT).

### Integra 4000 Mk 11

Integrated stereo amplifier. Two integrated circuits, 12 transistors and two diodes. Inputs: mag PU 3.5 mV, ceramic PU velocity loaded,

radio 50mV, tape 70mV. Noise level: (mag PU input) -54dB, (other inputs) -60dB. Overload capability: 30dB all inputs. Output: 15W RMS per channel. Controls: bass, treble, middle, scratch filter, rumble filter, loudness, mono/stereo mode, headphone output. HD: better than 0.5% at rated output. Output impedance: 8 ohms. FR: 20Hz-25kHz  $\pm$ 2dB. Mains: 220-240V AC. Size: 13 $\frac{1}{2}$  x 2 $\frac{3}{4}$  x 9in. Finish: teak cabinet with brushed aluminium panel. Price: £46.60 (plus VAT).

#### ■ A/R/D

Audio Research and Development Ltd,  
Navas House, The Maultway,  
Camberley, Surrey GU15 1QE.  
Tel: Camberley 24684.

#### 2000 Series 2

Solid state stereo amplifier. Power output: 15W RMS into 8 ohms. HD: 0.25% at 15W RMS. FR: 20Hz-20kHz  $\pm$ 0.5dB. Controls: bass  $\pm$ 12dB at 50Hz, treble  $\pm$ 12dB at 10kHz, volume, balance. Pushbuttons for on/off, radio, tape, record. Inputs: PU socket with DIN duplicates for tape and radio. Tape record, tape play, radio tuner, ceramic PU, magnetic PU with RIAA equalisation. Psn: 200/240V 50Hz or 117V 60Hz. Size: 7 x 4 $\frac{1}{2}$  x 12in. Price: (grey case) £58 (plus VAT); (teak veneered case) £62 (plus VAT).

#### 2000 Series 3

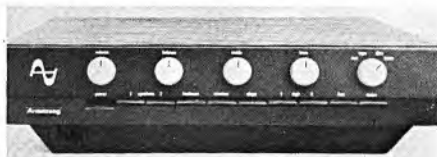
Solid state stereo amplifier. Power output: 35W RMS into 8 ohms. HD: 0.1% at 35W RMS. FR: 20Hz-20kHz  $\pm$ 0.5dB. Controls: bass  $\pm$ 14dB at 50Hz, treble  $\pm$ 14dB at 10kHz, volume, balance. Pushbuttons for on/off, records, radio, tape and tape monitor. Inputs: PU socket with DIN duplicates for radio and tape, tape record, tape play, radio tuner, magnetic PU, with RIAA equalisation. Psn: 200/240V 50Hz or 117V 60Hz. Size: 7 x 4 $\frac{1}{2}$  x 12in. Price: (grey case) £78 (plus VAT); (teak veneered case) £82 (plus VAT).

#### ■ ARMSTRONG

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

#### Model 621 ★

Integrated stereo amplifier. 24 transistors, 19 diodes. Inputs: mag PU switchable 3mV and 6mV 47K, tape 250mV 68K, radio 120mV 68K, aux 120mV 68K. Noise level: (all inputs) better than 65dB. Overload capability: (mag PU inputs) 75mV and 105mV, (tape input) 7V, (other inputs) 3V. Output: 40W RMS per channel into 8 ohms. Controls: bass  $\pm$ 15dB at 70Hz, treble  $\pm$ 13dB at 14kHz, electronic gate input selector, switches for two pairs of speakers, independent headphone outlet, loudness, tape monitor, mono/stereo, two high



Armstrong 621



Bang & Olufsen Beolab 1700

filters and slope control, low filter. HD: less than 0.08%. Output impedance: 4 to 16 ohms. FR: 25Hz-25kHz  $\pm$ 1dB. Size: 12 $\frac{1}{4}$  x 3 $\frac{1}{4}$  x 11 $\frac{1}{4}$ in. Finish: zinc diecast front panel enamelled black, case in teak or rosewood. All sockets DIN type. Outlet socket for AC mains. Price: £81.95 (including VAT).

#### ■ ARNOLD ELECTRONICS

40c Queen Street, Hitchin, Herts.  
Tel: Hitchin 3387.

#### Magnetic pre-amp stereo

A solid state pre-amplifier for use with amplifiers with no facility for magnetic pick-up. Nominal input: 3mV. Gain: 30dB. Input impedance: 50K (1kHz). Response: 25Hz-20kHz. Crosstalk: not less than 50dB. Price: on application.

#### Tape pre-amp stereo

A solid state pre-amplifier for use with amplifiers with no magnetic tape input facility. Nominal input: 3mV. Gain: 30dB. Input impedance: 50K (1kHz). Response: 25Hz-20kHz. Crosstalk: not less than 50dB. Price: on application.

#### Headset amplifier stereo.

A solid state 100mW stereo amplifier for use with headphones. From either magnetic or ceramic input. Magnetic input: 3mV nominal. Ceramic input: 100mV nominal. Output: 100mW into 8 ohms. Price: on application.

#### ■ BEOLAB

Bang & Olufsen (UK) Ltd,  
Eastbrook Road, Gloucester GL4 7DE.  
Tel: Gloucester 21591.

#### Beolab 1700 ★

Integrated stereo amplifier with ambiophonic facility. Output: 20W RMS into 4 ohms. Distortion: <0.5% at 20W. FR: 20Hz-30kHz  $\pm$ 1.5dB. S/N ratio: mag PU >55dB, >65dB other inputs. Inputs: magnetic PU 2.4mV

★ Indicates entry is illustrated

47K, tape 150mV 1M, tuner 150mV 350K, Controls: volume, bass, treble, balance, push-buttons for sound sources, mono, loudness, speakers, ambio filter and power. Outputs: 4 ohms, headphones 100 ohms minimum. Mains: 110-130 and 220-240V AC 50-60Hz. Size: 19.7 × 9.1 × 2.9in. Finish: teak or rosewood. Price: (teak) £85 (including VAT); (rosewood) £86 (including VAT).

## ■ BGW SYSTEMS

Webland Electronics Ltd, Mirabel House, 117-121 Wandsworth Bridge Road, London, SW6. Tel: 01-736 0980.

### BGW Model 500D ★

Power amplifier. Power output: 200W RMS per channel with both channels driven into 8 ohms at 25kHz to 15kHz. THD: not more than 0.2% at any power level from 250mW to 200W into 8 ohms. FR: 20Hz-20kHz +0dB, -0.2dB. Noise and hum level: better than 110dB below rated output into 8 ohms. Input sensitivity: 2V for 40V output. Voltage gain: 26dB. Input impedance: 47K. Damping factor: greater than 1000 at low frequencies into 8 ohms. Load impedance: ≥ 2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Size: 19 × 7 × 12in. Finish: standard brush silver rack panel with handles. Weight: 49lb. Price: £575 (plus VAT).

### BGW Model 250

Power amplifier. Power output: 85W RMS per channel with both channels driven into 8 ohms at 20Hz-20kHz. THD: 0.1% at any power level from 250mW to 85W. FR: 20Hz-20kHz +0dB, -0.25dB. Noise and hum level: better than 110dB below rated output. Input sensitivity: 1.5V for 30V output. Voltage gain: 26dB. Input impedance: 47K. Damping factor: greater than 500 at low frequencies into 8 ohms. Load impedance: ≥ 2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Finish: standard brush silver rack panel. Weight: 27lb. Price £299 (plus VAT).

### BGW Model 750A

Power amplifier. Power output: 200W RMS per channel with both channels driven into 8 ohms at 5Hz-15kHz. THD: not more than 0.2% at any power level from 250mW to 200W into 8 ohms. FR: 20Hz-20kHz +0dB, -0.25dB. Noise and hum level: better than 100dB below rated output into 8 ohms. Input sensitivity: 2V for 4V output. Voltage gain: 26dB. Input impedance: 47K. Damping factor: greater than 1000 at low frequencies into 8 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Fan



BGW model 500D

cooled. Size: 10 × 7 × 12in. Finish: standard black rack panel with handles. Weight: 49lb. Price: £675 (plus VAT).

### BGW 1000

Power amplifier. Power output: 250W RMS per channel with both channels driven into 8 ohms. THD: less than 0.1% (typically 0.01%). FR: 20Hz-20kHz +0dB, -0.2dB. Noise and hum level: better than 110dB below rated output into 8 ohms. Input sensitivity: 2V for 40V output. Voltage gain: 26dB. Input impedance: 47K. Load impedance: greater than 2 ohms. Power bandwidth: 5Hz-20kHz minimum. Facilities include power limit switch, electronic crowbar protection, circuit breaker and indicators for the following: over temperature, power on, fan on and limiting legends. Size: 19 × 7 × 17in. Weight: 70lb. Price: to be announced.

### BGW pre-amplifiers

Three models to be introduced later this year, a phono pre-amplifier, a stereo control centre with graphic equaliser and a 4-channel pre-amplifier with full CD4, SQ and QS decoding facilities. Specifications not available as this edition of the Year Book closed for press.

## ■ BOSE

Bose (UK) Ltd, Milton Regis, Sittingbourne, Kent. Tel: Sittingbourne 75341.

### 1800

Solid-state dual-channel power amplifier. FR: 20Hz-20kHz ±0.5dB. Distortion: less than 0.5%. H and N: more than 100dB below full output. Damping factor: greater than 40. Power output: 250W RMS per channel into 8 ohms, both channels driven. Input impedance: greater than 50K. Input sensitivity: 1.5V RMS for 250W into 8 ohms. Minimum load impedance: 4 ohms. Size: 19in wide, 15in deep, 8 $\frac{1}{2}$ in high (requires 8 $\frac{1}{2}$ in of standard rack space. Dimensions do not include handles). Weight: 80lb. Power consumption: 1000W. Mains: 105-125V or 210-250V AC 50/60Hz. Price: on application.

**4401**

Solid-state four channel pre-amplifier. Inputs: phono (1) 2mV 1kHz, phono (2) 2mV 1kHz, tuner 200mV, aux 200mV, tape (1) 200mV, tape (2) 200mV. Rated output: 2V RMS (7V RMS before overload). Output impedance: 600 ohms. Input impedance: high level 100K, phono (except CD-4 mode) 47K, phono (CD-4 mode) 100K. FR: 20Hz-20kHz $\pm$ 0.2dB. THD:  $\leq$ 0.2%, 20Hz-20kHz at rated output. IM distortion:  $\leq$ 0.2% at rated output. H and N: high level min 80dB below rated output, noise typically 90dB down. Low filter: -3dB at 70Hz, 6dB/Oct attenuation, high filter -3dB at 7kHz, 12dB/Oct attenuation. Tone controls: bass  $\pm$ 15dB at 50Hz, treble  $\pm$ 15dB at 20kHz. Volume muting: -20dB. Mains: 105-130V or 210-260V AC 50/60Hz, 30W. Size: 6in high, 18in wide, 13 $\frac{1}{2}$ in deep. Weight: 12lb. Optional accessories for 4401: (Model WEP-1) walnut enclosure; (Model RBV-1) remote balance/volume control; (Model SQM-1) SQ decoder module; (Model CDM-1) CD-4 demodulator module. Prices: on application.

**BRADMATIC LTD**

338 Aldridge Road, Streetly,  
Sutton Coldfield B74 2DT.  
Tel: 021-353 3171.

Manufacturers of solid state mono and stereo power amplifiers. Enquiries welcomed and full details of service offered provided on request.

**BRYAN AMPLIFIERS LTD**

18 Greenacres Road, Oldham,  
Lancs OL4 1HA. Tel: 061-624 4074.

**The Leader LE720**

Integrated stereo amplifier, 45 transistors and 14 diodes. Inputs: mag PU 3mV 50K, tape 100mV 50K, radio (1) 100mV 50K, radio (2) 500mV 250K, aux (1) 100mV 50K, aux (2) 1V 500K. Noise level: -70dB. Overload capability: mag PU input 30dB. Output: at least 35W RMS per channel. Controls: balance (zero to max each channel), treble  $\pm$ 12dB at 10kHz, bass  $\pm$ 15dB at 50Hz, filter 3dB roll-off at 5-8-11kHz (8dB in first octave, 20dB in second octave), quiet listening +10dB at 50Hz and +5dB at 10kHz. HD: <0.1%. Output impedance: 4-15 ohms. FR: 20Hz-50kHz  $\pm$ 3dB. Mains: 100, 110, 220, 240V AC. Size: 18  $\times$  3  $\times$  10 $\frac{1}{2}$ in. Finish: teak cabinet with extruded aluminium front and rear. Full protection against DC offset on both speaker systems. Price: on application.

**BUSH NELSON LTD**

Bush House, Yattendon Road, Horley,  
Surrey RH6 7BS. Tel: Horley 5482.

**Integrated stereo amplifier**

Controls: on/off, mono/stereo, volume, balance, bass, treble. Output: 35W music (total). FR: 15Hz-30kHz  $\pm$ 1dB at 1W. Size: 12  $\times$  5  $\times$  2in. Price: on application.

**CAMBRIDGE AUDIO**

Lamb House, Church Street,  
London W4 2PB. Tel: 01-995 4551.

**P60**

Stereo integrated amplifier. Power output: 30W per channel, both channels driven into 8 ohms. FR: 25Hz-25kHz  $\pm$ 0.5dB. THD: less than 0.05% (typically 0.025%). IM distortion: less than 0.1%. S/N ratio: better than 60dB. Crosstalk: better than 45dB at 1kHz. Damping factor: better than 80 into 8 ohms (150 into 15 ohms). Inputs: phono 3mV 47K, radio 250mV 180K, cassette 150mV 100K, aux 150mV 100K, tape (1 & 2) 400mV. Outputs: tape (1 & 2) 400mV, cassette 400mV. Input overload capacity: better than 40dB. Size: 16 $\frac{1}{2}$   $\times$  9 $\frac{3}{8}$   $\times$  2in. Weight: 12lb. Mains: 110, 120, 240V AC. Price: on application.

**P110**

Stereo integrated amplifier. Inputs: phono (1) 3mV 47K, phono (2) 100mV 47K, radio 250mV 180K, aux 200mV 100K, tape 400mV. Outputs: tape 250mV, speakers 50W per channel into 8 ohms, 36W per channel into 15 ohms. Power bandwidth: 25Hz-25kHz  $\pm$ 0.5dB at 50W into 8 ohms. THD: 0.05% at 1kHz at any power up to rated power. S/N ratio: phono better than 60dB, tuner better than 70dB. Damping factor: 80 into 8 ohms. Size: 16.5  $\times$  9.6  $\times$  2in. Mains: 110, 120, 220, 240V AC. Price: on application.

**Classic I**

Stereo integrated amplifier. Power output: 60W per channel, both channels driven into 8 ohms, 80W per channel, both channels driven into 4 ohms. THD: less than 0.55% (typically 0.005%). S/N ratio: 65dB. Crosstalk: 75dB. Input overload capacity: 45dB. Inputs: PU 2mV 47K, tuner 250mV, cassette 100mV, aux 100mV. Outputs: 600mV nominal level. Size: 16 $\frac{1}{2}$   $\times$  9 $\frac{3}{8}$   $\times$  2in. Weight: 14lb. Mains: 110, 120, 220, 240V AC. Price: on application.

**CERWIN VEGA**

Cerwin Vega (UK), 281 Balmoral Drive,  
Hayes, Greater London.  
Tel: 01-573 1566.

**Model A-1800 S**

Power amplifier. Power output: 250W RMS into 8 ohms per channel. Distortion: less than 0.08% (IM or THD) at 250W RMS (typically less than 0.008%. FR: 20Hz-

★ Indicates entry is illustrated

100kHz + 1dB (DC - 100kHz + 1dB without low frequency roll-off). Damping factor: 500 at 1W. Hum and noise: 105dB below maximum output. Load impedance: 10K. Input sensitivity: 1V RMS. Power requirements: 25VA at no signal, 1100VA at maximum output. Size: 19 × 5½ × 6in. Weight: 25lb. Finish: brushed satin aluminium and walnut case. Price £450 (plus VAT).

#### Model A-3000

Power amplifier. Power output: 400W RMS into 8 ohms per channel. Distortion: less than 0.08% (1M or THD) at 400W RMS. Damping factor: 500 at 1W. Hum and noise: 105dB below maximum output. Load impedance: 4 ohms or higher. Input sensitivity: 1V RMS. Input impedance: 10K. Power requirements: 30VA at no signal, 1500 at maximum output. 120V AC 60Hz. Controls: input level, on/off switch, over temperature indicator. Size: 19 × 9 × 9in. Weight: 40lb. Finish: brushed satin aluminium enclosed in walnut case. Price: on application.

#### ■ DENON

Johnsons of Hendon Ltd,  
14 Priestley Way, London NW2 7TN.  
Tel: 01-450 8070.

#### PMA-500

Integrated stereo amplifier. Output: 40W per channel into 8 ohms. THD: <0.03% at -3dB of rated output. Power bandwidth: 5Hz-35kHz, -1dB. Inputs: power amp 1V 100K, phono (1 & 2) 2mV 60K, mic 1mV 100 ohms, aux (1 & 2) 100mV 60K, tape PB 500mV 100K. S/N: phono 65dB, mic 55dB all others 75dB. Price: £169.95 (plus VAT).

#### PMA-350Z

Integrated stereo amplifier. Output: 27W per channel into 8 ohms. THD: <0.1% at rated output. Power bandwidth: 30Hz-30kHz +0, -1dB. Inputs: power amp 1V 90K, phono (1 & 2) 2mV 60K. Tuner 100mV 100K, aux 100mV 100K, tape PB 320mV 100K. S/N: phono better than 62dB, all others better than 73dB. Price: £130.02 (plus VAT).

#### UDA 100

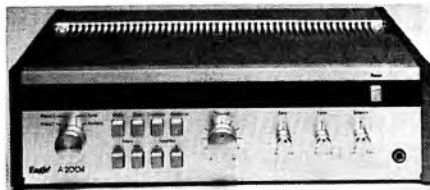
4-channel demodulator. Price: £93.31 (plus VAT).

#### ■ EAGLE INTERNATIONAL

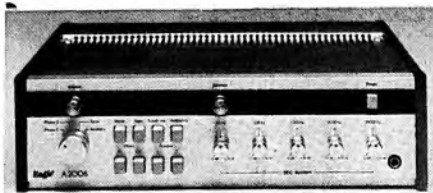
Heather Park Drive, Wembley HAO 1SU.  
Tel: 01-902 8832.

#### A2004 ★

Integrated stereo amplifier. Output: 30W RMS per channel at 4 ohms. FR: 15Hz-36kHz ±2dB. Power Bandwidth: 13Hz-50kHz ±3dB. Inputs: mag PU 3mV 47K,



Eagle International A2004



Eagle International A2006



EMI 1515 amplifier

ceramic PU 80mV 100K, tuner 180mV 100K, aux 180mV 100K, tape 180mV 100K. Signal to noise ratio: mag PU 68dB, ceramic PU 74dB, all other inputs 80dB. Damping factor: 35 at 8 ohms. THD: less than 0.2% at rated output. Controls: bass, treble, volume, balance, 7kHz filter, 10kHz filter, input selector, on/off switch. Size: 15 × 10½ × 4½in. Fitted with switchable ambience output. Finish: teak cabinet with metal fascia. Price: £65 (including VAT).

#### A2006 ★

Integrated stereo amplifier. Output: 30W RMS per channel at 4 ohms. FR: 15Hz-36kHz ±2dB. Power Bandwidth: 13Hz-50kHz ±3dB. Inputs: mag PU 3mV 47K, ceramic PU 80mV 100K, tuner 180mV 100K, aux 180mV 100K, tape 180mV 100K. Signal to noise ratio: mag PU 68dB, ceramic PU 74dB, all other inputs 80dB. Damping factor: 35 at 8 ohms. THD: less than 0.2% at rated output. Controls: bass, treble, volume, balance, five sound effect controllers giving ±10dB over five channels, input selector, 7kHz filter, 10kHz filter, on/off switch. Fitted with switchable

ambience output. Size: 15 × 10½ × 4½in. Finish: teak cabinet with metal fascia. Price: £85 (including VAT).

### ■ EMI SOUND & VISION

EMI Pathé Division, 252 Blyth Road, Hayes UB3 1HW. Tel: 01-573 3888.

#### 1515 ★

Integrated stereo amplifier. Output: 15W RMS per channel. HD: <0.02% at 1kHz at rated output. FR: 25kHz–25kHz ±1dB. Signal-to-noise level: better than -50dB on all inputs. Inputs: mag PU, radio, tape, microphone, aux. Low pass filter. Two switched mains outlet sockets incorporated. Price £46.50 (including VAT).

### ■ ESS

Distributors: Regent Acoustics, Carrington House, 130 Regent Street, London W1R 6BR. Tel: 01-437 1997.

#### ESS Pre-amplifier

Stereo pre-amplifier designed primarily for use with the ESS 500 and the ESS 200. Inputs: phono 10mV 47K. High level inputs: 100mV 75K. Noise level: High level section, -100dB at rated output. Tone control section, -96dB at rated output. Phono, -80dB ref 10mV at 1kHz input. Distortion: 0.0075% from 20Hz–20kHz at any level up to rated output. Output: rated at 2.5mV into 10K or greater. Two tape record outlets, two sets of power amp outlets. Output load impedance: 10K. Size: 16½ × 6 × 9in. Finish: brushed gold. Walnut case optional extra. Three-year guarantee. Mains: 240V AC. Price: £296 (plus VAT); (with walnut case) £315.20 (plus VAT).

#### ESS 500

Stereo power amplifier. Output: 250W RMS per channel into 8 ohms, both channels driven 20Hz–20kHz. Power bandwidth: 1Hz–100kHz ±3dB. Distortion: less than 0.1%, 20kHz–20kHz at any power up to rated power. H and N: -100dB ref rated output. Damping factor: 1,000 at 20Hz. Sensitivity: 1.75V input for rated output. Input impedance: 16K. Mains: 240V AC. Size: 16½ × 6 × 15in. Finish: brushed gold. Walnut case optional extra. Three-year guarantee. Price: £435.20 (plus VAT); (with walnut case) £454.40 (plus VAT).

#### ESS 200

Power amplifier. Output: 100W RMS per channel, both channels driven into 8 ohms, 20Hz–20kHz. FR: 22Hz–41kHz ±0.25dB. THD: 0.05% at rated output. Damping factor: 100 at 8 ohms, 20Hz. S/N ratio: -100dB. Input: 1.5V 47K. Mains: 240V AC. Size: 16½ × 6 × 7in. Finish: brushed gold. Walnut

case optional extra. Three-year guarantee. Price: £296 (plus VAT); (with walnut case) £315.20 (plus VAT).

Two power amplifiers and one pre-amplifier to be introduced later this year. No details or specifications available as this edition of the Year Book closed for press.

### ■ EXPOSURE ELECTRONICS

Richardson Road, Hove BN3 5RB, Sussex. Tel: Brighton 777912.

#### Phase Linear 400B

Direct-coupled laboratory amplifier. Power: 201W RMS per channel, both channels driven into 8 ohms from 20Hz–20kHz. THD: not more than 0.25%. Power clipping: 250W per channel, 435W per channel at 4 ohms. Hum and noise: 100dB below rated output. Damping ratio: 1000:1 at 20Hz. Rise time: less than 1.70 micro seconds. Sensitivity: 1.75V for rated output. Input impedance: 10K. Electronic energy limiters together with supply fuses prevent excursion into unsafe operating regions. Size: 19in wide, 7in high, 10in deep. Weight: 35lb. Finish: light brushed gold, baked aluminium and anodised. Three year guarantee. For these conditions no fan is required. Price: £435 (plus VAT).

#### Phase linear 700B

Direct-coupled laboratory amplifier. Power: greater than 350W RMS, both channels operating into 8 ohms. FR: 1Hz–20kHz (normal input), 5Hz–0.25MHz (IV input). THD: less than 0.2% (typically 0.01%). Power clipping: 450W into 8 ohms, 700W into 4 ohms (both channels driven). Direct input: 1Hz–0.25MHz. Hum and noise: 100dB below rated output. Damping ratio: 1000:1 at 20Hz. Sensitivity: 1.60V for 350W into 8 ohms. Input impedance: 100K nominal, reduces to 10K at full clockwise rotation of level control in normal or DC mode. Size: 19in wide, 7in high, 10½in deep. Weight: 55lb. Three year guarantee. When playing music on the 700B the average power consumed is less than that required by a 75W lightbulb. Price: £574 (plus VAT).

#### Phase linear 4000

Pre-amplifier. Autocorrelator noise reduction system. THD: 0.25% (typically 0.2%). Noise: 95dB below output. Impedance: 47K from 20Hz–20kHz. FR: ±1dB RIAA 20Hz–20kHz. Four channel facility (CBS/SQ). Active equaliser: 6dB/Oct boost below 50Hz. Tone controls: bass ±8dB at 20Hz (switchable), treble ±dB at 20kHz (switchable). Output voltage: 8V RMS, better than 2V into 4.7K or greater. Size: 19in wide, 7in high, 10in deep. Weight: 18lb. Three year guarantee. Price: £488.75 (plus VAT).



★ Indicates entry is illustrated

### ■ FANTAVOX

Adastra Electronics Ltd, Unit N22,  
Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

#### A11-505

Stereo integrated amplifier. Power output: 5W per channel into 8 ohms. FR: 40Hz-18kHz. Inputs: phono 150mV, aux/tuner 150mV. S/N ratio: -50dB. Mains: 200-240V AC. Size: 260 × 70 × 175mm. Price: £18.75 (plus VAT).

#### A12 A3550

Integrated stereo amplifier. 14 transistors and two diodes. Inputs: mag PU 3mV 50K, ceramic PU 300mV 50K, radio 200mV 50K, aux 200mV 50K. Noise level: mag PU input -50dB, other inputs -60dB. Output: 20W RMS per channel. Tone controls: bass ±10dB at 70Hz, treble ±10dB at 15kHz. Loudness control: HD: less than 1% at 1kHz at rated output. Output impedance: 4-16 ohms. Mains: 240V AC. Socket for AC outlet. Size: 12 × 4½ × 9½in. Finish: metal case with simulated wood grain finish, brushed gold fascia. Price: £67.50 (plus VAT).

#### A13 A3525

Integrated stereo amplifier. 12 transistors and two silicon diodes. Inputs: mag PU 3mV 50K, ceramic PU 300mV 50K, radio 250mV 50K, aux 250mV 50K. Noise level: mag PU input -50dB, other inputs -60dB. Output: 9W RMS per channel. HD: less than 1% at 1kHz at rated output. Output impedance: 4-16 ohms. FR: 30Hz-30kHz ±2dB. Mains: 240V AC. Unswitched socket for AC outlet. Size: 10 × 4½ × 7½in. Finish: metal case with simulated wood grain finish, brushed gold fascia. Price: £45 (plus VAT).

### ■ FERGUSON

Thorn Consumer Electronics Ltd,  
Thorn House, Upper St Martin's Lane,  
London WC2H 9ED. Tel: 01-836 2444.

#### Model 3490 ★

Stereo/quadrasonic amplifier with SQ decoder. Inputs: phono 3.5mV 50K (mag), phono (ceramic) 140mV 660K, tuner 140mV 660K. S/N: -60dB (DIN 45 500). Output: 20W/4 channels into 4 ohms. Damping factor: 20. THD: 0.1% at 20W. FR: 30Hz-20kHz, +0dB, -3dB. Mains: 117V, 127V, 220V, 240V, 50/60Hz. Price: £142.56 (plus VAT).

### ■ FERROGRAPH

The Ferrograph Company Ltd,  
Auriema House, 442, Bath Road,  
Cippenham, Slough SL1 6BB.  
Tel: Burnham 62511.



Ferguson 3490



Ferguson Model 3491

### F208

Integrated stereo amplifier. Output per channel: 20W into 8 ohms or 15W into 15 ohms. Total HD: less than 0.25% at 1kHz all levels. FR: (±1dB) 20Hz-25kHz, (+1dB-3dB) 15Hz-30kHz. Inputs: ceramic PU, tuner and aux, 100mV-5V at 2M; magnetic PU(RIAA), 3mV at 100K, 68K or 47K; tape 150mV at 50K. Outputs: speaker 8-16 ohms, phonos 8 ohms or greater; tape 50K or greater. H and N: less than -65dB (except magnetic PU which is less than -60dB). Bass control ±17dB at 50Hz, treble control ±13dB at 15kHz. Pushbutton low-pass filters -3dB at 10, 7 and 5kHz. Mains: 117, 220, 240V AC 50-60Hz. Size: 18 × 5 × 8½in. Finish: teak, walnut or white. Price: £94 (plus VAT).

### F608

Integrated stereo amplifier. Inputs: radio and aux, 100mV into 2M or 400K; phono, 2.5mV into 47K. Outputs: 60W per channel. Load: 4-8 ohms or 8-16 switchable. Damping factor: 24 at 8 ohms, 48 at 16 ohms. THD: 0.5% at full rated power. FR: 25Hz-20kHz ±1dB. Mains: 110-120V, 220-250V. Size: 17½ × 5½ × 13½in. Finish: teak, walnut or white. Price £162 (plus VAT).

### ■ FIDELITY RADIO LTD

Victoria Road, Willesden,  
London NW10 6MD.  
Tel: 01-965 8771.

**20/20 Amplifier**

Integrated stereo amplifier. Inputs: mag PU 3mV 50K, ceramic PU 70mV 50K, tape monitor 250mV 25K, aux 250mV 25K, radio 250mV 25K. Output: 20W RMS per channel into 8 ohms. HD: (overall) <0.2%, (power amplifier only) <0.1% at 20W output. FR: 20Hz-26kHz $\pm$ 2dB, 30Hz-16kHz $\pm$ 1dB. Noise level: (mag PU input) -65dB, (other inputs) -70dB. Controls: bass +16dB -18dB at 50Hz, treble +16dB -15dB at 10kHz, scratch filter -3dB at 6kHz 12dB/octave, rumble filter -3dB at 100Hz 10dB/octave, contour +16dB at 50Hz and +9dB at 10kHz. Outlet for tape recorder. Stereo headphone jack (not less than 8 ohms). Socket for connection to external quadruphonic equipment. Automatic overload protection circuit. Size: 18 x 3 x 8 $\frac{1}{2}$ in. Weight: 7 $\frac{1}{2}$ lb. Finish: satin black with wood grain end pieces. Price: £47.28 (plus VAT).

**FISHER**

Distributors: Hayden Laboratories Ltd, Hayden House, 17 Chesham Road, Amersham, Bucks HP6 5AG. Tel: Amersham 5511.

**TX-55**

Stereo control amplifier. Output: 30W RMS per channel both driven at 4 ohms, 23W RMS per channel both driven at 8 ohms. THD: less than 1% at 1kHz. Harmonic distortion: 0.1% FR: 15Hz-70kHz -3dB at 8 ohms. Inputs: phono mag 2.5mV 50K, phono ceramic 140mV 100K, tuner 165mV 50K, aux 165mV 50K, tape monitor (1 & 2) 150mV 16K. S/N ratio: phono 65dB, aux 73dB, tuner and tape 73dB. Residual noise: 1.5mV. Damping factor: 50 at 8 ohms. Tone controls: loudness +9dB at 50Hz, bass +10dB at 50Hz, treble +10dB at 10kHz, high filter -9dB at 10kHz. Phono overload: 75mV. Phono equaliser: RIAA 50Hz +17.5dB. Crosstalk: -45dB at 10kHz. Mains: 117V 50/60Hz. Size: 15 x 8 $\frac{1}{2}$  x 4 $\frac{1}{2}$ in. Weight: 5.5kg. Price: £82 (plus VAT).

**FUTURISTIC AIDS LTD**

104 Henconner Lane, Leeds LS13 4LQ. Tel: Pudsey 5478.

New range of models to be introduced later this year. No details available as this edition of the Year Book closed for press.

**GABRAPHONE**

Modern Engineering & Technology, 4 Station Road West, Canterbury, Kent. Tel: Canterbury 60431.

**Stereo 80 Series**

Modular construction integrated stereo amplifier. Inputs: pickup, tape and radio



Galactron model 10 Mk 10



Galactron Mk16

with individual preset gain controls. Tone controls: bass  $\pm$ 15dB at 100Hz, treble  $\pm$ 15dB at 10kHz. Scratch filter: -12dB/octave from 5kHz. Rumble filter: -12dB/octave from 10kHz. Output: 35W RMS per channel. Output impedance: 4 ohms (also suitable for 8 and 15 ohm speakers but will supply reduced power). S/N ratio: better than 65dB. FR: 25Hz-25kHz $\pm$ 1dB. HD: 0.2% at 1kHz. Mk I with integral input selector module. Mk II with separate input selector module adaptable to different inputs. Price: (Mk I) £31.95; (Mk II) £33.45; (regulated modular power supply) £6.95; (Mk I in cabinet with power supply) £38; (Mk II in cabinet with power supply) £39.75. All prices exclude VAT.

**GALACTRON**

Distributed by: Goodmans Loudspeakers Ltd, Downley Road, Havant, Hants PO9 2NL. Tel: Havant 6344.

**Model 10 Mk 10 ★**

Stereo integrated amplifier. Inputs: phono/mic 1mV 47K, aux 150mV 100K. S/N: phono/mic 76dB, aux 82dB ref. max output. Outputs: 90W channel into 8 ohms. Damping factor: 100 into 8 ohms. THD: <1.0% between 1W and rated power output. FR: 16Hz-70kHz -3dB. Mains: 110-240V AC. Size: 18 $\frac{1}{4}$  x 5 $\frac{1}{8}$  x 12 $\frac{1}{2}$ in. Price: £369.45 (plus VAT).

**Mk16 ★**

Stereo/Quad pre-amplifier. Inputs: plug-in matching modules available for phono, mic and aux feeding into a line input at 0.775V. S/N: phono/mic 78dB, aux 82dB. Max. output: 8V RMS into 600 ohms. THD: <0.1% at rated

★ Indicates entry is illustrated

output. FR: 20Hz-20kHz  $\pm 0.5$ dB. Mains: 110-240V AC. Size:  $18\frac{1}{4} \times 9\frac{1}{2} \times 5\frac{3}{4}$ in. Price £490.75 (plus VAT).

#### Mk100 ★

Stereo power amplifier. Input: 750mV. S/N: 95dB. Max. output 100W channel into 8 ohms. Damping factor: high 100, med 30, low 10. THD: 1% at rated output. FR: 16Hz-70kHz  $-3$ dB. Mains 117-240V AC. Size:  $18\frac{1}{4} \times 5\frac{3}{4} \times 12\frac{1}{4}$ in. Price: £241.69 (plus VAT).



Galutron Mk100

#### ■ GOLDRING LTD

10 Bayford Street,  
Hackney, London E8 3SE.  
Tel: 01-985 1152.

#### VV7 Equaliser

Equaliser pre-amplifier designed to fit beneath record decks. Includes power supply. Amplifiers output from low output cartridges and equalises to RIAA characteristic. Price: £12 (plus VAT).



Goodmans model Forty-forty

#### ■ GOODMAN'S

Goodmans Loudspeakers Ltd,  
Downley Road, Havant,  
Hants PO9 2NL. Tel: Havant 6344.

#### Model Forty-forty ★

Stereo integrated amplifier. Inputs: phono 2mV 50K, aux/ceramic 60mV 600K, tuner 60mV 600K, tape 320mV 50K. S/N: phono 60dB, all others 75dB; all ref. to rated power. Outputs: 35W channel into 4 ohms. Damping factor: 40 into 4 ohms. THD:  $<0.1\%$  both channels driven 60W. FR: 30Hz-20kHz  $\pm 1.5$ dB. Mains: 120, 220, 245V AC. Size:  $22 \times 11\frac{1}{4} \times 3\frac{3}{4}$ in. Price: £82.31 (plus VAT).

#### ■ GRIFFIN

H.K. Griffin & Co (Electronics),  
Siddons Factory Estate, Howard Street,  
West Bromich, Staffs.  
Tel: 021-556 0559/0752.

#### TOC80 Control Unit

Pre-amplifier of advanced design featuring all electronic touch operation. Inputs: mag 2mV RIAA characteristic, overload threshold 3V, radio 200mV, aux 50mV, tape (1 & 2) 300mV (adjustable). Outputs: 1V RMS, tape 100mV (adjustable), headphones 1W RMS into all loads (overload protected). Distortion: less than 0.01%. FR: 15Hz-30kHz. Hum and noise: all inputs better than  $-70$ dB Filters: 12dB/Oct. Turnover at 6kHz or 9kHz. Incorporates a width control. Price: £190.34 (including VAT).

#### ■ HARMON-KARDON

Hightate Acoustics,  
38 Jamestown Road,  
London NW1 7EJ  
Tel: 01-267 4937

#### Citation 11

Stereo pre-amplifier. 13 transistors. Inputs: mag PU (2) 1.5mV 47K, aux (2) 150mV 20K, aux 300mV 20K. Noise level: mag PU input 66dB, other inputs 80dB. Output: 6V RMS per channel at 500 ohms. Tone controls: bass  $\pm 12$ dB at 60Hz,  $\pm 12$ dB at 320Hz,  $\pm 12$ dB at 1kHz,  $\pm 12$ dB at 12kHz, high-cut filter  $-8$ dB (6dB/octave) at 10kHz, sub-sonic filter  $-12$ dB (6dB/octave) at 15Hz. Two low impedance headphone outlets. HD: 0.05% at 6V. Output impedance: 500 ohms. FR: 2Hz-250kHz  $\pm 1$ dB at 6V output. Mains: 110-240V AC. Audio equaliser control. Size:  $16\frac{1}{4} \times 4\frac{1}{4} \times 12$ in. Price: £228 (plus VAT).

#### Citation 12

Stereo power amplifier. Designed for use with Harmon-Kardon Citation 13 speakers or other similar high quality systems. Input: 1.6V 47K. Noise level: 100dB. Output: 60W RMS per channel. HD: 0.06% at 60W RMS. Output impedance: 8 ohms. Separate power supply unit for left and right channels. FR: 1Hz-100kHz  $\pm 1$ dB. Mains: 110-240V AC. Power consumption: 200W both channels driven simultaneously, 30W at zero signal. Size:  $12\frac{3}{4} \times 5\frac{1}{2} \times 12\frac{1}{2}$ in. Finish: black case with brushed aluminium panel. Price: £189 (plus VAT).

### ■ HARRISON

Gimar Ltd, 10 Museum Street,  
London WC1A 1JS. Tel: 01-836 3222.

#### 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: 100. THD: 0.05% at 100W, 1kHz. FR: 20Hz-20kHz  $\pm 0.5$ dB at 50W. Mains: 110-240V preset internally. Size: 17  $\times$  10 $\frac{1}{2}$   $\times$  3 $\frac{1}{2}$ in. Price: £185.90 (including VAT).

### ■ HEATHKIT

See Constructional Kits Section.

### ■ H/H ELECTRONIC

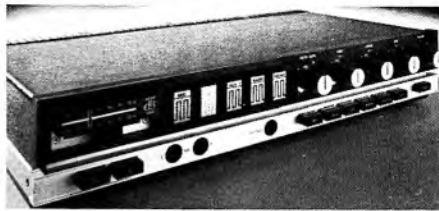
Industrial Site, Cambridge Road, Milton,  
Cambridge CB4 4AZ.  
Tel: Cambridge 65945.

#### IC-100S

Professional power amplifier with two input channels and mono power output. Transistors and ICs. Inputs: (two) 25mV 100K. Noise level: -70dB all inputs. Overload capability: 35dB. Output: 100W RMS into 8 ohms. Bass control: +18dB -9dB at 30Hz. Treble control: +8dB -10dB at 15kHz. Presence control: +10dB at 15kHz. Presence control: +10dB at 2kHz. FR: 20Hz-20kHz  $\pm 0.5$ dB. HD: <0.2% at 80W 20Hz-20kHz (typically 0.5% at 1kHz). Slave output at 500mV 50 ohms. Mains: 115, 210, 220, 230 and 240V AC. Size: 26 $\frac{3}{8}$   $\times$  4 $\frac{1}{4}$   $\times$  11 $\frac{1}{2}$ in. Finish: top and bottom ABS plastic with bison grain, bright aluminium front panel. Price: £120.52 (plus VAT).

#### IC-100

Professional power amplifier with two input channels and mono power output. Designed for use with musical instruments. Input: (two) 25mV 100K. Noise level: (power amplifier) -90dB. Bass control: +18dB -20dB at 20Hz. Treble control +16dB -18dB at 15kHz. Presence control: +12dB at 1kHz. Brilliance control: +10dB at 2kHz. Output: 100W RMS into 7.5 ohms, 120W RMS into 4 ohms. Output impedance: 4-15 ohms. Output protected against short-circuit and open-circuit operation. Mains: 115, 210, 220, 230 and 240V AC. Size: 26 $\frac{3}{8}$   $\times$  4 $\frac{1}{4}$   $\times$  11 $\frac{1}{2}$ in. Finish: top and bottom ABS plastic with bison grain, bright aluminium front panel. Price: £148.98 (plus VAT).



Harrison S200



Harrison S200

### TPA Series D

Professional power amplifiers with outputs from 50W-200W RMS. Modular construction. Bench or rack mounting. Full range of accessories. Full details and specifications on request.

### ■ HITACHI

Hitachi Sales (UK) Ltd, Hitachi House,  
Station Road, Hayes UB3 4DR.  
Tel: 01-848 8787.

#### IA1000

Integrated stereo amplifier. Inputs: mag PU (1) 2mV 50K, mag PU (2) 5mV 50K, aux (1) 140mV 100K, aux (2) 140mV 100K, radio 140mV 100K, mic 2mV 35K. 37 transistors, 18 diodes, two ICs. Output: 50W RMS per channel into 4 ohms (both channels driven). HD: <0.1% FR: 10Hz-100kHz. Damping factor: 50 at 8 ohms. Tone controls. bass  $\pm 12$ dB at 100Hz, treble  $\pm 12$ dB at 10kHz, high filter -10dB at 10kHz, low filter -8dB at 50Hz. Size: 17 $\frac{7}{8}$   $\times$  5 $\frac{3}{8}$   $\times$  13in. Weight: 27 $\frac{1}{2}$ lb. Two VU meters. Microphone input mixing. Two-system speaker connections. Finish: rosewood side panels and drawn aluminium control panel. Price: £146 (including VAT).

#### IA600

Integrated stereo amplifier. Inputs: mag PU (low) 2.5mV 50K, mag PU (high) 6mV 50K, aux (1) 220mV 100K, aux (2) 220mV 100K, mic 2.5mV 25K, tape 220mV. 19 transistors, 13 diodes, two ICs. Output: 27W RMS per channel into 4 ohms (both channels driven). HD: <0.1%. FR: 10Hz-100kHz. Damping factor: 50 at 8 ohms. Tone controls. bass  $\pm 12$ dB at 100Hz, treble  $\pm 12$ dB at 10kHz, high filter -8dB at 10kHz. Size: 16 $\frac{1}{4}$   $\times$  4 $\frac{3}{4}$   $\times$  12 $\frac{3}{8}$ in.

★ Indicates entry is illustrated

Weight: 19½lb. Solid wood end pieces, drawn aluminium panel. Price: £98 (including VAT).

#### HA 300

Stereo amplifier. Output: 20W RMS per channel into 8 ohms at 1kHz. FR: 20-30,000 Hz  $\pm$  2dB. Power bandwidth: 30-20,000Hz. Distortion: 0.8% RMS. Damping factor: 55 at 8 ohms. Input sensitivity and impedance: mic 4.8mV 8K, phono 2.4mV 45K, tuner/aux 140mV 50K, tape (1 & 2) 140mV 50K, DIN 400mV 160K. Tone controls: bass  $\pm$  10dB (100Hz), treble  $\pm$  10dB (10kHz). Loudness control: +10dB (100Hz); +5dB (10kHz). Equaliser:  $\pm$  2dB (RIAA). S/N ratio: phono 74dB, aux/tuner 94dB. Residual noise: 0.4mV. Mains: 220-240V AC 50Hz, 120W max. Size: 39  $\times$  12.1  $\times$  31.8cm. Weight: 6.7kg. Loudness switch, tape monitor switch, headphone jack and microphone jack. Facility for mic mixing. Price: £85 (including VAT).

#### ■ JVC

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

#### JAS5

Integrated stereo amplifier. Output: 40W RMS per channel, both channels driven into 8 ohms at 1kHz. Power bandwidth: (1HF) 20Hz-20kHz. THD: 0.05% at 1kHz. Intermodulation distortion: 0.4% at rated output. Damping factor: 30 at 8 ohms. Load impedance: 4-16 ohms. FR: 10Hz-150kHz -3dB. S/N ratio: 92dB. Inputs: tape (1 & 2) 2mV 50K, aux 2mV 50K, phono (1 & 2) 2mV 50K. Facilities for tape dubbing and two pairs of speakers. Headphone socket. Size: 16½  $\times$  5⅞  $\times$  13¼in. Weight: 23.1lb. Price: £168 (plus VAT).

#### JAS8

Integrated stereo amplifier. Output: 55W RMS per channel, both channels driven into 8 ohms at 1kHz. Power bandwidth: (1HF) 20Hz-20kHz. THD: 0.05% at 1kHz into 50W RMS. Intermodulation distortion: 0.4% at rated output. Damping factor: 30 at 8 ohms. Load impedance: 4-16 ohms. FR: 10Hz-150kHz -3dB. S/N ratio: 92dB. Inputs: tape (1 & 2) 2mV 50K, aux 2mV 50K, phono (1 & 2) 2.5mV 50K. Facilities for tape dubbing and two pairs of speakers. Headphone socket. Size: 16½  $\times$  5⅞  $\times$  13¼in. Weight: 23.1lb. Price: £194 (plus VAT).

#### JAX9

Integrated four channel amplifier with built-in

CD-4 demodulator and 2 matrix circuits. Output: 25W RMS per channel, both channels driven into 8 ohms at 1kHz. Power bandwidth: (1HF) 10Hz-40kHz -3dB. THD: 0.05% at rated output. Damping factor: 30 at 8 ohms. Load impedance: 4-16 ohms. FR: 5Hz-200kHz -3dB. Inputs: phono (1) 2.5mV 33K, 47K, 100K; phono (2) 2.5mV 100K, aux (1 & 2) 2mV 100K, tape play (1 & 2) 2mV 100K. Filters: subsonic and high. Tape dubbing facility. Headphone socket. Size: 16½  $\times$  5⅞  $\times$  14¼in. Weight: 26.4lb. Finish: anodised aluminium with black case. Price: £279 (plus VAT).

#### JA-S310

Integrated stereo amplifier. Output: 25W RMS per channel, both channels driven into 8 ohms at 1kHz. THD: Less than 0.8% at rated power. Intermodulation distortion: less than 0.8% at rated power. Damping factor: more than 100 at 8 ohms. Load impedance: 4-16 ohms. Inputs: phono 2.5mV 47K, tuner 165mV 50K, aux 165mV 50K, mic 5mV 10K. Price: £79.50 (plus VAT).

#### 4VN550

Integrated four-channel amplifier. Inputs: mag PU, radio, tape, mic, aux. Tone controls: treble, bass, rumble filter, scratch filter. Output: 12.5W RMS per channel (four channels). FR: 20Hz-50kHz. Price: £124.38 (plus VAT).

#### 4VN880

Integrated four-channel amplifier. Inputs: mag PU, radio, tape, mic, aux. Tone controls: treble, bass, rumble filter, scratch filter. Facilities for four-channel synthesised sound. Output: 28W RMS per channel (four channels). FR: 10Hz-50kHz. Price £180 (plus VAT).

#### 4VN990

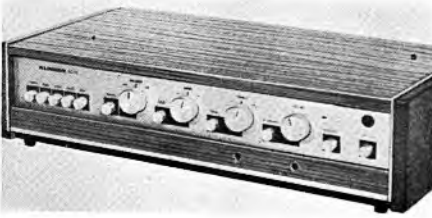
Integrated four-channel amplifier. Inputs: mag PU, radio, tape, mic, aux. Tone controls: treble, bass, rumble filter, scratch filter. Facilities for four-channel synthesised sound. Sound effect amplifier (SEA) tone system. FR: 10Hz-50kHz. Output: 38W RMS per channel (four channels). Price: £279 (plus VAT).

#### ■ KENWOOD

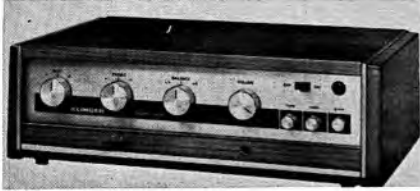
Distributors: B.H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6441.

#### 700C

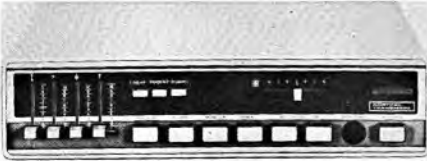
Stereo pre-amplifier. THD: 0.04% at rated output. Inputs: (1 & 2) 2.5mV 50K, tuner 150mV 100K, aux (1 & 2) 150mV 100K, tape play 150mV 100K, mic 2.5mV 600K. S/N ratio: phono (1 & 2) 70dB, tuner, aux (1, 2, 3),



Klinger KC92



Klinger KC93



Korting A710

tape play 85dB, mic 70dB. FR: phono (1 & 2) RIAA standard curve +0.3dB, tuner, aux, tape play 20Hz-20kHz -0.3dB, +0dB. Controls: bass, treble, loudness, low filter, high filter, phones out. Power consumption: 10W. Size: 440 x 145 x 300mm. Weight: 9.5kg. Price: £300 (plus VAT).

### 700M

Stereo power amplifier. Power output: 170W RMS per channel, both channels driven into 8 ohms at 20Hz-20kHz. THD: 0.1% at rated power into 8 ohms. Intermodulation distortion: 0.1% at rated power into 8 ohms. Power bandwidth: 5Hz-30kHz. S/N ratio: 100dB. Input sensitivity and impedance: 1V 50K. Damping factor: 40 at 8 ohms. FR: 20Hz-20kHz +0dB, -0.5dB. Speaker impedance: 4-16 ohms. Power consumption: 73W at no signal. Size: 440 x 200 x 360mm. Weight: 27kg. Price: £430 (plus VAT).

### ■ KENSONIC

Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.

### C-200

Stereo pre-amplifier. 80 transistors, 35 diodes. FR: 20Hz-20kHz +0dB, -0.2dB. Distortion: lower than 0.05% at rated output level. Inputs: disc (1) 2-6mV 30K, 47K, 100K; disc (2) 2-6mV

47K, mic 2mV 47K, tuner 200mV 130K, aux (1 & 2) 200mV 130K, tape play (1 & 2) 200mV 130K. Maximum output level: 10V at 0.05% distortion. Hum and noise: tuner, aux tape, play 90dB below rated output; disc, mic 74dB below 10mV input. Tone controls: 10-step rotary switch for each channel with turnover frequency switches. Volume control: less than 1dB tracking error control down to -60dB. Mains: 100, 117, 220, 240V AC 50/60Hz. Power consumption: 36W. Size: 445 x 152 x 355mm. Weight: 14kg. Price: £330 (plus VAT).

### ■ KLINGER

Klinger Controls Ltd, Spencer Court, 7 Chalcot Road, London NW1 8LU. Tel: 01-586 2922.

### KC92 ★

Integrated stereo amplifier. 28 transistor circuit. Inputs: mag PU 2mV 47K, radio 50mV 220K, tape 50mV 220K, ceramic PU 100mV 470K, aux (mic) 0.15mV 30 ohms. Noise level: (mag PU) 66dB, (other inputs) 70dB. Overload capability: 30dB. Tone controls: bass  $\pm$  15dB, treble  $\pm$  15dB, scratch filter 18dB/octave from 8kHz, rumble filter 12dB/octave from 80Hz. Full-range balance control. HD: 0.1% at 20W. Output: 25W RMS per channel. Output impedance: 8 ohms. Tape outlet: 100mV. FR: 25Hz-35kHz  $\pm$  2dB at 20W. Stabilised power supply. Two stereo headphone sockets. Switching for two pairs of speakers. Switched mains outlet socket. Finish: teak with diecast enamelled sides. Size: 17 $\frac{1}{2}$  x 4 $\frac{1}{4}$  x 8 $\frac{1}{2}$ in. Price: £53.50 (plus VAT).

### KC93 ★

Integrated stereo amplifier. 18 transistor circuit. Inputs: mag PU 3mV 47K, ceramic PU 40mV 470K, radio 50mV 470K, tape 50mV 470K. Noise level: (mag PU) 60dB, (other inputs) 66dB. Overload capability: 30dB. Output: 10W RMS per channel. Output impedance: 8 ohms. Tape outlet: 100mV. Tone controls: bass  $\pm$  15dB, treble  $\pm$  15dB. HD: better than 0.5% at 10W. FR: 40Hz-18kHz  $\pm$  2dB at 10W. Stereo headphone socket. Switched and direct mains outlet sockets. Finish: teak with enamelled sides. Size: 13 x 4 $\frac{1}{4}$  x 8 $\frac{1}{2}$ in. Mains: 120-240V AC. Price: £35.70 (plus VAT).

### ■ KORTING

Europa Electronics Ltd, 9 Howard Place, Shelton, Stoke-on-Trent ST1 4NW. Tel: Stoke-on-Trent 29316.

### A710 ★

Stereo amplifier. 25 transistors, 1 diode, 1 rectifier. Pushbuttons for linear, presence,



Leak 2200

rumble, scratch, stereo, monitor, tuner, on/off. Slide controls for volume, balance, treble and bass. Phono compensator: 2 stages per channel, low noise amplification adjustable from 30 to 43dB. Connection sockets: stereo tuner, stereo pick-up (magnetic system), stereo tape recorder, tape recorder/pick-up (crystal/ceramic), four loudspeaker boxes, stereo earphone, monitor. Output: 20W. Mains: 130/230V 50Hz. Cabinet: colour walnut, satin finish or white. Size: 28 × 9.5 × 23cm. Price: £43.75 (plus VAT).

#### A510

Stereo amplifier. 23 transistors, 1 diode, 1 rectifier. Pushbuttons for scratch, stereo, monitor, tuner, on/off. Slide controls for volume, balance, treble and bass. Phono compensator: 1 stage per channel. Connection sockets: stereo tuner, stereo pick-up (magnetic system), stereo tape recorder, tape recorder/pick-up (crystal/ceramic), 2 loudspeaker boxes, stereo earphone. Output power: 12.5W. Mains: 130/230V 50Hz. Cabinet: colour walnut, satin finish or white. Size: 38 × 9.5 × 23cm. Price: £39.36 (plus VAT).

#### 740

Quadrophonic amplifier. No further details available as this edition of the Year Book closed for press.

#### LEAK

Rank Radio International Ltd,  
PO Box 596, Power Road, Chiswick,  
London W4 5PW. Tel: 01-994 6491.

#### 2100

Stereo integrated amplifier. Inputs: phono 2.2mV or 6mV 47K switchable, tape 140mV 100K, cassette 140mV 100K, tuner 140mV 100K, all at 1kHz for 35W output. Outputs: tape/cassette 140mV, DIN 1.4mV/K. Speakers 30W channel into 8 ohms, 35W channel into 6 ohms, 40W channel into 4 ohms. Both channels sine wave driven at 1kHz. High power single channel mode 80W. Damping

factor. 40 at 80Hz. THD. 0.1% at rated power. Power bandwidth: 10Hz-40kHz at 35W - 2dB. Mains: 240V AC 50-60Hz. Size: 16.3 × 12½ × 5¼in. Price: £104.60 (plus VAT).

#### 2200 ★

Stereo integrated amplifier. Inputs: phono 2.5mV or 6.5mV 47K switchable, tape 150mV 100K, cassette 150mV 100K, tuner 150mV 100K, mic 2.4mV 47K, main amp 1V 47K; all at 1kHz for 50W output. S/N: phono 65dB, tape/cassette/tuner 80dB, main amp 90dB. Outputs: tape/cassette 150mV, DIN 1.5mV/K, speakers 45W channel into 8 ohms, 50W channel into 6 ohms, 60W channel into 4 ohms. Both channels sine wave driven at 1kHz. High power single channel mode 120W. Damping factor: 40 at 80Hz. THD: 0.1% at 45W. Power bandwidth: 10Hz-40kHz at 50W - 3dB. Mains: 240V AC 50-60Hz. Size: 16.3 × 12½ × 5¼in. Price: £131.98 (plus VAT).

#### LEEVEERS-RICH

Leever-Rich Equipment Ltd,  
319 Trinity Road, Wandsworth,  
London SW18 3SL. Tel: 01-874 9054.

#### 7 Band Audio Equaliser Model LR720

Wide range equaliser covering spectrum in 7 separately adjustable and overlapping bands, suitable for use in transcription to match widely differing recordings to a common quality standard. Price: £235 (plus VAT).

#### LOEWE OPTA

Hokushin Audio Visual Ltd,  
2 Ambleside Avenue, London, SW16.  
Tel: 01-677 9919.

No details of models available as this edition of the Year Book closed for press.

#### LUX

Howland-West Ltd, 3-5 Eden Grove,  
London N7 8EQ. Tel: 01-609 0923/6

#### SQ707 ★

Integrated stereo transistor amplifier. Inputs: PU 2mV 50K, radio 120mV 50K, tape recorder 120mV 50K, aux 120mV 50K. Noise level: -60dB on magnetic PU, -65dB all other inputs. Controls: two bass, two treble, mild/intense tone operation, function selector, volume, mono/stereo, balance, A/B speaker switch for two systems. Output: 17W RMS per channel into 8 ohms, 20W RMS per channel into 4 ohms. HD: <1% at maximum output. FR: 30Hz-30kHz ± 1dB. Output impedance: 8 ohms. Mains: 240V AC. Size: 14¼ × 5 × 9in. Polished wood veneered case. Price: £83 (plus VAT).

#### SQ700X

Integrated stereo amplifier. Inputs: phono



Lux SQ707



Lux M150



Lux CL350



Macel Electronics Brown Mark I

(1 & 2) 2mV 50K, aux (1 & 2) 120mV 50K. Output: 20W RMS per channel into 8 ohms. FR: 10Hz-50kHz -1dB. Size: 373 × 227 × 125mm. Finish: rosewood. Price: £116 (plus VAT).

**L308**

Integrated stereo amplifier. Inputs: phono (1 & 2) 2.5mV, aux (1 & 2) 100mV, 100mV tuner input (level adjustable). Output: 55W RMS per channel into 8 ohms, both channels driven. FR: 10Hz-50kHz within 1dB. Size: 485 × 300 × 65mm. Finish: rosewood. Price: £245 (plus VAT).

**L309**

Integrated stereo amplifier. Inputs: phono (1 & 2) 2.5mV, aux (1 & 2) 100mV, 100mV tuner input (level adjustable). Output: 75W RMS per channel into 8 ohms, both channels driven. FR: 10Hz-50kHz. Size: 485 × 300 × 165mm. Finish: rosewood. Price: £292 (plus VAT).

**CL350 ★**

Preamplifier. Input impedance: phono (1 & 2) 2mV, three aux inputs 110mV, mic 2-3mV, two tape inputs 110mV. Size: 476 × 244 × 182mm. Finish: rosewood. Price: £198 (plus VAT).

**M150 ★**

Main amplifier. Output: 75W RMS per channel into 8 ohms, both channels driven. FR: 10Hz-90kHz to within 1dB. Size: 476 × 244 × 182mm. Finish: rosewood. Matches the CL350 pre-amplifier. Price: £242 (plus VAT).

**SQ507**

Integrated stereo amplifier. 39 transistors. Inputs: PU (1) 2mV 30K/50K/100K switched, PU (2) 2mV 50K, aux (1) 90mV 50K, aux (2) 90mV 200K. Noise level: PU inputs -63dB, aux inputs -80dB. Output: 50W RMS per channel. Output impedance: 8 ohms. Tone controls: bass defeat 150, 300, 600Hz; treble defeat 6kHz, 3kHz, 1.5kHz; bass cut -6dB/octave from 70Hz, treble cut -6dB/octave from 6kHz. HD: 0.04%. FR: 10Hz-60kHz -1dB. Size: 17 $\frac{3}{4}$  × 10 $\frac{3}{8}$  × 6 $\frac{1}{8}$ in. Finish: rosewood cabinet with white/gold metal fascia. Price: £184 (plus VAT).

**SQ505X**

Integrated stereo amplifier, 37 transistors. Inputs: mag PU (2) 2mV at 30K, 50K or 100K selectable, aux (3) 80mV 30K. Noise level: (PU) 63dB, (aux) 80dB. Output: 35W RMS per channel. Controls: bass defeat (150, 300, 600Hz), treble defeat (1.5, 3, 6kHz), bass filter -6dB at 70Hz, treble filter -6dB at 6kHz. HD: <0.04% at 1kHz at 1V. Output impedance: 8 ohms. FR: 10Hz-60kHz -1dB. Mains: 120, 240V. Size: 17 $\frac{3}{4}$  × 6 $\frac{1}{8}$  × 10 $\frac{3}{8}$ in. Finish: rosewood cabinet with champagne panel. Price: £170 (plus VAT).

**■ MACEL ELECTRONICS LTD**

PO Box 64, 14 High Street, Ipswich IP1 3LR.  
Tel: Ipswich 215465.

**Brown Mark I ★**

Stereo integrated amplifier. Output: 70W



★ Indicates entry is illustrated

RMS per channel, both channels driven into 8 ohms at 20Hz-20kHz. IM and harmonic distortion: less than 0.1% at 20Hz-20kHz (typically less than 0.05% at 1kHz). Tone controls: Bass  $\pm 12$ dB at 80Hz, treble  $\pm 12$ dB at 10kHz. Low filter 30Hz cut-off (18dB/Oct), high filter 7kHz cut-off (12dB/Oct). S/N ratio: phono 78dB (10mV), aux, tuner, tape 90dB (250mV). Damping factor: greater than 150. Input sensitivity and impedance: phono 2.5mV 47K, aux, tuner, tape 0.25mV 100K. RIAA accuracy:  $\pm \frac{1}{2}$ dB. Size: 15 x 12 x 5in. Weight: 20lb. Price: £290 (plus VAT).



Marantz 1030

## ■ MARANTZ

Pysier Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4111

### Model 1030 ★

Integrated stereo amplifier. 22 transistors and 14 diodes. Inputs: mag PU 2.1mV 47K, mic 2.1mV 47K, aux 150mV 100K. Noise level: (PU input) -93dB. Overload capability: (PU input) 100mV. Output: 15W RMS per channel, both channels driven. Output impedance: 8 ohms. Tone controls: bass  $\pm 12$ dB at 50Hz, treble  $\pm 12$ dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz. HD: 0.5% from 40Hz-20kHz. FR: 20Hz-20kHz  $\pm 1$ dB at 1W. Output circuits automatically protected. Mic input on front panel. Main and remote speakers and headphones. Size: 14½ x 4¼ x 12in. Finish: gold anodised front panel. Price: £95 (plus VAT).

### Model 1060

Integrated stereo amplifier. 35 transistors and 14 diodes. Inputs: mag PU 1.8mV 47K, mic 1.8mV 47K, aux 180mV 100K. Noise level: (PU input) -96dB. Overload capability: (PU input) 100mV. Output: 30W RMS per channel, both channels driven. Output impedance: 8 ohms. Tone controls: bass  $\pm 15$ dB at 50Hz, treble  $\pm 12$ dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz, middle control  $\pm 6$ dB at 700Hz. HD: 0.5% 20Hz-20kHz. FR: 20Hz-20kHz  $\pm 0.5$ dB at 1W. Automatic protection of output circuits. Three-zone tone controls. Front panel sockets for mic and aux. Size: 14¼ x 4¼ x 14in. Finish: gold anodised front panel. Price: £129 (plus VAT).

### Model 1120

Integrated stereo amplifier. Inputs: mag PU 1.38mV 47K, mic 1.38mV 47K, aux 138mV 125K. Overload capability: (low level inputs) 100mV. Output: 60W RMS per channel, both channels driven from 20Hz-20kHz at 0.08% distortion. Controls: six-position input

selector, high filter 9kHz slope 12dB/octave, low filter 50Hz slope 12dB/octave, four slider type graphic tone controls (one for each channel), tape monitor pushbuttons, loudness switch, muting switch, main remote speaker switch. Tape dubbing jacks. HD: 0.08% 20Hz-20kHz. Output impedance: 8 ohms. FR: 5Hz-50kHz +0.5dB, -3dB at 1W, 20Hz-20kHz +0.3dB at 1W. Mains: 120, 220, 240V AC. Size: 15¾ x 5¾ x 14in. Finish: simulated walnut with gold anodised front panel. Automatic overload protection for circuit and speakers. Price: £270 (plus VAT).

### Model 250

Stereo power amplifier. 45 transistors, 18 diodes. Input sensitivity: 1.35V for rated power. Input impedance: 100K. Noise level: better than 106dB below rated power into 8 ohms. Output: 125W RMS per channel, both channels driven. HD: not greater than 0.1% 20Hz-kHz. Output impedance: 8 Ohms. FR: 20Hz-20kHz +0.1dB, 2Hz-100Hz +1.5dB at 1W. VU meters. Relay-operated overload protection. Direct-coupled output circuitry. Size: 15¾ x 6¼ x 9½in. Finish: gold anodised front panel. Price: £330 (plus VAT).

### Model 4060 ★

Integrated four-channel amplifier. Inputs: mag PU 1.8mV 47K, high level 180mV, radio, aux. Overload capability: 100mV. Output: 60W RMS total into 8 ohms (15W RMS per channel). Controls: five-position mode, switch, slider vari-matrix control, slider for balance (left, right, front, rear), separate sliders for bass and treble (front and rear). Pushbuttons for main/remote speakers and headphones, tape monitor, remote control, loudness. HD: 0.25% 20Hz-20kHz. Output impedance: 8 ohms. FR: 20Hz-20kHz  $\pm 1$ dB at 1W. Size: 14¼ x 4¼ x 12in. Finish: simulated walnut metal chassis with gold anodised front panel. Pocket in base for plug-in SQ decoder. Price: £190 (plus VAT).

### Model 4100

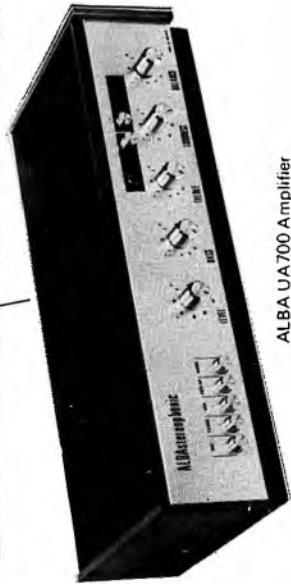
Integrated four-channel amplifier. Syn-

# Alba Hi-Fi Sounds realistic...the prices are realistic, too!

The ALBA UA700 Amplifier and the matching ALBA UA800 AM/FM Tuner are popular with Hi-Fi enthusiasts everywhere. Solid state circuitry, 15 watts per channel, decoder, push button switching, AFC, O.T and a novel directional FM tuner are some of the features which have impressed the fans... and the experts.

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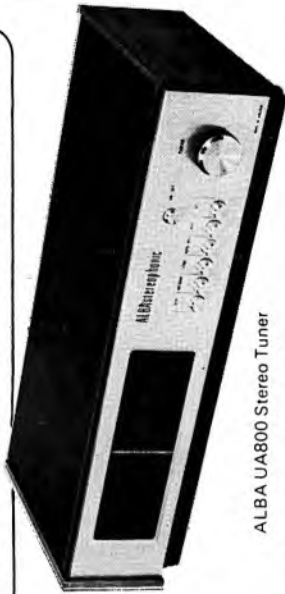
"For its price the UA700 is an excellent amplifier and has a performance that compares with that of amplifiers costing more. It is well designed and constructed and its facilities are more than adequate for the usual Hi-Fi signal sources."



ALBA UA700 Amplifier

## Records & Recording

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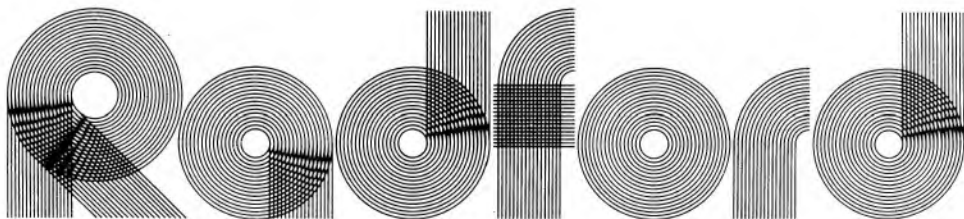
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Ask your dealer about the new range of slimline amplifiers and receivers from Cygnet Sound.

## D.D.3 (Illustrated)

Type	Two speed direct driven turntable
Turntable	310mm Aluminium alloy die cast
Drive System	3 $\frac{1}{2}$ and 45 rpm
Wow & Flutter	0.04%
S/N	55 dB
Tone arm	Statically balanced S-shaped tubular arm with inside force cancelling
Arm length	220mm
Overhang	13mm
Stylus pressure	0.5 Grams
Cartridge	Without
Arm lifter	Oil damped
Power consumption	15W
Power source	240v
Dimensions	480 (W) x 380 (D) x 190 (H)
Weight	13 kg
Standard accessories	45 rpm adaptor Screwdriver Connection cord

Note: Available without arm for SME fitting

**Ask your dealer;  
you may be surprised**



equipment is imported, distributed and guaranteed by

**Cygnet Audio Visual Co. Ltd.**  
7 PRIORY ROAD, HIGH WYCOMBE, BUCKS

## D.D.2 Specifications

Type	Two speed Direct Drive
Turntable	300mm Aluminium alloy diecast
Drive system	Direct drive
Motor	AC servo motor
Speed	3 $\frac{1}{2}$ and 45 rpm
Wow & Flutter	0.03%
S/N	58 dB
Tone arm	Statically balanced S-shaped tubular arm with inside force cancelling
Arm length	220mm
Overhang	13mm
Stylus pressure	0.5 Grams
Cartridge	Without
Arm lifter	Oil damped
Power consumption	15W
Power source	240v
Dimensions	550 (W) x 440 (D) x 200 (H) mm
Standard accessories	45 rpm adaptor Screwdriver Connection cord

Note: Available without arm for SME fitting

# AMCRON

## STATE OF THE ART



AMCRON amplifiers are acknowledged as leading the world in terms of audio reproduction, and reliability. They are to be found in the Studios of CBS, EMI, Philips, De Lane Lea as well as in Sadlers Wells, and the Royal Opera House. Most of the world's leading equipment manufacturers use them as a reference standard, and they are available to you if you want the finest equipment in the world for your own Hi-Fi system.

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SAXMUNDHAM, SUFFOLK IP17 2NL  
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thesises four-channel sound from any stereo source, decodes any matrix encoded record or FM broadcast and has provision for future quadraphonic developments. Inputs: mag PU 1.8mV 47K, high level 180mV 120K, radio, aux. Overload capability: 100mV. Output: (four channels) 25W per channel into 8 ohms (two channels) 60W RMS per channel into 8 ohms. Controls: treble  $\pm 12$ dB at 15kHz,  $\pm 14$ dB at 50Hz, high filter 6dB/octave at 9kHz, slider type balance controls for left, right, front and rear. Four level meters. Mode switch for vari-matrix mono, stereo, discrete and SQ. HD: 0.3% 20Hz-20kHz. Output impedance: 4-8 ohms. FR: 20Hz-20kHz  $\pm 0.5$ dB at 1W. Mains: 110, 220, 240V AC. Size:  $15\frac{3}{4} \times 5\frac{3}{4} \times 14\frac{1}{2}$ in. Finish: walnut (cabinet optional), simulated walnut metal chassis with gold anodised front panel. Under chassis pocket for plug-in decoder. Price: £305 (plus VAT).

#### Model 1200B

Stereo integrated amplifier. Inputs: phono (1 & 2), tuner, mic and aux (1 & 2). Ratio of input overload to equivalent noise (phono): 100dB. Sensitivity and impedance: 1.35mV 47K. Input sensitivity and impedance (high level): 134mV 50K. Tone controls: bass 50Hz  $\pm 10$ dB, mid 700Hz, treble 10kHz  $\pm 10$ dB. Output level and impedance: 3V 600 ohms. THD: 0.05%. IM distortion: 0.05%, 20Hz-20kHz. FR: (high level) 20Hz-20kHz. Power output. 100W RMS per channel, both channels driven at 20Hz-20kHz into 8 ohms. Power bandwidth: 10Hz-40kHz, both channels driven. Damping factor: 100 at 8 ohms. Price: £425 (plus VAT).

#### Model 240

Stereo power amplifier. Power output: 250W RMS per channel, both channels driven at 20Hz-20kHz into 8 ohms. IM distortion: 0.05%. THD: 0.05%, both channels driven. FR: 20Hz-20kHz. Power bandwidth: (IHF) 3Hz-60kHz. Input sensitivity and impedance: (nominal) 1.75V 33K. Damping factor: 400 at 8 ohms. Fitted with variable overlap drive. Price: £245 (plus VAT).

#### Model 4140 ★

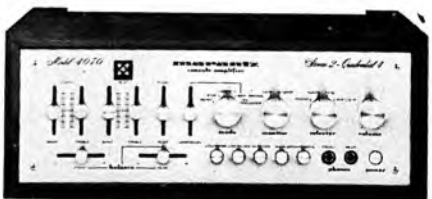
Integrated stereo amplifier with power mode switch for quadraphonic sound. Facilities for two 4-channel tape recorders with dubbing back and forth, a CD-4 adaptor, matrix decoders, 4-channel scope and separate pre-out/main-in jacks. Ratio to input overload voltage to equivalent noise (phono): 96dB. Equivalent noise input: 1.9 $\mu$ V. Sensitivity and impedance: 1.8mV 47K. Input sensitivity and impedance (high level): 180mV 100K. Tone controls: bass 50Hz  $\pm 10$ dB, mid 700Hz, treble 15kHz  $\pm 10$ dB. Output level and impedance:



Marantz 4060



Marantz Model 4140



Marantz Model 4070

1V 900 $\Omega$ . Power output: 70W RMS per channel, both channels driven at 20Hz-20kHz into 8 ohms or 4  $\times$  25W RMS per channel, all channels driven at 20Hz-20kHz into 8 ohms. THD: 0.3%. IM distortion: 0.3%. FR: 20Hz-20kHz  $\pm 5$ dB. Power bandwidth: 7Hz-70kHz (IHF). Damping factor: 40 at 8 ohms. Price: £310 (plus VAT).

#### 4000

Four channel pre-amplifier adaptor. High level input sensitivity and impedance: 180mV 100K. Tone controls: Bass at 50Hz  $\pm 10$ dB, treble at 15kHz  $\pm 10$ dB. Output level and impedance: (front) 180mV (rear) 2.1V. FR: 20Hz-20kHz  $\pm 5$ dB. Finish: metal chassis with optional walnut cabinet (model WC2). Price: (without cabinet) £154 (plus VAT); (cabinet only) £22 (plus VAT).

#### Model 4070 ★

Integrated four-channel amplifier. Inputs: mag PU 1.8mV 47K, high level 180mV, radio, aux. Overload capability: 100mV. Output:

★ Indicates entry is illustrated



Marantz Model 3600

2 × 35W RMS total into 8 ohms (4 × 15W RMS all channels). Controls: five-position mode switch, slider vari-matrix control, slider for balance (left, right, front, rear), separate sliders for bass and treble (front and rear). Pushbuttons for main/remote speakers and headphones, tape monitor, remote control, loudness. HD: 0.25% 20Hz-20kHz. Output impedance: 8 ohms. FR: 20Hz-20kHz ± 1dB at 1W. Size: 14½ × 4½ × 12in. Finish: simulated walnut metal chassis with gold-anodised front panel. Pocket in base for plug-in SQ decoder. Price: £195 (plus VAT).

#### Model 2440

Four-channel 'Quadradial' adaptor/amplifier. Synthesises four-channel sound from any stereo source, decodes any matrix encoded record or FM broadcast and has provision for future quadraphonic developments. Inputs: matrix, tape front, tape rear, aux. Output: 20W per channel (four) 20Hz-20kHz. Controls: treble ± 12dB at 15kHz, bass ± 14dB at 50Hz, variable dimension, mode. HD: 0.18% 20Hz-20kHz. Output impedance: 8 ohms. FR: 15Hz-80kHz ± 2dB, 20Hz-20kHz ± 0.5dB at 1W output. Mains: 110, 120, 220, 240V AC. Size: 16½ × 5 × 14in. Finish: simulated walnut metal chassis with gold-anodised front panel. Price: £180 (plus VAT).

#### 3600 ★

Stereo pre-amplifier/control console. FR: 20Hz-20kHz ± 0.25dB. THD: 0.02% at or below rated output. 1M distortion: 0.01% Tone controls: bass ± 15dB at 50Hz, mid ± 8dB at 700Hz, treble ± 10dB at 10kHz. Output level and impedance: 3V 150 ohms. Input sensitivity and impedance (high level) 300mV 25K, (phono) 2mV 40K. Equivalent noise input: (phono) 0.775µV. Overload voltage: 100dB (front panel) six input selector push-switches, mode, tape monitor, turnover push switches (30Hz, 5kHz and 9kHz), left and right mic input jacks, dubbing input and output jacks, main and remote speaker push-switches, headphone jack and power. Separate bass, mid-range and treble controls for left and right channels, tone in/out switch

and a horizontal straight-line balance control. (Rear panel) features include two tape output and two tape input jacks, six AC conveniences (four switched, two unswitched), left and right speaker switching inputs, tuner, phono and aux input jacks, and two sets of pre-out jacks to power two separate power amps. Price: £305 (plus VAT).

#### 3800

Same as 3600 but with Dolby B and tape equaliser. Price: to be announced.

#### ■ McIntOSH

Wilmex Ltd, Import Division, Crompton House, New Malden, Surrey KT3 4DE. Tel: 01-949 2545.

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#### ■ MILLBANK

The Millbank Electronics Group Ltd, Bellbrook Estate, Uckfield, Sussex TN22 1PS. Tel: Uckfield 4166.

#### MEX-1001C

Mono power amplifier. 12 transistors, 13 diodes. Input: 775mV at 10K. Noise level: -80dB. Output: (nominal 100W. HD: typically 0.1% at 1kHz at rated power. Output impedance: 8 ohms. FR: 30Hz-20kHz -3dB at half rated output. Mains: 220, 235, 250V 50-60Hz. Size: 19 × 3½ × 15in. Price £155.76 (plus VAT).

#### ■ MUSTANG

Mustang Communications, Nelson Street, Scarborough, Yorks YO12 7SZ. Tel: Scarborough 63298.

#### SS100

Power amplifier. Power output: 100W RMS into 15 ohms or 150W RMS into 7.5 ohms. FR: 10Hz-20kHz -0.5dB at 1W output. Power bandwidth: -0.5dB at 10Hz-20kHz. THD: less than 0.5% (typically 0.1% at 1kHz). Sensitivity: 0.775V. Input impedance: 10K nominal. S/N ratio: 94dB. Voltage gain: 34dB. Output regulation: low impedance output better than 3%. Weight: 13½lb. Mains: 115, 220, 230, 240V 50/60Hz AC. Size: 19 × 3½ × 13½in. Finish: matt anodised aluminium and chrome. Price: £110.08 (plus VAT).

#### SS50

Power amplifier. Power output: 50W RMS into 15 ohms or 80W RMS into 7.5 ohms. FR: 10Hz-20kHz, -0.2dB. Power bandwidth: -0.3dB at 10Hz-20kHz. THD: less than 0.5% (typically 0.1% at 1kHz). Sensitivity: 0.775V.



Nikko TRM 230



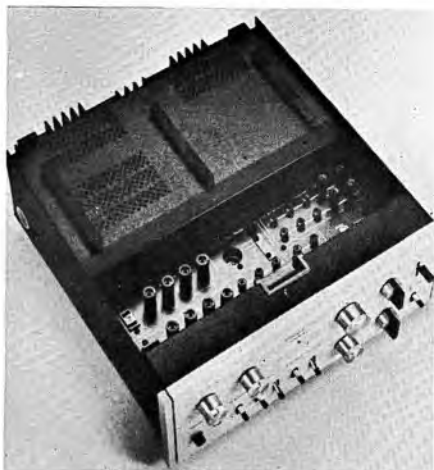
Nikko TRM 500



Nikko TRM 210



Nikko TRM 600



Onkyo Integra 725

Input impedance: 10K nominal. S/N ratio: 90dB. Voltage gain: 31dB. Output regulation: low impedance output better than 1.5%. Weight: 12½lb. Mains: 115, 220, 230, 240V 50/60Hz AC. Size: 19 × 3½ × 13¼in. Finish: matt anodised aluminium and chrome. Price: £83.20 (plus VAT).

#### ■ NIKKO

Distributors: Howland-West Ltd,  
3-5 Eden Grove, London N7 8EQ.  
Tel: 01-609 0293/6.

#### TRM-210 ★

Integrated stereo amplifier. Output power: 16W per channel into 8 ohms. Inputs: phono 1.8mV 50K, tuner 200mV 100K, tape and aux 200mV 100K. Price: £56 (plus VAT).

#### TRM-230 ★

Integrated stereo amplifier. Output power: 20W per channel into 8 ohms. Inputs: phono (1 & 2) 1.8mV 50K, tuner 200mV 100K, tape and aux 200mV 100K. Main in 850mV 150K. Price: £68 (plus VAT).

#### TRM-500 ★

Integrated stereo amplifier. 29 transistors, 9 diodes. Inputs: mag PU 2mV 47K, tape

150mV 50K, aux 150mV 50K, radio 150mV 50K. Noise level: (mag PU input) -60dB, (other inputs) -80dB. Output: 26W RMS per channel. Controls: bass ±10dB at 70Hz, treble ±10dB at 10kHz, loudness +11dB at 70Hz +7dB at 10kHz, low filter -8dB at 70Hz, high filter -7dB at 10kHz, speaker switch (A, A + B, B), tape dubbing. HD: 0.2% at 1W, 0.8% at rated output. Output impedance: 8 ohms. FR: 20Hz-30kHz ±2dB. Mains: 100, 120 220, 240V 50-60Hz. Size: 15 × 8⅞ × 11⅞in. Finish: wood cabinet with metal trim. Price: £97 (plus VAT).

#### TRM-600 ★

Full technical specification not available as this edition of the Year Book closed for press. Integrated stereo amplifier. Finish: wood cabinet with metal control panel. Price: £115 (plus VAT).

#### ■ ONKYO

J. Parker & Co (London) Ltd,  
Parker House, Beresford Avenue,  
Wembley HA0 1YX. Tel: 01-903 5211.

#### Integra 725 ★

Integrated stereo amplifier. Inputs: PU (1)



★ Indicates entry is illustrated

2.4mV 50-100K, PU (2) 2.4mV 50-100K, tuner 100mV 100K. H and N: (PU input) better than 75dB. (tuner input) better than 90dB. Overload capability: PU input 200mV. Tone controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 10kHz, low filter -6dB/octave at 70Hz, high filter -6dB/octave at 8kHz. Output: 22W RMS per channel into 8 ohms. HD: <0.1% at rated output. FR: 15Hz-70kHz at rated output. Output impedance: 4-16 ohms. Loudness control. Headphone and mains outlets. Mains: 100-120V or 220-240V AC 50-60Hz. Size:  $12\frac{3}{4} \times 5\frac{3}{4} \times 13\frac{1}{2}$ in. Weight: 17 $\frac{1}{2}$ lb. Price: £130.54 (including V A 1).

#### Model 732

Stereo integrated amplifier. Inputs: phono (1) 2mV 50 or 30K, phono (2) 2mV 50K, phono (moving coil) 83 $\mu$ V 80 ohms, mic 1.8mV 50K, tuner, aux (1 & 2) tape 100mV 100K. Outputs: Pre-out (1 & 2) 1V 100K, speakers 56W channel into 8 ohms, 68W channel into 4 ohms, THD: <0.1% at rated output, 1kHz. FR: 10Hz-80kHz -1dB. Power bandwidth: 10Hz-100kHz (1HF -3dB, THD 0.2%). S/N: >110dB (1HF-A). Damping factor: 100 (DC -20kHz). Mains: 100, 120, 220, 240V AC 50-60Hz. Size: 437 x 355 x 136mm. Price: on application.

#### 733 ★

Stereo control unit. 50 transistors, 19 diodes. Inputs: mag PU (1) 2.4mV 30-50K, mag PU (2) 2.5mV 50K, mic 1.8mV 50K. Noise level: mag PU inputs -75dB, mic input -55dB. Output: rated 1V, maximum 4V. Controls: tone defeat, high filter 12dB/octave from 10kHz, low filter 12dB/octave from 70Hz, loudness, muting, volume. HD: <0.05% at 1V at 1kHz output. Output impedance: 2.2K. FR: 10Hz-70kHz +0dB -1dB at 1V. Mains: 100, 120, 220, 240V AC. Size:  $17\frac{1}{2} \times 14 \times 5\frac{1}{2}$ in. Finish: brushed aluminium. Top entry terminals for easy accessibility. Price: £176.24 (including V A T).

#### ■ PHILIPS

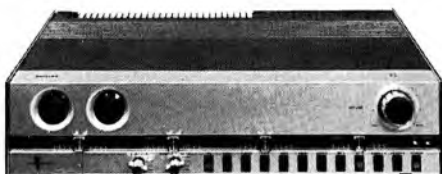
Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS. Tel: 01-437 7777.

#### RH 521 ★

Integrated stereo amplifier with surround sound facility. 32 transistors. Inputs: mag PU 2mV 50K, radio 100mV 100K, tape 250mV 100K, aux 100mV 750K, mic 1mV 2K. Noise level: -90dB. Output: 30W RMS per channel  $\pm 1$ dB. Controls: volume, balance, bass  $\pm 14$ dB, treble  $\pm 15$ dB, presence  $\pm$ dB at 2kHz, loudness (three positions), scratch filter, rumble filter, monitor. Output impedance: 4 ohms. HD: 0.1% at 20W per channel. FR:



Onkyo 733



Philips RH 521



Photax-Concertone 800B

20Hz-20kHz  $\pm 1$ dB at 50mW. Mains: 110, 127, 220, 240V AC. Size:  $18\frac{3}{4} \times 4\frac{1}{2} \times 12$ in. Microphone input. Two sets of speaker outlets. Headphone socket. Finish: walnut veneer cabinet with brushed aluminium fascia. Price: £143.52 (plus V A T).

#### RH 551

Stereo pre-amplifier suitable for use with Philips motion feedback enclosures. Inputs: MD PU 2mV 50K, tuner 100mV 100K, tape (1) 250mV 100K, tape (2) 250mV 100K, monitor 250mV 100K, mic 1mV 2K. (all DIN sockets). Output:  $2 \times 1$ V. Controls: rumble -3dB at 80Hz (12dB/Oct), scratch -3dB at 7kHz (12dB/Oct), slide controls for bass  $\pm 14$ dB at 50Hz, presence  $\pm 6$ dB at 2kHz, treble  $\pm 15$ dB at 10kHz, rotary volume control. FR: 10Hz-40kHz +0.5dB -3dB. Signal to noise ratio: -70dB. Price: to be advised.

#### ■ PHOTAX-CONCERTONE

Photax (London) Ltd, Hampden Park, Eastbourne, Sussex. Tel: Eastbourne 51197.

**Model 420**

Integrated stereo amplifier. Inputs: phono (1) 2.5mV, phono (2) 2.5mV, aux or phono (3) 150mV, tuner 150mV, tape 150mV. Outputs: tape, main speakers, remote speakers, unswitched mains: FR: 20Hz-50kHz  $\pm$  1dB. Output: 12W per channel (one driven) into 8 ohms. THD: less than 0.6% hum and noise: phono -60dB, tuner and aux -70dB. Mains: 100, 117, 220 or 240V. Price: £59.40 (including VAT).

**Model 620**

Integrated stereo amplifier. Inputs: phono (1) 2.5mV, phono (2) 2.5mV, aux or phono (3) 150mV, tuner 150mV, tape (1) 150mV, tape (2) 150mV. Outputs: two tape, main speakers, remote speakers, unswitched mains. FR: 20Hz-40kHz,  $\pm$  1dB. Output: 18W RMS. Both channels driven, per channel into 8 ohms. THD: less than 0.4% at rated output. Hum and noise: phono -65dB, tuner and aux -75dB. Mains: 100, 117, 220 or 240V. Price: £70.20 (including VAT).

**Model 800B ★**

Integrated stereo amplifier. Inputs: phono (1) 2.5mV 30 or 50 switched, phono (2) 2.5mV 50K, tuner 150mV 50K, aux (1) 150mV 50K, aux (2) 50mV 50K. Mic 2.2mV 22K, tape 150mV 50K. FR: 5Hz-70kHz. Output: 34W per channel into 8 ohms. THD: less than 0.4% at rated output. Hum and noise: phono and mic -65dB, tuner and aux -75dB. Mains: 100, 117, 220 or 240V. Price: £93.34 (including VAT).

**■ PIONEER**

Shriro (UK) Ltd, Shriro House,  
The Ridgeway, Iver, Bucks SL0 9JL.  
Tel: Iver 652222.

**SA.5300**

Stereo integrated amplifier. Output: 2  $\times$  10W (40Hz-20kHz both channels driven into 8 ohms) or 2  $\times$  12W (1kHz both channels driven into 8 ohms). THD: less than 0.8% at full power. Intermodulation distortion: less than 0.8% at rated power. Damping factor: 30 at 40Hz-20kHz into 8 ohms. Inputs: phono, aux, tape PB, tape PB DIN, tuner. Overload level: phono 150mV (THD: less than 0.1%). FR: phono (RIA equalisation) 30Hz-15kHz +0.5dB. Tuner, aux, tape PB 20Hz-30kHz +0.5dB, -1dB. Tone controls: Bass +9dB (100Hz), treble +6dB (10kHz), loudness +8dB (100Hz) +5dB (10kHz). Hum and noise: phono 70dB, tuner, aux, tape PB 85dB. Price: on application.

**SA6300**

Stereo integrated amplifier. Output: 2  $\times$  20W

(40Hz-20kHz both channels driven into 8 ohms) or 2  $\times$  22W (1kHz both channels driven into 8 ohms). THD: less than 0.8% at rated power. Intermodulation distortion: less than 0.8% at rated power. Damping factor: 25 at 20Hz-20kHz into 8 ohms. Inputs: phono 2.5mV 50K, (overload 150mV, THD: 0.1% at 1kHz), aux, tape PB, tuner 150mV 50K. FR: 30Hz-15kHz +0.5dB, aux, tape PB, tuner 20Hz-30kHz +0.5dB, -1dB. Tone controls: Bass +9dB, treble +6dB, loudness +8dB (100Hz) +5dB (10kHz). Price: on application.

**SA7300**

Stereo integrated amplifier. Inputs: phono (1) 2.5mV, tuner 150mV, tape 150mV. S/N ratio: phono 70dB, tuner 90dB, tape 90dB, aux 90dB. Output: 2  $\times$  40W into 8 ohms with both channels driven at 1kHz. Damping factor: more than 25 into 8 ohms at 1kHz. THD: less than 0.3% at full power. FR: 10Hz-50kHz +0dB, -1dB. Size: 350  $\times$  125  $\times$  282mm. Price: on application.

**SA7500**

Stereo integrated amplifier. Inputs: phono (1) 2.5mV, phono (2) 2.5mV, aux, tape, tuner 150mV. S/N ratio: phono 70dB, aux, tape, tuner, 150mV. Output: 4W per channel, both channels driven into 8 ohms. THD: 0.3% at full power (1kHz into 8 ohms). Damping factor: 25 at 1kHz into 8 ohms. FR: (aux) 10Hz-80kHz +0dB, -1dB. Mains: 110, 120, 130, 220, 240V AC. Size: 420  $\times$  150  $\times$  345mm. Price: on application.

**SA8500**

Stereo integrated amplifier. Inputs: phono (1) 2.5mV, phono (2) 2.5mV - 5mV (variable), aux, tape, tuner 150mV. S/N ratio: phono 70dB, aux, tape, tuner 90dB. Output: 65W per channel, both channels driven into 8 ohms. THD: 0.1% at full power (1kHz into 8 ohms). Damping factor: 30 at 1kHz into 8 ohms. FR: (aux) 10Hz- 80kHz +0dB, -1dB. Mains: 110, 120, 130, 220, 240V AC. Size: 420  $\times$  150  $\times$  345mm. Price: on application.

**SA9500**

Stereo integrated amplifier. Inputs: phono (1) 2.5mV - 10mV (variable), tuner 150mV, aux 150mV, tape 150mV. S/N ratio: phono 70dB, aux, tape, tuner 90dB. Output: 85W per channel, both channels driven into 8 ohms. THD: 0.1% at full power (1kHz into 8 ohms). Damping factor: 40 at 1kHz into 8 ohms. FR: 10Hz-80kHz +0dB, -1dB. Mains: 110, 120, 130, 220, 240V AC. Size: 420  $\times$  165  $\times$  403mm. Price: on application.

**SA9900**

Stereo integrated amplifier. Output: 2  $\times$

★ Indicates entry is illustrated

110W (20Hz-20kHz, both channels driven into 8 ohms) or 2 × 120W (1kHz both channels driven into 8 ohms). THD: less than 0.1% at rated power into 8 ohms. Intermodulation distortion: 0.1% at rated power into 8 ohms. Damping factor: 30 at 20Hz-20kHz into 8 ohms. Inputs: phono (1) 2.5mV 50K, phono (2) 2.5mV - 10mV 35K, 50K, 75K, 100K (variable), mic 6mV - 24mV 85K, tuner, aux (1), aux (2), tape (PB1), tape (PB2) 150mV 50K. Overload level: phono (1) 550mV (1kHz) (1HD: 0.1%), phono (2) 550mV to 1V (1kHz). FR: phono (RIAA equalisation) 30Hz-15kHz +0.2dB, tuner, aux, tape PB 7Hz-40kHz +0dB, -1dB. Tone controls: (1.5dB steps) Bass ±7.5dB (100Hz) ±4.5dB (50Hz); treble ±7.5dB (10kHz) ±4.5dB (20kHz). Filters; low 15Hz, 30Hz (12dB/Oct); high filter 8kHz, 12kHz (12dB/Oct). Size: 420 × 165 × 403mm. Price: on application.

### M3 Exclusive

Power amplifier. Power output: 2 × 150W (20Hz-20kHz, both channels driven into 8 ohms). THD: less than 0.1% continuous power output; less than 0.5% (2 × 1W output into 8 ohms). Intermodulation distortion: less than 0.1% continuous power output into 8 ohms. FR: (1W output) 10Hz-80kHz +0dB, -1dB. Inputs: (sensitivity/impedance) input 1 & 2: 1V, 2V 50K, speaker level control 0-20dB. Damping factor: more than 35 (20Hz-20kHz into 8 ohms). Subsonic filter 8Hz (6dB/Oct). S/N ratio: better than 100dB. Size: 468 × 206 × 370mm. Available to special order. Price: on application.

### C3 Exclusive

Pre-amplifier. Inputs: phono (1 & 3) 2.5mV 50K, phono (2) 2.5mV - 10mV 25K, 50K, 100K (variable), tuner, aux (1 & 2) 150mV 100K, aux (3) 150mV to ∞/100K, tape PB (1, 2, 3) 150mV 100K. Phono overload level: (THD: less than 0.05%) phono (1 & 3) 700mV (RMS)/1.97 (p-p) at 1kHz, phono (2) 700mV (RMS) to 1.4V (RMS)/1.97 (p-p) to 3.95V (p-p) to 3.95V (p-p) at 1kHz. Output terminals: tape record (1,2,3) 150mV/2.5K. THD: (20Hz-20kHz) less than 0.03% (output 2V) less than 0.05% (output 15V). FR: (phono RIAA equalisation) 30Hz-15kHz +0dB, tuner aux, tape PB 20Hz-20kHz +0dB, -0.5dB, (10Hz-90kHz +0dB, -1dB). Tone controls: bass ±7.5dB (100Hz). Sub ±6dB (50Hz); treble ±7.5dB (10kHz) Sub ±6dB (20kHz). Low-cut filter: 15Hz (12dB/Oct), 30Hz (18dB/Oct); high-cut filter 12kHz (12dB/Oct), 8kHz (18dB/Oct). S/N ratio: phono more than 70dB, tuner, aux, tape PB more than 90dB. Size: 468 × 206 × 343mm. Available to special order. Price: on application.



Quad 33 and FM3 in wood sleeve



Quad 303 power amplifier

### ■ QUAD

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

### Quad 33 control unit ★

Transistorised mono/stereo control unit. Inputs: PU from 2mV, radio (1) 100mV 100K, radio (2) 100mV 100K, tape from 100mV 40K. Signal-to-noise level: -70dB on PU, -85dB on all other inputs. Output: 0.5V. Controls: volume, balance, bass, treble, filter slope, filter frequency. Mains powered. Designed for use with Quad 303 amplifier but suitable for operation with other high quality equipment. Size: 10¼ × 3½ × 6½in. Price: £68 (plus VAT).

### Quad 50/E

High quality transistor power amplifier primarily intended for professional and industrial use. Input: 500mV RMS into 14 to 50K according to gain control setting for 50W output, or standard 600-ohm line bridging input: Output: 50W. Output transformer secondaries linked by output connector to provide for 4 to 300 ohm loads. Damping factor 10. Total harmonic distortion: 0.1% at 1kHz at

any level up to 50W output. Hum better than 80dB. Consumption: 24-150W depending on power output: Mains: 100-127V or 200-250V 50-60Hz. Size:  $12\frac{3}{4} \times 6\frac{1}{2} \times 4\frac{3}{4}$ in. Weight: 24lb. Price: on application.

#### Quad 303 power amplifier ★

Transistorised stereo power amplifier. Output: 45W into 8 ohms. HD: 0.03% at 70Hz and 700 Hz, 0.1% at 10kHz. FR: -1dB 30Hz-35kHz into 8 ohms, -1dB 20Hz-35kHz into 16 ohms. Noise level: -100dB. Sensitivity: 0.5V. Output impedance: 4-16 ohms. Output transistors: High voltage 2N 3055. Designed for use with Quad 33 control unit but can be used with other high quality equipment. Size:  $4\frac{3}{4} \times 6\frac{1}{4} \times 12\frac{3}{4}$ in. Price: £74 (plus VAT).

#### ■ RADFORD

Radford Audio Ltd, Ashton Vale Road, Bristol BS3 2HZ. Tel: Bristol 662301.

#### ZD22

Stereo pre-amplifier. Inputs: phono, tuner, two tape machines. Distortion: zero at rated output. Noise -83dB ref. 5mV phono input -85dB, line input. Output: Rated 1V, 17V clipping level. Size:  $17 \times 4\frac{3}{4} \times 9$ in. Price: £110 (plus VAT).

#### ZD22H

As ZD22 but fitted with headphone amplifier and headphone socket on front panel. Price: £125 (plus VAT).

#### HD250

Stereo power amplifier designed for use with ZD22 pre-amplifier. Output: 50W continuous into loads from 4-8 ohms. Max. power: 90W into 5 ohms. THD: less than 0.2% typically 0.1% at rated power. Size:  $17 \times 4\frac{3}{4} \times 11$ in. Price: £185 (plus VAT).

#### ZD100

Stereo power amplifier. Output: 100W RMS per channel into 3-4 ohms load and 60W RMS per channel into an 8 ohms load. Designed for loudspeakers of 4 or 8 ohms nominal impedance. 1V input required for rated power output. Price: £145 (plus VAT).

#### ZD200

Stereo power amplifier. Output: 200W RMS per channel into a 3-4 ohms load and 100W RMS per channel into an 8 ohms load. Designed for loudspeakers of 4 or 8 ohms nominal impedance. 1V input required for rated power output. Price: £245 (plus VAT).

#### ZD2100

Integrated pre-amplifier power amplifier. Output:  $2 \times 100$ W RMS per channel into a 3-4 ohms load and 60W RMS per channel into



Revox A78

8 ohms at virtually zero distortion. Designed for loudspeakers of 4 or 8 ohms nominal impedance. Functions and facilities as ZD22. Price: £225 (plus VAT).

#### ■ REVOX

Distributors: C. E. Hammond & Co Ltd, Lamb House, Church Street, London W4 2PB. Tel: 01-995 4551.

#### Revox A78 ★

Stereo amplifier. Output: 40W RMS per channel into 4-8 ohms, 25W RMS per channel into 16 ohms. HD: less than 0.1% at 1kHz, 0.3% 40Hz-15kHz. FR: 20Hz-20kHz  $\pm 1$ dB. Inputs: mag PU 3mV, ceramic PU 230mV, tape 100mV, aux 100mV, radio 100mV, tape monitor 250mV. Treble control:  $\pm 12$ dB at 12kHz. Bass control:  $\pm 12$ dB at 60Hz. Mains: 110, 130, 150, 220, 240, 250V AC 50-60Hz. 30 silicon transistors, 3 rectifiers, 14 diodes. Size:  $6\frac{1}{4} \times 16\frac{3}{4} \times 9\frac{3}{4}$ in. Weight: 18lb. Price: £183 (plus VAT).

#### A722

Stereo power amplifier. Inputs: 0.75V 20K for (60W/4 ohms). Outputs: speakers 60W per channel into 4 ohms, 45W per channel into 8 ohms, 30W per channel into 16 ohms. THD: greater 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: less than 90dB (Ref. 60W/4 ohms). Price: £197 (plus VAT).

#### SGE 520

Five-band stereo graphic equaliser. Output: 1V 10k ohms (source impedance). Inputs: 1V 75K. FR: 5Hz-100kHz  $\pm 1$ dB. Control range:  $\pm 12$ dB. Filters centred on 60Hz, 240Hz, 1kHz, 3.5kHz and 10kHz. THD: 0.05% (2V output, controls centred). Unity gain (controls at centre). Size:  $8\frac{3}{8} \times 4\frac{3}{8} \times 4\frac{3}{8}$ in. Price: on application.

#### ■ RICHARDSON ELECTRONICS LTD

57 Jamestown Road, London NW1 7EJ. Tel: 01-267 0723/4874.

★ Indicates entry is illustrated

### SCP.2P

Stereo self-powered control unit. Modular construction with pluggable circuits. FET high Z input. Silicon semi-conductors. Stabilised power supply. Low noise and distortion 0.01% for 1V output. Bass  $\pm 20$ dB. Treble  $\pm 16$ dB. Rumble filter on disc. Quiet listening tape monitor. Mag pickup 2mV inputs (two); high Z 2M ohms 50mV; aux 250mV (two). Size:  $14\frac{1}{2} \times 14\frac{1}{2} \times 10\frac{1}{2}$ in. Psn 200-250V 50 or 60Hz. Price: on application.



Richardson Electronics SIA.100

### SIA.100 ★

Stereo integrated amplifier and control unit. Pre-amplifier specification as for SCP.2P. Power amplifier incorporates advance design complementary push-pull output to reduce crossover distortion. Output: 30W RMS per channel into 8 ohms. HD: 0.04%. Output protected against short circuit. Stable at all loads. Mains: 200-250V AC 50/60Hz. Price: on application.



Rogers Ravensbourne

### STA.200

Stereo transistor amplifier. Output: 100W RMS per channel into 8 ohms. 175W RMS per channel into 4 ohms. Mono version available giving balanced output of 50W into 8 ohms. Price: on application.



Rogers Panthera A75

### STA.100

Stereo transistor amplifier. Output: 50W RMS per channel into 8 ohms. 85W RMS per channel into 4 ohms. Price: on application.

### MA135 Mk 2

Valve power amplifier. Full specification and price on application.

## ■ ROGERS

Rogers Developments (Electronics) Ltd,  
4-14 Barmeston Road, London SE6 3BN.  
Tel: 01-698 7424/4340.

### Ravensbourne ★

Solid state stereo amplifier and control unit. Power output: 4, 8 and 16 ohms; 35W per channel RMS. HD: 0.1% average (0.06% at 15W). FR: 25Hz-25kHz  $\pm 1$ dB at 25W. N/L: -80dB. Output transistors: 2N3055. Power consumption: quiescent 40W; at 25W + 25W into 15 ohms 110W. Inputs: disc, sensitivity 2, 4, 50 100mV impedance 50K, noise level -60-65dB; aux, radio and tape, sensitivity 200mV, impedance 100K. N/L: -75dB. Controls: pushbutton input selector, volume, bass and treble, balance, low pass filter and slope, function, headphone. Dimensions: case  $14\frac{1}{2} \times 10\frac{1}{2} \times 5\frac{1}{2}$ in; chassis  $13\frac{1}{2} \times 10\frac{1}{2} \times 4$ in. Price: (chassis) £77.50 (plus VAT); (in cabinet) £82.50 (plus VAT).



Ross Electronics Stereo pre-amplifier

### Ravensbourne Mk III

Solid state stereo amplifier and control unit. Power output: 13W per channel into 15 ohms. 20W per channel into 8 ohms. HD: less than 0.3% at 18W into 8 ohms. less than 0.15% at 13W into 15 ohms. FR: 20Hz-50kHz -3dB. Noise level: disc -53dB, radio -8dB. Power consumption: quiescent 22W; 10W/15 ohms 50W. Inputs: disc, sensitivity 2, 4, 25 50mV impedance 47K. Noise level: -53dB. Controls: pushbutton input selector, function, bass and treble, balance, high pass filter switch, low pass filter/slope. Output facility for headphones. Output matching: 4-8 ohms and 8-16 ohms. Dimensions: cabinet 14½ × 9½ × 5in; chassis 13 × 9¼ × 3½in. Price: (chassis) £52.50 (plus VAT); (in cabinet) £57.50 (plus VAT).

### Panthera A75 ★

Integrated stereo amplifier. 22 silicon transistors. Power output: 2 × 37.5W continuous into 8 ohms. THD: less than 0.06% up to 20W into 15 ohms at 1kHz. (0.1% average at 32W). Output impedance: 4, 8 and 16 ohms. Damping factor: 60 at 1kHz into 15 ohms. Power frequency response: -3dB 25Hz-35kHz into 15 ohms. Signal to noise ratio: volume control minimum better than -80dB, volume control maximum, tuner, tape, aux inputs better than -75dB. Disc inputs, short circuit or 10K load, 2.5/3.5mV better than -60dB, 55/80mV better than -65dB, all relative to 32W into 15 ohms. Crosstalk: tuner, tape, and aux better than 45dB, 1kHz better than 30dB, 10kHz. Disc input short circuited better than 40dB up to 25kHz. Bass control: ±16dB at 40Hz. Treble control: ±16dB at 10kHz. High pass filter: built-in 20Hz 30dB per octave. Low pass filter: switched 6 or 9kHz. Balance control: range 9dB. Mains: 110, 125, 220, 240V 50/60Hz. Size: 14½ × 11½ × 4½in. Weight: 15½lbs. Price: (complete with rosewood covers) £95 (plus VAT); (less rosewood covers) £92.50 (plus VAT).

### ■ ROSS

Ross Electronics Ltd, 32 Rathbone Place, London W1P 9AD. Tel: 01-580 7112.

### Stereo pre-amplifier ★

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: £6.09 (plus VAT).

### ■ ROTEL

Rank Audio Visual Ltd, Great West Road, Brentford TW8 9HR. Tel: 01-568 9222.



Rotel RA311



Rotel RA611

### RA 211

Integrated stereo amplifier. Inputs: phono (1) 2.7mV 45K, phono (2) 140mV/170mV 100K, aux (1) 150mV 50K, aux (2) 330mV 100K. Damping factor: 35 at 8 ohms. Output: 10W RMS per channel, both channels driven into 8 ohms. THD: less than 1%. Power bandwidth: (1HF) 20Hz-35kHz. S/N ratio: phono 65dB, tape 70dB. Phono overload: 80mV. Speaker impedance: 4 to 16 ohms. Size: 13 × 4½ × 6½in. Weight: 9lb. Price: £55.47 (plus VAT) (plus VAT).

### RA 311 ★

Integrated stereo amplifier with matrix circuitry for four channel surround sound. Inputs: phono (1) 2.5mV 40K, phono (2) 140mV 94K, tuner 170mV 46K, aux 170mV 46K, tape monitor (1 & 2) 150mV 46K, tape (DIN) 330mV 100K. Output: 20W RMS per channel, both channels driven into 8 ohms. THD: less than 1%. Power bandwidth: (1HF) 20Hz-50kHz. S/N ratio: phono 65dB, tape 73dB. Phono overload: 100mV. Speaker impedance: 4 to 16 ohms. Size: 14 × 4½ × 7½in. Weight: 12lb. Price: £72.69 (plus VAT) (plus VAT).

### RA 611 ★

Stereo pre-main amplifier. Inputs: phono (1) 2.5mV 47K, phono (2) 2.5mV 47K, tuner 150mV 40K, aux (1 & 2) 150mV 40K, tape monitor 230mV 47K, main amp in 800mV 33K, tape (DIN) 330mV 100K. Output: 30W RMS per channel, both channels driven into 8 ohms. THD: less than 1%. Damping factor: 35 at 8 ohms. Power bandwidth: (1HF) 5Hz-50kHz.

★ Indicates entry is illustrated

S/N ratio: phono 65dB, tape 75dB. Phono overload: more than 100mV. Speaker impedance: 4 to 16 ohms. Size: 16½ × 5½ × 9½in. Weight: 18lb. Price: 1113.43 (plus VAT).

#### RA 810 ★

Stereo pre-main amplifier. mag PU (1) 2mV 100K, mag PU (2) 2-8mV 30-100K, radio 200mV 45K, aux (2) 200mV 45K, tape 330mV 100K. H and N: (PU inputs) -65dB, (other inputs) -75dB. Output: 45W RMS per channel, both channels driven into 8 ohms. THD: less than 1%. Tone controls: loudness +10dB at 50Hz and +6dB at 10kHz, high filter -10dB at 10kHz, low filter -10dB at 50Hz, bass ±10dB at 50Hz, treble ±10dB at 10kHz. Output impedance: 4 to 16 ohms. Power bandwidth: 5Hz-50kHz. S/N ratio: phono 65dB, tape 75dB. Phono overload: 125mV. Size: 16½ × 5½ × 12in. Weight: 22lb. Price: £145.84 (plus VAT).

#### RA 1210 ★

Stereo pre-main amplifier. Inputs: mag PU (1) 1mV 100K, PU (2) 1-4mV 30-100K, radio 200mV 45K, aux 200mV 45K, tape 200mV 45K, tape (DIN) 330mV 100K. Output: 60W RMS per channel, both channels driven into 8 ohms. THD: less than 1%. Controls: loudness +10dB at 50Hz and +6dB at 10kHz, low filter -10dB at 50Hz, bass ±10dB at 50Hz, treble ±10dB at 10kHz. Output impedance: 4 to 16 ohms. Power bandwidth: 5Hz-50kHz. S/N ratio: phono 70dB, tape 80dB. Phono overload: 130mV. Mains: 100, 117, 220, 240V AC 50/60Hz. Size: 16½ × 5½ × 12in. Weight: 30lb. Price: £182.88 (plus VAT).

#### ■ SABA

Saba Radio & Television Ltd,  
6-12 Cornbrook Road,  
Manchester M15 4EE. Tel: 061-872 7661.

#### VS80 ★

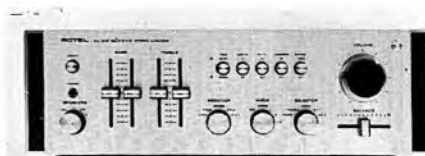
Integrated stereo amplifier. Output: 45W music power per channel. Inputs for mag PU, crystal PU, radio and tape. Full overload protection. Headphone socket on front panel. Slider controls for volume, bass, treble and balance. 29 transistors, 5 diodes. Output impedance: 4-16 ohms. Size 16½ × 4½ × 11in. Finish: light walnut or white. Price: £96.15 (including VAT).

#### ■ SANSUI

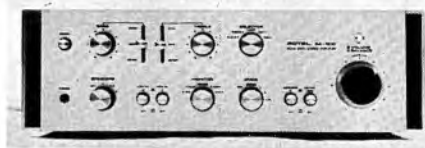
Vernitron Ltd, Thornhill,  
Southampton SO9 5QF.  
Tel: Southampton 444811.

#### AU2200

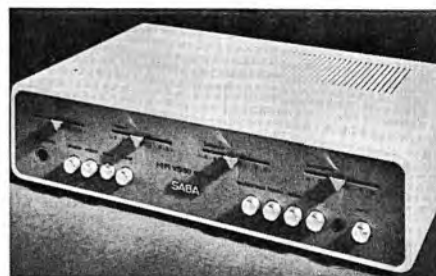
Stereo amplifier. Output: 2 × 15W RMS into



Rotel RA810



Rotel RA1210



Saba VS80

8 ohms. THD: less than 0.8% at rated output. Damping factor: 30 at 8 ohms. Output impedance: 4-16 ohms. FR: 30Hz-40kHz +1dB -2dB. Inputs: phono 2.5mV, mic 2.5mV 10K, tuner 150mV 50K, aux 150mV 50K, tape monitor 150mV 50K. S/N ratio phono better than 65dB. Aux inputs better than 75dB. Controls: Pushbutton input selectors, provision for two sets of speakers, high filter and loudness switches. Size: 400 × 120 × 240mm. Finish: brushed aluminium. Price: To be announced.

#### AU4400

Stereo amplifier. Output: 2 × 26W RMS into 8 ohms or 2 × 36W RMS into 4 ohms. FR: 20Hz-30kHz +1dB -2dB. Damping factor: 50 at 8 ohms. Output impedance: 4-16 ohms. Inputs: phono 2.5mV 50K, tape monitor 150mV 50K, mic 2.5mV 10K. S/N phono better than 70dB. Aux inputs better than 85dB. Controls: Pushbutton input selectors, provision for two sets of speakers, low and high filters, loudness and stereo/mono switches. THD: less than 0.3% at rated output. Size 400 × 120 × 240mm. Finish: brushed aluminium with black enamelled casing. Price: To be announced.

**AU550**

Stereo amplifier. Total output: 2 × 26W RMS into 8 ohms. Output impedance: 8 ohms. FR: 10Hz-35kHz +0.5dB -1dB. THD: less than 0.1% at rated output. Inputs: phono 2.5mV 50K, tuner 100mV 50K, aux 100mV 50K, tape monitor 100mV 50K, power amplifier output 800mV 50K. S/N tuner better than 75dB, aux better than 85dB, power amplifier inputs better than 100dB. Facility for two sets of speakers, tape to tape reprint, triple tone control. Size: 434 × 130 × 315mm. Finish: black. Price: To be announced.

**AU7700 ★**

Stereo amplifier. Output: 2 × 54W RMS into 8 ohms. Damping factor: 30 at 8 ohms. FR: 10Hz - 50kHz +0.5dB -1dB. THD: less than 0.1% at rated output. Inputs: phono one 2.5mV (30K, 50K, 100K), phono two 2.5mV 50K, tuner 100mV 50K, aux 100mV 50K, tape monitor 100mV 50K, power amplifier output 800mV 50K. S/N: tuner better than 75dB, aux better than 85dB, power amplifier inputs better than 100dB. Facility for two sets of speakers, tape to tape reprint, triple tone control. Size: 434 × 130 × 315mm. Finish: black. Price: To be announced.

**AU9500**

Integrated stereo amplifier. Inputs: mag PU (2) 2.5mV 50K, mic 2.5mV 50K, radio 100mV 50K, aux 100mV 50K, tape (3) 100mV 50K, four-channel adaptor 100mV 50K, noise reduction unit 100mV 50K, power amplifier 800mV 50K. Noise level: (mic) better than 65dB, (PU inputs) better than 75dB, (other inputs) better than 85dB. Overload capability: (PU inputs) 300mV. Output: 2 × 80W RMS into 8 ohms. Controls: bass ±15dB at 20Hz (3dB steps), mid-range ±5dB at 1.5kHz (1dB steps), treble ±15dB at 20kHz (3dB steps), bass selector defeat -150Hz, 300Hz, 600Hz, mid-range selector defeat -750Hz, 1.5kHz, 3kHz, treble selector defeat -2kHz, 3.5kHz, 6kHz, loudness +10dB at 50Hz +8dB at 10kHz, low filter -3dB at 50Hz -3dB at 100Hz, high filter -3dB at 12kHz -3dB at 6kHz. HD: <0.1%. Output impedance: 4-16 ohms. FR: 15 Hz-40kHz +0dB -1dB at 1W. Mains: 100, 117, 127, 220, 240, 250V 50-60Hz. Finish: matt black cabinet and front panel with satin chrome trim. Four AC outlets. Two headphone jacks. Two microphone jacks. Size: 500 × 140 × 347mm. Price: £311.46 (plus VAT).

■ **SANYO**

Sanyo Marubeni (UK) Ltd, Sanyo House, Bushey Mill Lane, Watford, Herts. WD2 4UQ. Tel: Watford 30421.



Sansui AU7700

**DCA200**

Stereo amplifier. Output: 15W RMS per channel, both channels driven into 8 ohms. HD: 0.8%. Power bandwidth: 20Hz-100kHz FR: 20Hz-100kHz ±3dB. Input level/impedance: aux 150mV 50K, phono 2.5mV 50K, Tape (RCA) 150mV 50K, tape (DIN) 150mV 50K. Tone controls: bass ±10dB 100Hz, treble ±10dB 10kHz. Loudness control: +8dB 100Hz, +3dB 10kHz. S/N ratio: aux 85dB, phono 75dB, tape 85dB. Speaker impedance: 4-16 ohms. Size: 350 × 295 × 120mm. Controls: power, speakers, mode, filter, loudness, mic level, tape 1 and 2, bass, treble, volume, balance, function selection, micmix. Connections: headphones, mic, speakers, phono, tuner, aux, tape playback, DIN. Price: on application.

■ **SERVO-SOUND**

Servo-sound (Cybernetic Hi-Fi). Lamb House, Church Street, London W4 2PB. Tel: 01-995 4551.

**PR4**

Stereo pre-amplifier designed to drive SL20 loudspeakers which incorporate their own 15W amplifiers. (See Speaker Enclosure Section). Inputs: phono 1.5mV 47K with h.f. radio filter, tape 300mV 40K, aux (1 & 2) 300mV 40K. Power supply is connected to two of the DIN socket pins: 30V, 15mA pin 4 pos, pin 1 neg. FR: 30Hz-35kHz ±1dB. S/N: phono better than 60dB. THD: less than 0.25% at 1kHz. Outputs: tape 600mV 10K, phones 1.2V 400 ohms. Power reproducer 1.2V 400 ohms (max. of 35 reproducers per channel). Tone controls: treble, bass, low pass filter, loudness control on volume. Price: £79 (plus VAT).

**RC4-SQ preamplifier/decoder**

Stereophonic preamplifier for the two rear channels in a quadraphonic system. Incorporates SQ decoder and remote control for adjustment of volume levels. Controls: master gain, bass, treble, balance, volume. Push-buttons for blend, tape monitor, ambio, SQ, stereo front, four-channel tape, mains on/off. Price: £99 95 (plus VAT)



★ Indicates entry is illustrated

### ■ SHARP

Sharp Electronics (UK) Ltd,  
Sharp House, 107 Hulme Hall Lane,  
Manchester M10 8HL. Tel: 061-205 7321.

#### SM-510-H ★

Integrated stereo amplifier using integrated circuits. Output: 15W per channel. Meets DIN Hi-Fi Standard 45 500. FR: 30Hz-20kHz  $\pm 1.5$ dB. Price £62.93 (plus VAT).

#### SM-511H ★

Solid state pre-main amplifier. Output: 20W per channel at 4 ohms. FR: 40Hz-20kHz  $\pm 1.5$ dB. OTL and ITL circuitry. Price: £67.23 (plus VAT).

### ■ SINCLAIR

Sinclair Radionics Ltd, London Road,  
St Ives, Hunts PE17 4HJ.  
Tel: St Ives 64646.

#### 4000

Stereo amplifier. Output: 17W RMS per channel, both channels driven into 8 ohms. Switchable active scratch filter: 12dB per octave (from 7kHz). Power bandwidth: 30Hz-20kHz. FR: 20Hz-25kHz  $\pm 3$ dB, 40Hz-20kHz  $\pm 1$ dB. THD: 0.05% at 1kHz. IM distortion: less than 0.1% at any level. S/N ratio: 65dB at maximum gain. Damping factor: 50 at 8 ohms. Inputs: phono (mag) 3mV 47K, phono (ceramic) 30mV 220K, aux 100mV 100K, tape 100mV 4.7K, radio 100mV 100K. All input sockets 5-pin DIN. Controls: pushbutton - inputs, mono, filter and mains; rotary - volume, balance, treble ( $\pm 13$ dB at 10kHz), and bass ( $\pm 13$ dB at 100Hz). Outputs: switched, fused mains socket; tape output 100mV 10K for rated input (DIN socket); speaker outputs (2-pin DIN sockets); stereo headphones with automatic muting of speakers ( $\frac{1}{2}$ in jack socket). Mains: 110, 120, 220 or 240V AC 50/60Hz, 60W max. Size: 308 x 152 x 50mm. Price: £59.95 (plus VAT).

#### Z40

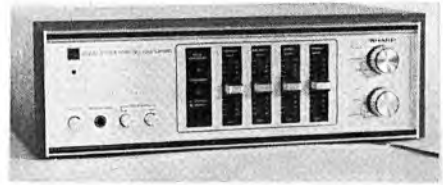
Power amplifier. Input sensitivity: 100mV. Output: 18W RMS continuous into 4 ohms. FR: 30Hz-100kHz  $\pm 1$ dB. S/N ratio: 64dB. Distortion: less than 0.1% at 10W into 8 ohms. 8 transistors. Size: 55 x 80 x 20mm. Price: £5.95 (plus VAT).

#### Z60 ★

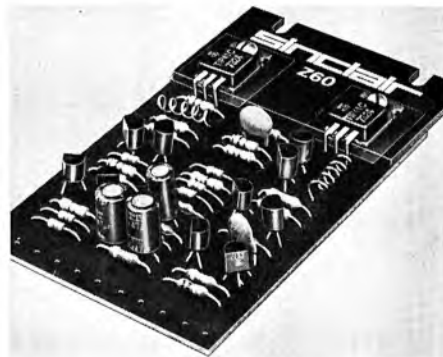
Power amplifier. Input sensitivity: 100mV for rated output  $\pm 1$ dB. Output: 25W RMS into 8 ohms. Distortion: typically less than 0.1%. FR: 10Hz-200kHz  $\pm 1$ dB. S/N ratio: better than 70dB. Built-in protection against transient overload and short circuit. Load impedance: 4 ohms min. 12 transistors. Size: 55 x 98 x 20mm. Price: £7.45 (plus VAT).



Sharp SM-510-H



Sharp SM 511H



Sinclair Z60

### Stereo 80

Stereo pre-amplifier. Inputs: mag PU 3mV RIAA corrected, ceramic PU 300mV, radio 100mV, tape 30mV. S/N ratio: 60dB. FR: 20Hz-15kHz  $\pm 1$ dB, 10Hz-25kHz  $\pm 3$ dB. Outputs: 100mV + AB monitoring for tape. Controls: press button for tape, radio and PU selection; volume, bass (+12dB to -14dB at 100Hz), treble (+11dB to -12dB at 10kHz). Size: 240 x 50 x 20mm. Power requirements: 20 to 35V. Finish: black, with white markings. Price: £13.95 (plus VAT).

### ■ SHURE ELECTRONICS

Shure Electronics Ltd,  
Eccleston Road, Maidstone,  
Kent ME15 6AU. Tel: Maidstone 59881.

**Solophone SA-2E ★**

Provides personal stereo listening for one or two people. Gives sufficient amplification to accept output from any high quality cartridge (for example Shure Stereo Dynetic range), tape deck or FM tuner. There are input selector switch, separate volume controls for each channel and two headphone jacks mounted on the front panel. Size:  $10\frac{1}{4} \times 3\frac{1}{2} \times 3$  in. Weight: 2lb. Mains: 240V 50Hz. Price: £26.70 (plus VAT).



Shure Solophone SA-2E

**M64-2E ★**

Stereo pre-amplifier designed to furnish voltage gain and equalisation to enable amplifiers not equipped with necessary input facilities to be used with magnetic pickup cartridges and tape heads. Can also be used for microphones and as buffer amplifiers. FR: 20Hz-20kHz  $\pm 2$ dB. Input impedance: 50K at 1kHz. Load impedance: (high) 22K minimum; (low) 600 ohms optimum. Separation: 50dB at 1kHz. H and N: 71dB minimum below 10mV input from 20Hz-20kHz. Price: £19.20 (plus VAT). Optional battery power unit. Price: £8.80 (plus VAT).



Shure M64-2E

**SONAB**

Sonab Ltd, PO Box 4, Oldfield Road, Hampton TW12 2HN.  
Tel: 01-979 0134.

**P4000**

Integrated stereo amplifier. Inputs: mag PU (2) 2mV 68K RIAA, mic 2.1mV 68K flat, aux 100mV 100K, tape 100mV 100K, line 500mV 47K. Output: 70W RMS per channel into 4 ohms, 50W RMS per channel into 8 ohms, 55W per channel into 4 ohms with both channels driven, 40W per channel into 8 ohms with both channels driven. Controls: input selector, mono/stereo, tape monitor, loudness, high filter, volume, balance, bass  $\pm 12$ dB at 50Hz, treble  $\pm 8$ dB at 10kHz. HD: less than 0.1% at 1kHz with both channels operating and up to 35W into 8 ohm load. Output impedance: 4-16 ohms. FR: 15Hz-25kHz  $\pm 1.5$ dB. Mains: 110, 130, 220, 240V 50/60Hz. Size:  $18\frac{3}{4} \times 9\frac{7}{8} \times 4\frac{3}{8}$  in. Weight: 18 $\frac{1}{2}$ lb. Provision for two pairs of stereo headphones with impedance 8-600 ohms. Price: £133.84 (plus VA T).

**SONY (UK) LTD**

Pyrene House, Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

**TA 70**

Integrated stereo amplifier. Output: 8W per channel, both channels operating at 1kHz into 8 ohms. Harmonic distortion: 5% at rated out-

put power. Input sensitivity and impedance: phono 3.5mV 50K, phono (1) 300mV (switchable) 1M, tuner 250mV 100K, aux 250mV 100K, tape 440mV 100K, DIN 440mV 100K. Output level and impedance: rec out 250mV 10K, DIN 30mV 80K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz, loudness +8dB 100Hz, +4dB 10kHz (attenuation -30dB), filter (high) 3dB/Oct above 5kHz. Quasi-complementary symmetry circuit system. 20 transistors, 2 diodes. Mains: 240V AC 50Hz. Power consumption: 70W. Size:  $330 \times 87.5 \times 245$ mm. Weight: 3.8kg. Price: £46.25 (plus VAT). Optional accessories: DR9 stereo headphone, DR15 stereo headphone, RC2 DIN (Rec/PB) connecting cord, RK81 connecting cord, RK74 connecting cord.

**TA 88**

Integrated stereo amplifier. Output: 10W RMS per channel, both channels operating at 1kHz into 8 ohms. 40Hz-12.5kHz. Power bandwidth: 20Hz-20kHz 1HF. Harmonic distortion: 0.5% at 1W. IM distortion: 1% at rated output power. FR: 15Hz-50kHz  $\pm 1$ dB, -3dB, tuner, tape, aux, rec/PB input. S/N ratio: 60dB phono. 80dB other inputs. Damping factor: 35 at 8 ohms. Input sensitivity and impedance: phono 3mV 50K, tuner 250mV 50K, aux 250mV 50K, tape 250mV 50K, DIN 250mV 50K. Outputs: rec out 250mV 10K, headphone 8K, DIN 30mV 80K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz, filter (high) 6dB/Oct above 5kHz. Quasi-complementary symmetry direct circuit system. 22 transistors, 8 diodes. Mains: 110, 220 and 240V AC 50/60Hz. Power consumption: 80W. Size:  $130 \times 230 \times$

★ Indicates entry is illustrated

165mm. Weight: 3.2kg. Price: £55.51. Optional accessories: DR9, DR15 stereo headphones, RC2 DIN (Rec/PB) connecting cord, RK81, RK74 connecting cords.

#### TA 1066

Stereo amplifier. Output: 15W RMS per channel in 8 ohms, both channels operating, 40Hz-20kHz. Power bandwidth: 10Hz-40kHz IHF (with 8 ohms load). IM distortion: less than 0.8% at 1kHz at rated output, less than 0.2% at 1W output (40Hz-20kHz). FR: (at rated output) phono input RIAA  $\pm 1$ dB, tuner, aux, tape 1, 2, DIN 20Hz-60kHz  $\pm 3$ dB. Damping factor: better than 22dB at 1kHz into 8 ohms. Inputs: phono 2.5mV 47K, tuner 250mV 50K, aux 250mV 50K, tape 1, 2 250mV 50K, DIN 250mV 50K. Outputs: Rec out 1 & 2 250mV 10K, headphone 300mV, DIN 30mV 82K. Tone controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 10kHz, high filter 6dB/Oct above 5kHz. Mains: 110, 127, 220 and 240V AC 50/60Hz. Power consumption: 140W. Size: 410  $\times$  120  $\times$  280mm. Weight: 6.0kg. Price: £69.40 (plus VAT). Optional accessories: DR9, DR15 stereo headphones.

#### TA 1055

Stereo amplifier. Output: 20W per channel, both channels operating into 8 ohms at 40Hz-20kHz. Power bandwidth: 10Hz-40kHz IHF. Harmonic distortion: 0.5% at rated output, 0.1% at 1W output power. IM distortion: 0.5% at rated output power. FR: 10Hz-60kHz  $\pm 3$ dB, tuner, aux, tape, DIN input. S/N ratio: 70dB, phono 65dB, tuner, aux, tape 90dB. Damping factor: 22 at 8 ohms. Inputs: phono 2mV 47K, mic 2mV 47K, tuner 250mV 50K, aux 250mV 50K, tape (1 & 2) 250mV 50K, DIN 250mV 50K. Outputs: Rec out 250mV 10K, headphone 6V 8-10 ohms, DIN 30mV 82K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz, loudness  $+10$ dB 50Hz,  $+3.5$ dB 10kHz (attenuation  $-30$ dB), high filter 6dB/Oct above 5kHz. Quasi-complementary symmetry direct circuit system. 19 transistors, 1 IC, 8 diodes. Mains: 110, 127, 220 and 240V AC 50/60Hz. Power consumption: 165W. Size: 410  $\times$  120  $\times$  280mm. Weight: 6.2kg. Price: 83.90 (plus VAT). Optional accessories: RK81, RK74 connecting cord, ECR500 electret condenser headphone.

#### TA 1150

Stereo amplifier. Output: 30W RMS per channel into 8 ohms at 20Hz-20kHz. Power bandwidth: 8Hz-35kHz IHF. Harmonic distortion: 0.2% at rated power, less than 0.1% at 1W output power. IM distortion: less than 0.2% at rated output power, less than 0.1% at 1W

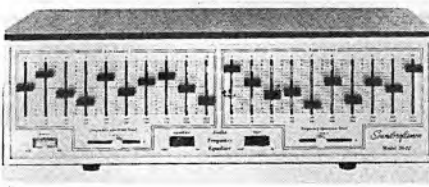
output power. FR: 15Hz-80kHz  $\pm 2$ dB, tuner, aux (1 & 2), tape (1 & 2), DIN. S/N ratio: 70dB phono, tuner, aux (1 & 2), tape (1 & 2), DIN 90dB. Damping factor: 100 at 8 ohms. Inputs: phono (1) 2mV (70mV max) 47K, phono (2) 2mV (70mV max) 47K, tuner 140mV 50K, aux (1) 140mV 50K, aux (2) 140mV 50K, tape (1 & 2) 140mV 50K, DIN 140mV 50K. Tone controls: bass  $\pm 10$ dB at 100Hz, turnover 500Hz  $\pm 10$ dB at 50Hz, turnover 250Hz, treble  $\pm 10$ dB at 10kHz, turnover 2.5kHz at 20kHz, turnover 5kHz, loudness  $+10$ dB at 50Hz,  $+3$ dB at 10kHz (at  $-30$ dB), filter (low) 6dB/Oct below 100Hz, (high) 6dB/Oct above 5kHz. Direct-coupling complementary symmetry circuit. 26 transistors, 2 ICs, 3 diodes. Mains: 110, 127, 220 and 240V AC 50/60Hz. Power consumption: 250W. Size: 400  $\times$  149  $\times$  316mm. Weight: 8.3kg. Price: £118.47 (plus VAT). Optional accessories: ECR500 electret condenser headphone.

#### TA 1130

Stereo amplifier. Output: 50W RMS per channel, both channels operating into 8 ohms at 20Hz-20kHz. Power bandwidth: 7Hz-30kHz. Harmonic distortion: 0.1% at rated output power, 0.05% at 1W output power. IM distortion: 0.1% at rated output power. S/N ratio: 70dB phono, 90dB tuner, aux, tape. FR: 10Hz-100kHz  $+0-2$ dB tuner, aux, tape, DIN input. Damping factor: 100 at 8 ohms. Inputs: phono (1 & 2) 1.5mV 47K, tuner 130mV 100K, aux (1, 2, 3) 130mV 100K, tape 130mV 100K, DIN 130mV 100K. Tone controls: bass 100Hz  $\pm 10$ dB (10 steps each 2dB), treble 10kHz  $\pm 10$ dB (10 steps each 2dB), loudness 50Hz  $\pm 8$ dB, 10kHz  $+3$ dB (attenuation  $-30$  dB), filter (high) 6dB/Oct above 7kHz, (low) 6dB/Oct below 100Hz. Quasi-complementary symmetry direct circuit system. 33 transistors, 8 FET's, 39 diodes. Mains: 100, 117, 220 and 240V AC 50/60Hz. Power consumption: 280W. Size: 400  $\times$  149  $\times$  327mm. Weight: 13kg. Price: £185.14 (plus VAT). Optional accessories: RK81 connecting cords, RC2 DIN (Rec/PB) connecting cord, TAC-1 wooden case, MB5 mounting bracket, ECR500 electret condenser headphone.

#### TA 5650

Output: 65W RMS per channel, both channels operating at 1kHz into 8 ohms, 20Hz-20kHz. Harmonic distortion: 0.1% at 1kHz rated output power. IM distortion: 0.1% at rated power. S/N ratio: 100dB. Damping factor: better than 100dB at 1kHz into 8 ohms. Pure-complementary direct-coupled circuit system (main amp). Mains: 240V AC. Price: on application.



Soundcraftsmen 20-12

### TA 8650

Output: 90W RMS per channel, both channels operating at 1kHz into 8 ohms, 20Hz-20kHz. Harmonic distortion: 0.1% at 1kHz rated output power. IM distortion: 0.1% at rated output power. S/N ratio: 100dB. Damping factor: better than 100dB at 1kHz into 8 ohms. Inputs: phono (1) 2.5mV 50K, phono (2) 2.5mV 50K, mic 0.2mV 50K, aux 1, 2, 3 150mV 100K, tuner 150mV 100K, tape (1 & 2) 150mV 100K. FR: (RIAA equalisation curve  $\pm 0.2$ dB) phono (1 & 2) 10Hz-100kHz  $\pm 0.2$ dB, aux 1, 2, 3, tuner, tape (1 & 2). Tone controls: bass 250/500Hz  $\pm 10$ dB, treble 2.5/5kHz  $\pm 10$ dB, filters (high) 12dB/Oct 9-20kHz (turnover), (low) 12dB/Oct 10-40Hz (turnover). S/N ratio: 70dB phono (1 & 2), 90dB aux 1, 2, 3, tape (1 & 2). Pure-complementary triple push-pull direct-coupled circuit system. Mains: 240V AC. Power consumption: 30W. Size: 440  $\times$  170  $\times$  425mm. Weight: 20.8kg. Price: on application.

### TA 3140F

Power amplifier. Rated output: 35W per channel, both channels operating into 8 ohms at 20Hz-20kHz RMS. Power bandwidth: 6Hz-35kHz IHF. Harmonic distortion: 0.1% at rated output power, 0.05% at 1W output power. IM distortion: 0.1% at rated output power. FR: 10Hz-200kHz +0, -2dB at 1W output. S/N ratio: 110dB. Damping factor: 100 at 8 ohms. Input sensitivity and impedance: 0.85V 70K. Quasi-complementary symmetry direct-coupling SEPP OTL. 22 transistors, 3 diodes. Mains: 100, 117, 220 and 240V AC 50/60Hz. Power consumption: 210W. Size: 200  $\times$  149  $\times$  320mm. Weight: 6.5kg. Price: £97.18 (plus VAT).

### ■ SOUNDCRAFTSMEN

Gale Electronics & Design Ltd,  
39 Upper Brook Street, London W1Y 1PE.  
Tel: 01-499 9966.

#### Model 20-12 ★

Stereo octave equaliser. Two channels each with ten level controls which give a maximum of 12dB of boost or 12dB of cut for each octave-wide band. Filters centered at 30Hz, 60Hz, 120Hz, 240Hz, 480Hz, 960Hz, 1920Hz,

3840Hz, 7680Hz and 15360Hz. Frequency-spectrum-level controls continuously variable over 18dB range for unity gain. Equaliser includes walnut-grained wood case. Two years parts and labour guarantee. Inputs: 100K. S/N: 90dB refracted output. Max output: 2V > 3K. THD: 0.05% at 1V RMS. FR: 20Hz-20kHz  $\pm 0.5$ dB. Mains: 120-240V AC 50-60Hz. Size: 18  $\times$  5 $\frac{1}{4}$   $\times$  11in. Price: on application.

### PE 2217

Pre-amplifier/equaliser, each channel incorporates at ten octave-band graphic equaliser similar to the Model 20-12. Interlocked push-button patching. LED overload warning indicators in each channel. Tape dubbing between two machines with simultaneous equalising and monitoring. Separate system selection enables full use of other functions during tape dubbing. Two stereo headphone jacks, six AC accessory outlets. Preamp includes walnut-grained wood case. Two years parts and labour guarantee. Inputs: phono 47K, high level 100K. S/N: phono -84dB ref 10mV, high level -90dB, ref 1V RMS. Output: max 5V RMS into 600 ohms. THD: <0.05% at 1V RMS. FR: 5Hz-100kHz  $\pm 0.25$ dB. Mains: 120-240V AC 50-60Hz. Size: 18  $\times$  5 $\frac{1}{4}$   $\times$  11in. Price: on application.

### ■ STEEPLETONE

Steepletone Products Ltd, Station Approach,  
Bicester, Oxon OX6 7DP.  
Tel: Bicester 42031.

#### STA 1

Stereo amplifier. Output: 10W per channel. Distortion: less than 0.1%. FR: 40Hz-18kHz  $\pm 2$ dB. H and N: better than -60dB. 18 transistors, 2 diodes. Tape record and replay facilities. Stereo headphone socket on front panel with automatic speaker muting. Size: 13  $\times$  4 $\frac{1}{4}$   $\times$  8 $\frac{1}{2}$ in. Finish: teak with diecast enamel sides. Price: on application.

#### STA 2

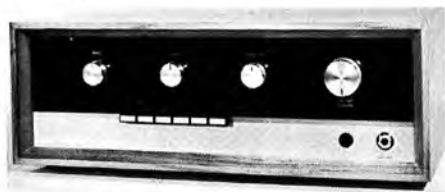
Stereo amplifier. Output: 25W RMS. Distortion: less than 0.1%. FR: 25Hz-25kHz  $\pm 2$ dB. H and N: better than -70dB. 32 transistors, 5 diodes. Full range balance control, scratch filter and rumble filter, tape record/replay facilities with A/B (monitor) switch, contour control, two stereo headphone sockets, individual switching for two pairs of loudspeakers. Size: 17 $\frac{1}{4}$   $\times$  4 $\frac{1}{4}$   $\times$  8 $\frac{1}{2}$ in. Finish: teak with diecast enamel sides. Price: on application.

### ■ J.E. SUGDEN

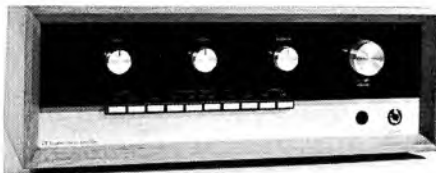
J.E. Sugden & Co Ltd, Carr Street,  
Cleckheaton, Yorks BD19 5LA.  
Tel: Cleckheaton 2501.



J.E. Sugden C51 Control Unit



J.E. Sugden A21 Series Three



J.E. Sugden A48



J.E. Sugden P51

### C51 control unit ★

Transistorised stereo control unit designed for use with P51 power amplifier. Inputs: radio, tape and aux, each 150mV into 250K for flat response. PU (1) 2.5mV 47K RIAA. PU (2) same as PU (1) or any characteristic to choice with basic sensitivity 0.25mV. Plug-in adaptors available for various cartridges, microphones, etc. Controls: bass  $\pm 14$ dB at 40Hz, treble  $\pm 14$ dB at 10kHz, volume  $\pm 1$ dB per channel, balance  $\pm 6$ dB for 180° rotation fade out at full rotation. Rumble filter: 12dB/octave below 30Hz. Treble filter: 4kHz, 7kHz and 10kHz. Treble filter slope: gradual 6dB/octave, steep 18dB/octave. HD: better than 0.1% at rated output. S/N: better than 85dB on 150mV inputs, better than 75dB on PU inputs. Pushbutton selection of inputs and operating mode. Power: obtained from P51 amplifier. Size: 11 × 3½ × 7in. Price: £60 (plus VAT).

### A21 Series Three ★

Integrated stereo amplifier. 28 transistors, 13 diodes. Inputs: mag PU 2.5mV 47K, radio 100mV 200K, aux 100mV 200K, tape 100mV 200K. Noise level: (PU input) -73dB, (other inputs) -85dB. Overload capability: (PU input) 130mV, (other inputs) infinite. Output: 20W RMS per channel into 8 ohms, 25W per channel into 4 ohms. Controls: bass  $\pm 14$ dB at 40Hz, treble  $\pm 14$ dB at 10kHz, balance  $\pm 6$ dB for 180° rotation, fade out at full rotation, volume, input selectors, HF filter 7kHz at 12dB/octave, stereo/mono, left/right outputs. HD: <0.1%. FR: 30Hz-20kHz  $\pm 1$ dB at all power levels. Mains: 110, 120, 220, 240V

50-60Hz. Size: 16 × 5½ × 11½in. Finish: teak with anodised front panel. Special class AB output stage. Price: £83 (plus VAT).

### A48 ★

Integrated stereo amplifier. 34 transistors, 17 diodes. Inputs: mag PU 2.5mV 47K, radio 100mV 200K, tape 100mV 200K, aux 100mV 200K. Noise level: (PU input) -70dB, (other inputs) -82dB. Overload capability: (PU input 100mV, (other inputs) infinite. Output: 40W RMS into 8 ohms. Controls: bass  $\pm 14$ dB at 40Hz, treble  $\pm 14$ dB at 10kHz, balance  $\pm 6$ dB at 180° rotation, fade out at full rotation, volume, input selectors, LF filter 18dB/octave from 70Hz, HF filter at 4, 7 or 10kHz, pushbutton selection of slope (steep 18dB/octave, gradual 6dB/octave), quiet button (-16dB loudness compensated), mono/stereo, left or right output. HD: <0.1%. FR: 30Hz-20kHz  $\pm 1$ dB at all output levels. Mains: 110, 120, 220, 240V 50-60Hz. Size: 16 × 5½ × 11½in. Finish: teak with anodised aluminium panel. Special output stage. Price: £101 (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. HD: 0.05% at 8 ohms, 0.1% at 4 ohms. FR: 30Hz-20kHz  $\pm 0.75$ dB at all power levels. Mains: 110, 120, 220, 230, 240V 50-60Hz. Finish: case finished in embossed PVC with matt PVC facing on aluminium panel. Price: £92 (plus VAT).

### ■ TANDBERG

Farnell-Tandberg Ltd, Farnell House,  
81 Kirkstall Road, Leeds LS3 1HR.  
Tel: Leeds 35111.

#### TA300M

Integrated stereo amplifier. 33 transistors, 13 diodes. Inputs: mag PU (2) 2.5mV 48K, tape (2) 200mV 100K. Noise level: (PU inputs) 60dB, (other inputs) 83dB. Overload capability: 25dB. Output: 35W RMS per channel. Controls: treble  $\pm 17$ dB, high filter  $-3$ dB at 7kHz, bass  $\pm 15$ dB, loudness  $+7$ dB at 10kHz, low filter  $-3$ dB. HD: 0.2% at 1dB below rated output. Output impedance: 4-8 ohms. FR: 15Hz-50kHz  $-1.5$ dB. Mains: 115, 220, 240V AC 50-60Hz. Size:  $16\frac{1}{2} \times 3\frac{1}{2} \times 9\frac{1}{2}$ in. Finish: teak or rosewood. Headphones jacks on front plus microphone input. Input mixing capability. Price: (teak or rosewood) £116 (plus VAT).

### ■ TECHNICS

Technics Hi-Fi Division,  
Building 63, 107-109 Whitby Road,  
Slough SL1 3DR.  
Tel: Slough 34522.

#### SE 9600 ★

Power amplifier. Output:  $2 \times 110$ W RMS continuous power, both channels driven into 8 ohms ( $2 \times 165$ W RMS into 4 ohms). THD: 0.08%. Intermodulation distortion: 0.08%. Power bandwidth: 5Hz-60kHz  $-3$ dB. FR: 5Hz-150kHz  $+0$ dB  $-3$ dB. Damping factor: 100 at 8 ohms. Input sensitivity and impedance: 1V 40K. Power consumption: 295W. Power supply: 110-240V AC 50/60Hz. Size:  $450 \times 193 \times 426$ mm. Weight: 23.6kg. Finish: matt black. Price: £407.40 (plus VAT).

#### SU 9600 ★

Pre-amplifier. Inputs: phono (1) 2mV 25K, 50K, 100K (variable), phono (2) 1mV-3mV 25K, 50K, 100K (variable), tuner 100mV 50K, aux (1) 100mV 100K, aux (2) 100mV 100K. Output voltage: 1V rated, 12V maximum. THD: 0.02%. Intermodulation distortion: 0.02%. Signal to Noise ratio: phono (1) 73dB, phono (2) 69-76dB, aux (1 & 2) 95dB all at rated power. FR: phono RIAA  $+0.3$ dB, aux (1 & 2) 2Hz-100kHz  $+0$ dB  $-3$ dB. Tone controls: bass 50Hz  $\pm 12.5$ dB, treble 20kHz  $\pm 12.5$ dB. Low filter 15Hz, 30Hz ( $-18$ dB/Oct), high filter 10kHz, 15kHz ( $-18$ dB/Oct). Muting:  $-20$ dB. Power supply: 110-240V AC 50/60Hz. Size:  $450 \times 173 \times 375$ mm. Weight: 10.5kg. Finish: matt black. Price: £287.04 (plus VAT).

#### SU 3500 ★

Output:  $2 \times 43$ W RMS continuous power, both channels driven into 8 ohms ( $2 \times 55$ W

RMS into 4 ohms). THD: 0.08%. Intermodulation distortion: 0.08%. Power bandwidth: 5Hz-70kHz  $-3$ dB. Damping factor: 100 at 8 ohms. Input sensitivity and impedance: 1V 50K. Inputs: phono (1) 2mV 25K, 50K, 100K (variable), phono (2) 2mV 25K, 50K, 100K (variable), tuner 100mV 50K, aux (1 & 2) 100mV 50K. S/N ratio: phono 60dB, aux (1 & 2) 80dB. FR: phono RIAA  $\pm 0.5$ dB, aux (1 & 2) 5Hz-100kHz  $+0$ dB  $-3$ dB. Tone controls: bass 50Hz  $\pm 12$ dB, treble 20kHz  $\pm 12$ dB. Low filter 30Hz ( $-12$ dB/Oct), high filter 8kHz ( $-12$ dB/Oct). Power consumption: 380W. Power supply: 110-240V AC 50/60Hz. Size:  $410 \times 140 \times 340$ mm. Weight: 10.2kg. Price: £156.94 (plus VAT).



Technics SE 9600



Technics SU 9600



Technics SU 3500

★ Indicates entry is illustrated

### SU 3200

Output: 2 × 20W RMS continuous power, both channels driven into 8 ohms (2 × 23W RMS into 4 ohms). THD: 0.3%. Inter-modulation distortion: 0.3%. Power bandwidth: 5Hz-100kHz -3dB. Damping factor: 70 at 8 ohms. Inputs: phono (1) 2mV 50K, phono (2) 2mV 50K, tuner 100mV 40K, aux (1 & 2) 100mV 40K. Signal to Noise ratio: phono 57dB, aux (1 & 2) 86dB. FR: phono RIAA ± 0.5dB, aux (1 & 2) 5Hz-100kHz +0dB -3dB. Tone Controls: bass 50Hz ±11dB, treble 20kHz ± 11dB. Low filter 40Hz (-6dB/Oct), high filter 8kHz (-6dB/Oct). Power consumption: 210W. Power supply: 110-240V AC 50/60Hz. Size: 410 × 140 × 340mm. Weight: 7.6kg. Price: £110.65 (plus VAT).

### SU 3000

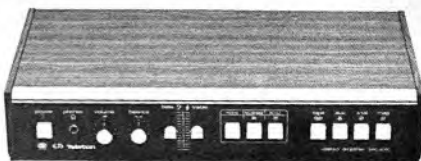
Output: 2 × 12W RMS continuous power, both channels driven into 8 ohms (2 × 14W RMS into 4 ohms). THD: 0.8%. Inter-modulation distortion: 0.8%. Power bandwidth: 5Hz-40kHz -3dB. Damping factor: 35 at 8 ohms. Inputs: phono (1) 3mV 47K, tuner 200mV 30K, aux (1 & 2) 200mV 30K. Signal to Noise ratio: phono 60dB, aux (1 & 2) 80dB. FR: phono RIAA ± 1dB, aux (1 & 2) 10Hz-50kHz +0dB -3dB. Tone controls: bass 50Hz +10dB -12dB, treble 20kHz ±10dB. Low filter 150Hz (-6dB/Oct), high filter 6kHz (-6dB/Oct). Power consumption: 115W. Power supply: 110-240V AC 50/60Hz. Size: 336 × 115 × 295mm. Weight: 5.3kg. Price: £63.59 (plus VAT).

### ■ TELETON

Teleton Electro (UK) Co Ltd,  
Teleton House, Waterhouse Lane,  
Chelmsford, Essex CM1 1BD.  
Tel: Chelmsford 62442.



Teleton A400



Teleton SAQ307D

### A300

Stereo amplifier designed for use with the Teleton T300 stereo tuner. Output power: 10W RMS per channel. HD: 0.5% at 6W. FR: 30Hz-20kHz ± 1.5dB (Ref. 1kHz). Input sensitivity: phono mag 3mV, phono xtal 150mV, aux 200mV, tape 250mV. Tone controls: bass ±11dB (100Hz), treble ±11dB (10kHz). Hum and noise: less than 20mV. Crosstalk: -50dB at 1kHz. Damping factor: 15. Mains: 115/240V AC 50/60Hz. Size: 99 × 422 × 230mm. Price: £53.19 (plus VAT).

### A400 ★

Stereo amplifier. Twin VU meters. Output power: 20W RMS per channel, both channels driven. HD: 0.3% at 10W 1kHz. IM distortion: 1%. FR: 25Hz-30kHz ± 1.5dB (Ref. 1kHz). Power bandwidth: 15Hz-30kHz. Input sensitivity: mag PU 3mV 47K, crystal/ceramic PU 150mV 700K, tape 250mV 100K, aux 200mV 100K. Tone controls: bass ±11dB

## TELETON STEREO AMPLIFIERS

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# Teleton

TELETON (UK) LTD Teleton House  
Waterhouse Lane, Chelmsford, Essex CM1 3DW.  
Chelmsford (0245) 62442 Telex 99338

(100Hz), treble  $\pm 11$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: (vol/bass/treble max.) less than 20mV. Outputs: speakers 8 ohms. Headphones: 8 ohms (500mV at 20W). Crosstalk:  $-50$ dB at 1kHz. Damping factor: 20. Mains: 240V AC 50/60Hz 100W max. Size:  $90 \times 422 \times 230$ mm. Weight: 4kg. Price: £64.50 (plus VAT).

#### GA203

Stereo amplifier with twin VU meters. Output power: 20W RMS per channel, both channels driven. HD: 0.3% at 10W 1kHz. IM distortion: 1%. FR: 25Hz-30kHz  $\pm 1.5$ dB (ref. 1kHz). Power bandwidth: 15Hz-30kHz. Input sensitivity: mag PU 3mV 47K, crystal/ceramic PU 150mV 700K, tape 250mV 100K, aux 200mV 100K. Tone controls: bass  $\pm 11$ dB (100Hz), treble  $\pm 11$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 20mV. Outputs: speakers 8 ohms, headphones 8 ohms. Crosstalk:  $-50$ dB at 1kHz. Damping factor: 20. Mains: 240V AC 50/60Hz. Size:  $90 \times 422 \times 230$ mm. Weight: 4kg. Price: £64.50 (plus VAT).

#### SAQ307D ★

Stereo amplifier. Output power: 8W RMS per channel, both channels driven. HD: 0.4% at 6W. FR: 30Hz-20kHz  $\pm 1.5$ dB (ref. 1kHz). Input sensitivity: phono mag 3mV, phono xtal 150mV, aux 200mV, tape 250mV. Tone controls: bass  $\pm 10$ dB (100Hz), treble  $\pm 10$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 20mV. Crosstalk:  $-50$ dB at 1kHz. Damping factor: 20. Smooth slider control for balance with rotary volume bass and treble controls. Flip switches for stereo/mono, loudness and hi-cut filters. Rotary function switch selects mag, crystal, aux or tape. Exceeds DIN 45 500. Mains: 110/240V AC 50/60Hz 60W max. Size:  $80 \times 388 \times 230$ mm. Price: £40.45 (plus VAT).

#### SAQ307

Stereo amplifier. Output power: 8W RMS per channel, both channels driven. HD: 0.5% at 5W. FR: 30Hz-20kHz  $\pm 1.5$ dB (Ref. 1kHz). Input sensitivity: phono mag 3mV, phono xtal 130mV, aux 200mV, tape 235mV. Tone controls: bass  $\pm 10$ dB (100Hz), treble  $\pm 10$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 20mV. Crosstalk:  $-50$ dB at 1kHz. Damping factor: 15. Slider controls for bass and treble, rotary volume and balance controls with a rotary function switch for mag, aux, crystal and tape. Flip switches for stereo/mono, loudness and high cut filters. Exceeds DIN 45 500. Mains: 110/240V AC 50/60Hz 60W max. Size:  $80 \times 388 \times 230$ mm. Price: £36.32 (plus VAT).

#### SAQ 206B

Stereo amplifier. All silicon transistorized, quasi-complimentary circuit gives a high output and very low distortion levels. Push button function controls for power mono/stereo, loudness contour, high cut filter, tape, aux, crystal and mag. Slider controls for bass and treble with rotary controls for volume and balance. Exceeds DIN 45 500. Output power: 8W RMS per channel, both channels driven. HD: 0.5% at 5W. FR: 30Hz-20kHz  $\pm 1.5$ dB (ref. 1kHz). Input sensitivity: phono mag 3mV, phono xtal 130mV, aux 200mV, tape 235mV, tape 235mV. Tone controls: bass  $\pm 10$ dB (100Hz), treble  $\pm 10$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 20mV. Crosstalk:  $-50$ dB at 1kHz. Damping factor: 20. Mains: 110/240V AC 50/60Hz 60W max. Size:  $88 \times 288 \times 230$ mm. Price: £36.32 (plus VAT).

#### SAQ408

Stereo amplifier. Slider controls for volume, balance, bass and treble and rotary controls for mag, crystal, aux and tape functions. Flip switches operate the mono/stereo, loudness and high cut filters. Exceeds DIN 45 500. Output power: 10W RMS per channel, both channels driven. HD: 0.5% at 6W. FR: 30Hz-25kHz  $\pm 1.5$ dB (Ref. 1kHz). Input sensitivity: phono mag 3mV, phono xtal 150mV, aux 200mV, tape 250mV. Tone controls: bass  $\pm 10$ dB (100Hz), treble,  $\pm 10$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 30mV. Crosstalk:  $-55$ dB at 1kHz. Damping factor: 15. Mains: 110/240V AC 50/60Hz 80W max. Size:  $80 \times 388 \times 230$ mm. Price: £45 (plus VAT).

#### GA202

Stereo amplifier designed to match the Teleton GT 202 stereo tuner. Slider controls for bass, treble; left and right volume. Push button switches for power, high cut filter, loudness filter and functions. Exceeds DIN 45 500. Output power: 16W RMS per channel, both channels driven. HD: 0.7% at 10W. FR: 30Hz-20kHz  $\pm 1.5$ dB (Ref. 1kHz). Input sensitivity: phono mag 2mV, phono xtal 200mV, aux 150mV, tape 130mV. Tone controls: bass  $\pm 12$ dB (100Hz), treble  $\pm 12$ dB (10kHz). High cut filter:  $-8$ dB at 10kHz. Hum and noise: less than 20mV. Crosstalk:  $-50$ dB at 1kHz. Damping factor: 15. Mains: 110/240V AC 50Hz 80W max. Size:  $99 \times 388 \times 265$ mm. Price: on application.

#### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.



★ Indicates entry is illustrated

### SB-300

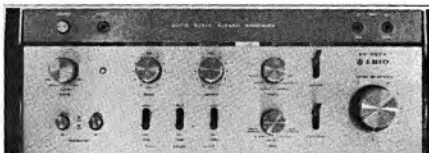
Pre/main power amplifier. Output: 17W RMS per channel, both channels driven into 8 ohms at 1kHz. THD: 0.8% at rated output. FR: 20Hz-70kHz +1dB, -3dB. Power bandwidth: 20Hz-30kHz (IHF). Damping factor: 40 at 8 ohms. Speaker impedance: 4-16 ohms. Input sensitivity and impedance: phono 1 2.2mV 47K, phono 2 2.2mV 47K, tuner 150mV 100K, aux 1 150mV 100K, aux 2 150mV 100K, mic 8mV 200K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz, loudness +10dB 100Hz (+4dB 10kHz). Equalizing curve: RIAA  $\pm 0.5$ dB. S/N ratio: phono mag 2mV 60dB, aux 150mV 75dB. Mains: 100, 120, 220, 240V 50/60Hz. Power consumption: 55W (10W at no signal). 20 transistors, 8 diodes. Size: 400 x 280 x 115mm. Weight: 6.5kg. Price: on application.

### SB-500

Pre/main power amplifier. Output: 35W RMS per channel, both channels driven into 8 ohms at 1kHz. THD: 0.4% at rated output. FR: 10Hz-70kHz  $\pm 1$ dB. Power bandwidth: 10Hz-40kHz (IHF). Damping factor: 20 at 8 ohms. Speaker impedance: 4-16 ohms. Input sensitivity and impedance: phono 1 2.5mV 47K, phono 2 2.5mV 47K, tuner 150mV 100K, aux 1 150mV 100K, aux 2 150mV 100K, mic 4mV 50K. Tone controls: bass 1kHz  $\pm 10$ dB at 100Hz, treble 1kHz  $\pm 10$ dB at 10kHz, loudness +10dB 100Hz. Equalizing curve: RIAA  $\pm 0.3$ dB. S/N ratio: phono mag 2.5mV 65dB, aux 150mV 80dB, mic 65dB. Mains: 100, 120, 220, 240V AC 50/60Hz. Power consumption: 120W. 32 transistors, 8 diodes, 1 IC. Size: 400 x 320 x 115mm. Weight: 7.6kg. Price: on application.

### SB-404S

Four-channel pre/main amplifier with built-in RM/SQ matrix decoders and a matrix effect system. Equalisation circuitry is built-in for a condenser cartridge and the unit has four-channel CD-4 adaptor terminals. Output: 30W RMS per channel both channels driven into 8 ohms or 15W RMS all channels driven into 8 ohms. THD: 0.4%. FR: 10Hz-55kHz -3dB. Speaker impedance: 4-16 ohms. Damping factor: 20 at 8 ohms. Input sensitivity and impedance: phono 1 2.5mV 47K, phono 2 2.5mV 47K, tuner 150mV 47K, aux 1 (4-ch) 150mV 47K, aux 2 (4-ch) 150mV 47K, 4-channel tape 500mV 47K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz. Equalising curve:  $\pm 0.5$ dB RIAA. Mains: 100, 120, 220, 240V AC 50/60Hz. Power consumption: 70W (16W at no signal). 27 transistors, 10 diodes, 5 ICs. Size: 400 x 280 x 115mm. Weight: 7.5kg. Price: on application.



Trio KA-6004

### SB-514

Output: 35W RMS all channels driven into 8 ohms. THD: 0.2% at rated output. IM distortion: 0.2% at rated output. FR: 10Hz-70kHz -1dB. Damping factor: 100 at 8 ohms. Speaker impedance: 8-16 ohms. Input sensitivity and impedance: phono 1 20mV 47K, phono 2 2mV 70K, phono 3 2mV 47K, tuner 150mV 47K, aux 1 (4-ch) 150mV 47K, aux 2 (4-ch) 150mV 47K, 4-channel tape 150mV 47K. Tone controls: bass  $\pm 10$ dB 100Hz, treble  $\pm 10$ dB 10kHz. Equalising curve:  $\pm 0.2$ dB RIAA. Mains: 100, 120, 220, 240V AC 50/60Hz. Power consumption: 230W (16W at no signal). 74 transistors, 38 diodes. Size: 450 x 376 x 126mm. Weight: 11.5kg. Price: on application.

### SC-410S

RM/SQ decoder amplifier. Output: 15W per channel into 8 ohms. HD: 0.8% at rated power output. Input sensitivity: input 30, 150, 500mV (50K), tape 300mV (100K), aux 300mV (100K). Recording output: (for 2-channel) 150mV. Speaker impedance: 8, 16 ohms. Mains: 100, 120, 220, 240V AC 50/60Hz. Power consumption: 55W. 15 transistors (4 FET), 1 diodes, 2 ICs. Size: 300 x 115 x 383mm. Weight: 6kg. Price: on application.

## ■ TRIO

Distributors: B.H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6441.

### KA-4002A

Integrated stereo amplifier. Inputs: magnetic PU (1) 2.5mV 50K, magnetic PU (2) 2.5mV 50K, aux (1) 150mV 100K, aux (2) 150mV 100K, radio 150mV 100K, tape 150mV 100K. Noise level: magnetic PU input -60dB, all other inputs -70dB. Controls: volume, balance, treble, bass, input selector, loudness, filters, output switching. Output: 16W RMS per channel, both channels driven into 8 ohms at 1kHz. HD: less than 0.5% at rated output. Power bandwidth: 20Hz-50kHz. Damping factor: 50 at 8 ohms. Speaker impedance: 4-16 ohms. Power consumption: 115W at full power, 8W at no signal. Mains: 240V AC

50/60Hz. FR: 20Hz-40kHz  $\pm 1.5$ dB. Size: 352  $\times$  118  $\times$  240mm. Weight: 5.7kg. Price: £85 (plus VAT).

#### KA-6004★

Integrated stereo amplifier. Inputs: magnetic PU (2) 2.5mV 50K, mic 3mV 50K, radio 200mV 100K, tape play 200mV 100K, aux (2) 200mV 100K. Input to main amplifier: 1V 50K. Output: 43W RMS per channel, both channels driven into 8 ohms at 1kHz. HD: less than 0.5% at rated output. Power bandwidth: 10Hz-50kHz. Damping factor: 32 at 8 ohms. Speaker impedance: 4-16 ohms. Power consumption: 235W at full power, 15W no signal. Tone controls: bass  $\pm 10$ dB at 10kHz in 2dB steps, low filter 40Hz cut-off and 80Hz cut-off (both 12dB per octave), high filter 7kHz cut-off (6dB per octave). Loudness: +8dB at 100Hz and +3dB at 10kHz. Speaker switch for A, B, and A+B. Tape-to-tape dubbing switch. FR: 20Hz-50kHz. Mains: 110, 230V AC 50/60Hz. Size: 435  $\times$  153  $\times$  300mm. Weight: 11.5kg. Price: £154 (plus VAT).

#### KA-8004

Integrated stereo amplifier. Inputs: magnetic PU (2) 2.5mV 30K, 50K, mic 2.5mV 50K, radio 150mV 100K, tape (2) 150mV 100K, aux (2) 150mV 100K. Output: 65W RMS per channel, both channels driven into 8 ohms at 1kHz. Output impedance: 4-16 ohms. Controls: bass  $\pm 10$ dB at 100Hz in 2dB steps, treble  $\pm 10$ dB at 10kHz in 2dB steps, low filter 20Hz or 40Hz cut-off (both 18dB/Oct), loudness +8dB at 100Hz and +3dB at 10kHz. Speaker switching (A+B+C, A+B, A+C, B+C). FR: 10Hz-50kHz. Tape-to-tape dubbing switch. Power bandwidth: 10Hz-50kHz. Damping factor: 30 at 8 ohms. Power consumption: 375W at full power, 22.5W no signal. Mains: 110, 230V AC 50/60Hz. Four mains outlet sockets (three switched, one non-switched). Size: 435  $\times$  153  $\times$  300mm. Weight: 12.9kg. Finish: wood grain sides with two-tone aluminium control panel. Price: £210 (plus VAT).

#### KA-4004

Integrated stereo amplifier. Inputs: phono (1 & 2) 2.5mV 50K, tuner, aux (1 & 2), tape play 160mV 30K. Main amp input: 1V 50K. S/N ratio: phono 65dB, all others 75dB. Damping factor: 32 at 8 ohms, 64 at 16 ohms. Output: 19W RMS per channel, both channels driven into 8 ohms at 1kHz (20Hz-20kHz). THD: less than 0.5% at rated power, 20Hz-20kHz. Less than 0.05% at half power. Controls: bass, treble tone, low filter, high filter, loudness. Power consumption: 150W full power, 15W no signal. Mains: 240V AC 50/60Hz. Size:

435  $\times$  153  $\times$  300mm. Weight: 9.3kg. Price: £116 (plus VAT).

#### KA 1200G

Integrated stereo amplifier. Output: 13W RMS per channel, both channels driven into 8 ohms at 1kHz (16W RMS per channel, both channels driven into 4 ohms at 1kHz). THD: 0.8% at rated power into 8 ohms. Power bandwidth: 20Hz-40kHz. S/N ratio: 50dB at 50mW. Damping factor: 30 at 8 ohms. Inputs: phono 2.5mV 50K, tuner 150mV 50K, aux 150mV 50K, tape play 150mV 50K, mic 3mV 50K. FR: phono RIAA standard curve +1dB, tuner aux, tape play 20Hz-40kHz +0dB, -2dB. Controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 1kHz, loudness +8dB at 100Hz or +5dB at 1kHz. Facilities for tape monitoring, two sets of loudspeaker outputs, loudness switch. Power consumption: 120W full power, 9W no signal. Mains: 240V AC 50/60Hz. Size: 372  $\times$  125  $\times$  251mm. Weight: 4.9kg. Finish: brushed gold and teak. Price: £57 (plus VAT).

#### KA 1200B

Identical in performance to the KA 1200G but with an attractive matt black fascia. Price: £57 (plus VAT).

#### KA 1600G

Integrated stereo amplifier. Output: 20W RMS per channel, both channels driven into 8 ohms at 1kHz, 40Hz-20kHz (28W RMS per channel, both channels driven into 4 ohms at 1kHz). THD: 0.3% at rated power into 8 ohms. Power bandwidth: 20Hz-40kHz. S/N ratio: 50dB at 50mW. Damping factor: 30 at 8 ohms. Inputs: phono 2.5mV 50K, tuner 150mV 50K, aux 150mV 50K, tape play 150mV 50K, mic 3mV 50K. FR: phono RIAA standard curve  $\pm 1$ dB, tuner, tape play, aux 20Hz-40kHz +0dB, -2dB. Controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 1kHz, loudness control +8dB at 100Hz. Power consumption: 160W full power, 19.5W no signal. Mains: 240V AC 50/60Hz. Weight: 5.8kg. Size: 372  $\times$  125  $\times$  251mm. Finish: brushed gold and teak. Price: £92 (plus VAT).

#### KA 1600B

Identical in performance to the KA 1600G but with an attractive matt black fascia. Price: £92 (plus VAT).

#### 700C

Stereo pre-amplifier. THD: 0.04% at rated output. Inputs: (1 & 2) 2.5mV 50K, tuner 150mV 100K, aux (1 & 2) 150mV 100K, tape play 150mV 100K, mic 2.5mV 600 $\Omega$ . S/N ratio: phono (1 & 2) 70dB, tuner, aux (1, 2, 3) RIAA standard curve +0.3dB, tuner, aux, tape play 20Hz-20kHz -0.3dB, +0dB.

★ Indicates entry is illustrated

Controls: bass, treble, loudness, low filter, high filter, phones out. Power consumption: 10W. Size: 440 × 145 × 300mm. Weight: 9.5kg. Price: £300 (plus VAT).

#### 700M

Stereo power amplifier. Power output: 170W RMS per channel, both channels driven into 8 ohms at 20Hz-20kHz. THD: 0.1% at rated power into 8 ohms. IM distortion: 0.1% at rated power into 8 ohms. Power bandwidth: 5Hz-30kHz. S/N ratio: 100dB. Input sensitivity and impedance: 1V 50K. Damping factor: 40 at 8 ohms. FR: 20Hz-20kHz +0dB, -0.5dB. Speaker impedance: 4-16 ohms. Power consumption: 73W at no signal. Size: 440 × 200 × 360mm. Weight: 27kg. Price: £430 (plus VAT).

#### ■ WHARFEDALE

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

#### Denton ★

Stereo integrated amplifier. Power output: 12W RMS per channel, both channels driven into 6 ohms at 1kHz. THD: 0.5% at all levels



*Wharfedale Denton*



*Wharfedale Linton*

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Telephone: 743 1131/2; 743 1313

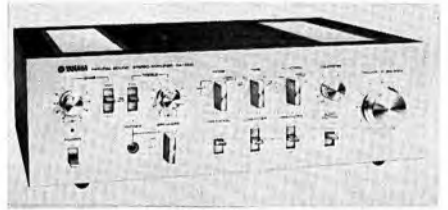
up to rated output at 1kHz. Power bandwidth: 30Hz-35kHz. Damping factor: 25 at 1kHz. Inputs: phono 2.5mV or 5mV 47K, tape, tuner, aux 150mV 47K. S/N ratio: 60dB, tape, tuner, aux 65dB all referred to rated power output. Size: 345 x 235 x 105mm. Weight: 4.2kg. Mains: 240V AC. Features include a loudness control to boost low frequency sound at low volume levels, a high filter, facilities for two pairs of loudspeakers and a matrix switch on the rear of the amplifier. Finish: teak. Price: £48 (plus VAT).



Yamaha CA400

**Linton Mk 2 ★**

Stereo integrated amplifier. Inputs: phono 2.5mV 47K, tape, tuner, aux 150mV 47K all referred to rated power output. Power output: 20W RMS per channel, both channels driven into 6 ohms at 1kHz. THD: 0.4% at all levels up to rated output at 1kHz. Power bandwidth: 30Hz-35kHz. Damping factor: 25 at 1kHz. Mains: 240V AC 50Hz. Size: 390 x 255 x 105mm. Weight: 4.8kg. High filter and loudness control. Features include facilities for two pairs of loudspeakers, rotary controls for volume, balance, bass, treble and speaker selection/switch which includes a facility for a simulated four channel system. Finish: teak. Price: £63 (plus VAT).



Yamaha CA1000

■ **YAMAHA**

Natural Sound Systems Ltd, Strathcona Road, North Wembley, London HA9 8QL. Tel: 01 904 0141.

**CA400 ★**

Integrated stereo amplifier. Inputs: phono 3mV into 47K. Noise level: 75dB. Output: 20W RMS into 8 ohms. Load impedance: 4-16 ohms. Damping factor: 50. THD: 0.02% at rated power. FR: 10Hz-100kHz +0 -1dB. Dimensions: 438 x 146 x 324mm. Mains: 110-240V. Price: £89.95 (plus VAT).

**CA600**

Integrated stereo amplifier. Phono input: 3mV into 47K. Noise level: 80dB. Output: 30W per channel into 8 ohms. Load: 4-16 ohms. Damping factor: 70. THD: 0.02% at rated power. FR: 10Hz-100kHz +0dB -1dB. Dimensions: 438 x 146 x 324mm. Mains: 110-240V. Price: £131.23 (plus VAT).

**CA800**

Integrated stereo amplifier. Phono input: 3mV into 47K. Noise level: 80dB. Output: 45W per channel into 8 ohms. Load: 4-16 ohms. Damping factor: 70. THD: 0.02% at rated power. FR: 10Hz-100kHz. Mains: 110-240V. Dimensions: 438 x 146 x 324mm. Price: £194.64 (plus VAT).

**CA1000 ★**

Integrated stereo amplifier. Phono input: 3mV into 47K. Noise level: 80dB. Output: 70W from 20Hz-20kHz into 8 ohms. Load: 4-16 ohms. Damping factor: 70. THD: 0.016% (Class B) not measurable in Class A. Distortion measured at 10W. FR: 10Hz-100kHz +0dB ±1dB. Mains: 110-240V. Dimensions: 438 x 146 x 324mm. Price: £249.33 (plus VAT).

**B1**

All FET power amplifier. Output: 150W RMS per channel. THD: less than 0.04% at all powers. No more details of specifications available as this edition of the Year Book closed for press. Price: to be announced.

**C1**

Pre-amplifier for B1. No more details of specifications available as this edition of the Year Book closed for press. Price: to be announced.

**UC1**

Control unit for B1 power amplifier. Twin VU meters. Level controls for five pairs of loudspeakers. No more details of specifications available as this edition of the Year Book closed for press. Price: to be announced.

Super ferrite heads.

Automatic memory rewind.

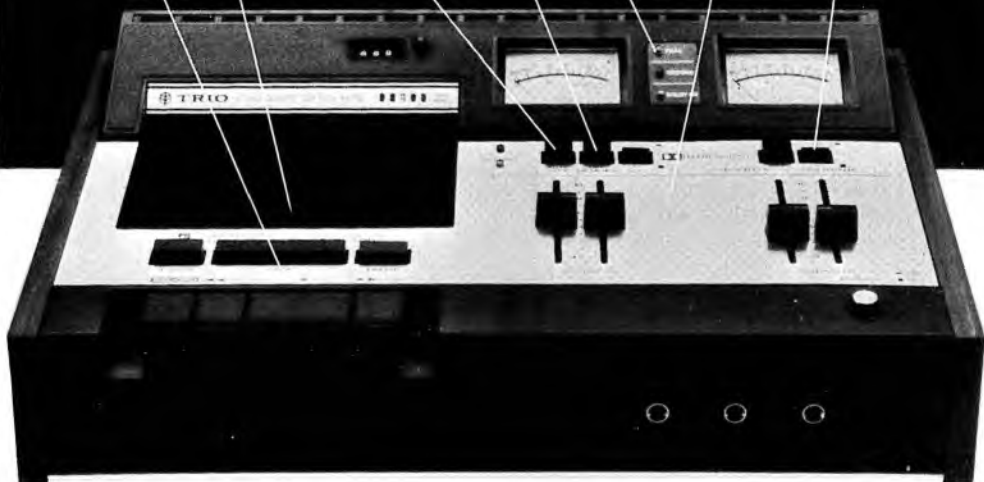
DC servo motor with electronic governor.

Cue and review system.

Automatic tape selector.

Peak level indicator.

Dolby B noise reduction system.



**THERE'S ONE FEATURE  
NO ONE ELSE HAS  
MANAGED TO INCLUDE  
WITH ALL THESE.**

**£140.00**

 **TRIO**

B. H. Morris & Co. (Radio) Ltd., Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6441.  
Agents in Eire: Best Wholesale Ltd, Dublin, Tel: 5 3455.

# Cassette Recorders and Decks

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ AIWA

Johnsons of Hendon Ltd, 14 Priestley Way, London NW2 7TN. Tel: 01-450 8070.

### Model AD 1700

Stereo cassette deck. Fitted with Dolby noise reduction and DNL noise limiter. Three-step tape selector. Automatic CrO<sub>2</sub> tape selector built in. Ferrite guard head aligned by four points. Full automatic stop system. Quick review/cue control for speedy replay. 2-step peak indicator. Oil-damped elevation. Memory rewind system. 4-track, 2-channel. FR: 30-14,000Hz (LH tape), 30-17,000Hz (CrO<sub>2</sub> tape), 30-18,000Hz (FeCr tape). S/N ratio: 65dB (Dolby and DNL on, CrO<sub>2</sub> tape). W and F: 0.05% (WRMS). Motor: AC hysteresis motor (synchronous). Price: on application.

### Model AD 1300

Stereo cassette deck. Fitted with Dolby noise reduction. 3-step tape selector. Automatic CrO<sub>2</sub> tape selector built in. Ferrite guard head. Quick review/cue control. Pause. Automatic shut off. 4-track, 2-channel. FR: 30-14,000 Hz(LH), 30-16,000Hz (CrO<sub>2</sub>), 30-16,000Hz (FeCr). S/N ratio: 58dB (Dolby on CrO<sub>2</sub>). W and F: 0.09% (WRMS). Price: £127.75 (plus VAT).

### Model AD 1600 ★

Stereo cassette deck. Fitted with Dolby noise reduction. 3-step tape selector. Automatic CrO<sub>2</sub> tape selector built-in. Ferrite guard head. Full automatic stop system. Quick review/cue control for speedy replay. Oil damped elevation. Mic/line input mixing. 4-track, 2-channel. FR: 30-12,000Hz (normal), 30-14,000Hz (LH), 30-16,000Hz (CrO<sub>2</sub>). S/N ratio: 60dB (Dolby on CrO<sub>2</sub> tape). W and F: 0.07%. Price: £175 (plus VAT).

### Model AD 1800 ★

Stereo cassette deck. Double noise reduction circuitry, Dolby and DNL. 3-step tape selector. Automatic CrO<sub>2</sub> tape selector built

in. Ferrite guard head aligned by four points for extra stability. Quick review/cue controls. 2-step peak indicator (3dB and 7dB). Oil-damped cassette eject elevation. Memory rewind system. MPX filter. Mic/line mixing. FR: 30Hz-14kHz (LH tape), 30Hz-17kHz (CrO<sub>2</sub> tape), 30Hz-18kHz (Fe Cr tape). S/N ratio: 65dB (Dolby and DNL on, CrO<sub>2</sub> tape). W and F: 0.05% (WRMS). Hinged and removable acrylic dust cover. Price: £189.74 (plus VAT).

### Model AD 6500 ★

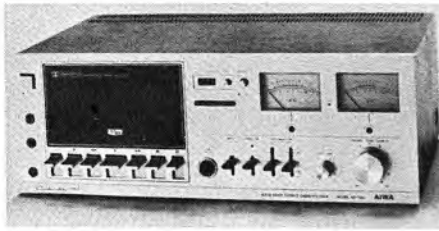
Front loading Dolby cassette deck. Features include: Dolby noise reduction system, motor drive cassette tape loading mechanism, 3-step tape selector (LH, CrO<sub>2</sub> and Fe Cr), quick review/cue controls, two large VU meters, 2-step peak indicator (3dB and 7dB). Mechanical pause. Two mic/line input selectors and memory rewind mechanism.



Aiwa Model AD 1500



Aiwa Model AD 1800



Aiwa Model AD 6500

FR: 30Hz-14kHz (LH tape), 30Hz-17kHz (CrO<sub>2</sub> tape), 30Hz-17kHz (Fe Cr tape). S/N ratio: 60dB (Fe Cr tape, Dolby on). W and F: 0.07% (WRMS). Price: approx. £180 (plus VAT).

## ■ AKAI

Rank Audio Visual Ltd, PO Box 70, Great West Road, Brentford, TW8 9HR.  
Tel: 01-568 9222.

### CS30D

Stereo cassette deck. W and F: 0.15% WRMS. S/N: better than 46dB (ferric oxide tapes). FR: 40Hz-13kHz (ferric oxide tapes), 40Hz-15kHz (CrO<sub>2</sub> tapes) ±3dB. CrO<sub>2</sub> switch alters record amplifier characteristics only. Twin VU meters. Inputs: mic 0.5mV 4.7K, line 50mV 200K. Outputs: line 0.78V 20K, phones 8 ohms. One synchronous motor. Mains: 250V AC. Size: 410 × 126 × 220mm. Deck has auto-stop and a tape-run indicator lamp. Price: £84.47 (plus VAT).

### CS33D

Stereo cassette deck. W and F: 0.15% WRMS. Fitted with Dolby B noise reduction. S/N: (Dolby out, ferric oxide tape) better than 46dB. FR: 40Hz-14kHz (ferric oxide tape), 40Hz-15kHz (CrO<sub>2</sub> tape). CrO<sub>2</sub> switch alters record amplifier characteristics only. Replay char: 120µs. Twin VU meters. Inputs: mic 0.5mV 4.7K, line 50mV 200K. Outputs: line 0.78V 20K, phones 8 ohms. One synchronous motor. Mains: 250V. Size: 410 × 126 × 220mm. Deck has auto stop and a tape run indicator. Price: £102.85 (plus VAT).

### GXC36D ★

Stereo cassette deck. W and F: less than 0.27%. S/N: better than 43dB. FR: 50Hz-13kHz (ferric oxide tape), 50Hz-14kHz (CrO<sub>2</sub> tape). CrO<sub>2</sub> switch alters record amplifier characteristic only. Replay char: 120µs. Twin VU meters. Inputs: mic 0.5mV 4.7K, line 80mV 200K, DIN 5mV. Outputs: line 0.775V, DIN 0.5V. Motor: 4-pole induction inner-

rotor. Mains: 100-240V AC 50-60Hz. Size: 410 × 115 × 223mm. Price: £107.63 (plus VAT).

### GXC38

Stereo cassette recorder. W and F: less than 0.27%. Fitted with Dolby B noise reduction. S/N: better than 43dB (Dolby out, ferric oxide tape). FR: 50Hz-13kHz (ferric oxide tape), 50Hz-15kHz (CrO<sub>2</sub> tape) ±3dB. CrO<sub>2</sub> switch alters record amplifier characteristics only. Replay char: 120µs. Twin VU meters. Inputs: mic 0.5mV 4.7K, line 80mV 200K, DIN 5mV. Outputs: line 0.775V, DIN 0.5V, speakers 6W 8 ohms. Motor: 4-pole induction inner-rotor. Mains: 100-240V AC 50-60Hz. Size: 410 × 123 × 295mm. Price: £133.54 (plus VAT).

### GXC38D

Stereo cassette deck. W and F: less than 0.27%. Fitted with Dolby B noise reduction. S/N: (Dolby out, ferric oxide tape) better than 43dB. FR: 50Hz-13kHz (ferric oxide tape), 50Hz-14kHz (CrO<sub>2</sub> tape). CrO<sub>2</sub> switch alters record amplifier characteristics only. Replay char: 120µs. Twin VU meters. Inputs: mic 0.5mV 4.7K, line 80mV 200K, DIN 5mV. Outputs: line 0.775V, DIN 0.5V. Motor: 4-pole induction inner-rotor. Mains: 100-240V AC 50-60Hz. Size: 410 × 123 × 295mm. Price: £143.08 (plus VAT).

### GXC40T

Stereo cassette recorder with tuner and phono input. W and F: 0.21%. S/N: less than 41dB (ferric oxide tape). FR: 50Hz-14kHz (ferric oxide tape), 50Hz-15kHz (CrO<sub>2</sub> tape), ±3dB. CrO<sub>2</sub> switch alters record amplifier characteristics only. Replay char: 120µs. Twin VU meters. Inputs: mic 0.1mV 4.7K, line 25mV 200K, DIN 3mV 22K. Outputs: line 1.2V, DIN 0.4V, speaker 5W 8 ohms. Motors: Hysteresis synchronous outer rotor. Mains: 100-240V AC 50-60Hz. Size: 413 × 138 × 320mm. Price: £180.88 (plus VAT).

### GXC46D ★

Stereo cassette tape deck with Dolby noise reduction system. ¼-track two-channel stereo. Speed: 1½i/s. W and F: <0.12%. FR: 30Hz-18kHz using CrO<sub>2</sub> tape, 30Hz-16kHz using low-noise tape. Signal-to-noise: better than 58dB with Dolby system, better than 50dB standard. Bias frequency: 60kHz. Two heads. One motor. Fast rewind: 55-65 seconds for C60 cassette. Output: line (2) 0.775V 20K, phones 30mV 8 ohms. Inputs: mic (2) line (2) 50mV 200K. 39 transistors, two FETs, 34 diodes, two ICs. Mains: 100-240V AC 50-60Hz. Size: 16½ × 5¾ × 12in. Weight: 15½lb. Price: £153.21 (plus VAT).



Akai GXC36D



Akai Model GXC65D



Akai GXC46D



Amerex ACD 800

**GXC65D ★**

Stereo cassette tape deck with Dolby noise reduction system.  $\frac{1}{4}$  track two channel stereo. Speed:  $1\frac{1}{2}$ i/s. W and F:  $<0.12\%$ . FR: 30Hz-18kHz using CrO<sub>2</sub> tape, 30Hz-16kHz using low-noise tape. Signal-to-noise: better than 58dB with Dolby system, better than 50dB without Dolby. Two heads. One motor. Fast rewind: 60-65 seconds for C60 cassette. Output: 0.775V 20K, phones 30mV 8 ohms. Inputs: mic 0.2mV 4.7K, line 50mV 200K. 36 transistors, two FETs, 35 diodes, two ICs. Mains: 100-240V AC 50-60Hz. Size:  $16\frac{1}{2} \times 7\frac{1}{4} \times 11\frac{1}{2}$ in. Weight: 22lb. Price: £166.67 (plus VAT).

**■ ALPHA**

Highgate Acoustics Ltd, 38 Jamestown Road, London, NW1 7EJ. Tel: 01-267 4937.

**CD 1000**

Stereo cassette recorder. FR: 50Hz-10kHz. S/N ratio: more than 35dB. W and F: less than 0.3%. Headphones: 0.2mV into 8 ohms. Output to amplifier: 500mV into 10K. Inputs: mic 1mV 600 ohms, aux 100mV 220K, DIN 30mV 220K. Hysteresis synchronous motor and modern keyboard type press buttons for replay, record, stop/eject, fast forward and fast rewind.

Twin slider gain controls, two VU meters. Microphone and headphone sockets. Mains: 115/240V. Size:  $10\frac{1}{2} \times 8\frac{3}{4} \times 3\frac{1}{2}$ in. Weight: 6 $\frac{1}{2}$ lb. Price: £44.50 (plus VAT).

**CD 2000**

Stereo cassette tape deck. FR: 45Hz-12kHz (normal tape), 45Hz-16kHz (Chrome tape). W and F: 0.13% RMS. S/N ratio: better than 45dB. Crosstalk: better than 30dB. Tape speed:  $1\frac{1}{2}$ i/s (4.8cm/sec). Fast forward time: 90 sec. Rewind time: 90 sec. Bias frequency: 60kHz. Features: full automatic shut-off mechanism, push button control, review/cue system, 2 pairs of level control (line input and mic input), noise filter switch, dual level meters, 3-digit control, headphone output controlling switch, both Pin and DIN jack connectors. Size:  $400 \times 250 \times 100$ mm. Price: £69 (plus VAT).

**■ AMEREX (UK) LTD**

96 Piccadilly, London W1V 9HA.  
Tel: 01-499 3537.

**ACD 800D ★**

Stereo cassette tape deck with Dolby system. Chromium dioxide tape switch, tape counter, twin VU meters, pushbutton operation (including pause button), twin sliding volume



★ Indicates entry is illustrated

controls. Headphone jack. Input for external microphone, auxiliary jack. Teak cabinet with matt black and silver fascia. Size:  $12\frac{1}{2} \times 3\frac{1}{2} \times 9\frac{1}{2}$ in. Weight: 7lb. Price: on application.

#### ■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road, London, E8. Tel: 01-249 5237.

##### 6000 ★

Stereo cassette deck. Inputs: mic 0.5mV, line 60mV 330K. Outputs: 0-500mV 47K (variable). Chrome tape switch. Noise reduction switch. Headphone outlet. VU/record level illuminated meters. Tape position counter. Electronic auto-stop works on fast wind/rewind and record/play. FR: 40Hz-14kHz CrO<sub>2</sub>, 40Hz-11kHz normal tape. Price: £61.90 (plus VAT).

##### 7000

Stereo cassette deck with Dolby noise reduction. Inputs: mic 0.5mV, line 150mV 470K. Outputs: 0-750mV 47K (variable). Chrome tape switch, dolby noise reduction switch. Headphone outlet. VU/record level illuminated meters. Tape position counter. Electronic auto-stop works on fast wind/rewind and record/play. FR: 40Hz-14kHz (CrO<sub>2</sub>), 40Hz-11kHz normal tape. Price: £80 (plus VAT).

#### ■ BASF

BASF United Kingdom Ltd, Audio/Video Tape Division, PO Box 473, Knightsbridge House, Knightsbridge, London SW7 1SA. Tel: 01-584 5080.

##### BASF CC Recorder 9202 CrO<sub>2</sub>

Battery or mains operated mono cassette recorder. Automatic switching to CrO<sub>2</sub> when DIN-CrO<sub>2</sub> cassette is inserted. Built-in condenser microphone. DIN connections for external remote control microphone, amplifier, radio, tape recorder and loudspeaker or headphones. Automatic or manual recording level control. Tape index counter. Meter for recording level and battery check. Fast review button. Automatic stop and cassette ejection. Mains: 110/240V. Battery: 6V, 4 cells SP2. FR: 80Hz-10kHz (Fe<sub>2</sub>O<sub>3</sub>), 80Hz-12.5kHz (CrO<sub>2</sub>). Wow and flutter:  $\leq 0.3\%$ . S/N ratio:  $\geq 45$ dB (Fe<sub>2</sub>O<sub>3</sub>), 50dB (CrO<sub>2</sub>). Output: approx 1.5W RMS. Size: 296 × 68 × 203mm. Weight: 2.5kg. Price: £59.29 (plus VAT).

##### Model 8200 ★

Stereo cassette deck. W and F: less than 0.2%. Fitted with both Dolby and DNL noise reduction. S/N: better than 45dB (ferric oxide, NR out), better than 58dB (CrO<sub>2</sub> NR out). FR:



Amstrad 6000



BASF 8200 (top) and 8100 (bottom)



BASF 8100 CrO<sub>2</sub>

40Hz-10kHz (ferric oxide), 40Hz-12.5kHz (CrO<sub>2</sub>) DIN. CrO<sub>2</sub> switch alters bias and record/replay equalisation. Two VU meters. Inputs: mic 70dB 1K, line 0.1-2mV 50K. Outputs: line 0.5-2V 2.5K, phones 8 ohms. Mains: 110/220-240V. Size: 407 × 147 × 270mm. Price: to be announced.

#### **BASF CC Radio-Recorder 9302 CrO<sub>2</sub>**

Battery or mains operated, 4 waveband radio (VHF, MW, SW, LW), mono cassette recorder. Telescopic FM/SW aerial. Built-in ferrite rod aerial. Dial light. Slide controls for volume and tone. Manual recording level and mixing facility while recording from built-in radio. Other recordings with automatic recording level only. Monitor facility. Ratings and features as recorder CC 9202 CrO<sub>2</sub> except fast review button. Size: 299 × 251 × 90mm. Weight: 3.15kg. Price: £83.16 (plus VAT).

#### **BASF 8100 Hi-Fi Stereo Deck CrO<sub>2</sub> ★**

Automatic switching to CrO<sub>2</sub> cassettes conforming to the DIN standard. DNL noise limiter. Two illuminated recording level meters. Automatic or manual recording level. Pause key. Tape index counter and automatic switch off. Fast review key. DIN and phono connectors. FR: 20Hz-10kHz (Fe<sub>2</sub>O<sub>3</sub>), 20Hz-14kHz (CrO<sub>2</sub>). S/N ratio: ≥48dB (Fe<sub>2</sub>O<sub>3</sub> with DNL), ≥52dB (CrO<sub>2</sub> with Dolby). Wow and flutter: ≤0.25%. Size: 327 × 114 × 259mm. Weight: 3.9kg. Price: £120 (plus VAT).

#### **BASF 8200 Hi-Fi Stereo Deck CrO<sub>2</sub>**

Dolby system with DNL noise limiter. Automatic switching to CrO<sub>2</sub> cassettes. Two illuminated recording level meters. Automatic or manual recording level, tape index counter with memory to find a pre-set passage, pause key and automatic switch-off. DIN and phono connectors. FR: 20Hz-12.5kHz (Fe<sub>2</sub>O<sub>3</sub>), 20Hz-14kHz (CrO<sub>2</sub>). S/N ratio: ≥54dB (Fe<sub>2</sub>O<sub>3</sub> with Dolby), ≥58dB (CrO<sub>2</sub> with Dolby). W and F: 1.5%. Size: 407 × 147 × 270mm. Weight: 5.4kg. Price: £180 (plus VAT).

#### **■ BELTEK**

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

#### **M1150 ★**

Stereo cassette deck fitted with Dolby noise reduction. W and F: 0.15% WRMS. S/N ratio: 58dB (Dolby in). FR: 20Hz-15kHz (20Hz-18kHz, CrO<sub>2</sub>). Twin VU meters. Inputs: mic 1mV 600 ohms, line 200mV 100K (variable). Output: 800mV 100K (variable). Memory counter, fingertip controls, auto loading mechanism. Headphone output. Size: 15½ × 6 × 12½in. Price: to be announced.



M1150



Beocord 2200

#### **■ BEOCORD**

Bang & Olufsen (UK) Ltd, Eastbrook Road, Gloucester GL4 7DE. Tel: Gloucester 21591.

#### **Beocord 900**

Stereo cassette tape deck. ¼-track. Speed: 1½i/s. Compact cassettes. W and F: 0.35% (JIS). FR: 40Hz-12.5kHz. S/N ratio: >50dB. Rewind time: 90 seconds for C60. Two VU meters. Inputs: mic 75µV 1K, radio 6mV 47K. Outlet: 800mV 470K. CrO<sub>2</sub> tape facility. Finish: teak or rosewood cabinet, brushed aluminium fascia. Size: 15.8 × 9.4 × 3.2in. Mains: 110-130 and 220-240V 50Hz. Price: (teak) £79.90, (rosewood) £80.90 (including VAT).

#### **Beocord 2200 ★**

Stereo ¼-track cassette tape deck incorporating Dolby noise reduction system. Speed: 1U i/s. W and F: 0.12% (JIS). FR: 30Hz-15kHz. S/N ratio: >62dB (with Dolby on), >53dB (without Dolby). Switched characteristics for CrO<sub>2</sub> or standard tapes. Rewind time: 70 seconds for C60. High density ferrite heads. Inputs: mic 100µV 1K, radio 4mV 47K, aux 200mV 2.2M. Outlets: 660mV 6.3K and headphones 0.5-0.8mW. 3-digit tape counter. Mechanical auto-stop plus preset memory stop on rewind. Mains: 110-130 and 220-240V 50-60Hz. Size: 19.7 × 9.1 × 2.9in. Price: (teak) £179.50 (rosewood) £180.50 (including VAT).

#### **■ BIGSTON**

Brown Brothers Ltd, Great Eastern House, Edinburgh Way, Harlow, Essex. Tel: Harlow 29511.

★ Indicates entry is illustrated

### **BSD-200 ★**

Stereo cassette deck. Fitted with Dolby noise reduction system. Inputs: mic 0.14mV 600 ohms. line (high level) 0.24V 1.5M, (low level) 45mV 270K. Outputs: line 1.0V 1.8K, headphones 0.3mV 8 ohms. Recording system: 4-track 2-channel stereo, 2-track mono. record and playback. Bias and erase: 85kHz. W and F: 0.15% (RMS). Fast forward and rewind: 110 seconds (C-60). FR: 40Hz-15kHz (chromium dioxide tape), 30Hz-13kHz (regular tape). S/N ratio: 56dB (with Dolby), 48dB (without Dolby). Mains: 240V AC 50Hz at 10W. Cabinet: matt walnut veneer. Size: 350 × 110 × 235mm. Weight: 4kg. Supplied complete with Dolby pre-recorded demonstration tape. Two dynamic microphones with stands, connecting lead. Price: £101.82 (plus VAT).



*Bigston BSD-200*

### **BUSH-ARENA**

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

### **C445**

Stereo cassette deck. W and F: 0.3% WRMS. S/N: 45dB (Ferric oxide tape), 50dB (CrO<sub>2</sub>). FR: 50Hz-9kHz (Ferric oxide tape). CrO<sub>2</sub> switch fitted. Twin VU meters. Inputs: Two stereo mic. DIN and line. Outputs: line, headphones. Size: 13.7 × 3.5 × 9.1in. Cassette deck fitted with auto-stop and supplied with microphones. Price: £90.85 (including VAT).

### **CROWN**

Crown Radio Co Ltd, Russell Gardens, Wickford, Essex SS1 8RT. Tel: Wickford 63414.

### **CTD 270**

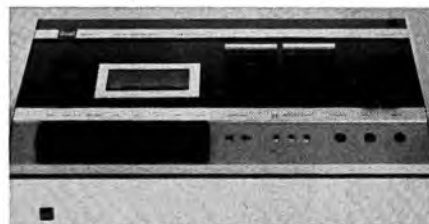
Stereo cassette deck. W and F: 0.25% RMS. FR: 30Hz-13kHz (CrO<sub>2</sub>). Dolby noise reduction fitted. S/N: better than 42dB, CrO<sub>2</sub> switch. Twin VU meters. Inputs: mic 0.2mV 600 ohms, aux 60mV 100K. Outputs: line 0.775V 10 ohms, phones 10mW 8 ohms. Mains: 220-240V AC, 50-60Hz. Size: 15½ × 4 × 11in. Dual capstan, slider controls for record and playback. Price: £138.05 (plus VAT).

### **DUAL**

K. F. Products Ltd, Ashton Road, Bredbury, Stockport, Cheshire SK6 2SP. Tel: 061-494 1441.

### **C901 ★**

Stereo cassette deck with record and playback in both directions. W and F: better than ±0.12% DIN. Drift: better than 1%. FR:



*Dual C901*

30Hz-14kHz (ferric oxide tape), 30Hz-10kHz (CrO<sub>2</sub> tape). S/N: better than 50dB (IEC Curve-A). Fitted with Dolby noise reduction. Inputs: mic 0.15mV, DIN 0.15mV, line 40 mV. Outputs: phones, DIN 0.75V, line 0.75V. Size: 16½ × 4½ × 11in. Automatic tape reversal, auto stop after both directions have been replayed. Continuous play override switch. Automatic selection for CrO<sub>2</sub> with manual switch for unmarked CrO<sub>2</sub> cassettes. Automatic level control or manual. Twin VU meters. Overload indicator. Fittings available for vertical mounting. Alternative walnut or white enamel (C901W) finish. Price: £198 (including VAT).

### **DECCA**

Decca Radio & Television Ltd, Neachells Lane, Willenhall, Wolverhampton, Staffs. Tel: Wolverhampton 67367.

### **DC 2000**

Stereo cassette deck with Dolby B. Tape speed: 1½/s. FR: (playback) ±2dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left and right). Pushbutton controls: mains on/off, CrO<sub>2</sub> on/off, Dolby noise reduction on/off, memory rewind switch, tape counter reset. Piano key controls: record, rewind, fast forward, play, pause, stop/eject. Input sockets: mic jacks, aux, DIN inputs. Output sockets: stereo headphones, line outputs, DIN outputs.

Mains: 240V 50Hz. Power consumption: 6W. Size: 350 × 240 × 110mm. Finish: teak. Price: £87.96 (plus VAT).

#### DC 1100

Stereo cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. FR: (playback)  $\pm 2$ dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left and right). Pushbutton controls: mains on/off, CrO<sub>2</sub> on/off, tape counter reset. Piano key controls: record, rewind, fast forward, play, pause, stop/eject. Inputs sockets: microphone jacks, aux, DIN inputs. Output sockets: stereo headphones, line outputs, DIN outputs. Mains: 240V 50Hz. Power consumption: 6W. Size: 350 × 240 × 110mm. Finish: teak. Price: £60.19 (plus VAT).

#### ■ DYNATRON

Dynatron Radio Ltd, St Peters Road, Maidenhead, Berks SL6 7QY. Tel: Maidenhead 23331

#### Model CP3

Stereo cassette deck. W and F: 0.35%. Fitted with DNL noise reduction. S/N: better than 45dB (DIN). FR: 60Hz-10kHz  $\pm 6$ dB (DIN). Twin VU meters. Inputs: mic 0.2mV 2K, DIN (1) 35mV 220K, DIN (2) 3.5mV 22K. Outputs: DIN (1) 500mV 30K, DIN (2) 35mV 10K. Mains: 110-240V, 50-60Hz. Size: 12 × 4 × 9in. Auto-stop. Price: to be announced.

#### ■ GRUNDIG

Grundig (Great Britain) Ltd, Hi-Fi Division, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

#### CN 730 Hi-Fi

Stereo cassette deck. W and F:  $\pm 0.2\%$  DIN. Fitted with Dolby noise reduction. FR: 30Hz-12.5kHz (ferric oxide tape), DIN 30Hz-14kHz (CrO<sub>2</sub> tape) DIN. S/N: better than 46dB (ferric oxide tape), better than 49dB (CrO<sub>2</sub> tape). Inputs: mic 1mV 33K, radio 1mV 33K, phono 60mV 2.2M. Output: 500mV 20K. Size:  $9\frac{1}{2}$  × 4 × 10 $\frac{1}{2}$ in. Price: on application.

#### ■ HANIMEX (UK) LTD

Hanimex House, Dorcan, Swindon, Wilts SN3 5HW. Tel: Swindon 26211.

#### HCD 1000 ★

Stereo cassette deck. W and F: less than 0.35% (DIN). S/N: better than 40dB. Fitted with DNL noise reduction system. FR: 40Hz-12kHz (ferric oxide tape). Two VU meters. Inputs: mic 0.2mV 10K, line 100mV



Hanimex HCD1000

1M DIN. Outputs: line 0.775V 10K, DIN 0.775V 10K. Motor: one mechanically governed DC motor. Mains: 117, 220, 240V AC. Size: 220 × 310 × 90mm. Price: £62.35 (including VAT).

#### ■ HARMON KARDON

Highgate Acoustics Ltd, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

#### HK1000

Dolby professional cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.13% or less. Drift: 1.0%. Tape speed error: within 1%. Fast forward and rewind time: 100 seconds for C60 cassette. THD: better than 1.5% at 1kHz, -2dB from zero VU. Output level: 580mV at zero VU rec/play and zero VU play. FR: 40Hz-13kHz  $\pm 1.5$ dB, 30Hz-15kHz  $\pm 1.5$ dB (chromium dioxide tape). S/N ratio: (mic input) 50dB with Dolby out, 58dB with Dolby in (measured at 1kHz at zero VU). Sensitivity: mic 0.2mV, low level input 50mV, high level input 200mV. Bias frequency: 105kHz  $\pm 3$ kHz. Erase ratio: 60dB at 1kHz, zero VU, all type tapes. Channel separation: greater than 30dB. Channel crosstalk: 60dB. Input impedance: 600 ohms (mic), 50K (aux), 8 ohms (headphone). Channel balance:  $\pm 1$ dB. Azimuth differential: 1dB at 10kHz. Size:  $15\frac{1}{2}$  × 10 $\frac{1}{2}$  × 4 $\frac{1}{2}$ in. Weight: 12 $\frac{1}{2}$ lb. Price: £189 (plus VAT).

#### ■ HITACHI

Hitachi Sales (UK) Ltd, Hitachi House, Station Road, Hayes UB3 4DR. Tel: 01-848 8787.

#### TRQ 2030D

Stereo cassette recorder deck. 2 VU meters. Track system: 4-track, 2-channel stereo. Tape speed:  $1\frac{1}{2}$ i/s. Recording system: AC bias. Erasing system: AC erase. FR: (CrO<sub>2</sub> tape) 40Hz-16kHz, (normal tape) 40Hz-12kHz. S/N ratio: better than 45dB. Crosstalk: better than 60dB track to track. Output level: 0.775V

★ Indicates entry is illustrated

(0dB). Fast forward and rewind time: 90 sec for C60 cassettes. Motor: 4-pole hysteresis synchronous motor. Input impedance: mic 500 $\Omega$ , line in 60 $\Omega$ , DIN (input side) 1K. Size: 16  $\times$  3 $\frac{3}{8}$   $\times$  10 $\frac{1}{4}$ in. Weight: 10.3lb. AC mains operation. Sliding volume and balance controls. Piano key cassette controls. Headphone socket. 3 digit counter with memory switch. Ferrite head fitted. Price:  $\pounds$ 101.85 (including VAT).

#### **TRQ 2020D**

Stereo cassette recorder deck. 2 VU meters. Track system: 4-track, 2-channel stereo. Tape speed: 1 $\frac{7}{8}$ i/s. Recording system: AC bias. Erasing system: AC erase. FR: (CrO<sub>2</sub> tape) 40Hz-16kHz, (normal tape) 40Hz-12kHz. S/N ratio: better than 45dB. W and F: 0.15% RMS. Output level: 0.775 (0dB) minimum. Fast forward and rewind time: 90 sec for C60 cassettes. Motor: 4-pole hysteresis synchronous motor. Input impedance: mic 500b6V, line in 60K, DIN (input side) 12K. Output impedance: line out 1K, DIN (output side) 1K, headphone 8 $\Omega$ . Size: 13  $\times$  3 $\frac{3}{8}$   $\times$  9 $\frac{1}{4}$ in. Weight: 9.5lb. AC mains operation. Piano key cassette controls. Rotary recording controls. Headphone socket. Ferrite rec/play head. Complete with CrO<sub>2</sub> switch and noise filter. Power consumption: 20W. Price:  $\pounds$ 85.50 (including VAT).

#### **TRQ 252D**

Stereo cassette recorder deck. Track system: 4-track, 2-channel stereo. Tape speed: 1 $\frac{7}{8}$ i/s. Recording system: AC bias. Erasing system: AC erase. S/N ratio: better than 40dB. W and F: less than 0.2%. Level indicator: Dual VU meters. Cassette stereo record and playback facilities, pushbutton system. Headphone socket. Automatic stop. AC mains. Size: 190  $\times$  102  $\times$  273mm. Weight: 2.8kg. Price:  $\pounds$ 62.50 (including VAT).

#### **TRQ 2040D**

Cassette tape deck with Dolby noise reduction system. Track system: 4-track, 2-channel stereo. FR: (CrO<sub>2</sub> tape) 40Hz-16kHz, (regular tape) 40Hz-12kHz. Tape speed: 1 $\frac{7}{8}$ i/s. Recording system: AC bias. W and F: 0.25% RMS. S/N ratio: better than 53dB. Output level: 0.775mV (variable). Fast forward and rewind time: 90 sec for C60 cassettes. Motor: 4-pole hysteresis synchronous motor. Input impedance: mic 20K, line in 1m $\Omega$ . Output impedance: line out 100b6V. Headphone: 8 $\Omega$ . Auto-stop halts tape from any mode of operation. 2 VU meters. Separate slider lever recording controls. Lockable fast forward and rewind buttons. Memory rewind and tape counter. AC mains. Headphone socket. Size: 16  $\times$  3 $\frac{3}{8}$   $\times$  10 $\frac{1}{4}$ in. Weight: 10.3lb.

Price:  $\pounds$ 135.50 (including VAT).

#### **D2360**

Cassette tape deck with Dolby noise reduction system. Track system: 4-track, 2-channel stereo playback/record. FR: (normal tape) 40Hz-14kHz, (CrO<sub>2</sub> tape) 40Hz-16kHz. S/N ratio: Dolby off 50dB, Dolby on 58dB. Crosstalk: better than 60dB. Channel separation: better than 25dB. W and F: 0.13% WRMS. Record system: AC bias. Bias frequency: 57kHz. Erasing system: AC bias. Erasing ratio: better than 65dB. Output level: better than 0.65V. Distortion: 2%. Tape speed: 1 $\frac{7}{8}$ i/s. Fast forward and rewind time: less than 90 sec for C60 cassettes. Motor: electric speed control motor. Input impedance: line in 100K (50mV), DIN 2K (0.25mV), mic 500-5K (0.25mV). Output impedance: line out 50K, DIN out 470K, headphone 8-2K. Pushbutton cassette system with mechanical pause control on record and playback. 2 VU meters and 3 digit tape counter. AC mains. Size: 39.6  $\times$  9.8  $\times$  24.2cm. Weight: 4.8kg. Price:  $\pounds$ 115.90 (including VAT).

#### **D3500**

Cassette tape deck with Dolby noise reduction system. Track system: 4-track, 2-channel stereo record/playback. FR: (normal tape) 20Hz-15kHz, (CrO<sub>2</sub> tape) 20Hz-20kHz. S/N ratio: better than 55dB at Dolby off, better than 63dB at Dolby on. Crosstalk: (between track) better than 60dB. W and F: 0.05% WRMS. Recording system: AC bias. Bias frequency: 105kHz. Erasing system: AC erase. Erasing ratio: better than 65dB. Tape speed: 1 $\frac{7}{8}$ i/s. Fast forward and rewind time: 90 sec. Motor: 4-pole hysteresis synchronous motor. Recording equaliser: normal 3,180 $\mu$ s/120 $\mu$ s; CrO<sub>2</sub> 3,180 $\mu$ s/70 $\mu$ s. Output level: better than 0.5V (variable). Distortion: 2% (1kHz 0dB). Level indicator: VU/peak. Input impedance: line in 100K (35mV), DIN in 2K (0.18mV), mic 300-20K (0.18mV). Output impedance: line out 50K, DIN out 50K, headphone 8 $\Omega$ . Three-head recording deck, 2 VU meters, incorporating Dolby sound system with memory device and separate output and input controls. Complete with 3-digit counter, headphone and microphone sockets. Finished in simulated walnut cabinet. For mains operation only. Size: 43  $\times$  14  $\times$  28.3cm. Weight: 7kg. Price:  $\pounds$ 238 (including VAT).

#### **D2150**

Stereo cassette deck. Track system: 4-track, 2-channel stereo record/playback. Tape speed: 1 $\frac{7}{8}$ i/s. FR: (normal tape) 40Hz-12kHz, (CrO<sub>2</sub> tape) 40Hz-16kHz. Recording system:

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*For full details regarding Sanyo hi-fi equipment see your local dealer or contact the Consumer Advisory department.*

Sanyo Marubeni (UK) Ltd, 8 Greycaine Road, Greycaine Estate, Watford WD2 4UQ.  
Telephone: Watford 30421

AC bias. Erasing system: AC erase. W and F: 0.15% WRMS. Inputs: mic -72dB (0.25mV) impedance 300-20K, line in -26dB (50mV) impedance 100K. Outputs: line out 50K, headphone 80 $\Omega$ . S/N ratio: better than 58dB at DNL on, better than 50dB at DNL off. Crosstalk: better than 60dB. Distortion: better than 2.5%. Bias frequency: 57kHz. Motor: electrical controlled motor. Level indicator: 2 VU meters. Record and playback facilities incorporate pushbutton system with pause control. 3 digit tape counter and 2 VU meters. DNL fitted. Size: 377 x 92 x 257mm. Weight: 3.4kg. Price: £104 (including VAT).

#### D135D

8-track cartridge playing and recording deck. Track system: 8-track, 2-channel, 4-programme. Tape speed: 3 $\frac{3}{4}$ /s. FR: 40Hz-10kHz. Crosstalk: 50dB. W and F: better than 0.15% WRMS. Power consumption: 35W. S/N ratio: 55dB. Recording system: AC bias. Erasing system: AC erase. Input/output sockets: DIN line in/out, headphone, aux, mic. Output load impedance: DIN 10K, line out 10K, headphone 8 $\Omega$ . Input impedance: DIN 50K, aux in 50-100K, mic 600 $\Omega$ . IC circuitry. Auto-cueing and auto-stop at start points. Incorporates programme repeat, level marker and headphone jack. Pushbuttons for programme selection and all modes of record and playback including fast, forward and rewind. For AC mains operation only. Size: 368 x 120 x 254mm. Weight: 4.5kg. Price: £98.50 (including VAT).

#### TPQ124D

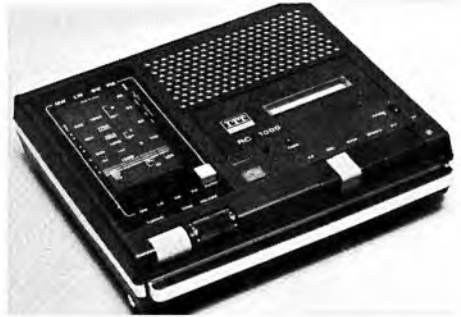
8-track stereo playback deck. Track system: 8-track, 2-channel stereo, 4-programme. FR: 40Hz-13kHz. S/N ratio: better than 55dB. Crosstalk: better than 50dB. W and F: less than 0.18%. Connects to stereo amplifier or receiver. Easy cartridge load. Automatic programme switching. Mains: 240V AC 50Hz. Size: 290 x 90 x 260mm. Weight: 5kg. Price: £52 (including VAT).

#### ■ ITT

ITT Consumer Products (UK) Ltd,  
Maidstone Road, Sidcup, Kent DA14 5HT.  
Tel: 01-300 7733.

#### Studio 73

Mains/battery stereo tape recorder. Speed: 1 $\frac{1}{4}$ /s. Compact cassette. W and F: 0.4%. Replay char: IEC. Rewind time: 50 sec for C60. Three-digit tape position indicator with PB reset. 26 transistors, 16 diodes. One motor. Size: 10 $\frac{3}{4}$  x 3 $\frac{1}{4}$  x 9 $\frac{1}{4}$ in. Weight: 7lb. Pause. Monitoring on record. Provision for CrO<sub>2</sub> tape. Auto or manual level control.



ITT RC1000



ITT Stereo 85

Double-gap erase head. End-of-tape warning light. Tone control. Provision for Dryfit accumulator operation. Power supply: mains 110-150V or 200-240V AC, five HP11 or Dryfit accumulator. Price: £60.10 (plus VAT); carry case £3.85 (plus VAT).

#### SL75

Mono portable cassette recorder. Incorporates LW/FM radio. Auto record level control. DIN socket for recording from other sources such as microphones. DIN speaker socket. Battery check button. Top loading, horizontal format. Price: £52.77 (plus VAT); carry case £3.35 (plus VAT).

#### RC1000 ★

2-track mono cassette recorder. Battery/mains operation. L, M, VHF and SW radio plus cassette record facilities. Built-in capacitor microphone. Automatic recording level only. Tape end switch with indicator lamp. Tape position indicator. Pushbutton wavechange. Roller tone, volume, station controls. Pause control. Top loading. Piano key operation. Electronic battery check button. 1.2W output. Osc. frequency switch (recording bias). Takes DSL rechargeable battery. Also takes external microphone with remote control stop/start. External speaker socket, or phones. Mic input/low-level output socket. Price: £70.85 (plus VAT).



★ Indicates entry is illustrated

### Stereo 85 ★

Stereo cassette recorder. This model incorporates a 5-watts-per-channel-into-4-ohms stereo amplifier, enabling it to be used with a suitable pair of loudspeakers as a cassette-only stereo system. Unit can also be linked to record player/or stereo radio with DIN sockets provided. Auto/manual recording level. Fe/Cr switch. Independent slider controls. Two VU meters. Auto tape end switch/warning light. Pause control. Price: £73.30 (plus VAT).

### Stereo 88 ★

Dolby system cassette recorder/player. Twin VU meters. Memory button. Tape counter. FR: 40Hz-12kHz. Input sensitivity: 70nA. Mains: 110/240V AC. Fe/Cr switch. Tape end switch. Black/silver finish. Trick/superimpose facility. Double gap erase head. Sockets for headphones, speakers, amplifier, record deck/radio, mic. Playback noise filter for non-dolby tapes. Slider controls for record level on both channels, also for playback levels. Dual socket system (front and rear). Weight: 11.6lb. Price: £153.64 (plus VAT).

### ■ JVC

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

### CD-1669U/F/S

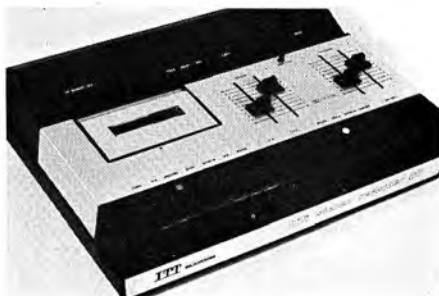
Stereo cassette tape deck. 4-track, 2-channel. Tape speed:  $1\frac{7}{8}$ i/s. FR: 30Hz-19kHz (chrome), 30Hz-16kHz (normal). W and F: 0.12% RMS. S/N ratio: (from peak level) 50dB (10dB at 5kHz or more and 5dB at 1kHz improve with ANRS). Mains: 100-230V (selectable) 50/60Hz. Size:  $5\frac{3}{8} \times 16\frac{3}{8} \times 12\frac{1}{2}$ in. Weight: 19.8lb. Price: £229 (including VAT).

### 1668U

Stereo cassette tape deck. 4-track, 2-channel. Tape speed:  $1\frac{7}{8}$ i/s. FR: 30Hz-19kHz (chrome), 30Hz-16kHz (normal). W and F: 0.13% RMS. S/N ratio: (from peak level) 50dB (10dB at 5kHz or more and 5dB at 1kHz improve with ANRS). Mains: 100-230V (selectable) 50/60Hz. Size:  $5\frac{1}{2} \times 15\frac{15}{16} \times 11$ in. Weight: 12.8lb. Price: on application.

### 1667U/F Mk II

Stereo cassette tape deck. 4-track, 2-channel. Tape speed:  $1\frac{7}{8}$ i/s. FR: 30Hz-19kHz (chrome), 30Hz-16kHz (normal). W and F: 0.15% RMS. S/N ratio: (from peak level) 50dB (10dB at 5kHz or more and 5dB at 1kHz improves with ANRS). Mains: 100-230V (switchable) 50/60Hz. Size:  $4\frac{9}{16} \times 14\frac{15}{16} \times 10\frac{7}{16}$ in. Weight: 10.1lb. Price: £135 (including VAT).



ITT Stereo 88



Leak 2002



Nakamichi Tri-Tracer 1000



Nakamichi Dual-tracer 550

**CD-1656U/F/S**

Stereo cassette tape deck. 4-track, 2-channel. Tape speed:  $1\frac{1}{2}$ i/s. FR: 30Hz-16kHz (chrome), 40Hz-14kHz (normal). W and F: 0.22 RMS. S/N ratio: (from peak level) 50dB (10dB at 5kHz or more and 5dB at 1kHz improves with ANRS). Mains: 100-230V (switchable) 50/60Hz. Size:  $4\frac{1}{2} \times 15\frac{1}{4} \times 9\frac{3}{16}$ in. Weight: 9.2lb. Price: £99.50 (including VAT).

**CD 1950**

Front loading stereo cassette deck with ANRS. W and F: 0.10% WRMS. Crosstalk: 65dB at 1kHz. Channel separation: 35dB at 1kHz. Cronios heads. Price: £154 (including VAT).

**LEAK**

Rank Radio International Ltd, Power Road, Chiswick, London W4 5PW.  
Tel: 01-994 6491.

**Leak 2002 ★**

Stereo cassette deck. Tape speed:  $1\frac{1}{2}$ i/s  $\pm 1.5\%$ . W and F: less than 0.2% DIN. Output level: 580mV. Input level: mic 0.3mV, line 30mV. FR: (Dolby out) 50Hz-12.5kHz  $\pm 3$ dB (CrO<sub>2</sub>). THD: less than 3.0%. S/N ratio: typically 54dB (Dolby out). Twin VU meters. Erase ratio: better than 60dB. Size: 100  $\times$  300  $\times$  325mm. Weight: 5kg. Finish: teak. Price: £161.45 (including VAT).

**NAKAMICHI**

Natural Sound Systems Ltd,  
Strathcona Road, North Wembley,  
London HA9 8QL. Tel: 01-904 0141.

**Tri-tracer 1000 ★**

Stereo cassette deck. W and F: less than 0.1%. Fitted with both Dolby and DNL noise reduction systems. S/N: 54dB (ref OVU). Dolby out. FR: 35Hz-20kHz. CrO<sub>2</sub> bias switch. Replay equalisation: 70 $\mu$ s or 120 $\mu$ s switchable. Two 45dB peak level meters. Motors: two phonic-wheel DC servo-motors. Size: 20.7  $\times$  11.7  $\times$  8.6in. Three head machine with tape monitor via Dolby processor. Built-in calibration oscillator. Automatic head azimuth check and adjustment facility. Logic controlled function selectors. Memory and auto rewind. Price: £631.82 (plus VAT).

**Tri-tracer 700**

Stereo cassette deck. W and F: less than 0.12%. Fitted with Dolby noise reduction. S/N: better than 54dB (ref OVU) Dolby out. FR: 35Hz-20kHz  $\pm 4$ dB. CrO<sub>2</sub> switch fitted. Replay equalisation: 70 $\mu$ s or 120 $\mu$ s switchable. Twin peak 45dB level meters. Two phonic-wheel DC servo motors. Size:



Neat Model 103

$20\frac{1}{2} \times 10.7 \times 5.1$ in three head machine with tape monitor via Dolby processor. Built in calibration oscillator. Automatic head azimuth check and adjustment facility. Logic controlled function selectors. Memory rewind. Price: £399.60 (plus VAT).

**Dual-tracer 550 ★**

Stereo cassette deck. Mains or portable operation. W and F: less than 0.13% WTD peak to peak. Dolby noise reduction. S/N: 60dB (Dolby on). CrO<sub>2</sub> and ferric bias and equalisation positions. Twin 45dB peak level meters. Built-in calibration oscillator. Three microphone inputs. Price: £275 (plus VAT).

**NEAL**

North East Audio Ltd, 5 Charlotte Square,  
Newcastle-upon-Tyne NE1 4XF.  
Tel: Newcastle-upon-Tyne 26660.

**Model 102**

Transcription cassette recorder. Dolby B. 3M Wollensak deck. Two illuminated peak reading meters. Chrome and ferric equalisation and bias. Controlled headphone output. Separate input amplifiers for mic, DIN and line. W and F: less than 0.09% RMS (DIN weighted). Record amp distortion: less than 0.1% at 0dB. Inputs: mic 250 $\mu$ V 2.5K, high level line 80mV 2M, DIN 2.25mV 5K. Overload margin on all inputs 40dB. Replay amp distortion: less than 0.1% at 0dB. Equalisation: CrO<sub>2</sub> 70/3180 $\mu$ sec; ferric oxide 120/3180 $\mu$ sec. Outputs: monitor 110mV 3.7K, DIN variable to 2V 1K, phones variable to 2V 50 ohms, output levels referred to 220nWb/m flux density. FR: (ferric tape) 35Hz-12kHz +1dB -3dB; CrO<sub>2</sub> tape 35Hz-15kHz +1dB -3dB. S/N ratio: CrO<sub>2</sub> (Dolby off) 55dB, CrO<sub>2</sub> (Dolby on) 63dB, ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 61dB. Price: on application.

**Model 103 ★**

Transcription cassette recorder. Dolby B.

★ Indicates entry is illustrated



Philips N2507



Philips N2408

Built-in Dolby calibration oscillator. 3M Wollensak deck. Two illuminated peak reading meters. Chrome and ferric equalisation and fully variable bias for both. Bias level may be displayed on meters. Controlled headphone output. Separate amplifiers and input mixing for mic, DIN and line. W and F: less than 0.09% RMS (DIN weighted). Record amp distortion: less than 0.1% at 0dB. Inputs: mic 200 $\mu$ V 2K, high level line 80mV 2M, DIN 5mV 10K. Replay amp distortion: less than 0.1% at 0dB. Equalisation: CrO<sub>2</sub> 70/3180 $\mu$ sec, ferric oxide 120/3180 $\mu$ sec. Equalisation, calibration controls externally accessible. Outputs: monitor 600mV 5K, DIN 600mV 5K, phones variable to 2.5V 10 ohms. Output levels referred to 220nWb/m flux density. FR: (ferric tape) 35Hz-12kHz +1dB -3dB, CrO<sub>2</sub> tape 35Hz-15kHz +1dB -3dB. S/N ratio: CrO<sub>2</sub> (Dolby off) 55dB, CrO<sub>2</sub> (Dolby on) 64dB, ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 62dB. Price: on application.

#### P Series Cassette Recorders

An extensive range of professional variants of the two machines listed (above) are available. Facilities and options to special order include: 3 $\frac{3}{4}$ i/s tape speed, remote pause, four channel, mono and dual mono track configurations. Details and prices on application.

#### ■ NORDMENDE

Veseco Vision & Radio Ltd,  
Unit 4, Blackwater Way, Ash Road,  
Aldershot, Hants GU12 4DL.  
Tel. Aldershot 321661.

#### 6000 Hi-Fi ★

Stereo cassette recorder. W and F:  $\pm 0.25\%$

DIN. FR: 40Hz-12.5kHz, DIN. One synchronous motor fitted. Rewind time: less than 100s with a C60. Twin VU meters. Dolby noise reduction fitted; automatic level control CrO<sub>2</sub> switch. Conforms to DIN Hi-Fi standard. Size: 245 x 95 x 230mm. Memory counter. Price: £100 (plus VAT).

#### Hi-Fi Comfort

Stereo cassette recorder. W and F: better than  $\pm 0.2\%$  DIN. FR: 40Hz-14kHz using CrO<sub>2</sub> tape. Two motors. Rewind time: better than 100s for a C60. Automatic selection of bias for CrO<sub>2</sub> or standard tape. Automatic level control or manual sliders. Philips DNL noise reduction fitted. Twin VU meters. Meets DIN 45 500 Hi-Fi standard. Size: 345 x 100 x 245mm. Price: £138.75 (plus VAT).

#### ■ PHILIPS

Philips Electrical Ltd, Century House,  
Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01 437 7777.

#### N2408 ★

Mains operated stereo cassette recorder. Speed: 1 $\frac{1}{8}$ i/s. W and F:  $< 0.25\%$ . Hum and noise: low noise tape  $> -45$ dB, CrO<sub>2</sub> tape  $> -47$ dB. FR: (low noise tape) 60Hz-10kHz, (CrO<sub>2</sub> tape) 60Hz-12kHz. Rewind time:  $< 100$  sec, for C60 cassette. Two rec level meters. Inputs: mic 0.2mV 2K, PU 100mV 1M, line 2mV 20K. Outlets: line 1V 20K, speakers (2) 10W 4 $\Omega$ , headphones 3V 600 $\Omega$ . Output: low RMS per channel. Two motors, long life head, monitoring, automatic cassette changer. Size: 18 $\frac{1}{2}$  x 9 $\frac{1}{4}$  x 9in. Weight: 13.2lb. Mains: 110, 127, 220, 240V 50/60Hz. Price: £170 (including VAT)

**N2507 ★**

Mains operated stereo cassette unit to fit in with Audio plan Equipment. Includes dynamic noise limiter (DNL) circuit to improve subjective S/N ratio. Speed:  $1\frac{1}{2}$ /s. W and F: 0.35%. DIN weighted. H and N: (low noise tape) better than 45dB, (CrO<sub>2</sub> tape) better than 47dB. FR: (low noise tape) 60Hz-10kHz, (CrO<sub>2</sub> tape) 40Hz-12kHz. Re-wind time: <80 sec for C60. Meter level indicator. Input/output sockets for external amplifier. Input/output socket for phono/micro. One motor. Pause. Size:  $8\frac{1}{2} \times 8 \times 3\frac{1}{2}$ in. Weight:  $4\frac{1}{2}$ lb. Mains: 220/240V 50/60Hz. Price: £75 (including VAT).

**N2520**

Mains operated stereo cassette tape deck. Speed:  $1\frac{1}{2}$ /s. Compact cassette. W and F: <0.2% (DIN 45 507). Fitted with Dolby noise reduction. FR: (CrO<sub>2</sub>) 25Hz-14kHz (DIN 45 500). Replay char: DIN 45 500. S/N ratio: (Dolby) standard tape 54dB, CrO<sub>2</sub> tape 57dB. Three-digit tape position indicator with PB reset. Inputs: mic 0.2mV 2K, radio 2mV 20K, line 100mV 1M. Outputs: line 0.5V 10K, monitor 400mV 10K. Two recording level meters. One tachometer-controlled motor. Own deck. Size:  $15\frac{1}{2} \times 8\frac{1}{2} \times 3\frac{3}{8}$ in. Weight:  $9\frac{1}{2}$ lb. Pause control. Monitoring on control. Input mixing. Facilities for chromium dioxide tape. Built-in dynamic noise limiter circuit. Price: £185 (including VAT).

**■ PIONEER**

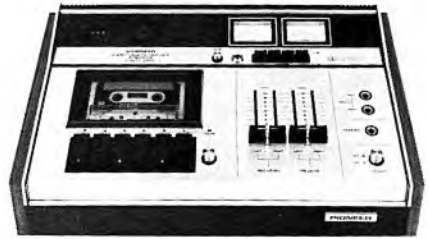
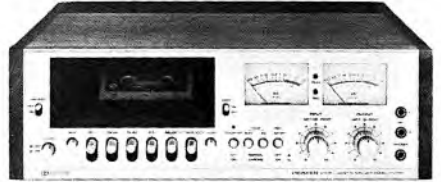
Shiro (UK) Ltd, Shiro House,  
The Ridgeway, Iver, Bucks SL0 9JL.  
Tel: Iver 652222

**CT3131A**

Stereo cassette deck. W and F: less than 0.13% WRMS. S/N: 47dB ref. max. rec. level. FR: 63Hz  $\pm$ 3dB (Ferric oxide tape), 63Hz-12kHz (CrO<sub>2</sub>). Fitted with CrO<sub>2</sub> switch. Two VU meters. Inputs: mic 90mV 20K, line 40mV 7.300K, rec PB 15mV -2.2V 10K. Output: line 300mV 50K, rec PB 300mV 50K, phones 40mV 8 ohms. Motor: One electro-mechanically controlled DC type. Mains: 110-130V, 220-240V AC 50-60Hz. Size:  $15\frac{1}{2} \times 3\frac{3}{4} \times 9\frac{1}{2}$ in. Price: on application.

**CT4141A ★**

Stereo cassette deck W and F: less than 0.13% WRMS. Dolby noise reduction fitted. S/N: 48dB at 333Hz (Ferric oxide tape). FR: 63Hz-10kHz  $\pm$ 3dB (Ferric oxide tape), 63Hz-10kHz  $\pm$ 3dB (CrO<sub>2</sub> tape) CrO<sub>2</sub> switch fitted. Twin VU meters. Inputs: mic 0.5 -90mV 200 ohm, line 50mV 300K, rec PB 15mV -2.2V 10K. Outputs: line 300mV 50K,

*Pioneer CT4141A**Pioneer CTF7171*

rec PB 300mV 50K, phones 40mV 8 ohms. Motor: one electro-mechanically controlled DC type. Mains: 110-130V, 220-240V, 50-60Hz. Size:  $15\frac{1}{2} \times 3\frac{3}{4} \times 9\frac{1}{2}$ in. Peak level indicator, independent bias and equalisation switches. Price: on application.

**CT5151 ★**

Stereo cassette deck. W and F: less than 0.12% WRMS. Fitted with Dolby B noise reduction. S/N: 48dB at 333Hz (Ferric oxide tape). FR: 63Hz-12kHz  $\pm$ 3dB (Ferric oxide tape), 63Hz-13kHz  $\pm$ 3dB (CrO<sub>2</sub> tape). Fitted with CrO<sub>2</sub> switch. Twin VU meters. Inputs: mic 0.5-90mV 200K, line 50mV 300K, rec/PB 15mV-2.2V 10K. Outputs: line 300mV 50K, rec/PB 300mV 50K, phones 40mV 8 ohms. Motors: one electronic controlled DC motor. Mains: 110-130V, 220-240V AC, 50-60Hz. Size:  $15\frac{1}{2} \times 3\frac{3}{4} \times 9\frac{1}{2}$ in. Peak level indicators and independent bias and equalisation switches fitted. Price: on application.

**CTF7171 ★**

Front loading cassette deck. 4-track or 2-channel. Electronic controlled DC motor. Rec/PB head (ferrite). Erase head (ferrite). Recording system: AC bias (85kHz). Erase system: AC push pull. FR: (chrome) 30Hz-16kHz S/N ratio: (Dolby on) 62.5dB W and F: <0.10%. Led peak indicator. Recording limiter 2-step bias 2-step equaliser. Skip facility. Memory rewind. Price: on application.

**CTF6161**

Front loading cassette deck. 4-track or 2-channel. Electronic controlled DC motor. Rec/PB head (permalloy solid). Erase head

★ Indicates entry is illustrated



Sansui SC737



Sanyo RD4600



Sansui SC737



Sanyo RD4250

(ferrite). Recording system: AC bias (85kHz). Erase system: AC push pull. FR: (chrome) 30Hz-16kHz. S/N ratio: (Dolby on) 62.5dB. W and F: <0.12% WRMS. 2-step bias. 2-step equaliser. Full auto-stop mechanism. Price: on application.

#### CTF2121

Front loading cassette deck to match Pioneer SA 5300 and SA 6300 amplifiers. With Dolby system. Further details and price on application.

#### CTF9191

Front loading cassette deck. Electronic touch controls. Dolby system. Further details and price on application.

#### ■ PYE

Pye Radio & Television Ltd,  
St Andrews Road, Cambridge CB4 1DS.  
Tel: Cambridge 58985.

#### Model 9145

Stereo cassette deck. W and F: 0.35% DIN. FR: 80Hz-10kHz within 6dB. Inputs: mic radio, record player, tape recorder. Supplied complete with blank cassette, stereo microphone, connecting lead, cassette library rack. DNL noise reduction. Price: on application.

#### Model 9147

Stereo cassette deck. W and F: less than 0.2% (DIN 45 511). Fitted with DNL noise reduction. FR: 50Hz-11kHz  $\pm$ 6dB (Ferric

oxide tape) 50Hz-14kHz  $\pm$ 6dB DIN (CrO<sub>2</sub> tape). Size: 3.25 x 14.5 x 9.375in. Fitted with automatic CrO<sub>2</sub> switching operated by cassette. CrO<sub>2</sub> indicator lamp. Twin VU meters. Price: on application.

#### Model 9148

Stereo cassette deck. W and F: better than 0.2% DIN. Fitted with DNL noise reduction. FR: 50Hz-11kHz (Ferric oxide tape), 50Hz-14kHz (CrO<sub>2</sub> tape) DIN. Automatic switch for CrO<sub>2</sub>. Inputs: mic, radio, record player. Slider record controls. Two VU meters. Meets the DIN Hi-Fi standard. Price: on application.

#### ■ SANSUI

Vernitron Ltd, Thornhill,  
Southampton SO9 5QF.  
Tel: Southampton 444811.

#### SC636

Stereo cassette tape deck. Twin VU meters. Facility for left/right and centre mic mixing. Has chrome standard and Dolby facility, M/C ferrite head. Input sensitivity: mic 0.5mV 600 ohms to 10K, line 70mV 100K. Output level: line 0.56V. FR: 30Hz-13kHz (standard tape), 30Hz-16kHz (chromium dioxide tape). Size: 408 x 118 x 295mm. Price: £137.02 (plus VAT).

#### SC737 ★

Stereo cassette tape deck. Twin VU meters. Facility for left/right and centre mic mixing. Has chrome standard and Dolby facility. M/C

ferrite head. Input sensitivity: mic 0.5mV 600 ohms to 10K, line 70mV 100K. Output level: 0.56V. FR: 30Hz-13kHz (standard tape), 30Hz-16kHz (chromium dioxide tape). Size: 464 × 121 × 294mm. Price: £152.57 (plus VAT).

#### ■ SANYO

Sanyo Marubeni (UK) Ltd. Sanyo House, Bushey Mill Lane, Watford, Herts WD2 4UQ. Tel: Watford 30421.

#### RD4300X

Stereo cassette deck with Dolby system. No details of specification available as this edition of the Year Book closed for press. Price: £129.75 (including VAT).

#### RD4530

Stereo cassette deck. Fitted with DNL and CrO<sub>2</sub> switch. No other details available at time of going to press. Price £74.75 (including VAT).

#### RD4600 ★

Cassette tape deck with switchable Dolby noise suppression circuit. For recording and playback through a hi-fi system. Near perfect speed accuracy is obtained with direct drive from a saturable magnetic core type ultra low-speed DC brushless motor. Separate left/right adjustments for input and output levels, 3-position tape selector switch for chrome, low noise and normal tapes, super ferrite heads. Auto-stop and auto-return rewinds tape to original position, auto repeat gives continuous music. Input select switch and tilt-up panel with two VU meters. Memory rewind system. FR: 30Hz-16kHz on CrO<sub>2</sub>. W and F: 0.06% RMS. Price: £255.95 (including VAT).

#### RD4250 ★

Dolby cassette deck incorporating a super ferrite head to provide a flat frequency response with negligible wear when using any kind of tape. For hiss-free recording and playback a Dolby suppression is incorporated. Servo controlled drive mechanism assures almost perfect speed accuracy. Other facilities include VU recording level meters, tape counter and eject button with seven control buttons including cueing and pause function in a key board arrangement. Auto-stop facility, sliding adjustable recording levels that provide optimum recording with standard, high-energy cobalt or CrO<sub>2</sub> tape. Finish: teak and brushed aluminium. Price: £126.95 (including VAT).

#### ■ SHARP

Sharp Electronics (UK) Ltd. Sharp House, 107 Hulme Hall Lane, Manchester, M10 8HL. Tel: 061-205 7321.



Sharp RT-480-H

#### RT-480-H ★

Stereo cassette deck. FR: 25Hz-14kHz (standard tape), 20Hz-17kHz (CrO<sub>2</sub> tape). S/N: 56dB (with Dolby). Dolby noise reduction fitted. CrO<sub>2</sub> switch, dual VU meters. Motor: 4-pole synchronous hysteresis motor. Features and automatic programme finder that senses the blank sections between recordings and stops fast forward or rewind when switched in. Price: £113.59 (plus VAT).

#### RT-442H

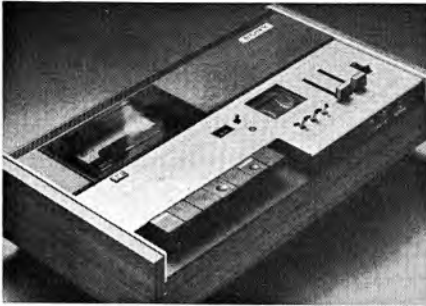
4-track stereo cassette deck. FR: 30Hz-12kHz. S/N ratio: 50dB. Dual VU meters. AC hysteresis synchronous motor. Advanced noise suppressor circuit. Price: £68.18 (plus VAT).

#### ■ SONY

Sony (UK) Ltd. Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

#### TC131SD

Stereo cassette deck. Recording system: 4-track, 2-channel, stereo and 2-track monaural. Speed: 1½i/s. Bias frequency: 85kHz approx. S/N ratio: (normal tape) 52dB, (CrO<sub>2</sub> tape) 54dB. With Dolby "in" improvement: 5dB at 1kHz, 10dB above 5kHz. FR: (normal tape) 40Hz-13kHz -15dB, (CrO<sub>2</sub> tape) 40Hz-15kHz. THD: less than 2.5%. Crosstalk: (between tracks) 60dB. W and F: 0.22% WRMS. Inputs: mic low -72dB (0.2mV), line 100K -22dB (0.06V), DIN less than 10K. Outputs: line 10K 0dB (0.775mV) with 10K load, headphones 8 ohms -28dB, DIN 50K. Mains: 110, 127, 220, 240V AC 50/60Hz. Size: 387 × 95 × 232mm (excluding projecting parts). Weight: 4.5kg. Price: £97.18 (plus VAT).



Sony TC 134SD



Sony TC 138SD

#### TC134SD ★

Stereo cassette deck. Recording system: 4-track, 2-channel stereo and 2-track monaural. Tape speed:  $1\frac{1}{2}$ i/s. Bias frequency: 85kHz approx. S/N ratio: (normal tape) 49dB (Dolby "in" improvement), 5dB at 1kHz, 10dB above 5kHz. FR: (normal tape) 30Hz-15kHz -15dB, (CrO<sub>2</sub> tape) 30Hz-17kHz -15dB. THD: less than 2.5%. W and F: 0.2% WRMS. Inputs: mic low -72dB (0.2mV), line 560K -22dB (0.06mV), Rec/PB 3.3K -33dB. Outputs: line 100K 0dB (0.775V), headphone 8 ohms, rec/PB 8.2K -1dB. Mains: 110, 127 220 and 240V AC 50/60Hz. Size: 412 × 115 × 223mm including projecting parts. Weight: 5.3kg. Price: £106.43 (plus VAT).

#### TC135SD ★

4-track, 2-channel cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.12% WRMS. S/N ratio: 53dB (Fe Cr<sub>1</sub> CrO<sub>2</sub>), 46dB (Fe Cr DIN). FR: 50Hz-13kHz ±3dB (CrO<sub>2</sub>), 40Hz-10kHz (normal). THD: 2.2%. Inputs: mic low 0.2mV (-72dB), line 100K 6mV (-22dB), DIN 10K. Outputs: line 10K 435mV, DIN 50K 435mV. Headphone: 8 ohms. Motor: DC servo controlled. Mains: 110, 127, 220, 240V AC 50/60Hz. Power consumption: 7W. Size:  $15\frac{1}{8} \times 4\frac{1}{4} \times 9\frac{3}{8}$ in. Weight: 8.3lb. Price: on application.

#### TC136SD

4-track, 2-channel cassette tape deck. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.1% WRMS. S/N ratio: 52dB (normal), 54dB (Fe Cr, CrO<sub>2</sub>). FR: 30Hz-14kHz (normal), 30Hz-16kHz (Fe Cr). THD: 2.0%. Inputs: mic low 0.2mV (-72dB), line 100K 6mV (-22dB), line 10K. Outputs: line 10K 435mV, DIN 50K 435mV. Headphone: 8 ohms. Motor: DC servo controlled. Mains: 240V AC 50/60Hz. Power consumption: 8W. Size: 386 × 126 × 140mm. Weight: 4.2kg. Price: on application.

#### TC138SD ★

4-track, 2-channel cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.07% WRMS. S/N ratio: 48dB DIN (normal tape), 55dB (Fe Cr, CrO<sub>2</sub> tape). With Dolby "in" improvement: 5dB at 1kHz, 10dB above 5kHz. THD: less than 1.7%. FR: 20Hz-15kHz -15dB (normal tape), 20Hz-17kHz -15dB (CrO<sub>2</sub> tape). Inputs: mic low -72dB (0.2mV), line 100K -22dB (60mV), DIN 10K. Outputs: line more than 10K 0dB (775mV) at 100K, DIN 50K. Headphones: 8 ohms. Mains: 110, 127, 220, 240V AC 50/60Hz. Size: 411 × 138 × 294mm including projecting parts. Weight: 7kg. Price: £157.36 (plus VAT).

#### TC161SD

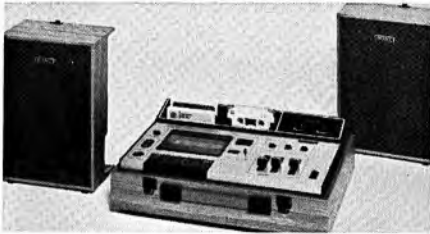
4-track, 2-channel, stereo and 2-track monaural cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. Bias frequency: 85kHz approx. S/N ratio: (normal tape) 49dB. (Dolby "in" improvement) 5dB at 1kHz, 10dB above 5kHz. FR: (normal tape) 20Hz-15kHz -15dB, (CrO<sub>2</sub> tape) 20Hz-17kHz %15dB. THD: less than 2%. W and F: 0.1% WRMS. Inputs: mic low -72dB (0.2mV), line 100K -22dB (0.06mV), Rec/PB 3.7K -33dB (0.022V). Outputs: line 100K 0dB (0.775V), headphone 8 ohms -1dB, rec/PB 7K. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 400 × 127 × 276mm including projecting parts. Price: £138.84 (plus VAT).

#### TC146A

4-track, 2-channel, stereo and 2-track monaural cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. Bias frequency: 85kHz approx. S/N ratio: (with normal tape) 45dB. FR: 50Hz-10kHz. THD: less than 2.5%. W and F: 0.32% WRMS. Power output: 1.0W. Speaker: 4in diameter. Inputs: mic low -72dB, line 560K -22dB (0.05V), rec/PB 2.2K. Outputs: line 10K 0dB, monitor out 8 ohm earpiece level 0dB at 10K, headphone 8 ohms, rec/PB 0.4K. Mains: 240V AC 50Hz. Size: 284 × 66 × 217mm including projecting parts. Weight: 2.8kg. Price: £64.77 (plus VAT).



Sony TC 153SD



Sony TC 133CS

**TC153SD ★**

4-track, 2-channel cassette deck. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.15% WRMS. S/N ratio: (normal tape) 53dB, (FeCr tape) 55dB. With Dolby "in" improvement: 5dB at 1kHz, 10dB above 5kHz. FR: (normal tape) 30Hz-13kHz, (FeCr tape) 30Hz-15kHz. THD: less than 1.7%. Inputs: mic low -72dB (0.2mV), line 100K -22dB (60mV), DIN 10K. Outputs: line more than 10K 0dB (775mV) at 100K, DIN 50K 0dB (775mV), headphone 8 ohms. Motor: DC servo controlled. Mains: 240V AC 50Hz. Size: 378 × 108 × 238mm including projecting parts. Weight: 5.4kg. Price: £143.47 (plus VAT).

**TC1775D**

Cassette deck. Recording system: AC bias, 105kHz. Track system: 4-track, 2-channel. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.07% NAB ±0.2% DIN. S/N ratio: 53dB (normal), 55dB (special). Dolby "in" improvement: 5dB increase at 1kHz, 10dB increase above 5kHz. FR: 30Hz-13kHz ±3dB (normal), 30Hz-17kHz ±3dB (FeCr), 30Hz-15kHz DIN (normal), 30Hz-18kHz DIN (FeCr). THD: 1.3%. Inputs: mic low 0.2mV (-72dB), line 100K 60mV (-22dB), DIN 10K. Outputs: line 10K 775mV (0dB) at 100K, DIN 50K, headphone 8 ohms -22dB, -32dB switchable BNL. Motor: 6-pole hysteresis synchronous

motor. Head: record, PB and erase heads. Mains: 110, 127, 220 or 240V AC 50/60Hz. Size: 435 × 325 × 155mm including projecting parts. Weight: 10kg. Power consumption: 52W. Price: £305.51 (plus VAT).

**TC209SD**

Cassette deck. Recording system: AC bias, 105kHz. Track system: 4-track, 2-channel, stereo rec/PB. Tape speed:  $1\frac{1}{2}$ i/s. W and F: 0.07% WRMS. S/N ratio: 55dB, FeCr tape, Dolby off. Dolby system: 5dB improvement at 1kHz, 10dB improvement at 5kHz and above. FR: 20Hz-15kHz (normal tape), 20Hz-17kHz (FeCr tape). THD: 2.0%. Mains: 240V AC. Price: on application.

**TC133CS ★**

Cassette recorder. Recording system. 4-track, 2-channel stereo and 2-track monaural. Tape speed:  $1\frac{1}{2}$ i/s. Bias frequency: 85kHz approx. S/N ratio: 50dB (normal tape), 55dB (CrO<sub>2</sub> tape), 60Hz-9kHz DIN (normal tape), 60Hz-11kHz DIN (CrO<sub>2</sub> tape). THD: less than 2.5%. W and F: 0.22% WRMS, ±0.35% DIN. Speaker: 4 $\frac{1}{2}$ in diameter. Inputs: mic low -72dB (0.2mV), line 560K -27dB (0.035V), phono 40K -57dB (11mV), rec/PB 10K -28dB (3.1mV). Outputs: line 10K or more -5dB (0.4V) at 100K, ext. speaker 8 ohms, headphone 8 ohms or 10K, rec/PB 16K 0dB (0.775V). Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 398 × 196 × 311mm including projecting parts. Weight: 8kg. Price: £92.55 (plus VAT).

**CF620**

Cassette recorder. Circuit system: 4-track, 2-channel stereo cassette recorder. FM stereo, FM/AM tuner. FM section: tuning range: VHF 87.5-108MHz. Intermediate frequency: 10.7MHz. Sensitivity: 2.4 $\mu$ V. S/N ratio: 30dB. Selectivity: 35dB at 98MHz. S/N ratio: 65dB. FR: 20Hz-15kHz ±3dB. Stereo separation: 30dB at 400Hz. AM section: tuning range: MW 530-1605kHz. Intermediate frequency: 455kHz. Sensitivity: 48dB/m built-in aerial, 20 $\mu$ V ext aerial. S/N ratio: 50dB. Cassette recorder section: recording system: 4-track, 2-channel, stereo and 2-track monaural. Tape speed:  $1\frac{1}{2}$ i/s. Recording time: 2 hours with C120. Bias frequency: 85kHz approx. FR: 30Hz-12kHz -15dB (normal tape), 30Hz-13kHz -15dB (CrO<sub>2</sub> tape), 60Hz-10kHz DIN (normal tape), 60Hz-11kHz DIN (CrO<sub>2</sub> tape). THD: less than 2.5%. W and F: 0.22% WRMS, ±0.38% DIN. Power output: 6W per channel into 8 ohms. Speaker: 6 $\frac{1}{2}$ in diameter. Inputs: mic low -72dB (0.2mV), line 100K -22dB



★ Indicates entry is illustrated

(0.06V), phono 40K -57dB (1.1mV). Outputs: line 10K or more 0dB (0.775V) at 100K, ext speaker 8 ohms, headphone 8 ohms. Mains: 110, 127, 220, 240V AC 50/60Hz. Power consumption: 30W. Size: 420 × 138 × 311mm including projecting parts. Speaker enclosures 385 × 294 × 159mm. Weight: (deck) 6.5kg, (speaker enclosure) 3.5kg. Price: £161.99 (plus VAT).

#### TC204SD

Cassette tape deck. Recording system: 4-track, 2-channel. Bias frequency: 105kHz. Tape speed: 1 $\frac{1}{2}$ i/s. W and F: 0.1% WRMS,  $\pm$ 0.2% DIN. S/N ratio: 53dB (normal tape), 55dB (FeCr, CrO<sub>2</sub>), 48dB (DIN, FeCr). FR: 40Hz-12kHz  $\pm$ 3dB (normal tape), 40Hz-15kHz  $\pm$ 3dB (CrO<sub>2</sub>), 40Hz-15kHz  $\pm$ 3dB (FeCr), 40Hz-12kHz DIN (normal tape), 40Hz-15kHz DIN (CrO<sub>2</sub>), 40Hz-15kHz DIN (FeCr.) THD: 1.7%. Inputs: mic low 0.2mV (-72dB), line 100K 6mV (-22dB), DIN 10K. Outputs: line more than 10K 775mV at 100K, DIN 50K 775mV, headphone 8 ohms. Motor: DC servo controlled. Mains: 110, 127, 220, 240V AC 50/60Hz. Power consumption: 8W. Size: 430 × 160 × 325mm. Weight: 6.5kg. Price: to be announced.

#### TC117

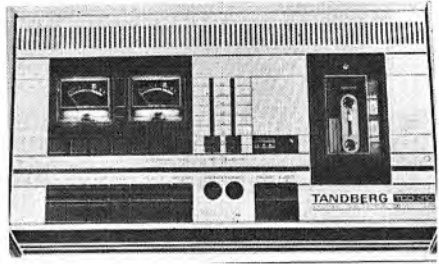
Cassette tape deck. Recording system: 4-track, 2-channel. Bias frequency: 85kHz. Tape speed: 1 $\frac{1}{2}$ i/s. W and F: 0.2% WRMS. S/N ratio: 46dB (FeCr). FR: 40Hz-10kHz -15dB (normal tape), 40Hz-13kHz -15dB (CrO<sub>2</sub> tape), 40Hz-13kHz -15dB (FeCr). THD: 3%. Inputs: mic low 0.2mV (-72dB), line 100K 6mV (-22dB), DIN 10K. Outputs: line more than 10K 435mV at 100K, DIN 50K 700mV, headphones 8 ohms. Motor: DC servo controlled. Mains: 240V AC 50/60Hz. Power consumption: 10W. Size: 362 × 105 × 238mm. Price: to be announced.

#### ■ TANDBERG

Farnell-Tandberg Ltd, Farnell House, 81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds 35111.

#### TC310 ★

Cassette stereo tape deck  $\frac{1}{2}$  track. Speed: 1 $\frac{1}{2}$ i/s. Compact cassette. W and F: 0.2%. S/N: -52dB. FR: 40Hz-12.5kHz (ferric oxide tape), 40Hz-13.5kHz (CrO<sub>2</sub> tape). CrO<sub>2</sub> switch. Replay char: NARTB. Two meter level indicators. Four-digit tape position indicator with PB reset. Inputs: mic 0.1mV at less than 700 ohms, line 40mV 100K, radio 8mV 47K. Outlet: line 0.775V 10K, all DIN sockets. Three motors (synchronous hysteresis for capstan, precision fastwind reel



Tandberg TCD310



Technics RS67US

motors). Size: 16 $\frac{1}{8}$  × 4 $\frac{1}{4}$  × 9 $\frac{1}{2}$ in. Weight: 14 $\frac{1}{2}$ lb. Pause. Monitoring on record. Parallel track replay. Hot-pressed ferrite heads. Dolby noise reduction system. Dual-capstan closed loop tape transport. Electronic controls. Auto-stop. Operates horizontally or vertically. Can be wall mounted. AC mains. Price: £181 (plus VAT).

#### ■ TECHNICS

Building 63, Whitby Road, Trading Estate, Slough. Tel: Slough 34522.

#### RS263AUS

Stereo cassette tape deck with Dolby noise reduction system. Normal or CrO<sub>2</sub> tapes. Auto-stop. Pause button. Memory rewind. Slider and pushbutton controls. Two VU meters. FR: (normal tape) 30Hz-13kHz; (CrO<sub>2</sub> tape) 30Hz-15kHz. Full specifications unobtainable as this edition of the Year Book closed for press. Price: £110.95 (including VAT).

#### RS271US

Stereo cassette tape deck with Dolby system. Normal or CrO<sub>2</sub> tapes. Ten-year guarantee on HFP head. Electronically controlled motor. Memory rewind. Lockable pause control. Photoelectric auto stop. FR: (normal tape) 20Hz-13kHz; (CrO<sub>2</sub> tape) 20Hz-15kHz. Full specifications unobtainable as this edition of

the Year Book closed for press. Price: £159.95 (including VAT).

#### **RS276US**

Stereo cassette tape deck with Dolby system. Normal or CrO<sub>2</sub> tapes. Direct drive motor. Feather-touch controls. Lockable pause control. Memory rewind. Photo-electric auto shut-off. FR: (normal tape) 20Hz-16kHz; (CrO<sub>2</sub> tape) 20Hz-18kHz. Full specifications unobtainable as this edition of the Year Book closed for press. Price: £249.95 (including VAT).

#### **RS279US**

Stereo cassette tape deck with three heads, two motors and the Dolby noise reduction system. Ultra slow running DC motor. HFP heads with 10-year guarantee. Feather-touch electronic pushbuttons. Memory rewind. Photo-electric auto-stop. Electronic pause control. FR: (normal tape) 20Hz-16kHz; (CrO<sub>2</sub> tape) 20Hz-18kHz. Full specifications not obtainable as this edition of the Year Book closed for press. Price: £269.95 (including VAT).

#### **RS610US**

No details available as this edition of the Year Book closed for press. Price: £132.95 (including VAT).

#### **RS67US ★**

No details available as this edition of the Year Book closed for press. Price: £279.95 (including VAT).

### ■ TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough SL1 4AW. Slough 33311.

#### **MC2100 Hi-Fi**

Stereo cassette deck. W and F: better than 0.2%. Fitted with DNL noise reduction. S/N: 52dB (CrO<sub>2</sub> tape), 50dB (Ferric oxide tape). FR: 30Hz-10kHz (Ferric oxide tape), 30Hz-12.5kHz (CrO<sub>2</sub> tape). Automatic selection for CrO<sub>2</sub>. Twin VU meters. Inputs: radio 0.2mV 2.2K, mic 0.2mV 2.2K, phono (cer) 200mV 2.2M. Outputs: radio 0.8V 15K, phones 0.4V 3.3K. One electronic controlled DC motor. Mains: 110-220V AC. Size: 320 × 72 × 270mm. Memory counter. Automatic level control. Price: £98.50 (including VAT).

#### **MC2200 Hi-Fi**

Stereo cassette deck. W and F: better than 0.2%. Fitted with Dolby noise reduction. S/N: better than 56dB (CrO<sub>2</sub> tape), better than 54dB (Ferric oxide tape). FR: 30Hz-12.5kHz (Ferric oxide tape), 30Hz-14kHz (CrO<sub>2</sub> tape). Automatic selector switch for CrO<sub>2</sub>.

Two VU meters. Inputs: radio 0.2mV 2.2K, mic 0.2mV 2.2K. Phono (cer) 200mV 2.2M. Outputs: radio 0.8V 4.7K. Phones 2.5V 400 ohms. One electronic controlled DC motor. Mains: 110-220V AC. Size: 390 × 85 × 300mm. Memory counter. Slider volume control for headphones, and recording. Manual or automatic record level control. Price: £138.50 (including VAT).

#### **Magnetophon C 3300 Hi-Fi**

Stereo cassette tape deck (DIN 45500). Dolby system, featuring integrated circuitry and with selector switch. Electronic CrO<sub>2</sub> tape selector. HNS audio head. Automatic stereo recording level control with manual override. Speech/music change-over switch coupled with radio/mic input selector. Two illuminated peak voltage meters, also operated during playback. Three slide controls for record left/right and headphones volume. Headphone socket. Magnetic movement control with electronic touch buttons. Illuminated signals for record, playback, forward, rewind, stop, pause, Dolby and CrO<sub>2</sub>. FR: 30Hz-15kHz (CrO<sub>2</sub>). S/N: ≥57dB. W and F: ≤ ± 0.18%. Five rocker switches for electrical function selection. Electronically-governed direct-current motor. Three digit memory tape counter (memory can be cut out). Electronic end-of-tape and interference detector with stop feature. Pause button. CrO<sub>2</sub> cassette C60 and stereo transcription lead included. Finish: plastic, black and silver. Size: 17 × 4½ × 12in. Price: £225 (including VAT).

### ■ TELETON

Teleton Electro (UK) Co Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex. Tel: Chelmsford 62442.

#### **Model 50**

Stereo cassette deck. W and F: 0.35% DIN. Fitted with Dolby noise reduction. FR: 40Hz-10kHz (Ferric oxide tape), 40Hz-12.5kHz (CrO<sub>2</sub> tape). Inputs: mic 0.56mV 4K, aux 50mV 47K. Outputs: 0.775V 4.7K. Mains: 90 × 362 × 246mm. Motor: DC electronic stabilised. CrO<sub>2</sub> switch. Twin VU meters. Slider record controls. Price: £62.59 (plus VAT).

### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Greater London. Tel: 01-751 1281.

#### **KT-403D**

Cassette deck. 4-track, 2-channel. Tape speed: 1⅞/s. 4-pole hysteresis synchronous motor. Tape head: recording AC bias, erasing AC, rec/playback. FR: 50Hz-12kHz

★ Indicates entry is illustrated

(chrome). S/N ratio: more than 45dB (chrome). W and F: 0.25% WRMS. Mains: 110, 120, 200, 220, 230, 240V 50/60Hz. Size: 300 × 200 × 105mm. Weight: 2.5kg. Price: on application.

#### PT-415

Cassette deck. 4-track, 2-channel. Tape speed: 1½i/s. 4-pole synchronous motor. Tape head: recording AC bias, erasing AC, rec/playback. FR: 30Hz-15kHz (chrome). S/N ratio: more than 49dB (chrome) W and F: 0.1% WRMS. Mains: 100, 120, 220, 240V 50/60Hz. Size: 425 × 290 × 140mm. Weight: 4.6kg. Price: on application.

#### PT-470

Cassette deck. 4-track, 2-channel. Tape speed: 1½i/s. 4-pole synchronous motor. Tape head: recording AC bias, erasing AC, rec/playback. FR: 40Hz-16kHz (chrome). S/N ratio: more than 58dB (Dolby on); W and F: 0.1% WRMS. Mains: 100, 120, 220, 240V 50/60Hz. Size: 425 × 290 × 140mm. Weight: 6.1kg. Price: on application.

#### PT-490

Cassette deck. 4-track, 2-channel. Tape speed: 1½i/s. 4-pole synchronous motor. Tape head: recording AC bias, erasing AC, rec/playback. FR: 40Hz-16kHz (chrome). S/N ratio: more than 58dB (Dolby on). W and F: 0.1% WRMS. Mains: 100, 120, 220, 240V 50/60Hz. Size: 425 × 290 × 140mm. Weight: 8.2kg. Price: on application.

#### ■ TRIO

B.H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP.  
Tel: 01-205 6441.

#### KX710

Dolby cassette deck. Facilities: Dolby B system, auto tape switching, auto stop, cue



Uher CR210

and review. memory rewind, tape run, indicator, tape counter, auto level control, peak level indicator, Dolby FM/copy, DC servo controlled motor. Tape system: 4-track, 2-channel stereo. Tape speed: 1½i/s. Heads: super ferrite record/playback and erase. W and F: less than 0.13%. FR: 30Hz-16kHz (CrO<sub>2</sub>), 30Hz-13kHz (low noise). Recording system: AC bias 85kHz. Erasing system: AC bias. Input sensitivity: (variable) mic 0.24mV 10K, line 77.5mV 47K. Output voltage: (variable) 490mV 100K. Fast wind/rewind time: less than 82 seconds for C60 cassettes. Power consumption: 23W. Mains: 240V AC. Size: 404 × 124 × 252mm. Weight: 5.3kg. Price: £140 (plus VAT).

#### ■ UHER

Uher (UK) Ltd, 15 Broomhills Estate, Braintree, Essex CM7 7RQ.  
Tel: Braintree 23192.

#### CR210 ★

Portable stereo cassette recorder with auto-reverse. ¼-track, 1½i/s. W and F: 0.2%. Hum and noise: -48dB. (CrO<sub>2</sub>). Inputs: mic 0.2mV-200mV 500 ohms, radio 4mV-550mV 47K, car radio 4mV-550mV 47K, phono 150mV-15V 1M. Outputs: line 500mV 15K, external speakers 2 × 1W 4 ohms. Operation from dry internal batteries, rechargeable

## TELETON CASSETTE DECKS

*Listen Carefully to the Price Ticket*

*Pay for the Quality not the Name . . . .*

# Teleton

TELETON (UK) LTD Teleton House  
Waterhouse Lane, Chelmsford, Essex CM1 3DW  
Chelmsford (0245) 62442. Telex 99338.

accumulator, 110-240V AC mains/charger unit, 6V, 12V and 24V car battery. Automatic reverse and switch off for tape breakage, automatic CrO<sub>2</sub> switching, built-in capacitor mic, switchable automatic level control, tape direction indicator, three-digit counter, illuminated tape view window and photo-sensitive electronic control of tape transport. Price: £280 (plus VAT). Complete with carrying case.

### CG360 ★

Mains operated 3-motor stereo cassette recorder with touch sensitivity digital drive control, and Dolby noise reduction.  $\frac{1}{4}$ -track,  $1\frac{1}{2}$ i/s. W and F: 0.2%. Hum and noise: -56dB (CrO<sub>2</sub> with Dolby). FR: 20Hz-15kHz (CrO<sub>2</sub>), 20Hz-12.5kHz (FeO<sub>2</sub>). All figures to DIN specification 45 500. Inputs: mic 0.2mV-100mV 500 ohms, radio 2mV-600mV 22K, phono 300mV-6V IM, recorder 300mV-6V IM. Outputs: line 0.775V 15K, rerecording 0.775V 15K, headphones 2V 4 ohms, loudspeaker 2 x 10W (sine) with addition of output stage accessory W 319). Digital drive control with 3 motors giving touch sensitive operation and full remote control facility (accessory F 113), automatic CrO<sub>2</sub> switching, automatic reverse and continuous play facilities, separate bass, treble, balance, volume, two record levels (mixed) and record balance controls, optional 10W (sine) per channel output stage (W 319), twin peak programme reading record meters and switchable Dolby noise reduction circuitry. Weight: 7kg. Price: £457.50 (plus VAT).

### ■ WHARFEDALE

Rank Radio International Ltd, Power Road, Chiswick, London W4 5PW.  
Tel: 01-994 6491.

#### WHD 20D

Stereo cassette deck. W and F: 0.25% (DIN). Fitted with Dolby noise reduction. S/N: 54dB. FR: 50Hz-12kHz  $\pm 4$ dB (CrO<sub>2</sub>). Inputs: mic 300mV 1.5K, aux 30mV 100K. Outputs: line 580mV. Size: 97 x 285 x 300mm. CrO<sub>2</sub> switch. Price: £120 (including VAT).

### ■ WOLLENSAK

3M United Kingdom Ltd, 3M House, Wigmore Street, London W1A 1ET.  
Tel: 01-486 5522.

#### 4766

Cassette recorder. Speed: 4.76cm/sec. W and F: typically 0.1% DIN peak weighted. Forward/rewind: typically 45 seconds for C60 cassettes. Inputs: mic 0.15mV 5K, aux (line) 125mV 100K, DIN 1.5mV 10K. Outputs: line



Uher Power output stage for CG360



Uher CG360

with output level control at maximum output level IV at 0 VU tape level, DIN as line, headphones 0.2mV into 8 ohms adjustable. FR: 40-15,000Hz  $\pm 3$ dB. chrome and ferrichrome tape. Record/play: 40-13,000Hz  $\pm 3$ dB. ferric tape reference 0dB at 1kHz. Distortion: typically less than 0.1%. Dolby oscillator: 400Hz for Dolby B system calibration. Twin volume unit meters with separate peak programme indicators. S/N ratio: better than 50dB with ferric tape. Noise reduction: (Dolby on) 10dB at 4kHz and above, 9dB at 2.4kHz, 6dB at 1.2kHz, 3dB at 600Hz. Crosstalk attenuation: better than 65dB. Stereo channel separation: better than 38dB at 1kHz. Stereo channel balance: within 2dB. Bias and erase oscillator: 110kHz  $\pm 5$ kHz. Erase efficiency: better than 70dB 33 transistors, 20 diodes, 2 FETs. Mains: nominal 230V AC 50Hz. Power consumption: less than 25W. Size: 43.8 x 26.04 x 16.5cm. Weight: 7.26kg. Price: £230.56 (plus VAT).

### ■ YAMAHA

Natural Sound Systems, Strathcona Road, North Wembley HA9 8QL.  
Tel: 01-904 0141.

#### TR600

Price and specifications: to be announced.

#### TR800

Price and specifications: to be announced.



**HMV hi-fi**  
**stereo system Model 2488**  
**£384.80** (inc. VAT)

**DECK**

The superb Garrard 86SB single record player. The pickup is the highly sophisticated Shure M75-ED Type 2 with its 18 x 5 micron elliptical diamond stylus (N75-ED Type 2) and fluid camped cueing lever.

**SPEAKERS**

Each unit houses three specialist hi-fi speakers from Goodmans. Two 8" bass speakers and one 1" treble dome radiator.

**Loudspeakers (local)\*** Pressing this button puts you in touch with a glorious 120 watts of music power.

**Balance\*** Provides an electronic means of balance when using loudspeakers (remote) only. (Pressing these two buttons\* simultaneously provides ambiphony with an extra pair of speakers.)

**Loudspeakers (remote) on Rumble Filter Scratch Filter Contour/Linear response Mono - Stereo and interstation muting**

Gives you superb reproduction on mono records and tapes because it switches channels to run in parallel. Releasing it gives you the full depth and beauty of stereo sound when receiving stereo. And a reduction in inter-station noise when tuning the radio in the stereo mode (FM).

**Tape Monitor**

For playing back tapes. The

monitor facility being available for use with a "3 head" machine.

**Pickup**

Switches in the superb Garrard 86-SB high performance record player.

**Ceramic PU and Auxiliary**

To connect the system to other audio equipment. Simply plug into the socket provided and press

**FM Band Selector (FM AFC)**

**MW Band Selector**

**Preset FM Band Selectors**

**Manual Tuning Selector**

Allows you to use the Flywheel Tuner.

**Slide Tone Controls**

Treble and bass

**Volume Left Channel**

**Volume Right Channel**

Separate channel controls enable you to get the exact sound level you want right wherever you sit.

**VHF Preset Tuning Roller**

**Rotary Flywheel Tuner**

Takes you smoothly through the whole length of the waveband.

**Slide Switch (panel)**

Interconnection for FM and AM aerials.

**INDICATORS**

**Stereo Transmission Light**

**Off-Tune and Weak Signal**

**Indicator**

The brightness of its light is linked to the accuracy of the tuning. The more 'on-tune' you are the dimmer it becomes. Eventually it disappears altogether.

**VHF-FM Frequency Meter**

For tuning preset buttons.

**On-Off indicator SOCKETS Stereo Headphone DIN Sockets**

Loudspeakers: local LH, RH; loudspeakers, remote, LH, RH (or backspeakers for ambiphony 4-D); tape record/playback monitor; auxiliary audio input; VHF aerial; AM aerial.

**Optional Extras**

Pair of speakers for 4-D sound. The 4-D system provides you with an entirely new experience. Completely surrounding you in sound. Stereo headphones.

**Appearance**

All three units are veneered in rich teak. The main unit has a black aluminium control panel and black controls. Speakers are elegantly proportioned with deep black acoustic front panels.

**Approximate dimensions**

Main unit: Width 24½", Height 8½", 19½" lid fully open, Depth 16½", 19½" lid fully open. Loudspeakers: Width 13½", Height 22", Depth 10½".

For further information write to Thorn Consumer Electronics Limited, Dept C284 Southbury Road, Enfield, Middlesex EN1 1TJ.

Prices correct at time of preparing for publication.

**HMV**

put quality first

HMV is the registered trademark of HMV Records Ltd.

**If you think the small print's full of quality wait till you hear the Hi-Fi sound**

# Combination Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

### GF2500 Conductor

Stereo amplifier and record deck in shelf cabinet with lift-up tinted plastic lid. Motor unit: Garrad SP25 Mk III. Speeds: 33 $\frac{1}{3}$ , 45, 78rpm. Idler wheel drive. Cartridge: Picking P/A.T. Diamond stylus. Inputs: mag PU 6mV, radio 80mV-IV, tape 250mV-3V. Noise level: (tape and radio inputs) better than 60dB. (PU input) 48dB. Overload capability: 23dB on all inputs. Output: 15W RMS per channel. HD: <0.5% at 15W. Output impedance: 8 ohms. FR: 20Hz-25kHz (40Hz-14kHz  $\pm$  2dB). Headphone socket. Slider volume control. Finish: teak with anodised black and silver control panel. Size: 17 $\frac{1}{2}$   $\times$  7  $\times$  13in. Mains: 240V AC. Price: £71.50 (plus VAT).

### GF3500

Output: 18W RMS per channel. HD: less than 0.1% at 10W. FR: 20Hz-25kHz. Tone controls: bass  $\pm$  12dB at 50Hz, treble  $\pm$  12dB at 10kHz, loudness +8dB at 50Hz, +6dB at 10kHz. Tuning range: FM 87.5-108MHz. Crosstalk: better than 35dB. S/N ratio: better than 60dB. Mains: 240V AC. Cabinet: teak finish. Price: £129 (plus VAT).

## ■ ASA

ASA (UK) Television & Radio Ltd, 31-35 High Street, Shirehampton, Bristol BS11 ODX. Tel: Avonmouth 5035.

### 3704

FM stereo receiver in plinth with four-speed record deck. Motor unit: BSR P128. Speeds: 16 $\frac{2}{3}$ , 33 $\frac{1}{3}$ , 45 and 78rpm. Four-pole motor. 10 $\frac{1}{2}$ in diecast turntable. Wow: less than 0.2%. Flutter: less than 0.06%. Automatic or manual operation of pickup arm. Hydraulic lifting and lowering. Playing weight adjustable 0-6gm.

Cartridge: Shure M75-6. Range: 87.5-104MHz. Sensitivity: better than 2 $\mu$ V for 26dB quieting. Aerial input: 240 ohms balanced. AFC. Variable tuning plus three presets. Quiet tuning facility. IC stereo decoder with auto switching and beacon. Output: 20W RMS per channel. FR: 30Hz-30kHz  $\pm$  1.5dB. HD: <1%. Tone controls: bass +18dB -15dB at 40Hz, treble +14dB -15dB at 10kHz. Rumble and scratch filters. Inputs: mag PU 4mV 47K, crystal PU 70mV 500K, tape play 260mV 500K. Front jack sockets for headphones (automatically mutes speaker outlets). 37 transistors, 15 diodes, one IC, three varicap diodes. Mains: 220-240V 50Hz. Finish: anodised metal front with teak or rosewood cabinet. Size: 20 $\frac{3}{8}$   $\times$  7 $\frac{1}{8}$   $\times$  13 $\frac{1}{2}$ in. Price: on application.

## ■ BEOCENTER

Bang & Olufsen (UK) Ltd, Eastbrook Road, Gloucester GL4 7DE. Tel: Gloucester 21591.

### Beocenter 1400

AM/FM stereo receiver with built-in cassette recorder. Tuning range: FM 87.5-104MHz, LW 2040-857m, MW 578-187m. Variable tuning. Sensitivity: FM <1.8 $\mu$ V, AM: LW <15 $\mu$ V, MW <20 $\mu$ V. Aerial input: 75 ohms coaxial and 300 ohms balanced. Output: 20W RMS. HD: <0.5% at 20W. FR: 20Hz-30kHz  $\pm$  1.5dB. Inputs: mag PU 2.5mV 47K, tape 300mV 100K. Cassette section. Speed: 1 $\frac{1}{2}$ i/s. W and F: 0.35% RMS. S/N ratio: <50dB. FR: 40Hz-12.5kHz. Mains: 110-130 and 220-240V AC 50Hz. Size: 26  $\times$  10 $\frac{1}{2}$   $\times$  3 $\frac{1}{2}$ in. Finish: brushed aluminium fascia with teak or rosewood cabinet. Price: (teak) £198.50 (rosewood) £199.50 (including VAT).

### Beocenter 3500

FM stereo receiver in cabinet with record deck. Motor unit: B & O. Two speeds. 12in grooved aluminium alloy platter. Belt drive. High compliance pickup arm. Cartridge: B & O SP10A, 0.6 thou diamond stylus. Range: FM 87.5-104MHz. Variable tuning plus six presets. AFC. Ratio detector. 'Balanced light' tuning system. Usable sensitivity: 2 $\mu$ V. Aerial input: 75-ohm coaxial. Stereo decoder fitted. Inputs: PU (1) 3mV 47K, PU(2) 200mV-3V 1M, tape 200mV-3V 1M. Output: 40W RMS per channel. Output impedance: 4 ohms. Tone controls: bass  $\pm$  17dB at 50Hz, treble  $\pm$  14dB at 10kHz. Rumble filter: 12dB/octave below 80Hz, scratch filter - 12dB/octave above 4kHz. HD: 0.3% at 1kHz at rated output (both channels driven). FR: 40Hz-20kHz  $\pm$  1.5dB. Mains:

★ Indicates entry is illustrated



Crown SHC 65F

110, 130, 220, 240V AC. Sizes:  $22\frac{7}{8} \times 13\frac{3}{4} \times 5\frac{3}{4}$ in. Finish: brushed aluminium fascia and deck, teak, rosewood or white side panels, hinged dust cover. Price: (teak) £298.50 (rosewood or white) £299.50 (including VAT).

#### Beocenter 1800 ★

FM stereo receiver with built-in record deck. Tuning range 87.5-108MHz. Variable tuning. Sensitivity:  $<2.5\mu\text{V}/75$  ohms IHF. HD:  $<0.5\%$  at full output. Output: 40W RMS per channel. Speakers: 4 ohms. Headphones: max. 10V 200 ohms. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . Motor unit:  $33\frac{1}{2}$  and 45 rpm. Radial pick-up arm with MMC 3000 cartridge. Fully automatic. Rumble:  $>60\text{dB}$  (DIN). Wow and flutter:  $<\pm 0.12\%$  DIN. Asynchronous motor. Idler wheel and belt drive. 12in grooved aluminium alloy platter. Hinged translucent dust cover. Finish: brushed aluminium deck, black anodised fascia. Size:  $19\frac{1}{2} \times 4\frac{3}{4} \times 14\frac{1}{2}$ in. Price: (teak) £198.50; (rosewood or white) £199.50. Both prices include VAT.

#### ■ BUSH-ARENA

Rank Radio International Ltd, PO Box 596, Power Road, London W4 5PW.  
Tel: 01-994 6491.

#### BS3031

Radio/record player system with Garrard deck and magnetic cartridge. Cueing device. Pre-set tracking weight. AM/FM radio.

Flywheel tuning. Tuning meter. Switchable AFC. Stereo beacon. Output: 10W RMS per channel. HD: less than 1%. Separate bass and treble controls. DIN socket for cassettes and a headphone socket. Separate left and right volume controls. Acoustically-transparent foam front loudspeakers each with separate bass and HF drive units. Finish: teak or white. Price: to be announced.

#### ■ CROWN

Crown Radio Co Ltd, Russell Gardens, Wickford, Essex SS11 8RT.  
Tel: Wickford 63414.

#### SM110

AM/FM receiver in cabinet with record deck. Range: FM 88-108MHz, MW 182-560m. Variable tuning. AFC. Stereo decoder fitted. Controls: bass, treble, low filter, high filter, volume, input selector, balance, main on/off, tuning. Output: 7.5W RMS per channel. Output impedance: 8 ohms. FR: 20Hz-25kHz. HD:  $<1\%$  at 6W output. Finish: walnut veneer with silver trim. Price: £107.89 (plus VAT).

#### SHC65F ★

AM/FM receiver in cabinet with cassette recorder and record deck. Range: FM 88-108MHz, MW 182-560m. Variable tuning. AFC. Stereo decoder fitted. 27 transistors, one FET, six ICs. Controls: tuning AFC on/off, muting, waveband selector, input function, high filter, loudness, bass, treble, left-channel record level, right-channel record level, balance, volume. Output: 7.5W RMS per channel. Output impedance: 8 ohms. FR: 50Hz-20kHz. Record deck: Garrard SP25 Mk III or Garrard 2025T. Finish: walnut veneer with black trim. Price: £244.43 (plus VAT).

#### ■ DYNATRON

Dynatron Radio Ltd, Ditton Walk, Cambridge CB5 8QD.  
Tel: Teversham 2781.

#### HFC 202 Mazurka

Integrated stereo tuner-amplifier (top presentation) and record player unit in contemporary styled cabinet. Motor unit: Garrard 86SB. Cartridge: Shure M75.6S. Power output: 20W RMS per channel. Bands: LW, MW, stereo VHF/FM with 6 pre-sets on FM. Controls: volume, balance, bass, treble, mains, on/off; contour filter, MPX filter, FM mute circuit, AFC, stereo/mono mode, input selectors for: tape, disc, radio bands; quadraphonic sound 4-channel system with selector switch and rear speaker level switch. THD: 0.3% at  $-\frac{1}{2}\text{dB}$  below rated maximum output. FR: 20Hz-30kHz, linear inputs. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz; treble  $+12\text{dB}$  at 10kHz,  $-10\text{dB}$  at 10kHz. Input sensitivity:



Dynatron RG95 (front), HFC203 (centre), HFC204 (rear) and speakers LS5128 (front) and LS5228.



Dynatron Empress

tape replay 180mV, disc 3mV (RIAA), radio, 30% mod. for max. output. Tape output: 180mV 22K. Headphones: 8 ohms, 0.5W max. Bands: AM-MW 1630 — 525kHz; LW 285-150kHz; FM 87.5-104MHz, 6 pre-sets. MPX channel separation: 40dB at 1kHz. S/N ratio: tape -60dB, disc -60dB, FM -30dB with 1 $\mu$ V input; AM -20dB with 300 $\mu$ V/m input average. VHF AM rejection: 55dB with 200 $\mu$ V input. MPX stereo residual pilot tone output: -40dB rel. 100% mod. Finish: teak veneered/brown lacquer cabinet with bronze tinted acrylic plastics lid. Size: 626 × 400 × 178mm. Price: to be announced.

#### HFC 203 Buckingham Suite ★

Integrated stereo tuner-amplifier and record player unit housed in a Queen Anne style period cabinet. Specification as for HFC 202Mazurka but motor unit Garrard SP 25 Mk IV. Cartridge: Shure M756S. Finish: walnut using selected burr veneers. Size: 978 × 432 × 640mm. Price: to be announced.



Dynatron Carlton



Dynatron RG94 (rear), HFC209 (left), speaker LS1428 (on stand) and speaker LS3038

#### HFC 204 Carlton Suite ★

As HFC 203 but in Regency style cabinet finished in flame mahogany veneers. Size as HFC 203. Price: to be announced.

#### HFC 205 Buckingham Music Centre

Integrated tuner-amplifier and record player unit, as HFC 203 plus stereo cassette deck. Tape deck: Dynatron CR 102-D. Tape deck specification as Dynatron Model CP2. Size and finish: as HFC 203. Price: to be announced.

#### HFC 206 Carlton Music Centre ★

As HFC 204 plus stereo cassette tape deck. Tape Deck: Dynatron Model CR 102-D. Tape deck specification: as Dynatron Model CP2. Size and finish: as HFC 204. Price: to be announced.

#### HFC 208 The Music Chest

Integrated stereo tuner-amplifier and record player unit housed in an attractive cabinet styled as a coin collector's chest. Specification as for HFC 203. Finish: walnut using selected burr veneers. Size: 660 × 457 × 205mm. Price: to be announced.



★ Indicates entry is illustrated

### HFC 209 Cantata Music Centre

Integrated stereo tuner/amplifier (top presentation), record player and stereo cassette tape deck housed in compact contemporary style cabinet. Specification as HFC 205/206. Finish: teak veneers. Size: 638 × 400 × 205mm. Price: to be announced.

### HFC 105 Specialist 105 ★

Integrated stereo tuner/amplifier and record player unit housed in contemporary styled cabinet. Motor unit: Goldring Lenco GL 78. Cartridge: Shure M55E. Power output: 50W RMS per channel. Bands: LS, MW, stereo VHF/FM, manual tuning. Controls: volume, bass, treble, balance, mains, on/off, MPX filter, AFC/FM mute circuit, scratch filter,

rumble filter, loudness filter, input selectors for: tape, tape monitor, disc, radio, bands, mono/stereo mode, A/B speaker circuits. Quadraphonic sound 4-channel system with selector switch. Stereo headphone socket. Tuning meter (all bands). THD: 0.3% at -RdB max. output. FR: 20Hz-20kHz ± 1.5dB. Tone controls: Bass ± 10dB at 100Hz, treble ± 12dB at 10kHz, -10dB at 10kHz. Filters: rumble -20dB at 20Hz steep slope from 50Hz, scratch -20dB at 20kHz steep slope from 5kHz, loudness +14dB at 30Hz = 4dB at 10kHz (Vol -30dB or below). Input sensitivity: -2dB ref max. output at 1kHz, tape 165mV (6V max.) 230K, radio: 20% mod. Disc: 2.4mV (100mV max) 47K. Tape output: socket 1 165mV via 22K (6V max at 1kHz); socket 2 165V via 100K (6V max at 1kHz). Headphones: 8 ohms nominal. Channel separation: 40dB -10kHz, inputs terminated. Damping factor: 50 into 8 ohms (relative). Bands: AM, MW 525-1630kHz, LW 150-280kHz VHF/FM 87.5-104MHz. Aerials: FM socket for 75 ohms unbalanced. AM internal ferrite rod, socket for external long wire. MPX channel separation: 40dB at 1kHz. S/N ratio: tape -66dB, disc -60dB, main amp (vol min) -80dB, FM 30dB with 1μV input. AM 20dB with 300μV/m input average, VHF/AM rejection: 55dB with 200μV input. MPX stereo residual pilot tone output: 40dB rel. 100% mod. Finish: teak veneered cabinet with black anodised control panel and bronze tinted acrylic plastics lid. Size: 542 × 412 × 210mm. Price: to be announced.



Dynatron Beaufort



Dynatron HFC105 100 Series

### CP2 The Jewel Case

Stereo cassette tape deck housed in period style cabinet with cassette storage space. Tape deck unit: Dynatron CR 102-D. Features: DNL (switchable); auto chrome tape switching; twin VU type recording level meters; twin recording level controls. Controls: piano key operation of record, rewind, start, fast forward, pause, stop/eject. Wow and flutter: 0.2%. S/N typically: 50dB weighted dependant on taps used; DNL operating. Overall distortion: 2.5% relative to 100% modulation. Channel separation: 40dB at 1kHz. Inputs: mic 0.1mV 1K, line I/P 100mV IM. Output: 0.8V nominal (100% SRL). Mains: 240V AC 50Hz. Power consumption: 7.8W. Finish: walnut using selected burr veneers. Size: 363 × 265 × 142mm. Price: to be announced.

### CP3

Stereo cassette deck housed in contemporary style cabinet with acrylic plastics lid and cassette storage space. Specifications as CP2.



Goldring ST8000

Finish: teak veneers. Size: 328 × 242 × 130mm. Price: to be announced.

### ■ GOLDRING

Goldring Ltd, 10 Bayford Street, Hackney, London E8 3SE. Tel: 01-985 1152.

#### ST8000 ★

Combination unit comprising FM tuner, amplifier and turntable. Turntable: Goldring GL 78 fitted with Goldring G800E cartridge. FM: tuner section. Band: 87.5-105MHz. Sensitivity:  $1.8\mu\text{V}$  for 26dB (at 40kHz deviation). Limiting:  $4.6\mu\text{V}$ . IF: 455kHz. S/N: better than 62dB at  $100\mu\text{V}$ . 40kHz deviation. Amplifier section. Output power: 2 × 40W 4 ohms. Distortion: less than 0.15% at rated power. Power bandwidth: 20Hz-30kHz at 20W 1% distortion factor. Inputs: tape 200mV 270K, phono 4mV 47K. S/N: better than 60dB (main amp), better than 55dB with pre-amplifier. Price: £225 (plus VAT).

### ■ GOODMAN'S

Goodmans Loudspeakers Ltd, Downley Road, Havant, Hampshire PO9 2NL. Tel: Havant 6344.

#### Module 90 Compact ★

AM/FM stereo receiver with transcription record player. Facilities: two stereo headphone sockets, stereo beacon, tuning indicator, two output meters. Amplifier: 45W per channel into 4 ohms, 30W per channel into 8 ohms. THD: <0.1% at 35W into 4 ohms. FR: 25Hz-30kHz, -3dB. S/N: (Tape input) -75dB. Radio bands: MW 525-1605kHz, FM 87.5-108MHz variable, 87.5-101MHz on 4 presets. FM sensitivity: typically  $2\mu\text{V}$  into 240 ohms or  $1\mu\text{V}$  into 75 ohms, for 30dB S/N with



Goodmans Module 90



Goodmans Model 1-10z Compact

75kHz deviation. THD: typically 0.5% for 75kHz deviation. Transcription unit. Garrard Zero 100SB; W and F: 0.12% peak, rumble -63dB DIN. Cartridge: Shure M93E, elliptical stylus. Mains: 122V or 220-245V 50-60Hz. Size:  $24\frac{1}{2} \times 15\frac{3}{4} \times 8\frac{1}{2}$ in. Price: £232.49 (plus VAT); (white) £237.01 (plus VAT).

#### Model 1-10z Compact ★

AM/FM stereo receiver in case with transcription record player. Motor unit: Garrard Zero-100SB. Speeds:  $33\frac{1}{3}$  and 45 rpm. Die-cast zinc turntable, 292.1mm diameter. Belt drive. Tangential tracking pickup. Cartridge: Shure M93E magnetic. Stylus: diamond, elliptical  $0.7 \times 0.4$ thou. Tuning range: FM 87.5-108MHz, MW 187-572m, LW 1130-2000m, SW 48-51m. Variable tuning. Switched AFC. Signal strength meter. Usable sensitivity: FM  $1\mu\text{V}$  in 75 ohms/ $2\mu\text{V}$  into 24 ohms, AM  $20\mu\text{V}$  MW and SW,  $40\mu\text{V}$  LW. Stereo decoder included, with indicator

★ Indicates entry is illustrated

beacon. 89 semi-conductors: Inputs: ceramic PU 200mV 1M, tape play 200mV 100K. Noise level: mag PU -70dB, other inputs -80dB. Overload capability: 30dB. Output: 50W RMS per channel into 4 ohms. Controls: bass, treble, volume, balance, plus 17 tab controls. HD: <0.01% at 30W output, <0.1% at any power up to rated maximum. FR: 20Hz-20kHz  $\pm$ 1dB at rated power. Mains: 115-125V or 200-250V AC 50/60Hz. Suitable for use on Goodmans CS2 stand. Price: (teak or walnut) £249.09 (plus VAT); (white) £254.19 (plus VAT).

## ■ GRUNDIG

Grundig (Great Britain) Ltd, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

### Studio 2040a ★

4-channel integrated tuner/amplifier/transcription unit providing a total output of 80W music power. Tuning range: FM 87.5-108MHz, LW 145-350kHz, AM 510-1620kHz, SW 5.4-16.2Mhz. 7 pre-set buttons. Four-channel amplifier has built in matrix IC decoder. Slider switches for bass, treble. Light action switches for off, FM, SW, MW, LW, tape recorder, phono, mono/stereo, AFC, 7 pre-set VHF stations, VHF manual tuning, stereo headphones and quadro/stereo. Tuning meter. Dual 1228 transcription auto changer is fitted with a Shure M91 MG-D magnetic cartridge. Variable bias compensation is provided and the tracking weight can be adjusted from 0.5-5.5gm. Complete with stand. Price: on application.

### Studio 1600 ★

System comprises stereo tuner/amplifier and Dual 1214 transcription auto changer fitted with Dual DMS200 magnetic cartridge. Tuning range: FM 87.5-108MHz, LW 145-350kHz, AM 510-1620kHz, SW 5.9-16.2MHz. Slider controls for volume, bass, treble, stereo balance and 4D balance, and waveband selection, phono and tape recorder is by square cut block buttons. Output: 20W per channel, music power. Stereo beacon. Dual 1214 transcription auto changer has three speeds (33, 45, 78) and a pitch control. A dampened cueing device is fitted and the tracking weight can be adjusted from 0-5.5gm. Mains: 110, 130, 220, 240V 50Hz. Power consumption: 70W max. Size: 54 x 18 x 37cm. Complete with stand. Price: on application.

## ■ HACKER

Hacker Radio Ltd, Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.

## Centurion GAR550

Receiver in cabinet with record deck. FM/VHF radio covering 87.5-101MHz. Usable sensitivity: 5 $\mu$ V for 30dB S/N ratio (30kHz deviation). Station markers. AFC. Garrard SP25 Mk IV fitted with Goldring G850 magnetic pickup and diamond stylus.



Grundig Studio 2040A



Grundig Studio 1600

Inputs: PU 3mV equalised, 30dB overload capability; radio 50mV 47K, infinite overload capability; aux/tape 50mV 47K, infinite overload capability. Output: 14W RMS per channel into 8 ohms. 10W RMS per channel into 15 ohms. Controls: bass +18dB -14dB at 40Hz, treble +18dB -20dB at 15kHz, low-pass filter -3dB at 7kHz, treble/bass, on/off, balance, volume, pushbutton selection for scratch filter, gram, aux/tape, radio and mono/stereo. HD: better than 0.2% at 8 ohms, better than 0.1% at 15 ohms. FR: 25Hz-30kHz  $\pm$ 3dB. Inbuilt rumble filter operates at below 25Hz. H and N: better than 60dB down on all inputs. Outlet for tape recorder of 15mV at 25K. Headphone socket with automatic muting of speakers. Pushbutton operated stereo decoder. Separation: 35dB at 1kHz, 26dB at 5kHz. Finish: teak. Hinged lid and black front panel or semi-transparent lid and black front panel. Mains: 200-245V 50Hz. Size: 18 x 8½ x 16in. Suggested speakers: Hacker LS1100 Three-way system with response 30Hz-18kHz. Size: 13¼ x 20¼ x 11¼in. Prices: GAR550 and 2 x LS1100 speakers £203 (plus VAT); GAR550 (unit only) £125 (plus VAT).

**NOTE:** Suffix 'P' in Hacker model numbers denotes a semi-transparent acrylic lid (e.g. GAR 550/P).

## ■ KLINGER

Klinger Controls Ltd, Spencer Court,  
7 Chalcot Road, London NW1 8LU.  
Tel: 01-586 2922.

### KC360

Integrated stereo amplifier with record deck, 21 transistors and seven diodes. Motor unit: Garrard SP25 Mk IV. Cartridge: Shure M44E. Diamond Stylus. Inputs: radio 100mV 10K, tape 100mV 10K. Noise level: 66dB. Overload capability: 30dB. Output: 12W RMS per channel. Tone controls: bass  $\pm$ 15dB, treble  $\pm$ 15dB. Full-range balance control. HD: 0.15% 1W. FR: 30Hz-50kHz  $\pm$ 2dB. Stereo headphone socket. Stabilised power supply. Size: 16½ x 8¼ x 14in. Price: £69 (plus VAT).

### KC94

FM stereo receiver in cabinet with record deck. Motor unit: Garrard SP25 Mk IV. Three speeds. Idler wheel drive. Cartridge: Shure M44E. Diamond stylus. Range: 87.5-108MHz. Five preset stations. Switchable AFC. Usable sensitivity: 2µV. Aerial input: coaxial and balanced. Outlet for tape: 100mV. Stereo decoder included. Inputs: tape 50mV 220K, aux (1) 100mV 470K, aux (2) 0.15mV 30



Klinger KC95

ohms. Noise level: 70dB. Overload capability: 30dB. Output: 25W RMS per channel. Output impedance: 8 ohms. Tone controls: bass  $\pm$ 15dB, treble  $\pm$ 15dB, scratch filter 18dB/octave from 8kHz, rumble 12dB/octave from 80Hz. Loudness control. A/B monitor switch. HD: 0.1% at 20W. FR: 25Hz-35kHz 2dB at 20W. Switching for two pairs of speakers. Two stereo headphone sockets. Stabilised power supply. Size: 21 x 8 x 15½in. Mains: 110-120V, 220-240V AC. Finish: teak cabinet with folding lid. Price: £141 (plus VAT).

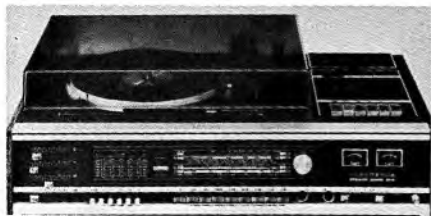
### KC95 ★

Integrated stereo amplifier with record deck. Motor unit: BSR P144. Cartridge: Shure M44E. Diamond stylus. 28 transistor circuit. Inputs: radio 50mV, 220K, tape 50mV 220K, aux 100mV 470K, mic 0.15mV 30 ohms. Noise level: 70dB. Overload capability: 30dB. Output: 25W RMS per channel. Tape outlet: 100mV. Tone controls: bass  $\pm$ 15dB, treble  $\pm$ 15dB, scratch filter 18dB/octave from 8Hz, rumble filter 12dB/octave from 80Hz. Loudness control. A/B monitor switch. HD: 0.1% up to 20W. Output impedance: 8 ohms. FR: 35Hz-35kHz  $\pm$ 2dB at 20W. Two stereo headphone sockets. Sockets and switches for two sets of speakers. Stabilised power supply. Mains: 110-120V, 220-240V-AC. Size: 21 x 8 x 15½in. Finish: teak with transparent folding lid. Price: £105 (plus VAT).

### KC350

Integrated stereo amplifier with record deck. Motor unit: choice of Garrard 6300 or SP25 Mk IV. Cartridge: Garrard KS40A or Sonotone 3509. Diamond stylus. 14 transistor circuit. Inputs: radio 250mV 220K, tape 250mV 220K. Noise level: 65dB. Overload capability: 26dB. Output: 8W RMS per channel. Tape outlet: 200mV. Tone controls: bass +15dB -10dB, treble +15dB -10dB.

★ Indicates entry is illustrated



Nordmende 5006 SCP



Philips RH832

Full-range balance control. HD: < 1% at 8W. Output impedance: 8 ohms. FR: 40Hz-20kHz  $\pm 1.5$ dB at 1W. Stereo headphone socket. Mains: 240V AC (other voltages to order). Size:  $16\frac{1}{2} \times 8 \times 14$ in. Finish: teak cabinet with silver trim and transparent dust cover. Price: (with 6300) £51 (plus VAT).

#### ■ NORDMENDE

Vessco Vision & Radio Ltd,  
Unit 4, Blackwater Way,  
Ash Road, Aldershot, Hants.  
Tel: Aldershot 312661.

#### 5006-SCP ★

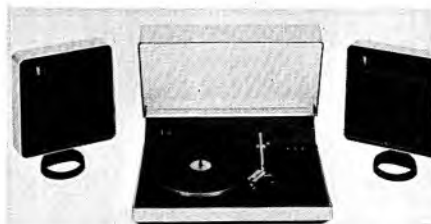
Combination unit comprising receiver, turntable and cassette recorder. Receiver: 4-wavebands, 6AM and 9FM circuits, 5 preset FM stations. Built in AM/FM aerial, AFC, AM creep adjustment. Peak output  $2 \times 14$ W, four loudspeaker connections, headphone socket. Two VU meters for recording and a tuning indicator. Record deck. PE3010, three speeds, 33 $\frac{1}{3}$ , 45, 78 with five speed control. Cartridge: CD5 650 ceramic, sapphire stylus. Price: £228.70 (plus VAT).

#### 5006-SP

Combination unit as 5006-SCP but with record player and receiver. Price: £161.11 (plus VAT).



Philips RH837



Philips GF907

#### ■ PHILIPS

Philips Electrical Ltd, Century House,  
Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01-437 7777,

#### RH832 ★

Quadraphonic tuner / pre-amplifier / record player combination. Range: FM 87.5-104MHz, MW 520-1605kHz, LW 150-345 kHz, SW 5.95-17.78MHz. 109 transistors, 16 diodes and four ICs. Record player: GCO12-12 (two speed). Pickup cartridge: GP 422, suitable for 4-channel discrete reproduction. FR: 15Hz-30kHz +0.5dB., -3dB. Distortion: < 0.1%. Tone controls: bass +15 to -15dB at 50Hz, treble +12 to -15dB at 10kHz. Power consumption: 32W. Mains: 110, 127, 220 and 240V AC. Finish: metal, with silver top-deck and black front. Speakers: Philips RH532MFB. Price: (complete system) £625 (plus VAT).

#### GF907 ★

Record player/amplifier combination. With stereo 4 surround sound facility. Output: 8.5W

RMS per channel  $\pm 1$ dB. Distortion:  $\leq 1\%$ . FR: 30Hz-30kHz  $\pm 2$ dB. Power bandwidth: 60Hz-20kHz. Tone controls: bass  $\pm 12$ dB at 100Hz, treble  $\pm 10$ dB at 10kHz. Presence: (switchable)  $-3$ dB at 8Hz. Scratch filter: (switchable)  $-4$ dB at 7kHz. W and F:  $\leq 0.2\%$ . Rumble:  $\leq -35$ dB (DIN A),  $\leq -55$ dB (DIN B). Turntable speeds:  $3\frac{1}{2}$  and 45 rpm. Motor: low-speed synchronous. Cartridge: GP400 magnetic with diamond spherical LP stylus. Loudspeakers: 4 ohms impedance. Mains: 110, 127, 220, 240V AC 50Hz. Size: (main unit) 490  $\times$  405  $\times$  131mm; (speakers) 265  $\times$  265  $\times$  100mm. Price: £147.69 (plus VAT).

**RH852**

Stereo tuner/amplifier/record player combination. Range: FM 87.5-104MHz, SW 5.95-9.78MHz, MW 520-1605kHz, LW 150-345kHz. Output: 6.5W per channel into 4 ohms. HD:  $\leq 1\%$ . FR: 20Hz-20kHz  $\pm 1$ dB,  $-3$ dB. S/N ratio: better than  $+50$ dB at rated output. Tone controls: bass  $+12$  to  $-10$ dB at 50Hz, treble  $+11$  to  $-12$ dB at 10kHz. DIN socket for recorder. Philips GC027 record player. Speeds:  $3\frac{1}{2}$  and 45rpm. Pick-up cartridge: GP 400. Mains: 110, 127, 220 and 240V AC. Power consumption: 47W max. Cabinet: polystyrene, silver finished. Size: 545  $\times$  102  $\times$  398mm. Price: to be advised.

**RH837 ★**

FM tuner/amplifier in cabinet with record deck and two separate speakers. 46 transistors, 23 diodes and one IC. Range: 87.5-104MHz. Four preset stations. Switchable AFC. Stereo decoder fitted. Slider controls for volume, balance, bass, treble, presence, contour/rumble/scratch, quiet tuning, speaker selection, input selector, AFC, headphones, stereo-4. Output: 20W RMS per channel  $\pm 1$ dB. Output impedance: 4 ohms. FR: 30Hz-25kHz  $\pm 1.5$ dB. HD:  $< 1\%$ . Motor unit: Philips GC008. Finish: polystyrene case with tinted transparent plastic cover. Speakers: Philips RH431 enclosures. Price: (complete system) £249.07 (plus VAT).

**RH851**

Stereo tuner/amplifier/cassette recorder combination. Range: FM 87.5-104MHz, SW 5.95-9.78MHz, MW 520-1605kHz, LW 150-345kHz. Automatic stereo decoder. Output: 10W RMS per channel. Distortion:  $\leq 1\%$ . FR: 20Hz-20kHz  $\pm 3$ dB. Tone controls: bass  $+12$  to  $-10$ dB at 50Hz, treble  $+11$  to  $-12$ dB at 10kHz. S/N ratio:  $-50$ dB. Cassette recorder fitted with DNL (switchable). Illuminated indicator. Counter: 3 digit with zero reset. Philips RH442 loudspeakers.



*Radionette Model SM 240 G*

Impedance: 4 ohms. Cabinet: silver with black grille. Size: (complete unit) 570  $\times$  290  $\times$  115mm. Mains 110, 127, 220 or 240V AC 50/60Hz. Price: £184.26 (plus VAT).

**RH831**

Stereo tuner/amplifier/cassette recorder combination. With stereo 4 surround sound facility. Range: FM 87.5-104MHz, SW 5.95-9.78MHz, MW 520-1605kHz, LW 150-345kHz. IEC input sockets for FM dipole aerial (300 ohms symmetrical) and AM aerial/earth. Standardized 75 ohms coaxial FM aerial input. Output: 25W per channel into 4 ohms. Distortion:  $\leq 1\%$ . FR: 20Hz-20kHz  $\pm 1$ dB. S/N ratio:  $-58$ dB. Tone controls: bass  $+15$  to  $-15$ dB at 50Hz, treble  $+12$  to  $-15$ dB at 10kHz. Damping factor: 20. Cassette deck: S/N ratio: 48dB (CrO<sub>2</sub> tape), 45dB (Fe<sub>2</sub>O<sub>3</sub> tape) without Dolby. Improvement with dolby circuit: 10dB. 86 transistors, 22 diodes and 5 ICs. Mains: 110, 127, 220 and 240V AC. Power consumption: 16-120W. Size: 600  $\times$  110  $\times$  320mm. Price: on application.

**RH953**

Stereo tuner/amplifier/record player/cassette recorder combination. Range: FM 87.5-104MHz, SW 5.95-9.78MHz, MW 520-1605kHz, LW 150-345kHz. Output: 10W per channel. Distortion: less than 1%. FR: 20Hz-20kHz. S/N ratio: better than  $-50$ dB at rated output. Tone controls: bass  $+12$  to  $-10$ dB at 50Hz, treble  $+11$  to  $-12$ dB at 10kHz. N2507 cassette deck fitted with DNL. Two-speed turntable with Philips GP 400 pick-up cartridge fitted. Power supply: 110, 127, 220 and 240V AC. Power consumption: 52W max. Size: 577  $\times$  111  $\times$  376mm. Price: to be advised.

■ **RADIONETTE**

Norse Audio Systems Ltd,  
9 Hawkesworth Trading Estate,  
Swindon SN2 1D2, Wilts.  
Tel: Swindon 22592.

**SM240 ★**

Record player incorporates anti-skating device and graded tracking weight adjustment,

★ Indicates entry is illustrated

which can be operated manually or automatically. Hydraulically damped lowering mechanism. Supplied with Shure M 75 type D Hi-Fi cartridge. AM/FM reception with 4 pre-set stations. Output: 20W RMS per channel. Separate bass and treble controls. Headphone socket and two tape input facilities for separate tape decks. Price: on application.

#### ■ RICHMOND

Richmond Audio Ltd, 27 Church Road, Bishops Cleeve, Gloucester GL52 4LR. Tel: Bishops Cleeve 3952.

#### AG22

Stereo record player with two matching speakers. Output: 9W RMS per channel into 8 ohms. 6300 Garrard deck, KS40 Garrard cartridge. Tape input and output socket. HD: better than 0.3%. Stereo headphone jack. Mains: 220-240V AC 50Hz. Size: 546 × 362 × 381mm. Weight: 14.74kg. Price: £65 (plus VAT).

#### ■ THOMAS LANEY AUDIO

Electronic Manufacturing Co (UK) Ltd, Devonshire House, High Street, Deritend, Birmingham B12 0LP. Tel: 021-772 3669/7145.

#### TLA200C

AM/FM stereo receiver in cabinet with record deck. Range: FM 87.5-108MHz. Variable tuning plus five presets. Switchable AFC. Aerial input: 75 ohms coaxial, 240 ohms balanced twin. Sensitivity: 2µV for 30dB quieting. Limiting complete at 5µV. Stereo decoder fitted. Capture ratio: 1.5dB. Inputs: mag PU 2mV 47K, aux 100mV 100K. S/N ratio: (PU input) 65dB (aux) 70dB. Overload capability: (PU input) 100mV, (aux) 1V. Controls: bass ± 12dB at 40Hz, treble ± 12dB at 10kHz, filter 12dB/octave at 4kHz. 7kHz and 10kHz, balance, volume, input selector. Bass, treble and balance controls are sliders with centre 'click' position. Output: 50W RMS per channel into 4 ohms. 30W RMS per channel into 8 ohms. HD: <0.1% (typically <0.02%) 35Hz-20kHz. Power bandwidth: 20Hz-40kHz +0dB -3dB. Mains: 110, 120, 130, 220, 230, 240V AC. Two AC outlets (one switched). Two headphone jack sockets behind flap on front panel. Quiet tuning facility. Output fully protected against any load condition. Motor unit: BSR 810 record deck. Price: £180 (plus VAT) teak or walnut finish.

#### ■ VIDEOTONE

#### KC94T

System comprises amplifier, record deck, tuner and any speakers from the Videotone range. Tuning range: FM 87.5-108MHz. 5 pre-set stations. Built-in AFC. Multiplex decoder fitted. Controls: volume, bass, treble, balance, low filter, high filter, loudness, tape monitor and five input selectors. Output: 25W RMS per channel. Loudspeaker impedance: 8 ohms. HD: less than 0.1% at 20W. Turntable: Garrard 86SB. Finish: teak. Price: £179.82 (including VAT).

#### ■ WYNSOR

Wyndor Recording Company Ltd, Wyndor Works, Bellevue Road, Friern Barnet, London N11 3ES. Tel: 01-368 2226/7.

#### MC555

Three-unit system with stereo cassette recorder, stereo radio and stereo cassette recorder. VHF/LW/MW. Automatic record changer with cueing device. Recorder has twin meters and separate record level controls. Output: 10W RMS per channel at less than 2% distortion. 203mm speakers. Imp: 8 ohms. Price: £179 (plus VAT).

#### S5000

Compact three-unit system combined record deck and tuner/amplifier plus speakers. VHF/LW/MW. Output: 5W RMS per channel. Price: £108 (plus VAT).

#### ■ YAMAHA

Natural Sound Systems Ltd, Strathcona Road, North Wembley, London HA9 8QL. Tel: 01-904 0141.

#### MS2B

AM/FM stereo tuner in cabinet plus 18W per channel amplifier. THD: 0.1%. 2-speed belt-drive turntable with magnetic cartridge. Stereo cassette recorder fitted. Separate meters and channel level controls. Auto-stop. Azimuth adjustment. W and F: 0.15%. Price: £249.95 (plus VAT). Also available as a system with NS 625 loudspeakers. Price: £299.95 (plus VAT).

#### MS2

As MS2B but without stereo cassette deck. Price: £199.95 (plus VAT). Also available as a system with NS 625 loudspeakers. Price: £249.95 (plus VAT).

# GOOD UNIT AUDIO ISN'T JUST A MATTER OF WHAT YOU SPEND...

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### MC2 £184.00\*

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## FIDELITY RADIO LIMITED

Victoria Road, London NW10 6ND, Telephone: 01-965 8771 (20 lines) Telex: 923355 Cables: Amplify London.  
Service Dept. 2 Chase Road, London NW10 6HZ, Telephone: 01-965 9235/6.  
Manufacturers of: Unit Audios, Radio/Cassette Recorders, Transistor Radios, Record Players.

\*Manufacturer's Recommended Retail Price including VAT



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Station Road, Hayes, Middlesex UB3 4DR.

# Complete Audio Systems

★ Indicates entry is illustrated.  
Abbreviations used in this section are given on page 27.

## ■ AIWA

Johnsons of Hendon Ltd, 14 Priestley Way,  
London NW2 7TN. Tel: 01-450 8070.

### AF5080

Stereo music centre with Dolby noise reduction circuitry. Tape Deck: Dolby, oil-damped cassette eject mechanism, mechanical pause, quick review/cue, 3-step tape selector (LH, CrO<sub>2</sub> Fe Cr), tape counter. Record deck: full size belt-drive turntable, semi-automatic, bias control, magnetic cartridge. Radio: 4 waveband (AM/FM/SW/LW), FM stereo, automatic stereo/mono switching. Output: 20W per channel. Price: £240 without speakers (plus VAT).

## ■ AMEREX

Amerex (UK) Ltd, 96 Piccadilly,  
London W1V 9HA. Tel: 01-499 3537.

### ACR 405C

Complete music centre comprising AM/FM stereo tuner/amplifier, BSR autochange record deck, eight-track cartridge player and matching speakers. Slider controls for bass, volume, treble and balance. Stereo decoder fitted. Range: VHF, MW. Loudness switch, rumble and scratch filters. Wood grain finish with bright trim. Price: £131.63 (including VAT).

### AMC-900

AM/FM stereo tuner/amplifier with cassette tape deck and matching speaker systems. Range: FM 88-108MHz, MW 185-582m, LW 857-2000m, SW 25-84m. Output: 10W (IHF) per channel into 8 ohms. HD: <1%. FR: (normal listening level) 20Hz-15kHz-3dB. Inputs: mag PU 3mV, ceramic PU 250mV, aux 350mV. H and N: (mag PU input) better than 50dB, (aux) better than 60dB. Separation: better than 50dB. Tone controls: bass ±10dB at 100Hz, treble ±10dB at

10kHz. Cassette recorder section. Speed: 1½ i/s. W and F: 0.25%. Microphone input: 1mV. Speaker drive units: 6½in. Size: (main unit) 23½ × 14½ × 5in; (speaker units) 13½ × 8½ × 8½in. Price: £236.68 (including VAT).

### ACR 525C

Complete music centre comprising AM/FM stereo tuner/amplifier, BSR autochange record deck, eight-track cartridge player and matching speakers. Slide controls for bass, volume, treble and balance. Stereo decoder fitted. Range: VHF, MW. Loudness switch, rumble and scratch filters. Wood grain finish with bright trim. Price: £142.01 (including VAT).

## ■ BEOSYSTEM

Bang & Olufsen (UK) Limited,  
Eastbrook Road, Gloucester GL4 7DE.  
Tel: Gloucester 21591.

### Beosystem 1400

Three-unit system comprising Beocenter 1400 stereo tuner/amplifier/cassette and two Beovox 1702 loudspeakers. Tuning range: FM 87.5-104MHz, LW 857-2040m, MW 187-578m. Variable tuning, AFC. Sensitivity: FM <1.8µV, LW <15µV, MW <20µV. Cassette section. Speed: 1½i/s. FR: 40Hz-12.5kHz. S/N ratio: 50dB. W and F: 0.35% RMS. Output: 20W RMS. FR: 20Hz-30kHz ±1.5dB. HD: <0.5% at 20W. Inputs: mag PU 2.5mV 47K, tape 300mV 100K. Speakers: (two units) one 6in bass and one 1in tweeter. FR: 50Hz-20kHz. HC: 20W RMS. Sizes: (Beocenter 1400) 26 × 10½ × 3½in; (Beovox 1702) 13½ × 7½ × 7½in. Price: (teak) £261.40; (rosewood) £265.40 (including VAT).

### Beosystem 901

Four-unit system comprising Beomaster 901 tuner/amplifier, Beogram 1203 turntable and two Beovox 1702 loudspeakers. Tuning range: FM 87.5-104MHz, LW 857-2040m, MW 187-578m. Variable tuning, AFC. Sensitivity: FM <1.8µV, LW <15µV, MW <20µV. Output: 20W RMS per channel. FR: 20Hz-30kHz ±1.5dB. HD: <0.5% at 20W RMS. Inputs: mag PU 2.5mV 47K, tape 150mV 470K. Motor unit: (2 speed) 33½ and 45 rpm. SP14A cartridge. Rumble: 58dB. Wow and flutter: 0.15% DIN. Speakers: (two units) one 6in bass and 1in tweeter. FR: 50Hz-20kHz. HC: 20W RMS. Sizes: (Beomaster 901) 19½ × 9 × 3in; (Beogram 1203) 17½ × 13 × 4½in; (Beovox 1702) 13½ × 7½ × 7½in. Price: (teak) £275.80; (rosewood) £280.80. Prices include VAT.

★ Indicates entry is illustrated

### Beosystem 1700

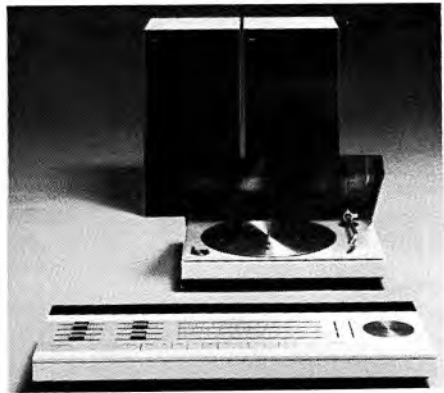
Five-unit system comprising Beolab 1700 stereo amplifier, Beomaster 1700 stereo FM tuner, Beogram 2000 turntable and two Beovox 2702 loudspeakers. Tuning range: 87.5-104MHz. Variable tuning plus three presets. AFC. Sensitivity:  $<2\mu\text{V}$ . Output: 20W RMS per channel. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD:  $<0.5\%$  at 20W RMS. Inputs: mag PU 2.5mV 47K, 150mV 1M, tuner 150mV 350K. Motor unit: 33 $\frac{1}{3}$  and 45 rpm. Rumble: 60dB. Wow and flutter: 0.12% DIN. SP.10A cartridge. Speakers; (two units) one 7in bass and one 1in tweeter. FR: 45Hz-20kHz. HC: 25W RMS. Sizes: (Beolab 1700) 19 $\frac{3}{4}$   $\times$  9 $\frac{1}{4}$   $\times$  3in; (Beomaster) 19 $\frac{3}{4}$   $\times$  9 $\frac{1}{4}$   $\times$  3in; (Beogram 2000) 17 $\frac{1}{2}$   $\times$  13  $\times$  4 $\frac{1}{2}$ in; (Beovox 2702) 16  $\times$  8  $\times$  8in. Price: (teak) £346.90; (rosewood) £399.90. Prices include VAT.

### Beosystem 1800

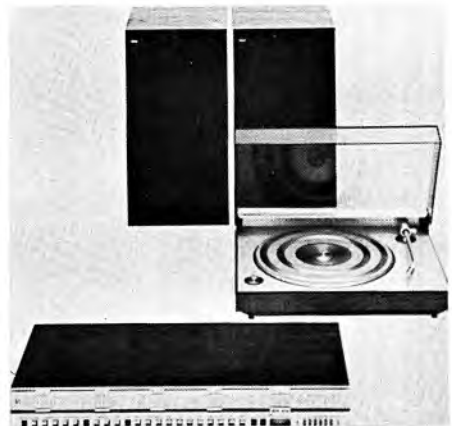
Three unit system comprising Beocenter 1800 FM stereo tuner/amplifier/record player and two Beovox 2702 loudspeakers. Tuning range: 87.5-108MHz. Variable tuning. Sensitivity:  $<2.5\mu\text{V}/75$  ohms IHF. HD:  $<0.5\%$  at full output. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . Motor unit: (two speeds) 33 $\frac{1}{3}$  and 45rpm. Radial pick-up arm with MMC 3000. Fully automatic. Rumble:  $>60\text{dB}$  (DIN). Wow and flutter:  $<\pm 0.12\%$  DIN. Asynchronous motor. 12in grooved aluminium platter. Speakers: (two units) one 7in bass and one 1in tweeter. FR: 45Hz-20kHz. HC: 25W RMS. Size: (Beocenter 1800) 19 $\frac{1}{2}$   $\times$  4 $\frac{1}{2}$   $\times$  14 $\frac{1}{2}$ in; (Beovox) 16  $\times$  8  $\times$  8in. Price: (teak) £283.50; (rosewood or white) £288.50. All prices include VAT.

### Beosystem 2000 ★

Three unit system comprising Beomaster 2000, stereo FM/AM tuner/amplifier, Beogram 2000 turntable and two Beovox 3702 loudspeakers. Tuning range: FM 87.5-104MHz, LW 147-350kHz, MW 520-1605 kHz. Variable tuning. AFC. Sensitivity: FM  $<2\mu\text{V}/75$  ohms IHF; LW 85 $\mu\text{V}$ , MW 85 $\mu\text{V}$ . Output: 40W RMS per channel. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD:  $<0.1\%$  at full output. Inputs: mag PU 2.5mV 47K at 1kHz. Tape: ( $\times 2$ ) 175mV/1M ohms. Tape output: ( $\times 2$ ) 15mV 20K. Motor unit: 33 $\frac{1}{3}$  and 45rpm. SP.10A cartridge. Rumble: 60dB DIN. Wow and flutter: 0.12% DIN. Speakers: (3 units) one 8in bass, one 1in tweeter and one 3 $\frac{1}{2}$ in mid-range. FR: 40Hz-20kHz. HC: 40W RMS. Sizes: (Beomaster 2000) 27  $\times$  3  $\times$  10 $\frac{1}{2}$ in; (Beogram 2000) 17 $\frac{1}{2}$   $\times$  4 $\frac{1}{2}$   $\times$  13in; (Beovox 3702) 9 $\frac{1}{2}$   $\times$  19 $\frac{1}{2}$   $\times$  9 $\frac{1}{2}$ in. Prices: (teak) £422; (rosewood or white) £431. All prices include VAT.



Beosystem 2000



Bang & Olufsen Beosystem 3000-2

### Beosystem 3000-2 ★

Four-unit system comprising Beomaster 3000-2 stereo tuner/amplifier, Beogram 3000 turntable and two Beovox 3800 loudspeakers. Tuning range: 87.5-104MHz. Variable tuning plus six presets. AFC. Sensitivity:  $2\mu\text{V}$ . Output: 40W RMS per channel. FR: 40Hz-20kHz  $\pm 1.5\text{dB}$ . HD: 0.3% at 40W RMS. Inputs: mag PU 3mV 47K adjustable, ceramic PU 250mV 1M adjustable, tape 250mV 1M variable. Motor unit: 33 $\frac{1}{3}$  and 45rpm. SP.12A cartridge. Rumble: better than 62dB. Wow and flutter: 0.09% DIN. Speakers: (three units) one 12in bass, one 3Rin mid-range and one 1in tweeter. FR: 40Hz-16kHz. HC: 50W RMS. Sizes: (Beomaster 3000-2) 22 $\frac{1}{2}$   $\times$  10 $\frac{1}{2}$   $\times$  3 $\frac{1}{2}$ in; (Beogram 3000) 17 $\frac{1}{2}$   $\times$  13  $\times$  4 $\frac{1}{2}$ in; (Beovox 3800) 11 $\frac{1}{2}$   $\times$  23  $\times$  11 $\frac{1}{2}$ in. Price: (teak) £433; (rosewood) £453. All prices include VAT.

**Beosystem 3500**

Three-unit system comprising Beocenter 3500 stereo tuner/amplifier/turntable plus two Beovox 3702 loudspeakers. Tuning range: 87.5-104MHz. Variable tuning plus six presets. AFC. Sensitivity:  $2\mu\text{V}$ . Output: 40W RMS per channel. FR: 40Hz-20kHz  $\pm 1.5\text{dB}$ . HD: 0.3% at 40W. Input: mag PU 3mV 47k adjustable, tape 250mV 1M adjustable. Motor unit: Beogram 3000. Speeds: 33 $\frac{1}{3}$  and 45rpm. SP10A cartridge. Rumble: better than 60dB. W and F: 0.06% RMS. Speakers: (three units) one 8in bass, one 3 $\frac{1}{2}$ in mid-range and 1 $\frac{1}{2}$ in tweeter. FR: 40Hz-20kHz. HC: 40W RMS. Sizes: (Beocenter 3500) 22 $\frac{1}{8}$   $\times$  13 $\frac{1}{8}$   $\times$  5 $\frac{1}{2}$ in; (Beovox 3702) 19 $\frac{1}{2}$   $\times$  10  $\times$  10in. Price: (teak) £410.50; (rosewood or white) £418.50 (including VAT).

**BUSH ARENA**

Rank Radio International Ltd.,  
PO Box 596, Power Road,  
London W4 5PW. Tel: 01-994 6491.

**BS3031**

Three-unit system radio/record player. Garrard record deck with a magnetic cartridge, cueing device and pre-set tracking weight. Radio tuner receives VHF, LW, MW, SW, with logging scale. Switchable AFC. Output: 10W RMS per channel. HD lower than 1%. DIN sockets for cassettes and headphones. Provision for quadraphonic. Price: on application.

**BS3032**

Three-unit system for stereo records, radio and cassettes. Output: 10W per channel RMS. FR: 70-15,000Hz  $\pm 3\text{dB}$ . Garrard 6300 SP deck with magnetic cartridge. Price: on application.

**BUSH**

Rank Radio International Ltd.,  
PO Box 596, Power Road,  
London W4 5PW. Tel: 01-994 6491.

**BS3501**

Musicentre for stereo records, radio and cassettes. Output: 6W per channel RMS. HD: less than 1%. Garrard 6200 CP automatic single-play deck. Price: £185.14 (plus VAT).

**BS3015**

Stereo three-unit system for radio and stereo records. Output: 6W per channel RMS. BSR automatic single play deck with cueing device. Stereo beacon. 6  $\times$  4ins. elliptical speakers in sealed cabinets. Price: £104.59 (plus VAT).

**A1006**

Three unit system for stereo records and radio. Output: 6W per channel RMS. HD: < 1%. BSR automatic single play deck with cueing device. Outputs for headphones, DIN tape

socket, and loudspeakers. Price: £99.31 (plus VAT).

**BS3504**

Three-unit system for stereo radio and cassettes. Output: 6W per channel RMS. S/N: normal tape > 46dB. CrO<sub>2</sub> tape > 49dB. W and F: < 0.25%. Cassette storage compartment, autostop; stereo microphones available as optional extra. Price: on application.

**CROWN**

Crown Radio Ltd, Russell Gardens,  
Wickford, Essex SS11 8RT.  
Tel: Wickford 63414.

**SHC-53, CSP-13 (2)**

AM/FM stereo radio in cabinet with eight-track cartridge tape player, plus two separate speakers. Range: FM 88-108MHz. MW 182-560m. Switchable AFC. Variable tuning. 21 transistors, four ICs, 21 diodes. Cartridge deck. Speed: 3 $\frac{1}{2}$ /s. S/N ratio > 40dB. W and F: < 0.35%. FR: 80Hz-12kHz. Output: 5W per channel. Automatic head cleaning device. Slider controls. Headphone jack socket. Speakers: infinite baffle enclosures with unit. One 13 $\frac{1}{2}$   $\times$  8 $\frac{1}{2}$ in bass driver with two integral HF units. Impedance: 8 ohms. Finish: walnut cabinets. Amplifier/tape unit has black dial and bright trim, speaker enclosures have black grilles. Price: (complete system) £135 (plus VAT).

**SHC-65F**

AM/FM stereo radio plus cassette recorder and record deck in one plinth cabinet, offered with two CSP13 speakers to form complete system. 27 transistors, one FET and six ICs. Range: FM 88-108MHz, MW 182-560m. Variable tuning. AFC. Stereo decoder fitted. Controls: tuning, AFC on/off, muting, waveband selector, input function, high filter, loudness, bass, treble, left-channel record level, right-channel record level, balance, volume. Output: 7.5W RMS per channel. Output impedance: 8 ohms. FR: 50Hz-20kHz. Record deck: Garrard SP25 Mk III or Garrard 2025T. Finish: Walnut veneer and black trim. Speakers: two CSP13 (CSP12 optional at lower cost). Price: (complete system) £287.09 (plus VAT).

**SM110, CSP12 (2) ★**

AM/FM stereo tuner/amplifier with record deck in one cabinet, plus two CSP12 speaker systems. Range: FM 88-108MHz, MW 182-560m. Variable tuning. AFC. Stereo decoder fitted. Controls: bass, treble, low filter, high filter, volume, input selector, balance, mains on/off, tuning. Output: 7.5W RMS per channel. Output impedance: 8 ohms.

★ Indicates entry is illustrated



Crown Radio SM110, CSP12(2)



Decca DS1503



Deccasound compact 3

FR: 20Hz-25kHz. HD: <1% at 6W output. Finish: walnut veneer with silver trim. Speakers: two CSP12. Price: (complete system) £125.12 (plus VAT).

## ■ DECCA

Decca Radio & Television, Neachells Lane, Wolverhampton, Staffs.  
Tel: Wolverhampton 67367.

### Deccasound Compact 3 (DS5226) ★

AM/FM tuner/amplifier in low-profile cabinet on stand, with record deck incorporated and two separate speakers. Range: FM 87.5-101MHz, MW 185-577m, LW 1200-2000m, SW 16.7-50m. Variable tuning. AFC. Stereo decoder fitted. Controls: bass, treble, balance, volume, input selector, 12kHz filter, AFC on/off. Output: 6W RMS per channel. FR: 30Hz-20kHz. Motor unit: BSR C141. Speakers: 5in dual cone full-range drivers in acoustic enclosures. Price: £141.20 (plus VAT).

### DS1503 ★

Complete audio system comprising amplifier/turntable and two alternative matching speaker systems. Specification. Power supply: 240V 50Hz. Power consumption: 75W. Slider controls. Inputs: tape playback, tuner, microphone. Output: tape record, auxiliary mains, headphones, loudspeakers. Power output: 15W RMS per channel at 1kHz into 8 ohms. FR: (amplifier) 25-18,000Hz

±3dB. S/N: -70dB (volume control Min). Tone control ranges: bass ±10dB at 100Hz. treble ±10dB at 10kHz. Filter functions: high and low (scratch and rumble). THD: better than 0.1% at 15W RMS output at 1kHz. Turntable: BSR C142R/A3 or P128/R. 3-speed autochanger with cue facility and bias compensation. Pickup: Sonotone V100 magnetic cartridge with diamond stylus type V100 or Acos M6. Speaker units: 8in bass plus 1in tweeter. Impedance: 8 ohms. FR: 80-18,000 Hz. Dimensions (speakers): L400 13 × 10½ × 21½in, L410 11 × 8½ × 16½in. Weight (speakers): L400 24lb. L410 14½lb. Dimensions (deck/amp): 20½ × 17½ × 8½in. Weight (deck/amp): 25½lb. Optional extras: white: mushroom-shaped stand, height of stand 14½in. Finish: teak and white, walnut or all teak. Price: (shelf) £125.46; (floor) £134.72. All prices exclude VAT.

### Deccasound Compact 2

Consists of a record deck, amplifier and FM stereo tuner with matching speakers. Complete stereo system in one unit. Specification. Power supply: 220-240V 50Hz. Power consumption: 50W. Inputs: external FM aerial, tape playback. Output: tape record, loudspeakers. Radio coverage: 87.5-101MHz. Stereo decoder power output: 6W RMS per channel into 8 ohms at 1kHz. FR: (amplifier) 30-20,000Hz. S/N: 60dB. Tone control range: bass ±11dB -10dB at 70Hz. treble ±16dB -11dB at 10kHz. Scratch filter.

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Up to now, a lot of would-be hi-fi fans have been forced to remain would-be. Their ears might accommodate something better than the best of unit audio, but their pockets wouldn't.

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\*Based on prices and VAT rating at time of going to press.

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Toshiba (UK) Limited, Toshiba House, Great South West Road, Feltham, Middlesex. (Tel: 01-751 1281)

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*Illustrated:  
Model 800 Music  
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30 Watts RMS per channel  
5 Waveband Stereo Receiver  
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Transcription turntable with Shure  
Cartridge. Hinged cover.  
Choice of matching  
loudspeakers*



Klinger Hi-Fi equipment  
combines superb quality with optimum  
value and reliability.

The systems are constructed to the highest technical  
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been spared to produce balanced designs at a more than reasonable cost, and yet still contain  
the essential ingredient of High Fidelity: ample power, comprehensive tone and filter controls,  
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detailed specifications on the complete range.

## **KLINGER**

KLINGER CONTROLS LIMITED, Spencer Court, 7 Chalcot Road,  
London NW1 8LU Tel: 01-586 2922/3

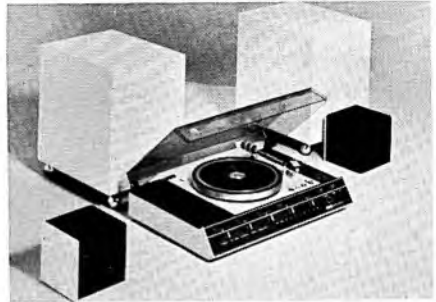
THD: 0.4% at 5W into 8 ohms at 1kHz. Aerial: internal FM aerial. Turntable: BSR C123/R 3-speed autochanger with cue facility and bias compensator. Pickup: Acos 104 ceramic turnover cartridge. Stylus: Acos GP 104, LP diamond stylus and sapphire 78 stylus. Speaker units: 5in round dual cone. Impedance: 8 ohms. FR: 100-18,000Hz. Volume (speakers): 0.12cu ft. Dimensions (speakers):  $8\frac{1}{2} \times 5\frac{1}{2} \times 12\frac{1}{2}$ in. Weight (speakers): 6 $\frac{1}{2}$ lb. Accessories supplied: wood and metal stand. Dimensions (main unit):  $26 \times 14\frac{3}{4} \times 8$ in. Height of stand: 16 $\frac{1}{2}$ in. Weight (main unit): 27 $\frac{1}{2}$ lb. Finish: teak. Price: £113.43 (plus VAT).

#### Datsound Compact 4

Consists of record deck, amplifier, two speakers, AM/FM tuner and a stereo cassette deck. Specification. Power supply: 240V 50Hz. Power consumption: 60W. Inputs: external aerials, microphone. Outputs: headphones, loudspeakers (4). Radio waveband coverage: FM 87.5-107.5MHz, AM 510-1620kHz. Power output: 12W RMS per channel. FR: (amplifier) 15-50,000Hz -3dB. Power bandwidth: 25-30,000Hz. S/N: 70dB. Tone control ranges: bass 30Hz  $\pm$  16dB 100Hz  $\pm$  10dB, treble 10kHz  $\pm$  12dB. Filter function: 6dB down at 12kHz. Aerial: internal ferrite rod for AM, internal FM aerial. Turntable: BSR C141/R. 3-speed autochanger with cue facility, bias compensation and manual over-ride. Pickup: Sonotone 3559 ceramic turnover cartridge. Stylus: Sonotone 3559, LP diamond stylus and 78 sapphire stylus. Cassette recorder. FR: (playback) 40-10,000Hz -6dB. W and F: 0.3% RMS. Twin VU meters. Speaker units (L153): 5in round dual cone. FR: 100-18,000Hz. Impedance: 8 ohms. Dimensions:  $35\frac{1}{2} \times 14\frac{1}{2} \times 8\frac{1}{2}$ in. Accessories supplied: stand, height of stand 15 $\frac{1}{2}$ in. Weight (main unit): 37lb. Finish: teak, with satin aluminium trim. **NOTE** — Two extra loudspeaker sockets allow you to use Compact 4 as a 4-speaker system, by purchasing two further L153 speakers. Price: £194.44 (plus VAT).

#### DS 9000

Combined cassette/radio stereo system. Specification. Power supply: 240V 50Hz. Power consumption: 20W. Input: FM aerial, auxiliary, microphone. Output: loudspeakers, tape, headphones. Waveband coverage: FM 88-108MHz. MW 535-1605kHz. Stereo decoder power output: 4W RMS (FR) per channel. FR: 20-20,000Hz (power bandwidth). S/N: 60dB. Tone control ranges: bass  $\pm$  8dB at 100Hz, treble  $\pm$  6dB at 10kHz. Aerial: internal MW ferrite rod. Cassette type:



Ekco ZU9

standard Philips Musicassette type. FR: (playback) 40Hz 0dB 10kHz -3dB. W and F: 0.4%. Twin VU meters. Finish: teak and brushed aluminium trim. Speakers. Power handling capacity: 6W. Impedance: 8 ohms. Speaker units: 5in dual cone. FR: 100-18,000Hz. Volume: 0.12cu ft. Dimensions (main unit):  $19\frac{3}{4} \times 17 \times 5\frac{1}{2}$ in. Speaker enclosures:  $8\frac{1}{2} \times 5\frac{1}{2} \times 12\frac{1}{2}$ in. Weight (main unit): 18lb. Speaker enclosures: 6 $\frac{1}{2}$ lb each. Price: £118.06 (plus VAT).

#### ■ EKCO

Pye Ltd, PO Box 49, St Andrews Road, Cambridge CB4 1DS.  
Tel: Cambridge 58985.

#### ZU530

System comprises transcription deck (two speed), amplifier and MW/VHF radio and two matching loudspeakers. Output: 20W per channel. Tuning range: FM 87.5-104MHz, AM 520-1605kHz. Switchable AFC. HD: 0.1%. FR: 25Hz-25kHz  $\pm$  1.5dB. Turntable: Philips GC008 2-speed transcription type with viscous damped cueing device, counter-balanced pick-up arm and side thrust compensation. Cartridge: Philips GP400 magnetodynamic. Stylus: diamond, spherical. Controls: FM/AM free tuning, variable stereo-4, pre-select tuners. Slide controls: volume, balance, bass, presence, treble. Drive units: 8in bass/mid-range, 2 dome tweeters with variable direct/indirect sound radiation. Impedance: 4 ohms. Price: on application.

#### ZU9 ★

FM stereo tuner/amplifier in shelf-mounting cabinet with record deck, plus two or four separate speakers. 62 transistors, 48 diodes, two FETs and one IC. Range: FM 87.5-104MHz. Variable tuning plus five presets. Switchable AFC. Ratio detector. Stereo decoder fitted. Stereo beacon.



★ Indicates entry is illustrated

Controls: volume, balance, bass, presence, treble, tuning, ambio level, three position tone contour, rumble/scratch filters, input selectors. Output: 35W RMS per channel. Output impedance: 4-8 ohms. FR: 20Hz-30kHz  $\pm 1.5$ dB. HD:  $< 0.1\%$  at 32W output per channel,  $< 0.03\%$  at 6W output per channel. Motor unit: Philips GC012 electronically controlled transcription deck with GP401 cartridge and elliptical diamond stylus. Finish: silver and matt black. (speakers) white, and black and white. Speakers: (DX321 system) comprises four enclosures, two with 10in bass drivers and two with 5in mid-range units and 1in dome tweeters; (5728 system) comprises two enclosures with one 10in woofer; one 5in mid-range and one 1in dome tweeter in each. Price: (complete system with DX321 speaker system) £628.41 (including VA1); (complete system with 5728 speaker system) £508.04 (including VA1).

#### ZU440

Complete audio system comprising record player, receiver, cassette recorder in one unit, with pair of matching loudspeakers. Cassette section: W and F  $< \pm 0.35\%$  DIN. FR: 60Hz-10kHz DIN. S/N:  $> 45$ dB without NR. Fitted with DNL. Tuner section: FM tuner 87.5-104 MHz variable plus four presets. Stereo decoder. Amplifier section: Output  $2 \times 15$ W RMS. FR: 30Hz-20kHz  $\pm 1.5$ dB at 1W. THD:  $< 1\%$ . Turntable unit: Philips GC 007. Finish: silver and matt black. Two-unit speakers finished in teak. Price: £364.88 (including VA1).

#### ZU540 ★

Comprises amplifier, record player, cassette recorder and tuner, with speakers. Amplifier section:  $2 \times 20$ W into 4 ohms. THD:  $< 0.2\%$  at  $2 \times 8$ W. FR: 30Hz-25kHz  $\pm 1.5$ dB. S/N:  $> 55$ dB. Record player: Philips GC 008, 33 $\frac{1}{3}$  and 45rpm. Cartridge: Philips GP400 with diamond stylus. Cassette recorder: W and F  $\pm 0.2\%$  DIN. FR: CrO<sub>2</sub> 40Hz-12.5kHz, ferric oxide, 40Hz-10kHz. Fitted with Dolby NR. Tuner section: FM band 87.5-104MHz, manual or five preset stations. Stereo decoder. Speakers, twin unit enclosures. Size: 17 $\frac{3}{4}$   $\times$  11 $\frac{1}{4}$   $\times$  8 $\frac{1}{4}$ in. Price: £475.48 (including VAT).

### ■ ELECTROPHONIC

J. Parkar & Co (London) Ltd, Parkar House, Beresford Avenue, Wembley HA0 1YX.  
Tel: 01-903 5211.

#### Music Centre Mk I ★

AM/FM/AFC/MPX radio with BSR stereo



Ekco Unit Audio Model ZU540



Electrographic Music Centre Mk I



Ferguson Studio 6 Model 3460



Fidelity MC2

autochanger and stereo 8-track player. Complete with pair of matching speakers (10W output). Price: £132 (including VAT).

### ■ FALCON

John Street (Manufacturers) Ltd,  
Falcon Works, Barmeston Road, Catford,  
London, SE6. Tel: 01-698 1177.

#### Falcon 76

Stereo tuner/amplifier with record deck and two separate speaker enclosures. Range: FM, MW, SW and LW. Variable tuning. Sensitivity: FM better than  $5\mu\text{V}$ . Controls: bass  $\pm 12\text{dB}$  at 40Hz, treble  $\pm 10\text{dB}$  at 15kHz, volume, tuning, balance, input selector, mains on/off. Output: 6W RMS per channel. FR: 30Hz-20kHz  $\pm 3\text{dB}$ . HD:  $<1\%$  at all outputs. BSR record deck. 15 transistors, five diodes. Speaker units:  $6\frac{1}{2}\text{in}$  8 ohms. PU input: 100mV. DIN input and output sockets. Provision for tape record and playback. Headphone socket. Price: £52.57 (plus VAT).

#### Falcon 80

AM/FM stereo tuner/amplifier with record deck and two speakers. Range: LW, MW, SW and FM/VHF. 15 transistors, five diodes. Output: 10W per channel. Pushbutton selection of gram and wavebands. Sensitivity: FM better than  $5\mu\text{V}$ . BSR autochanger. Controls: bass  $\pm 12\text{dB}$  at 40Hz, treble  $\pm 10\text{dB}$  at 15kHz, volume, balance, tuning, on/off. Decoder fitted. Distortion better than 1% at all levels. Two speaker enclosures with ceramic magnet  $8 \times 5\text{in}$  units. Price: £43.07 (plus VAT).

### ■ FERGUSON

Thorn Consumer Electronics Ltd,  
Thorn House, Upper St Martin's Lane,  
London WC2H 9ED. Tel: 01-836 2444.

#### Studio 6 ★

A complete audio system comprising receiver, turntable, cassette recorder and matching loudspeakers. Tuner wavebands: FM 87-104MHz, MW 525-1630kHz, LW 148-268kHz. Aerials: internal ferrite rod for MW and LW, plug-in dipole for FM. Cassette recorder. Four-track stereo. Stereo microphone supplied with table stand. FR of recorder: 40Hz-12kHz  $\pm 6\text{dB}$  (at  $-20\text{dB}$  below OVU using CrO<sub>2</sub> tape) 40Hz-10kHz (using ferric oxide). Sockets: FM aerial, stereo mic (5-pin DIN), speakers (DIN), stereo headphones (100-600 ohms). Size:  $25\frac{3}{4} \times 17\frac{3}{4} \times 7.8\text{in}$  (lid open:  $25\frac{3}{4} \times 19\frac{3}{4} \times 17\frac{3}{4}\text{in}$ ). Speakers:  $8.6 \times 7\frac{1}{4} \times 14\frac{1}{2}\text{in}$ . Price: £179.27 (plus VAT).

### ■ FIDELITY RADIO LTD

Victoria Road, Willesden,  
London NW10 6MD.  
Tel: 01-965 8771.

#### UA1 Unit Audio One

Stereo tuner/amplifier and record deck with two matched speakers. 20 transistors, one integrated circuit, 7 diodes. Range: FM 87.5-108.2MHz. MW 185-555m. LW 1200-2000m. Variable tuning, separate scales and pointers for AM and FM. Multiplex decoder fitted. Stereo beacon. Switchable AFC. Controls: (pushbuttons) gram, LW, MW, FM, auxiliary, AFC; (rotary controls) bass  $+16\text{dB} -13\text{dB}$  at 70Hz, treble  $+12\text{dB} -14\text{dB}$  at 14kHz, volume  $+8\text{dB}$  at 100Hz at 30dB down from maximum volume. Output: 6W RMS per channel into 8 ohms. HD:  $<1.5\%$  at rated output. FR: 55Hz-23kHz  $\pm 1.5\text{dB}$  at 1W with tone controls flat. Motor unit: Garrard SP25 Mk III. Cartridge: Acos GPI04 ceramic. Speakers: 10in bass driver and 4in treble unit in each enclosure. Finish: teak. Size: (tuner/amplifier and record deck) 17in high, 17in wide, 15 $\frac{1}{2}\text{in}$  deep; (speakers) 13 $\frac{1}{2}\text{in}$  wide, 18 $\frac{1}{2}\text{in}$  high, 7 $\frac{1}{2}\text{in}$  deep. Price: on application.

#### UA3 Unit Audio Three

AM/FM stereo tuner/amplifier and record deck in plinth with two separate speakers. Range: FM 87.5-108MHz, MW 186-555m, LW 1200-2000m. 11 transistors, three ICs, four diodes. Variable tuning. Switchable AFC. Stereo decoder included with beacon. Tone controls: bass  $+12.5\text{dB} -17\text{dB}$  at 100Hz, treble  $+13.5\text{dB} -13\text{dB}$  at 10kHz. Output: 4W RMS per channel into 8 ohms. FR: 40Hz-15kHz  $-3\text{dB}$  at 1W. HD:  $<1\%$  (typically 0.1%). Motor unit: BSR changer (four speeds). Crystal cartridge. Speakers: 8 x 5in full range elliptical. Finish: teak. Price: (complete system) £70.37 (plus VAT).

#### MC2 ★

Complete music centre comprising AM/FM stereo tuner/amplifier, record deck, stereo cassette tape unit and two matching speakers. Range: FM 87.5-108MHz, LW 1200-2000m, MW 186-555m. Sensitivity: FM better than  $40\mu\text{V}$ , LW 1mV/m for 20dB S/N, MW  $400\mu\text{V/m}$  for 20dB S/N. Stereo decoder with beacon. Variable tuning. Output: 4W RMS per channel into 8 ohms. HD:  $<1\%$  at 5W. FR: (amplifier) 40Hz-15kHz  $\pm 3\text{dB}$ . Tone controls: bass  $+12.5\text{dB} -17\text{dB}$  at 100Hz, treble  $+13.5\text{dB} -13\text{dB}$  at 10kHz. Piano key controls for recorder. Speed: 1 $\frac{1}{4}$ i/s. Compact cassettes. Three-digit tape position indicator. S/N ratio: 45dB. W and F: 0.25%. FR: (recorder) 35Hz-12kHz  $\pm 3\text{dB}$  with standard tape, 35Hz-16kHz  $\pm 3\text{dB}$  with CrO<sub>2</sub> tape. Speakers:

★ Indicates entry is illustrated



Hacker Centurion GAR 550



Hanimex HRC 5070

one 6½in bass driver, one 3½in tweeter in each enclosure. Size: (unit) 21 × 7½ × 16½in; (speakers) 10 × 6 × 15in. Weight: (unit) 23½lb; (speakers) 10½lb each. Record deck: BSR three-speed autochanger with ceramic stereo cartridge. Cueing device. Bias compensation. Finish: satin black unit with wood grain end pieces and bright trim with tinted plastic cover. Speakers: wood grain finish with fabric-grilles. Price: £147.20 (plus VAT).

#### UA6

Stereo unit. Piano key selection for on/off, LW, MW and FM wavebands with AFC on FM and selection of phono and tape. Rotary tuning control, shadow illuminated dial, slider controls on left and right volume, bass and treble. Sockets for two loudspeakers, tape recorder, FM/AM aerials, stereo headphone jack socket. Garrard SP25 Mk 4 single-play turntable, 3-speeds. Magnetic cartridge and

cueing device. Power: 60W. Voltage: 220 to 245V at 50Hz. Output: 10W per channel RMS. Two 8 ohm speaker enclosures fitted with 6½in woofer and 3½in tweeter. Price: (complete system) £115.74 (plus VAT).

#### ■ HACKER RADIO LTD

Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.

#### Centurion GAR 550 ★

Tuner/amplifier in cabinet with record deck. FM/VHF radio covering 87.5-101MHz. Usable sensitivity: 5µV for 30dB S/N (30kHz deviation). Station markers. AFC. Garrard SP25 Mk 4 fitted with Goldring G850 magnetic pickup and diamond stylus. Inputs: PU 3mV equalised, 30dB overload capability; radio 50mV 47K, infinite overload capability; aux/tape 50mV 47K, infinite overload capability. Output: 14W RMS per channel into 8 ohms, 10W RMS per channel into 15 ohms. Controls: bass +18dB -14dB at 40Hz, treble +18dB -20dB at 15kHz, low-pass filter -3dB at 7kHz, on/off, treble, bass, balance, volume, pushbutton selection for scratch filter, gram, aux/tape, radio and mono/stereo. HD: better than 0.2% at 8 ohms, better than 0.1% at 15 ohms. FR: 25Hz-30kHz ±3dB. In-built rumble filter operates at below 25Hz. H & N level better than 60dB down on all inputs. Outlet for tape recorder of 15mV at 25K. Headphone socket with automatic muting of speakers. Pushbutton operates stereo decoder. Separation: 35dB at 1kHz, 26dB at 5kHz. Finish: teak. Hinged lid and black front panel or semi-transparent lid and black front panel. Mains: 200-245V 50Hz. Size: 18in wide, 8½in high, 16in deep. Suggested speakers: Hacker LS1100 three-way system with response 30Hz-18kHz. Size: 13¼ × 20¼ × 11¼in. Price: plus two speakers on application. GAR 550/T (teak) lid or GAR 550/P (acrylic) lid. Price: £203 (plus VAT).

#### ■ HANIMEX

Hanimex (UK) Ltd, Hanimex House, Dorcan, Swindon, Wilts SN3 5HW. Tel: Swindon 26211.

#### HRC 5015

AM/FM stereo tuner incorporating 8-track stereo cartridge player and matching speakers (3W per channel). Price: on application.

#### HRC 5072

Complete system consisting of professional series transcription deck, stereo cassette deck. AM/FM/MPX stereo radio and pair of matching speakers (15W per channel output). Price: on application.

**HRC 5050**

Complete system consisting turntable, 8-track cartridge player, AM/FM receiver and 2 x 10W RMS amplifiers, with two speaker enclosures. Record player: BSR P128R, 4-speeds, 16, 33, 45 and 78rpm. 11in diameter turntable. PU: BSR SC10H1 ceramic. Cartridge player: Hanimex HRC 5050. Price: on application.

**HRC 5070 ★**

Complete system consisting of AM/FM receiver, stereo cassette deck and two speakers. Cassette deck has twin VU meters, slider controls, recording and playback facilities. Tuner features FET front end for high sensitivity. Power output: 2x10W RMS. Price: on application.

**HMV**

Thorn House, Upper St Martin's Lane, London WC2H 9ED. Tel: 01-836 2444.

**2455B ★**

AM/FM stereo tuner/amplifier in cabinet with record deck, separate speakers. Range: FM 88-108MHz, MW 200-550m. Variable tuning plus four presets. Stereo decoder fitted. Integrated quadrature FM decoder. Slider controls for volume, treble, bass, balance. Pushbuttons for AFC, shape, tape monitor, input selector, wavebands, mode. Output: 25W to DIN 45 500. Output impedance: 4 ohms. FR: 25Hz-30kHz +0, -3dB. HD: <0.1% at all powers up to 20W. Motor unit: BSR P128. Cartridge: Goldring 800 magnetic. Finish: teak. Speakers: two 5in and one 3½in drivers in each speaker enclosure. Price: (complete system) approximately £199.60 (plus VAT).

**2456B ★**

As HMV 2455B but in console cabinet. Price: £285.92 (plus VAT).

**HOWLAND-WEST**

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6.

**R101**

System comprising R100 receiver, belt drive transcription turntable, magnetic cartridge and loudspeakers with symmetric drive units. Output: 63W music power 8 ohms or 71W at 4 ohms. Two-way loudspeakers using 1½in. dome-tweeters, 10in. woofers with 1½in. voice coil incorporating special SD system for extra natural sound and flow resistant resonance control for improved bass response. Price: £253 (plus VAT).

**ITT**

ITT Consumer Products (UK) Ltd, Maidstone Road, Footscray, Kent DA14 5HT. Tel: 01-300 7733.

**KA2000 ★**

System comprises a 5W per channel amplifier coupled with a stereo tuner and BSR autochange record deck. Simulated teak veneer cabinet. BSR C123R deck with cueing device and counter-balanced playing arm and bias compensator. Sapphire turn-over stylus assembly. VHF/MW/LW bands with separate tuning. Built-in decoder with AFC on VHF. Slide controls for volume, balance,



HMV 2455B



HMV 2456B



ITT KA 2000

★ Indicates entry is illustrated



ITT KA 2015 and KS665 speakers



ITT KA 1255



ITT KA 1026 and KS 662 speakers



ITT KA 2030

treble and bass. Pushbuttons for disc, wave-change and on/off. Sockets for tape recording/playback, headphones, FM aerial and speakers. Semi-hinged plastic dust cover. Complete with KS664 loudspeakers. Price: £106.48 (plus VAT); (centre pillar stand optional extra) £6.07 (plus VAT).

#### KA2015 ★

System comprises 15W per channel amplifier and BSR autochange record deck (C141 R) and stereo tuner with indicator lamp. Teak veneer finish. Slider controls for volume, bass, treble and balance. Pushbuttons for headphones, tape, disc, FM/MW/LW and on/off. Rotary tuning knob. Sockets for tape, playback, headphones, FM aerial and loudspeakers. Plastic semi-hinged dust cover. Complete with KS665 or KS666 loudspeakers. Price: £134.94 (with KS665 speakers); £163.06 (with KS666 speakers); trolley stand optional extra 17.55. All prices exclude VAT.

#### KA2030 ★

System comprises stereo deck, stereo tuner

and stereo cassette recorder. BSR P128R single play deck, Sonotone cartridge with CD single tip stylus. Teak veneer finish, matt black and aluminium trim. Sliders for volume, balance, bass and treble. Piano keys for fast rewind, record, stop/start, fast forward. Pushbuttons for headphones, tape, disc, VHF/MW/LW, on/off. Rotary tuning knob. Facility for 2 additional loudspeakers. Sockets for headphones, mic, FM aerial, 2nd tape, radio input/output and 4 speakers. Built-in AFC on FM Fe/Cr switch. Auto recording level control. Tape end switch/indicator. Price: (including speakers) £203.69 (plus VAT).

#### KA1255 ★

Stereo player. 15W per channel amplifier and BSR C141R 3-speed autochange-or-manual record deck fitted with Acos GP104 diamond stylus. Sliding controls for volume, bass, treble and balance, with pushbuttons for on/off, headphones, disc, tape and radio. Sockets are incorporated for radio, tape, record/playback, headphones, speakers. Acrylic lid, teak veneered. Speaker impedance: 4 ohms. Pair

supplied as standard KS661. Price: (with speakers) £74.09 (plus VAT).

**KA1026 ★**

Stereo player. 5W per channel output. BSR record deck with sapphire stylus. Modern slider controls for bass, treble, balance and volume with pushbuttons for tape, disc and on/off. Sockets for tape record/playback, speakers and headphones. Transparent acrylic lift-off lid. Unit may be used with 8 or 16 ohm speakers. Recommended types KS661, KS662. Price: (with KS662 speakers) £54.02; (with KS661 speakers) £63.63; centre pillar stand optional extra £6.07. All prices exclude VAT.

**■ JVC**

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

**GX500E**

System comprises tuner, amplifier and turntable unit with loudspeakers. Tuner section: 87.5-108MHz FM, 520-1605kHz MW, variable. AFC and stereo decoder fitted. Amplifier output: 4 x 13W into 8 ohms. CD4, SQ, QS, stereo/mono. FR: 20Hz-30kHz. THD: 1%. Twin unit speakers. JVC belt-driven turntable. Price: £399 (plus VAT).

**■ KLINGER**

Klinger Controls Ltd, Spencer Court, 7 Chalcot Road, London NW1 8LU. Tel: 01-586 2922

**KC94 plus two S50 Mk II speakers ★**

FM stereo tuner/amplifier in cabinet with record deck plus two S50 Mk II speaker enclosures. Motor unit: Garrard SP25 Mk IV. Three speeds. Idler wheel drive. Cartridge: Shure M44E Diamond stylus. Range: 87.5-108MHz. Five preset stations. Switchable AFC. Usable sensitivity: 2µV. Aerial input: coaxial and balanced. Outlet for tape: 100mV. Stereo decoder included. Inputs: tape 50mV 220K, aux (1) 100mV 470K, aux (2) 0.15mV 30 ohms. Noise level: 70dB. Overload capability: 30dB. Output: 25W RMS per channel. Output impedance: 8 ohms. Tone controls: bass ± 15dB, treble ± 15dB, scratch filter 18dB/octave from 8 kHz, rumble 12dB/octave from 80Hz. Loudness control. A/B monitor switch. HD: 0.1% at 20W. FR: 25Hz-35kHz ± 2dB at 20W. Switching for two pairs of speakers. Two stereo headphone sockets. Stabilised power supply. Size: 21 x 8 x 15½in. Mains: 110-120V, 220-240V AC. Finish: teak cabinet with folding lid. Price: (KC94 unit, plus two S50 Mk II speakers) £186 (plus VAT).



*Klinger KC94 Plus Two S50 Mk II*

**KC94 Transcription**

Specification as for KC94 above but fitted with Garrard 86SB belt driven transcription deck and supplied with two Klinger S90 speaker systems. Price: £273 (plus VAT).

**■ MARCONIPHONE**

Thorn Consumer Electronics Ltd, Thorn House, Upper St Martin's Lane, London WC2H 9ED. Tel: 01-836 2444.

**Unit-Four**

Tuner/amplifier and record deck with matching speakers. Tuning range: FM 87.5-108MHz, MW 525-1605kHz. Deck: Garrard SP25 Mk IV with Shure M75-6S cartridge. Speeds: 33½, 45 and 78rpm. Synchronous motor. Cueing lever: fluid damped. Two stereo headphone sockets; DIN sockets for speakers and 4-D. Sockets for tape/record/playback/monitor. Sockets for aux input and aerials. Controls: pushbutton power-off, speakers on, balance. Built-in AFC. Tuning selector. Slide controls: treble ± 12dB at 12kHz, bass ± 12dB at 40Hz, left and right volume. Rotary flywheel tuning. Price: £216.48 (plus VAT).

**■ ONKYO**

J. Parkar & Company (London) Ltd, Parkar House, 1 Beresford Avenue, Wembley HA0 1YX. Tel: 01-903 5211.

**SM-10**

Stereo tuner/amplifier in cabinet with record deck, plus matching speaker enclosures. 23-transistor circuit. Range: FM 88-108MHz, MW 187-562m. Variable tuning. AFC. Stereo decoder and beacon fitted. Controls: (slider type) balance, volume and treble/bass; (rotary type) tuning, input selector. Output: 6W RMS

★ Indicates entry is illustrated

per channel. Output impedance: 8 ohms. Own two-speed record deck with lightweight tubular arm and high-compliance ceramic pickup. Automatic return of pickup arm and switch-off. Reflex speaker enclosures with 8in full-range units. Finish: matt wood grain cabinets with black control panel and brushed aluminium trim. Size: (tuner/amplifier/player unit)  $18\frac{1}{2} \times 7\frac{1}{4} \times 15\frac{1}{2}$ in; (speaker enclosures)  $15\frac{1}{2} \times 9\frac{1}{2} \times 7$ in. Price: (complete system) £129.98 (including VAT).

**Dynamic Four 800 ★**

AM/FM stereo tuner/amplifier with separate record deck and speakers, 27 transistors and 21 diodes. Range: FM 88-108MHz, MW 187-565m. Variable tuning. Stereo decoder with auto switching. Stereo beacon. Tuning meter. Switchable AFC. Controls: bass, treble, loudness, balance, high filter, mode, tuning. Output: 25W per channel. Two-speed motor unit with auto-stop and auto return of arm. 12in belt-driven platter. Balanced tubular arm with moving magnet cartridge. Diamond stylus. Pw: 3gm. Two-way reflex speaker enclosures, each containing 8in bass driver and 5in mid/HF unit. Finish: teak veneer with brushed aluminium fascia and tinted plastic dust cover. Price: (complete system) £221.39 (including VAT).



*Onkyo Dynamic Four 800*

**SM-100**

AM/FM stereo tuner/amplifier in cabinet with record deck plus two separate speakers. 25 transistors, 19 diodes. Range: FM 88-108MHz, MW 187-565m. Variable tuning. Stereo decoder with beacon. Tuning meter. Controls: flywheel tuning, bass, treble, balance, volume, input selector, mains on/off. Output: 14W per channel. Sensitivity: FM

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3 $\mu$ V, MW 15 $\mu$ V. Two-speed motor unit with auto cut-off and auto arm return. 12in platter. Balanced tubular arm with high compliance cartridge. Microphone input. Speaker system comprising 8in bass driver and 3in tweeter in bass reflex cabinet. Mains: 100,110,220,240V 50-60Hz. Price: (complete system) £165.86 (including VAT).

#### Model X-1

Four-channel sound system comprising console cabinet with AM/FM tuner/amplifier and record deck, two main-channel speaker enclosures and two slim wall-fixing ambience speakers, 49 transistors and 32 diodes. Range: FM 88-108MHz, MW 187-565m. Variable tuning. Stereo decoder with auto switching and stereo beacon. Output: 16W per channel (total 64W). Sensitivity: FM 2 $\mu$ V, MW 12 $\mu$ V. Special 'Sound Composer' network permits matrix four-channel operation from two-channel sources in addition to discrete four-channel reproduction. Tuning meter. Headphone jack. Two-speed record deck with auto cut-off and return of pickup arm. 12in diameter belt drive. Moving magnet cartridge with diamond stylus. Pw: 1.5-2.5gm. Front speakers: two-way system incorporating 8in bass driver and 2 $\frac{1}{2}$ in mid/HF unit in each. Separate mic input mixing circuit. Price: (complete system) £385.23 (including VAT).

#### Model Y-2

Four-channel sound system comprising AM/FM tuner/amplifier, shelf-mounting record deck, two front-channel speakers and two rear-channel speakers, 47 transistors and 24 diodes. Range: FM 88-108MHz, MW 187-565m. Sensitivity: FM 2.5 $\mu$ V, MW 15 $\mu$ V. Stereo decoder with auto-switching and stereo beacon. Variable tuning. Output: 16W per channel (total 64W). Special 'Sound Composer' network permits matrix four-channel operation from two-channel sources in addition to discrete four-channel reproduction. Tuning meter. Headphone jack. Two-speed record deck with auto cut-off and return of pickup arm. 12in diameter belt-drive platter. Moving magnet cartridge with diamond stylus. Pw: 1.5-2.5gm. Front speakers: two-way reflex system with 8in bass driver and horn tweeter in each. Rear speakers: wall hanging type with single full-range 6 $\frac{1}{2}$ in unit in each. Price: (complete system) £292.25 (including VAT).

### ■ PERIOD HIGH FIDELITY LTD

Clivemont Road, Cornwallis Trading Estate, Maidenhead, Berks SL6 7BU.  
Tel: Maidenhead 21221

#### Versailles

Based on the Louis XV wine commode. Contains the Period High Fidelity tuner amplifier and Garrard 86SB belt-driven transcription record player in an automatically illuminated compartment. The cassette recorder is concealed in a drawer. Used in conjunction with Period High Fidelity LS20 loudspeakers. Output: 20W RMS per channel, both channels operating into 8 ohms. Power bandwidth: 20Hz-20kHz. FR: 20Hz-30kHz  $\pm$ 2dB. HD: 0.15% at 1kHz. H and N: greater than 60dB. Damping factor: 8 ohms 60. Crosstalk: 48dB. Tone controls: bass  $\pm$ 10dB at 100Hz, treble  $\pm$ 12dB at 10kHz. Tuning range: FM 87.5-108MHz, AM 530-1650kHz. Sensitivity: ferrite aerial x 300mV/m, external aerial 30mV. Cassette tape recorder: recording system AC bias, AC erase. Tape speed: 1 $\frac{1}{4}$ i/s. Record player fitted with Shure M75 6S stylus. Synchronous motor. Speakers: infinite baffle construction containing 8in bass unit having a low resonance cone and rubber roll surround, 2in HF unit with associated filters. Price: (with speakers) £985 (including VAT).

#### Adam

Derived from the work of Robert Adam (1728-1792), a period when English cabinet making was at the peak of its fame, with such designers as Chippendale and Sheraton.

Finished in rich mahogany veneers with selected curl mahogany centres on each door. Black box lines separate the curl centres from contrasting cross banding; with solid brass ornamentation, hand finished fluting. Technically Adam is identical to Versailles. Period High Fidelity loudspeaker enclosures LS21 have been especially designed to match both technically and aesthetically with Adam. Technically LS21 are identical to LS20 described under Versailles. Price: (with speakers) £759 (including VAT).

#### Dubarry

An elegant and attractive piece of furniture following closely the style of a console card table from the Louis XVI period.

Veneered in burr walnut and cross banded in contrasting straight grained Walnut, the top especially features a delicately coloured inlaid marquetry panel set in an oval. There is a shaped frieze veneered in burr walnut whilst antiqued brass mounts and handles complete the decoration in authentic Louis XVI style. Turned and fluted legs endow the whole piece with the elegance of its period.

Open the top and Dubarry is seen to contain the Garrard 86SB belt-driven transcription record player fitted with Shure M75.6S



★ Indicates entry is illustrated

cartridge and a compact cassette deck.

Open the front for the Period High Fidelity tuner amplifier and for those unable to accommodate free standing speakers, you will find already built in two infinite baffle enclosures containing 6-inch loudspeakers. The 8 litre enclosures have a frequency response of 60Hz to 18kHz with a power handling capacity of 15 watts DIN for each channel. Price: £621 (including VAT).

#### **Queen Anne**

Adapted from a miniature commode, the Queen Anne is especially suitable for the smaller room. This beautifully made cabinet has burr walnut doors with contrasting diagonal cross bandings.

The top is finished in burr walnut with cross banding and similarly the sides.

A shaped underframe and cabriole legs form a graceful base to the cabinet. Queen Anne, despite its compactness contains the full specification Period High Fidelity tuner amplifier, Garrard 86SB belt-driven transcription record player and a compact cassette tape deck is concealed in a drawer.

In addition, there is storage for approximately 40 L.P.'s together with space for cassettes and other accessories.

Period High Fidelity loudspeaker enclosures LS20 have been especially designed to match with Queen Anne. Technical details of LS20 are included under Versailles. Price: (with speakers) £640 (including VAT).

#### **Iron Duke PHF5 Yew**

Complete Hi-Fi ensemble adapted from a dual purpose low table-rifle chest of the early 19th century campaign era. Cabinet is produced in beautiful Yew veneers, hand polished and then waxed to a faded antique shade.

Protective brass corners and brass handles lend further authenticity to the reproduction, whilst the top especially features a gold tooled green leather skiver.

Iron Duke is also available in Mahogany with a gold tooled honey coloured leather skiver.

Open the top and you will find the Garrard 86SB belt-driven transcription record player and a compact cassette tape deck.

Open the front and you will find the Period High Fidelity tuner amplifier together with built in infinite baffle enclosures containing 6-inch loudspeakers.

The 9 litre enclosures have a frequency response of 60 Hz to 18kHz with a power handling capacity of 15 watts DIN per channel. Price: £615 (including VAT).

#### **Warwick**

Closely following a low table with single drawer from the popular Queen Anne period of English furniture design.

The finest of burr walnut veneers have been used on the top, front and sides, with box lines with diagonal cross banding.

Solid brass handles simulate the front drawer effect and are typical of the period.

The elegant cabriole legs have hand carved acanthus leaves at the knee and together with the shaped underframe form a graceful base to the cabinet.

Garrard 86SB Belt Driven Transcription Record Player and a compact cassette tape deck, and the Period High Fidelity Tuner Amplifier.

Period High Fidelity loudspeaker enclosures LS20 have been designed to complement Warwick both technically and aesthetically. Details are included under Versailles. Price: (with speakers) £569 (including VAT).

#### ■ **RADIONETTE**

Norse Audio Systems Ltd, 9 Hawkesworth Trading Estate, Swindon SN2 1D2, Wilts. Tel: Swindon 22592.

#### **SM340**

Music centre. Output: 20W RMS per channel. Range: FM 87-104MHz. MW 515-1630kHz. LW 148-270kHz. AFC. Cassette recorder fitted with dynamic noise filter switch. Automatic level control. Automatic stop and eject. Stereo mic input and outlets for 2 pairs of stereo headphones. Record deck has hydraulically damped lift/lowering pick-up head. Manual or auto. Supplied with Shure M 75 type D Hi-Fi cartridge. Price: on application.

#### ■ **SHARP**

Sharp Electronics (UK) Ltd, 107 Hulme Hall Lane, Manchester M10 8HL. Tel: 061-205 7321.

#### **SR102E**

Tuner/amplifier with eight-track tape player and two separate speakers. 26 transistors and 15 diodes. Range: FM 88-108MHz, MW 189-560m. Variable tuning. AFC. Ratio detector. Stereo decoder fitted. Controls: tuning, mains on/off, volume, balance, bass, treble, function switch, tape programme selector. Output: 1.5W RMS per channel. Output impedance: 8 ohms. FR: 20Hz-30kHz. HD: 1.5%. Sharp tape transport. Finish: wood veneered cabinet with dark matt metal fascia. Speakers in separate enclosures supplied. Price: £95.45 (plus VAT).

#### **SC103 (CP108H) ★**

Tuner/amplifier with built-in cassette recorder and two separate speakers. 31 transistors



Sharp SC103 (CP108H)



Sharp SD305H

(including one FET), 14 diodes, one IC. Range: FM 88-108MHz, MW 189-560m. Variable tuning. AFC. Ratio detector. Stereo decoder fitted. Controls: tuning, mains on/off, function selector, bass, treble, monitor volume control (record), left-channel volume, right-channel volume, pause button, fast forward, tape play, rewind, record interlock, reject cassette. Output: 3W RMS per channel. Output impedance: 8 ohms. FR: 40Hz-22kHz. Sharp tape deck. Finish: wood veneered cabinet with dark matt metal fascia. Speakers in separate enclosures supplied. Price: £127.23 (plus VAT).

**SD305H ★**

Tuner/amplifier with built-in record deck and separate speakers. Range: FM 88-108MHz, MW 189-560m, LW 900-2000m, SW 16.5-50m. Variable tuning plus preset programmes on FM. AFC. Ratio detector. Stereo decoder fitted. Controls: volume, balance, bass, treble, tuning, mains on/off, function selector, mode. Output impedance: 8 ohms. Sharp motor unit. Magnetic cartridge. Finish: PVC film on wood with aluminium front panel. Separate speakers supplied. Price: £204.55 including speakers. Price excludes VAT.

**GS5730E**

Complete quadraphonic system comprising tuner/amplifier, record deck and four speakers. Range: FM 88-108MHz, MW 189-560m. Variable tuning. AFC. Ratio detector. Stereo decoder fitted. Controls: mains on/off, volume, mic volume, tuning, bass, treble,

function selector, loudness, tape monitor, mode, matrix/discrete four level controls. Output: 10W RMS per channel. Output impedance: 8 ohms. FR: 20Hz-30kHz. Sharp record deck with magnetic cartridge and diamond stylus. Price: £335.45.

**SG-155-H**

Complete unit comprises tuner/amplifier with stereo cassette recorder, and a 2-speed, semi-automatic record player. Output: 3W RMS per channel. Features include pushbutton recording of either disc or radio sources; ceramic cartridge with sapphire stylus fitted to tone arm and a teak cabinet housing. Complete with 2-unit matched speakers. Price: £172.68 (plus VAT).

**SR-156-E**

Combination of AM/FM stereo receiver with an 8-track stereo cartridge recorder. Horizontal styling. Features include fast-forward, pause and auto-eject, speaker selector switch and separate level meters for recording. Output is 3W RMS per channel. Includes pair of matched speakers. Price: £145.41 (plus VAT).

**SC-153H**

Stereo tuner/amplifier with built-in cassette tape deck, and two separate loudspeakers. 20 transistors, 2 IC's, 24 diodes. Range: FM 88-106MHz, MW 520-1620kHz. Output: 3W RMS per channel at 8 ohms. FR: 40Hz-20kHz. Built-in speaker matrix. FM stereo radar indicator. Automatic stop mechanism. Controls: tuning, mains on/off, function switch, volume, balance, bass, treble. 3 digit tape counter, record pushbutton, rewind, play/fast forward, pause control, stop/eject. Price: £127.23 (plus VAT).

■ **SILVER**

J.J. Silber Ltd, 11 Northburgh Street, London, EC1. Tel: 01-253 8031.

**SS5005E**

System comprises record deck/tuner/amplifier with 5 x 700 loudspeakers. Tuner section: FM 87.5-108MHz, AM 515-1620kHz. Fitted with stereo cassette recorder. Dolby B type noise reduction system (S/N ratio: 60dB at 1kHz at zero VU). Phase loop locking MPX for optimum FM stereo reception and minimum distortion. Rated output: 50W RMS (4 ohms at 0.1% distortion). FR: 10Hz-100kHz -3dB. Full auto shut-off and release on cassette and record player, tape memory system, Dolby switch with lighted indicator, tape source/monitor switch, loudness and speaker selector switch. Supplied with dust cover.

★ Indicates entry is illustrated

## ■ SKANTIC

Skantic (UK) Ltd, Station Road, Edenbridge, Kent TN8 6EY. Tel: Edenbridge 5231.

### 39332

Record deck in cabinet with built-in cassette recorder with DNL noise reduction system. Output: 10W RMS per channel. FM tuner with pushbutton selection of 4 pre-set stations. Stereo radio decoder. Record player incorporates ceramic cartridge. FR: 40Hz-20kHz. Available in teak, rosewood, walnut, white or black lacquer. Price: on application.

### 39312

System incorporates FM radio with stereo decoder. Pushbutton selection of 4 pre-set stations. Output: 10W RMS per channel. Record player incorporates ceramic cartridge. Available in teak, rosewood, walnut, white or black lacquer. Price: on application.

### 39342

Record player in cabinet with built-in AM/FM radio. FM section has pushbutton selection of 4 pre-set stations and stereo decoder. Record player with ceramic cartridge. Output: 10W RMS per channel. Available in teak, rosewood, walnut, white or black lacquer. Price: on application.

### 39352

Record deck in cabinet with built-in FM stereo radio. Output: 17W RMS per channel. Belt-drive turntable. Fitted with V15/AT2 Pickering cartridge. Tuner has pushbutton selection of 5 pre-set stations. Available in teak, rosewood, walnut, white or black lacquer. Price: on application.

### 38232

Record deck fitted with Shure M75MB type 2 cartridge. FM tuner incorporating stereo decoder and pushbutton selection of 5 pre-set stations. Output: 35W RMS per channel. Available in teak, rosewood, walnut, white or black lacquer. Price: on application.

## ■ SONY

Sony (UK) Ltd, Pyrene House, Sunbury-on-Thames. Tel: Sunbury 87644.

### HMP-40

AM/FM stereo tuner/amplifier with record deck and separate speakers. Power consumption 120W. Supplied accessories: Ribbon aerial (DIN), 45 rpm adaptor, short spindle, mains lead. FM section tuning range 87.5-108MHz. Frequency response 20-15,000Hz  $\pm 3$ dB. AM Section tuning range:



Sony HMK70

MW 530-1,605kHz. LW 150-350kHz. Built-in ferrite bar aerial, external aerial terminal. Amplifier output: 10 W RMS both channels operating load 8 ohm at 1kHz. Speakers: woofer 165mm, tweeter 51mm. Price: £161.99 (plus VAT).

### HMP-70

AM/FM stereo tuner/amplifier with record deck and separate speakers. FM tuner range: 87.5MHz-108MHz. HD mono 0.5% at 400Hz, stereo 1% at 400Hz. AM tuning range: LW 150-350kHz, MW 530-1,605kHz. HD MW 0.08% at 400Hz. LW 0.8% at 400Hz. Output: 20+ 20W RMS. HD less than 0.9% at continuous RMS power. Belt drive platter with Sony ND-132G stylus. Three way speakers with woofer 22cm, mid-range 9cm cone and tweeter 5 cm. Price: £231.43 (plus VAT).

### HMK-20

Unit audio system with cassette recorder. Output: 5W RMS per channel. Sensitivity: VHF 2.2 $\mu$ V. S/N: 30dB. MW 48dB/in. Controls: volume, tone, function, (AM, FM, phono, cassette) mode monitor. AFC switches. Speaker: 6 $\frac{1}{2}$ in (16cm) full range cone type, impedance 8 ohms. Turntable: two speeds. Ceramic stereo cartridge. Price: £148.10 (plus VAT).

### HMK-30

Unit audio system with cassette recorder. Output: 8W RMS per channel. Sensitivity: VHF 3.3 $\mu$ V. S/N: 30dB. Three-speed platter with VL-30G. Tape speed: 1 $\frac{1}{2}$ ips. Two-way speaker system with 16cm woofer and 6cm tweeter. Impedance: 8 ohms. Accessories supplied include mains lead, ribbon antenna, 45rpm adaptor. Price on application.

**HMK-40**

Unit audio system with cassette recorder. 35 transistors and 22 diodes. Tuning range: VHF 87.5-108MHz, MW 530-1,605kHz, LW 150-350kHz. Output: 10W per channel RMS. HD: less than 1% at 1kHz. 4-track, 2-channel stereo recording tape deck. W and F: 0.22rms weighted. S/N ratio: 45dB. Three speed player with VL30G VM magnetic cartridge. W and F:  $\pm 0.15$ . S/N: 53dB rms weighted. Speakers: 165mm woofer, 50cm tweeter. Price: £226.81 (plus VAT).

**HMK-70 ★**

Audio system with cassette recorder. Tuning range: VHF 87.5-108MHz, MW 530kHz-1,605kHz, LW 150-350kHz. Output: 20W per channel 8 ohms. HD: 0.9% at 1kHz. Two-speed player. W and F:  $\pm 0.09\%$  DIN. S/N: -63dB DIN. VM magnetic cartridge. Four track two channel recorder. Dolby system. Three-way speaker system with 22cm woofer, 9cm mid-range cone and 5cm tweeter. Price: £319.39 (plus VAT).

■ **STEEPLETONE**

Steepletone Products Ltd, Station Approach, Bicester, Oxon OX6 7DP.  
Tel: Bicester 42031.

**S600**

Complete system comprising FM stereo tuner/amplifier with record deck in cabinet plus two separate speakers. Range: 87.5-108MHz. Five preset stations. Switchable AFC. Ratio detector. Stereo decoder fitted. Controls: volume, balance, treble, bass, treble filter, bass filter, loudness, monitor switch, mono/stereo, speaker switching, headphone switching, AFC on/off. FR: (PU input equalised to RIAA) 40Hz-20kHz, (radio and tape inputs) 25Hz-25kHz  $\pm 2$ dB. HD: <0.1% at 20W output; <0.05% at 5W output. Motor unit: Garrard SP25 Mk IV. Speaker system: enclosures each containing one 8in long-throw bass driver, one 3in mid-range unit, one 2Rin tweeter. Finish: teak and brushed aluminium. Price: £226.31 (including VAT).

**S301**

Complete system comprising three waveband tuner/amplifier with record deck in cabinet plus two separate speakers. Range: FM 88-104MHz. AFC. Output: 10W RMS per channel. BSR professional series P.128 featuring viscous cueing device, calibrated stylus pressure adjustment, anti-skate, ceramic cartridge and auto/manual stop/start mechanism. Stereo headphone socket, auxiliary input/output socket and left/right 2-pin DIN speaker sockets. Rotary controls



*Telefunken Hi-Fi Centre 4040*

for tuning, treble, bass, volume and balance. Speaker contains 8in bass, 3in tweeter with crossover network into 4 ohms. Size: (unit) 17 x 6½ x 16½in; (speaker) 10 x 16.4 x 7in. Unit and speakers in teak finish. Price: on application.

■ **TELEFUNKEN**

AEG-Telefunken (UK) Ltd, Bath Road, Slough SL1 4AW. Tel: Slough 33311.

**Hi-fi center 4040 ★**

Radio receiver with 22W RMS per channel output. Four wavebands: FM, MW, SW, LW. 'Selecta' button waveband changeover, five FM station buttons. Switchable AFC. Slide controls for volume, treble, bass and balance. Switchable muting stereo indicator and tuning indicator. Headphone socket. Provision for connection of four loudspeakers. Built-in attenuator/pre-amplifier. Record changer, automatic, can also be used as a player. Speeds: 33½, 45 and 78rpm. Heavy, balanced turntable 10½in diameter. Weight: 4½lb. Tubular pickup arm with adjustable counterweight. Manual cueing device. Pickup pressure adjusting device. Tinted transparent cover. Cabinet: light matt walnut or black and silver. Dimensions: 17½ x 4½ x 14½in. Height without cover: 8in. Price: £234 (including VAT).

■ **TELETON**

Teleton Electro (UK) Company Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW.  
Tel: Chelmsford 62442.

**MC600**

Music centre. 3 waveband tuner. Tuning/signal strength meter. AFC. Output: 10W

★ Indicates entry is illustrated

RMS per channel. Controls: volume, stereo balance, bass and treble, hi-cut filter. Fitted with Garrard 35SB belt-drive deck. Speeds: 33½ and 45rpm. Viscous damped lever action. Tubular aluminium pick-up arm with resiliently-mounted counter-balance weight. 4-pole synchronous motor. W and F: less than 0.2% peak. Rumble: less than -55dB (DIN B). S/N: 40dB. Price: on application.

#### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House,  
Great South West Road,  
Feltham, Greater London.  
Tel: 01-751 1281.

#### SM-270

Complete audio unit comprising two-speed record deck, integrated with radio tuner-amp, VHF/MW/LW receiving stereo radio and two matching speakers. Output: 5W RMS per channel. Each speaker enclosure houses one 12cm and one 5cm. Imp: 8 ohms. Price: £108.80 plus VAT.

#### SM-390

Three unit system comprising stereo record player with MW/LW/SW/VHF stereo radio and two matching speakers. Output 10W RMS per channel. Each speaker enclosure houses 14cm bass driver and 5cm tweeter. Imp: 8 ohms. Price: £170.90 plus VAT.

#### SM-3000

Home music centre with tuner/amplifier VHF/LW/MW stereo radio, stereo record player and stereo cassette recorder plus matching speakers. Output: 6W RMS per channel. Imp: 8 ohms. Two speed player. Cassette deck with pause key, twin recording level meters, three-digit tape counter and interference eraser switch. Each speaker enclosure houses 16cm bass driver and 2.5cm tweeter. Imp: 8 ohms. Price: £182.00 plus VAT.



Ultra Model 6453

#### SM-5200

Three-unit system with four-waveband radio with FM stereo and pre-set tuning for five FM stations. Output: 15W RMS per channel. Speakers extra. Price: on application.

#### SM-3200

Music centre with three wave-band radio with FM stereo, two-speed stereo record deck and stereo cassette deck complete with DNL and CrO<sub>2</sub> selector. Output: 12W RMS per channel. Speakers extra. Price: on application.

#### ■ ULTRA

Thorn Consumer Electronics Ltd,  
Thorn House, Upper St Martin's Lane,  
London WC2H 9ED. Tel: 01-836 2444.

#### 6453B ★

AM/FM stereo tuner/amplifier in cabinet with record deck, plus two separate speaker systems. 48 transistors, 18 diodes, five ICs. Range: FM 87.5-108MHz. MW 187-571m. Variable tuning plus four preset stations on FM. Switchable AFC. Quadrature detector.

## TELETON MUSIC CENTRE

*Listen Carefully to the Price Ticket*

*Pay for the Quality not the Name . . . .*

# Teleton

TELETON (UK) LTD Teleton House  
Waterhouse Lane, Chelmsford, Essex CM1 3DW.  
Chelmsford (0245) 62442. Telex 99338.

Stereo decoder fitted. Controls: tuning, treble, bass, volume (right), volume (left), on/off, loudness, speaker switching, mono/stereo, input selector, waveband selector. Output: 25W RMS per channel. Output impedance: 4 ohms. FR: 25Hz-30kHz +0dB -3dB. HD: <0.1% up to 20W per channel. Motor unit: Garrard SP25 Mk IV with Shure magnetic cartridge. Finish: Bermuda white. Speaker systems: two 5in bass drivers and one 3½in tweeter in each enclosure. Additional pair of speakers available for 4D effect. Price: (complete system) £203.20 (plus VAT).



Van Der Molen T25SC with S45 loudspeakers

■ **VANDER MOLEN**

Van Der Molen Ltd, 101 Hainault Road, Romford, Essex RM5 3HF. Tel: Romford 22018/9.

**T15SC**

Output: 12W per channel RMS. LM/MW/VHF, BSR single play, ceramic cartridge. Cassette unit CrO<sub>2</sub>. FR: 35-15,000Hz. Imp: 8 ohms. Speakers extra. Price: £159.20 plus VAT.

**T25SC ★**

20W per channel RMS. LW/MW/VHF, 86SB turntable, Shure magnetic cartridge. Imp: 8 ohms. Cassette unit CrO<sub>2</sub>. FR: 35-15,000Hz. Imp: 8 ohms. Speakers extra. Price: £184 plus VAT.

**Lambourne SC**

As T25SC but in period style cabinet. Speakers extra. Price: £252.00 plus VAT.

**Havering SC**

As T25SC but in period style cabinet. Speakers extra. Price: £277.60 plus VAT.

■ **YAMAHA**

Natural Sound Systems Ltd, Strathcona Road, North Wembley, London HA9 8QL. Tel: 01-904 0141.

**MC-40**

AM/FM stereo tuner/amplifier in cabinet with record deck. Range: FM 88-108MHz, MW 186-560m. Variable tuning. AFC. Stereo decoder fitted. Controls: volume, loudness, mono/stereo, treble, tuning, bass, input selector, balance, mains on/off. Output: 10W RMS per channel. Output impedance: 8 ohms. FR: 20Hz-30kHz ±2dB. HD: 0.15%. Two-speed belt drive Yamaha turntable. CG-5500 magnetic cartridge. Finish: American walnut. Recommended speakers: NS-410, NS-230, NS-250. Price: from £119.94 (plus VAT) MC-40/NS4 10 System £149.94 (plus VAT).



Yamaha MS-3

**MS-3 ★**

AM/FM stereo tuner/amplifier in cabinet with record deck. Range: FM 88-108MHz, MW 186-565m. Variable tuning. AFC. Stereo decoder fitted. Controls: volume, treble, bass, balance, acoustic equaliser, loudness, tape monitor, mono/stereo, mains on/off, speaker selector, input selector, tuning. Output: 22W RMS. Output impedance: 8 ohms. FR: 10Hz-30kHz +0 -2dB. HD: 0.05%. Yamaha two-speed belt drive turntable. Yamaha CG-7000 magnetic cartridge. Finish: American walnut. Recommended speakers: NS-250, NS-625, NS-645. Price: £199.95 (plus VAT).

**MS-5B**

AM/FM stereo tuner/amplifier in cabinet with record deck and cassette recorder. Range: FM 88-108MHz, MW 186-565m. Variable tuning. AFC. Stereo decoder fitted. Controls: cassette tape record/playback, volume, treble, bass, balance, acoustic equaliser, function, loudness, high filter, mic volume, tuning, record level. Output: 22W RMS per channel. Output impedance: 8 ohms. FR: 10Hz-30kHz -0, +2dB. HD: 0.05%. Yamaha two-speed belt drive turntable. Yamaha CG-7000 magnetic cartridge. Finish: American walnut. Recommended speakers: NS-250, NS-625, NS-645. Price: from £249.95 (plus VAT).



## NAIM NAP 160

### WHAT—NO TONE CONTROLS?

Well, if you really consider the facts, to play music on equipment that is capable of producing a truly accurate portrayal of the original, and then to add or subtract bass or treble, or to filter out any (subjective) frequencies, can only lead to colouration of some form or other.

We believe the Naim amplifier achieves the most accurate and natural sound of any amplifier we have ever heard. The proof of our sincerity shows in that not every dealer could sell an amplifier that, although gives the best performance, basically offers the smallest number of facilities and controls in any amplifier currently available; but if you just want to listen to music, this is the one.

Of course, we admit that the Naim really excels when teamed with the best ancillary equipment, but it also has the amazing ability to reveal quality in sound from comparatively budget equipment. This may seem rather bias to the Naim but we only use our ears to attain the truth.

If you really must have a few extra controls to play with, then we carry a vast back-up range of equipment to choose from. Sugden, Denon, Accuphase, Yamaha, Radford, rate amongst the best, with the old Suggy at the cheaper end very difficult to beat, probably second only to the Naim in performance, and boasting just a few sensible facilities. After all, you can always switch all the filters out and run the tone controls flat . . . can't you?

Acos, Accuphase, Aiwa, Ariston, Cambridge, Celef, Connolisseur, Dahlquist, Dual, Denon, E.P.I., Fisher, Gale, Grace Hacker, J.B.L., Linn-Sondek, Marantz, Micro, Monitor Audio, N.A.D., Naim, Nakamichi, Neal, Nikko, Omal, Omar, Phase-Linear, Photax, Pioneer, Quasar, Radford, Revox, S.M.C., Scott, Soundcraftsman, J. E. Sugden, Supex, Teleton, Videotone, Yamaha, Ess, Cerwin-Vega, Dokorder, Infinity, BIC, B & W.



3 YEARS PARTS AND LABOUR GUARANTEE

## JEFFERIES HI-FI

4 ALBERT PARADE, GREEN STREET, EASTBOURNE  
Eastbourne 31336 (std code 0323)

# Constructional Kits

★ Indicates entry is illustrated  
Abbreviations used in this section are given on page 27.

■ **RICHARD ALLAN**  
Richard Allan Radio Ltd,  
Bradford Road, Gomersal,  
Cleckheaton, Yorkshire BD19 4AZ.  
Tel: Cleckheaton 2442.

**Twin Assembly** ★  
Speaker kit comprising CBF8 bass/mid-range driver and CB4 treble unit. CN54 crossover, BAF wadding, Vynair fret material (with choice of three patterns), foam backing sheet, detailed assembly instructions, fixing screws, terminals, etc. FR: 40Hz-17kHz. HC: 12W RMS. Impedance: 8 or 15 ohms. Recommended cabinet size: 20 × 12 × 9in. Design based on Richard Allan Chaconne series 11 enclosure. Price: £10.70 (plus VAT).

**Triple-8 Assembly**  
Speaker kit comprising CF8L bass driver, CF5 mid-range unit, CB4 treble unit, ¼-section printed circuit crossover, BAF wadding, Vynair grille material (with choice of three patterns), foam backing sheet, detailed assembly instructions, fixing screws, terminals, etc. FR: 40Hz-17kHz. HC: 15W RMS. Impedance: 8 or 15 ohms. Recommended cabinet size: 20½ × 13 × 8½in. Design based on Richard Allan Flamenco series 11 enclosure. Price: £16.25 (plus VAT).

**Triple-12 Assembly**  
Speaker kit comprising CG12 bass driver, CP8 mid-range unit, CB4 treble unit, ¼-section printed circuit crossover, BAF wadding, Vynair fret material (with choice of three patterns), foam backing sheet, detailed assembly instructions, fixing screws, terminals, etc. FR: 30Hz-17kHz. HC: 20W RMS. Impedance: 8 or 15 ohms. Recommended cabinet size: 25 × 15½ × 12½in. Design based on Richard Allan Pavane series 11 enclosure. Price: £23.60 (plus VAT).

**Super-12 Assembly**  
Speaker kit comprising CG12 Super bass driver, CP8 mid-range unit, CB4 treble unit,

¼-section crossover network. FR: 30Hz-17kHz. HC: 25W RMS. Impedance: 8 or 15 ohms. Recommended cabinet size: 25 × 15½ × 12½in. Design based on Richard Allan Sardana enclosure. Price: £28.35 (plus VAT).

■ **CONNOISSEUR**  
A.R. Sugden & Co (Engineers) Ltd,  
Connoisseur Works, Atlas Mill Road,  
Brighouse, Yorks HD6 1ES.  
Tel: Brighouse 2142.

**BD1 Turntable kit**  
Description and specification as for BD1 motor unit (See Record Decks section). Easy one-hour assembly. No soldering. Price: £16.09 (including VAT).

■ **EAGLE INTERNATIONAL**  
Heather Park Drive, Wembley HAO 1SU.  
Tel: 01-902 8832.

**SK210**  
Speaker kit (two-way) complete with crossover, terminal plate and instructions. HC: 10W RMS. FR: 50Hz-17.5kHz. Drive units: 6½in bass and 2in tweeter. Impedance: 8 ohms. Price: £6 (including VAT).

**SK215**  
Speaker kit (two-way) complete with crossover, terminal plate and instructions. HC: 15W RMS. FR: 45Hz-17.5kHz. Drive units: 8in bass and 2½in tweeter. Impedance: 8 ohms. Price: £10 (including VAT).



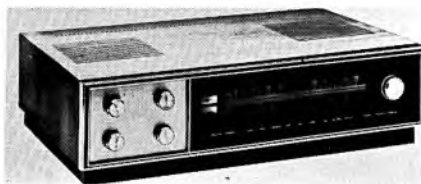
Richard Allan Twin Assembly



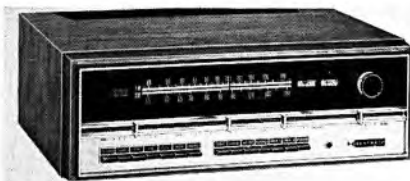
★ Indicates entry is illustrated



Eagle International SK335



Heathkit AR-1500



Heathkit AR-1302



Heathkit AC-1122



Heathkit AR-1214

### SK320

Speaker kit (three-way) complete with cross-over, terminal plate and instructions. HC: 20W RMS. FR: 35Hz-19kHz. Drive units: 8in bass, 2½in mid-range and 2in tweeter. Impedance: 8 ohms. Price: £14 (including VAT).

### SK325

Speaker kit (three-way) complete with cross-over, terminal plate and instructions. HC: 25W RMS. FR: 30Hz-20kHz. Drive units: 10in bass, 5in mid-range and 2½in tweeter. Impedance: 8 ohms. Price: £22 (including VAT).

### SK335 ★

Speaker kit (three-way) complete with cross-over, terminal plate and instructions. HC: 35W RMS. FR: 20Hz-20kHz. Drive units: 12in bass, 5in mid-range and 2½in tweeter. Impedance: 8 ohms. Price: £28 (including VAT).

### IM-28F

Laboratory valve-voltmeter kit. Printed circuit. Gimbal mounting, for viewing from any angle. Measures AC volts 0-1.5, 5, 15, 50, 150, 500, 1500 RMS; AC volts 0.4, 14, 140, 400,

1400, 4000 peak-to-peak. DC volts 0-1.5. 5. 15. 50, 150, 500, 1500. Ohms (with 10 ohms centre) × 1, × 10, × 100, × 1000, 10K, 100K, 1M, 0.1 ohms to 1000M with internal battery. Input resistance: 11m. 200µA meter movement. Price (kit): £32.31 (assembled): £51.39. Carriage included within UK.

### IG-18

Sine-square wave generator. Sine wave output: 1Hz-100kHz. Square wave output: 5Hz-100kHz. Frequency accuracy: ±5%. Sine wave in eight ranges, square wave in three ranges. Output meter: two voltage scales and one dB scale. Distortion: <0.1% 10Hz-20kHz. Mains: 105-125V or 210-250V AC. Size: 13¼ × 5¼ × 7in. Weight: 7lb. Price: (kit) £46.20 (assembled) £75.93. Carriage included within UK.

### HEATHKIT

Heath (Gloucester) Ltd,  
Bristol Road, Gloucester GL2 6EE.  
Tel: Gloucester 29451.

### AR-1500 ★

AM/FM stereo receiver. Range: FM 88-

108MHz, MW 185-560m. Sensitivity: FM  $1.8\mu\text{V}$ , AM  $50\mu\text{V}$ . Aerial input: 75 ohms coaxial and 300 ohms balanced. Built-in ferrite rod for MW. Stereo decoder fitted. Tuning meter. Stereo beacon. Variable tuning. Push-button waveband selectors. Output: 60W sine wave into 8 ohms per channel. HD: <2%. H and N: -40dB. Inputs: mag PU  $1.8\text{mV}$ , tape  $140\text{mV}$ , aux  $140\text{mV}$ . Two AC outlet sockets. Size:  $18\frac{1}{2} \times 5\frac{1}{2} \times 13\frac{3}{4}\text{in}$ . Mains: 120 or 240V 50-60Hz. Price: (kit) £237.59 (cabinet) £14.26. Carriage included within UK.

**AR-1302 ★**

AM/FM stereo receiver. Range: FM 88-108MHz, MW 185-560m. Sensitivity: FM  $1.9\mu\text{V}$ , MW  $300\mu\text{V}$ . Aerial input: 75 ohms coaxial and 300 ohms balanced. Built-in ferrite rod for MW. Stereo decoder fitted. Stereo beacon. Tuning meter. Inputs: mag PU  $2.4\text{mV}$ , tape and aux  $180\text{mV}$ . Variable tuning. Slider controls for bass, treble, balance and volume. Pushbuttons for waveband selection, mode and speakers. Output: 20W per channel sine wave into 8 ohms. Two AC outlet sockets. Mains: 120 or 240V 50-60Hz. Size:  $16\frac{3}{4} \times 5\frac{1}{4} \times 14\frac{1}{2}\text{in}$ . Price: (kit) £165 (cabinet) £13.24. Carriage included within UK.

**AR-1214 ★**

AM/FM stereo receiver. Range: FM 88-108MHz, MW 185-560m. Sensitivity: FM  $2\mu\text{V}$ , AM  $100\mu\text{V}$ . Aerial input: 75 ohms coaxial or 300 ohms balanced. Built-in ferrite rod for MW. Stereo decoder fitted. Stereo beacon. Variable tuning. Pushbutton waveband and mode selection. Output: 15W per channel sine wave into 8 ohms. Inputs: mag PU  $2\text{mV}$ , tape  $190\text{mV}$ . Two AC outlet sockets. Mains: 120 or 240V 50-60Hz. Size:  $17 \times 3\frac{3}{8} \times 13\text{in}$ . Price: (kit) £87.87. Carriage included within UK.

**AR-2000**

Multi-waveband AM/FM stereo receiver. Range: 88-108MHz, MW 185-560m, LW 860-2000m, SW 26-52m. Variable tuning. Aerial input: 75 ohms coaxial and 300 ohms balanced. Sensitivity: FM  $2\mu\text{V}$ , SW  $15\mu\text{V}$ , MW  $25\mu\text{V}$ , LW  $50\mu\text{V}$ . Input: mag PU  $2.8\text{mV}$ , crystal PU  $200\text{mV}$ , tape  $200\text{mV}$ . Output: 20W sine wave per channel into 8 ohms. HD: <0.25% at 20W. FR: 10Hz-30kHz  $\pm 1\text{dB}$ . Output impedance: 4-16 ohms. Tape outlet socket: 1V adjustable at 100K. Treble control: +14dB -16dB at 20kHz, bass control +16dB -20dB at 20Hz. Mains: 110, 130, 220-230, 240-250V AC. Size:  $24\frac{3}{8} \times 4\frac{1}{2} \times 11\frac{1}{4}\text{in}$ . Finish: walnut or teak. Price: (kit) £107.87 (cabinet) £11.02. Carriage included within UK.

**AC-1118 ★**

AM/FM stereo receiver. Range: FM 88-



Heathkit AC-118



Heathkit AC-1120

108MHz, MW 185-560m. Sensitivity: FM  $18\mu\text{V}$ , AM  $50\mu\text{V}$ . Aerial input: 75 ohms coaxial and 300 ohms balanced. Built-in ferrite rod for MW. Stereo decoder fitted. Tuning meter. Stereo beacon. Variable tuning. Pushbutton waveband selectors. Bass and treble controls, slide controls for volume, speaker on/off and stereo/mono switches, terminals for external FM antenna and headphone jack. Output: 4.5W RMS per channel into 8 ohms at less than 1.0% THD from 50Hz-15kHz. FR: 30Hz-15kHz  $\pm 3\text{dB}$ . Input sensitivity: ceramic phono  $140\text{mV}$ , high level inputs  $120\text{mV}$ . Hum and noise: -60dB FM. Selectivity: 60dB. Channel separation: 35dB. W and F: less than 0.3%. Mains: 120/240V AC 60/50Hz. Size: 4in high,  $16\frac{1}{2}\text{in}$  wide, 15in deep. Price: £72.22 (plus VAT).

**AC-1120 ★**

AM/FM stereo receiver with 8-track tape player. Tape player has synchronous motor, automatic or manual programme change and listed programme indicators. Range: FM 88-108MHz, MW 185-560m. Sensitivity: FM

★ Indicates entry is illustrated

18 $\mu$ V, AM 50 $\mu$ V. Aerial input: 75 ohms coaxial and 300 ohms balanced. Built-in ferrite rod for MW. Stereo decoder fitted. Tuning meter. Stereo beacon. Variable tuning. Pushbutton waveband selectors. Bass and treble controls, slide controls for volume, speaker on/off and stereo/mono switches, terminals for external FM antenna and headphone jack. Output: 4.5W RMS per channel into 8 ohms at less than 1.0% THD from 50Hz-15kHz. FR: 30Hz-15kHz $\pm$ 3dB. Input sensitivity: ceramic phono 140mV, high level inputs 120mV. Hum and noise: -60dB FM. Selectivity: 60dB. Channel separation: 35dB. W and F: less than 0.3%. Mains: 120/240V AC 60/50Hz. Size: 4in high, 22in wide, 14 $\frac{1}{2}$ in deep. Price: £92.41 (plus VAT).

**AC-1122 ★**

AM/FM 4-channel receiver with 8-track tape player. Built-in SQ decoder. Individual sliding controls for volume (each channel), separate bass and treble controls for front and rear channels, ceramic phono and aux inputs, 4-channel headphone jacks and speaker on/off switch. Range: FM 88-108MHz, MW 185-560m. Sensitivity: FM 18 $\mu$ V, AM 50 $\mu$ V. Aerial input: 75 ohms coaxial and 300 ohms balanced. Built-in ferrite rod for MW. Tuning meter. Stereo beacon. Variable tuning. Output: 4.5W RMS per channel into 8 ohms at less than 1.0% THD at 50Hz-15kHz. FR: 30Hz-15kHz $\pm$ 3dB. Input sensitivity: ceramic phono 140mV, other high level inputs 120mV. Hum and noise: -60dB. Selectivity: 60dB. Channel separation: 35dB. W and F: less than 0.3%. Mains: 120/240V AC 60/50Hz. Size: 4in high, 22in wide, 14 $\frac{1}{2}$ in deep. Price: £127.78 (plus VAT).

**AT-1124 ★**

4-channel amplifier with 8-track tape player. Output: 4.5W RMS per channel into 8 ohms at less than 1.0% THD from 50Hz-15kHz. FR: 30Hz-15kHz $\pm$ 3dB. Input sensitivity: ceramic phono 140mV, high level inputs: 120mV. Hum and noise: -55dB. W and F: less than 0.3%. Built-in SQ decoder. Sliding volume controls for each channel, separate front and rear, bass and treble controls, headphone jack. Mains: 120/240V AC 60/50Hz. Size: 4 $\frac{1}{2}$ in high, 16 $\frac{1}{2}$ in wide, 15in deep. Price: £92.41 (plus VAT).

**AA-1214**

Stereo integrated amplifier. Specification the same as amplifier section of AR-1214. Size: 12 $\frac{1}{2}$  x 3 $\frac{3}{4}$  x 12in. Finish: teak or walnut end panels. Price: (kit) £54.54. Carriage included within UK.

**AJ-1214**

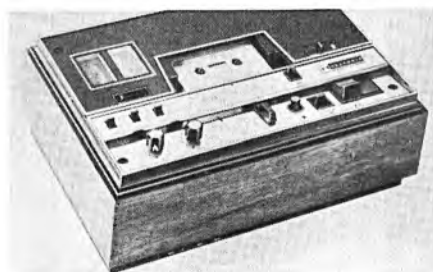
AM/FM stereo tuner. Specification the same



Heathkit AT-1124



Heathkit AS 9560, AS 9520, AS 9515, AS 9530



Heathkit AD-1530E

as tuner section of AR-1214. Output: AM 0.6V nominal, FM IV nominal. Size: 12 $\frac{1}{2}$  x 3 $\frac{3}{4}$  x 13in. Finish: teak or walnut end panels. Price: (kit) £54.54. Carriage included within UK.

**AS-9560 ★**

Speaker system with units. HC: 60W RMS. FR: 25Hz-27kHz. Crossover: 650Hz and 5kHz. Infinite baffle. Impedance: 8 ohms. Finish: teak or walnut. Size: 32 x 16 x 12in. Weight: 60lb. Price: (kit) £82.32. Carriage included within UK.

**AS-9530 ★**

Infinite baffle enclosure with units. KEF B139 13 x 9 $\frac{1}{2}$ in bass driver, KEF B110 5 $\frac{1}{2}$ in mid-range unit, KEF T27 dome tweeter. Crossover: 600Hz and 3kHz. Impedance: 8 ohms. HC: 30W RMS. FR: 30Hz-27kHz. Size: 26 x 16 x 12in. Weight: 32lb. Finish: teak or

walnut. Price: (kit) £62.78. Carriage included within UK.

**AS-9520 ★**

Infinite baffle enclosure with units. KEF B200 bass driver, KEF T15 mid-range and HF unit. HC: 20W RMS. FR: 35Hz-20kHz. Impedance: 8 ohms. Crossover: 3kHz. Size: 20 × 12 × 10in. Weight: 23lb. Finish: teak or walnut. Price: (kit) £36.94. Carriage included within UK.

**AS-9515 ★**

Infinite baffle enclosure with units. One full-range Peerless E396M elliptical driver. HC: 15W RMS. FR: 50Hz-16kHz. Impedance: 8 ohms. Size: 7 × 12 × 6in. Finish: teak or walnut. Weight: 6lb. Price: (kit) £14.68. Carriage included within UK.

**AS-1140**

Infinite baffle enclosures. Each enclosure houses a 4½in full-range speaker with a foam suspension and 3oz magnet. Useful response extends from 70Hz-16kHz. For use with amplifiers of up to 10W output. Size: 12in high, 7in wide, 6in deep. Impedance: 8 ohms. Finish: walnut-grain vinyl. Price: £20 per pair (plus VAT).

**AV-3U**

Audio valve millivoltmeter. Measures voltages as low as 1mV to a maximum of 300V at high impedances in 10 ranges. Frequency range 10-400,000Hz. Uses a 4½in meter. Cathode follower output. Price (kit): £21. Carriage extra.

**IM-58U**

Low-priced audio distortion meter. Simple to use. Measures distortion at frequencies between 20Hz and 20kHz. Size: 13 × 7 × 8½in. Price (kit): £54.07 (assembled) £78.24. Carriage included within UK.

**IM-18E**

Valve voltmeter kit. Printed circuit. Measures AC volts 0-1.5, 5, 15, 50, 150, 500, 1500 RMS. AC volts 0-4, 14, 40, 140, 400, 1400, 4000 peak-to-peak, DC volts 0-1.5, 5, 15, 50, 150, 500, 1500. Ohms (with 10 ohms centre) × 1, 10, 100, 1000, 10K, 100K, 1M, 0.1ohms to 1000M with internal battery. Input resistance: 11M, 200µA meter movement. Price (kit): £26.30 (assembled) £38.33. Carriage included within UK.

**AD-1530E ★**

Dolby cassette deck. Individual boas adjust controls for regular and CrO<sub>2</sub> tape. Individual record level controls with separate VU meters. Large three-digit resettable counter for indexing selections within a tape. Input selector switch for either mic or high-level source input. Modular plug-in circuit board

design in the amplifier and Dolby circuits simplify construction and servicing. FR: regular (iron oxide) tape 40Hz-12kHz ±3dB typical, CrO<sub>2</sub> (chromium dioxide) tape 40Hz-14kHz ±3dB typical. Distortion: less than 0.5%. Hum and noise: (Dolby switch off) 10dB at 4kHz, -9dB at 2.4kHz, -6dB at 1.2kHz, -3dB at 600Hz. W and F: less than 0.25% RMS. Tape speed: 1¼in/s. Mains: 120/240V AC 50/60Hz 15W. Size: 5½in high, 9½in deep, 14in wide. To help check-out and adjustment, a built-in test circuitry and blank C60 cassette tape are included. Price: £138.80 (plus VAT); dust cover (model ADA-1530-I) optional extra £4.50.

**AA-2005**

Four channel amplifier with built in decoder for matrixed 4-channel records and FM broadcasts. Output: 15W per channel into 8 ohms. Power bandwidth: 5Hz-30kHz. FR: ±1dB 7Hz-50kHz, ±3dB 5Hz-70kHz. HD: less than 0.5% from 20Hz-20kHz at 15W output. DF: greater than 30. Inputs: phono 2.2mV, tuner, aux, tape 200mV. Input overload: phono greater than 5V with level control tuner, aux; tape greater than 3V. H and N: phono -60dB, tuner, aux, tape -70dB. Channel separation: phono 40dB, tape 45dB. Input impedance: phono 49K (RIAA equalised), tuner, aux, tape 100K. Mains: 120 or 240V 50/60Hz AC. Size: 4⅞ × 10⅜ × 12in. Price: £138.80 (plus VAT).

**AJ-29**

FM stereo tuner. Sensitivity: 1.8µV. Selectivity: greater than 70dB. Built-in AM rod antenna. Price: £124.95 (plus VAT).

**AA-29**

Stereo amplifier. Output: 70W. Outputs for two stereo speaker systems. Input level controls for both channels of all inputs including tape monitor allow adjustments of levels so volume remains constant when switching sources. Price: £101.66 (plus VAT).

**AR-29**

AM/FM Receiver. Output: 30W into 8 ohms. Frequency Response (1W): -1dB, 7Hz to 60kHz. HD: 0.25% from 20Hz to 20kHz at 35W RMS, 0.1% at 1000 Hz at 1W. IM Distortion: 0.2% at 35W, 60 and 6,000 Hz mixed 4:1. 0.1% at 1W. Damping factor: 50. Input sensitivity: phono: 2.2mV (Overload 155mV), tape aux and tape mon, 180mV (overload 10V) Hum and noise: phono (10mV ref.), -65dB tape and aux (0.25 V ref.), -75dB. Channel separation: phono, 50dB, tape and aux, 60dB. Output impedance: (each channel): 4 to 16 ohms. Tape output

★ Indicates entry is illustrated

Channel separation: 45dB at mid-frequencies. FR:  $\pm 1$ dB from 20 to 15,000 Hz. HD: 0.5% at 100 Hz with 100% modulation. 19kHz and 38 kHz. Suppression: 55dB. AM Section: Tuning: 535 to 1620kHz. AM antenna: Adjustable rod. Connections for external ant. grd. HD: 2%. Hum and noise: -35dB. AC outlet sockets: one switched (350W max.), one impedance: 50 ohms. Input impedance: phono, 49k ohms (RIAA equalized). aux, tape and mon, 100k ohm. Tape output: 1V with 0.2 V input. FM, 3.8 V with 100% modulation. FM section: (monophonic): tuning range: 88 to 108 MHz. Antenna: balanced for external 300 ohm antenna, unbalanced 75 ohm. FR:  $\pm 1$ dB 20 to 15,000 Hz. Sensitivity: 70dB. Image rejection: 90dB. Capture ratio: 1.5dB. AM suppression: 50dB. HD: 0.4%. Hum and noise: 60dB. FM Section: (Stereophonic): unswitched (350 W max.) Mains: 120/240V AC 50/60 Hz 240 watts at full output. Dimensions: (Overall):  $5\frac{1}{2} \times 16\frac{1}{8} \times 14\frac{1}{2}$ ins. Price: £198.06 (plus VAT). Optional cabinet £13.24 (plus VAT).

#### AJ-1510A

Digital tuner: monophonic: Tuning range: 88.1 to 107.9MHz. Tuning: digitally synthesized. Intermediate frequency: 10.7MHz. Antenna: 75 or 300 ohm. FR: Discriminator: 10-60,000 Hz,  $\pm 0.5$ dB. Audio: 20-15,000 Hz,  $\pm 1$ dB. Sensitivity: Less than  $1.8\mu$ V. Selectivity (alternate channel): greater than 95dB. Capture ratio: less than 1.5dB. HD: Less than 0.3%. IM distortion: less than 0.1% Image rejection: greater than 90dB. IF rejection: greater than 95dB. Spurious rejection: greater than 90dB. Signal-to-noise ratio (100%mod): greater than 65dB. AM suppression: greater than 60dB. Channel frequency accuracy: Better than 0.005%. Stereophonic: channel separation: 1,000 Hz, 40dB; 80Hz, 25dB; 10kHz, 25dB; 15kHz, 20dB. HD: (100%mod): 0.35%. FR: ( $\pm 1$ dB): 20 to 15,000Hz. 19kHz and 38kHz suppression: greater than 60dB. SCA suppression: greater than 60dB. Audio output: audio output level: (fixed): 1.2V rms nominal (with 100% mod.). Output impedance (fixed): Approx 4,700 ohms. Power requirements: 120/240V AC, 50/60 Hz, 50W. AC outlet socket: unswitched, 350W max. Dimensions:  $6 \times 16\frac{1}{8} \times 14\frac{1}{2}$ ins. Weight 23 lbs (less cabinet. Price: £300.74 (plus VAT). Optional cabinet £14.26 (plus VAT).

#### AD-1013

Audio scope: Input impedance: 100k $\Omega$ . FR: 5 Hz to 200 kHz  $\pm 3$ dB. Audio oscillator output: range: 20Hz to 20kHz. Voltage level: 2mV to 3 volts (RMS)(variable). Output variations: 25dB

20Hz to 20kHz. Output impedance (front panel jack): Approx 600 $\Omega$ . Input impedance: 100K. Input Impedance: 100K. FR: 5Hz to 200kHz,  $\pm 3$ dB. 4-channel Input: Sensitivity: 1 volt P-P/cm. Input impedance: 5000 $\Omega$ . Triggered sweep generator: range: 10Hz to 100kHz. Mains: 120 or 240 volts AC, 50/60Hz, 15 watts with no accessory load. AC Outlet (on rear panel): unswitched. Dimensions (overall):  $5\frac{1}{2} \times 18\frac{1}{2} \times 13\frac{1}{2}$ ins. Price: £118.98 (plus VAT); optional cabinet £14.26 (plus VAT).

#### AR-2020

AM/FM receiver: FM section (monophonic): Tuning range: 88-108 MHz. Intermediate Frequency (IF): 10.7 MHz. FR:  $\pm 1$ dB, 20 to 15,000Hz. Sensitivity:  $2\mu$ V. Selectivity: 60dB. Image rejection: 50dB. IF rejection: 75dB. Capture ratio: 2dB. AM suppression: 50dB. HD: 0.5%. IM Distortion 0.5%. Hum and Noise: 60dB. Spurious rejection: 70dB. FM section: (stereophonic): Channel separation: 40dB typical. FR:  $\pm$ dB from 20 to 15,000 Hz. HD: 75% at 1000Hz with 100% modulation. 19kHz and 38kHz suppression. 60dB. SCA suppression: 55dB typical. AM section: tuner range: 535 to 1620 kHz. Intermediate Frequency (IF): 455 kHz. Sensitivity: 100 $\Omega$ V per meter. Selectivity: 40dB (alternate channel). Image rejection: 75dB at 600 kHz. 70dB at 1400kHz. IF rejection: 70dB. HD: 2%. Hum and noise: 35dB. Amplifier: dynamic power. Output per channel: (music power rating) 25 watts (8 $\Omega$  load; 30 watts (4 $\Omega$  load); 14 watts (16 $\Omega$  load). Continuous power output per channel: 15 watts (8 $\Omega$  load); 20 watts (4 $\Omega$  load); 10 watts (16 $\Omega$  load). Power bandwidth for constant 0.5% THD: 5Hz to 30kHz. FR: (1 watt level):  $\pm 1$ dB 7Hz to 50kHz.  $\pm 3$ dB, 5Hz to 70kHz. HD: less than 0.5% from 20Hz to 20kHz at 15 watts output. Less than 0.25% at 1000Hz with 1 watt output. Intermodulation Distortion: less than 0.5% with 15 watts output, using 60 and 6000 Hz mixed 4:1. Less 0.25% at 1 watt output. Damping factor: greater than 30. Input sensitivity: phono: 2.2 millivolts. Tape: 200 millivolts. Input overload: phono: greater than 5 volts with level control. Tape: greater than 2.5 volts. Hum and noise: phono (10 millivolt reference) +60dB. Tape (200 millivolt reference) -70dB volume control in minimum position -85dB referred to rated output. Channel separation: phono 40dB. Tape: 45dB. Output impedance: 4 $\Omega$ , 8 $\Omega$ , or 16 $\Omega$ . Tape output impedance: approx 50. Input impedance: phono 49K (RIAA equalized). Tape 100. Tape monitor 100. Tape output: 4 volt output with 2 volt input. AC outlet

sockets: Two. One switched (350 watts max.) and one unswitched (350 watts max.) Power requirements: 120 or 240 volts 50/60Hz AC. Dimensions 5 x 20 x 14ins. Price: £183.33 (plus VAT).

■ **HELME**

Helme Audio Products Ltd, Summerbridge, Harrogate HG3 4DR Yorks.  
Tel: Darley 279.

Range of easy-to-assemble speaker enclosures for the home constructor

Five high-grade stereo speaker kits are offered, four of which require no soldering. All are complete with accessories and fully detailed instructions for assembly. As an additional aid, assembled cabinets finished in either teak or walnut are available to suit the appropriate speaker kit.

**XLK-30**

8in bass/mid-range with plastic coated cone and 4in cone tweeter. HC: 25 to 30W DIN. FR: 45Hz-18kHz. Crossover frequency: 5.5kHz. Price: £14.77 per pair (plus VAT).

**XLK-30 Super**

As XLK-30 but with ready wired crossover requiring no soldering. Price: £16.62 per pair (plus VAT).

**XLK-25 Deluxe**

8in bass/mid-range with 3in aluminium-coned tweeter. Bass/mid-range with plastic coated cone. HC: 25W DIN. FR: 40Hz-40kHz. Crossover frequency: 4kHz. Price: £27.73 per pair (plus VAT).

**XLK-25 H.E.**

Similar to XLK-25 Deluxe but not with plastic coated cone. Price: £25.46 per pair (plus VAT).

**XLK-50**

13in x 8in bass/mid-range with plastic coated cone and 3in aluminium coned tweeter. HC: 50W DIN. FR: 30Hz-40kHz. Crossover frequency: 6kHz. Price: £49.07 per pair (plus VAT).

■ **KEF ELECTRONICS LTD**

Tovil, Maidstone, Kent ME15 6QP.  
Tel: Maidstone 572528.

**Kefkit 1**

B200, T27 and DN13 units supplied on mounted polyurethane foam baffle. Complete with ready for fitting fabric grille. Pre-formed acoustic damping foam blocks, insulating

strip, terminal plates. For use with an amplifier of up to 25W per channel. Impedance: 8 ohms (nominal). FR: 50Hz-30kHz ±3dB. Sensitivity: 17W into nominal 8 ohms for 96dB/m. Price: on application.

**Kefkit 3**

B139, B110 and T27 units supplied mounted on 28 x 14 x 10½in baffle. Complete with grille fabric, mounting bolts, BAF padding, speaker terminals and full mounting instructions. HC: 30W. FR: 30Hz-30kHz. Impedance: 8 ohms. Price: £42.20 (plus VAT).

**KEF Components**

BAF wadding (5yds 12 x 1in) £1.50; terminal panels (per pair) 18p; 5mH inductor (per pair) £1; 1.3mH inductor (per pair) 70p; 1mH inductor (per pair) 70p; 3mH inductor (per pair) 80p; 0.25mH inductor (per pair) 40p; 0.6mH inductor (per pair) 60p; 1.1mH inductor (per pair) 70p; 2mH inductor (per pair) 60p; 0.8mH inductor (per pair) 60p; 1.7mH inductor (per pair) 80p; 0.4mH inductor (per pair) 40p; 4mH inductor (per pair) 90p; 4mfd 50V capacitor (per pair) 30p; 5mfd 50V capacitor (per pair) 32p; 6mfd 50V capacitor (per pair) 32p; 7mfd 50V capacitor (per pair) 32p; 8mfd 50V capacitor (per pair) 36p; 16mfd 50V capacitor (per pair) 40p; 30mfd 50V capacitor (per pair) 50p; 80mfd 50V capacitor (per pair) 80p; 5 ohms 5W resistor (per pair) 20p; 10 ohms 3W resistor (per pair) 20p. All prices exclude VAT.

Ready-built versions of all these systems are available. Details of these and cabinet kits on application.

■ **PEERLESS**

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

Peerless Loudspeaker Kits comprise expertly chosen and accurately matched drive units which are arranged to operated over their optimum frequency ranges through specially designed dividing networks. All Peerless kits contain: speaker fixing clamps, sealing strip, solderless connecting cables, and comprehensive instructions on system connection and cabinet construction. All kits have an input impedance of 8 ohms.

**Kit 20-2 ★**

8in. woofer with rubber roll surround. 2½in. sq. cone tweeter. HC: 50 W. FR: 40-20,000 Hz. Crossover: 2500 Hz. Rec. cabinet vol: 20 litres. Price (each kit): £18.88 (plus VAT)

★ Indicates entry is illustrated



Peerless Kit 20-2



Peerless Kit 50-4



Peerless Kit 20-3



Peerless Kit 1060



Peerless Kit 30-2



Peerless Kit 1070

**Kit 20-3 ★**

8in. woofer with rubber roll surround. 5in. enclosed midrange. 2½ in. sq. cone tweeter. HC: 50W. FR: 40-20,000 Hz. Crossover: 1500 and 6000 Hz. Rec. cabinet vol: 20 litres. Price (each kit): £28.50 (plus VAT)

**Kit 30-2 ★**

10in. woofer with rubber roll surround. 1 in. dome tweeter. HC: 50 W. FR: 35-20,000 Hz. Crossover: 3000 Hz. Rec. cabinet vol: 30 litres. Price (each kit): £26.63 (plus VAT).

**Kit 50-4 ★**

10in. woofer with rubber roll surround. 7 × 5 in. enclosed midrange. 2 × 2½in. cone tweeters. HC: 50 W. FR: 30-20,000 Hz. Crossover: 500 and 3500 Hz. Rec. cabinet vol: 50 litres. Price (each kit): £44.00 (plus VAT)

**Kit 1060 ★**

8½in. woofer with foam roll surround. 1in. dome tweeter. HC: 50 W. FR: 30-22,000 Hz. Crossover: 1600 Hz. Rec. cabinet vol: 20 litres. Price (each kit): £30.12 (plus VAT)

**Kit 1070 ★**

2 × 7in. woofer with foam roll surround. 4 in. enclosed midrange. 1in. dome tweeter. HC: 60W. FR: 25-22,000 Hz. Crossover: 500 and 4000 Hz. Rec. cabinet vol: 30 litres. Price (each kit): £51.80 (plus VAT)

**Kit 1120 ★**

2 × 10in. woofer with foam roll surround. 4in. enclosed midrange. 1in. dome tweeter. HC: 100 W. FR: 20-22,000 Hz. Crossover: 500 and 4000 Hz. Rec. cabinet vol: 60 litres. Price (each kit): £58.46 (plus VAT)

**■ SINCLAIR**

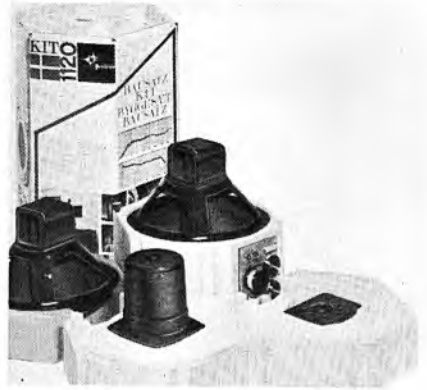
Sinclair Radionics Ltd, London Road,  
St Ives, Hunts PE17 4HJ.  
Tel: St Ives 64646.

**System 4000**

Stereo integrated amplifier. Inputs: mag PU 3mV 47K, ceramic PU 30mV 220K (Switchable), radio 100mV 100K, aux 100mV 100K, tape replay 100mV 47K. Tape output 100mV 10K. Output: 17W RMS into 8 ohms, both channels driven Output load requirement: any impedance between 3 and 16Ω protected against continuous short circuit. Distortion: 0.05%. THD: -3dB at 1kHz. FR: 20Hz-25kHz ±3dB. Controls: all inputs selected by pushbuttons. Headphone outlet switched for automatic loudspeaker muting. S/N: 65dB, gain at max. Mains: 110/120 or 220/240V. Size: 12 × 6 × 2in. Finish: matt black. Price: £59.95 (plus VAT).

**System 4000**

FM stereo tuner. Range: 88-108MHz. Sensi-



Peerless Kit 1120

tivity: 5μV for 30dB signal to noise. Aerial input 75 or 300 m utilizes varicap tuning and quadrature detection, together with a ceramic filter. Contains integral stereo decoder. Price: £49.95 (plus VAT).

**Q16**

FR: 60Hz-16kHz with a loading of up to 14W RMS and input impedance of 8 ohms. Size: 246mm square, 120mm deep. Solid teak surround and a black cellular foam front. Price: £8.95 each (plus VAT).

**Project 80**

Preamplifier and control unit Size: 260 × 50 × 20mm (10½ × 2 × ¾in). Finish Black, with white markings Inputs Mag PU 3mV RIAA corrected; ceramic PU 300mV; radio 100mV; tape 30mV. Signal to noise ratio: 60dB.

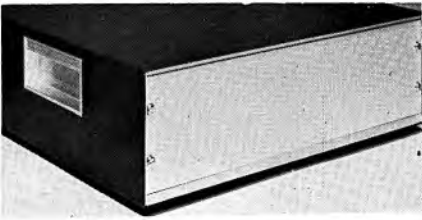
Frequency range 20Hz to 15KHz ± 1dB; 10Hz to 25KHz ± 3dB. Power requirements 20 to 35 volts. Outputs: 100mV + AB monitoring for tape. Controls: press button for tape, radio and PU selection; volume, bass +12dB to -14dB at 100Hz; treble +11dB to -12dB at 10KHz. Price: £13.95 (plus VAT)

**Project 80 Quadraphonic decoder**

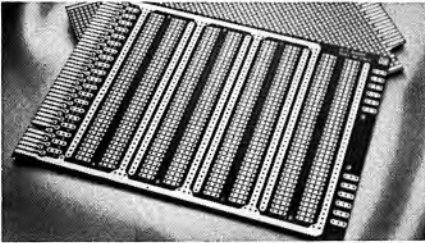
Size: 260 × 50 × 20mm Input sensitivity 40mV for rated output Rated output 100mV Frequency response: 15Hz to 25KHz ±3dB Overload factors +20dB at 1KHz on all inputs Distortion: 0.1%. Signal to noise ratio: 58dB. Bass control ±10Db at 100Hz; treble control ±10dB at 10KHz. Output load impedance not less than 25K Power requirements: 22 to 35 volts (15mA at 30 volts). Phase shift network 90° ±10% 100Hz to 10KHz. Provision is included for 4-channel discreet input.



★ Indicates entry is illustrated



Vero Type D case



Vero printed boards

The decoder has 10-40 blend included, which aids front to back separation. Price £18.95 (plus VAT).

#### **PZ20**

This power supply is specifically for the IC20 stereo amplifier, and consists of a transformer, bridge rectifier, and reservoir capacitor. The bridge rectifier and capacitor should be mounted on the IC20 pcb in the positions provided, and the transformer mounted separately, wherever convenient. Price £4.95 (plus VAT).

#### **FM tuner**

Tuning range 88 to 108 MHz. Detector IC balanced coincidence, for good AM rejection AFC Switchable, with thermistor control to prevent drift. One 26 transistor IC. Dual varicap tuning distortion 0.3% at 1KHz for 75 KHz deviation Output 100mV for 30% modulation ceramic filter in IF section Aerial impedance 75Ω or 240-300Ω sensitivity 5 microvolts for 30dB S/N power requirements 23-35 volts. Size: 85 × 50 × 20mm (approx. 3½ × 2 × ¾in). Price: £13.95 (plus VAT).

#### **Project 80 Decoder**

One 19 transistor IC power requirements 23-35 volts. Size: 47 × 50 × 20mm (1⅞ × 2 × ¾in). Price: £8.95 (plus VAT).

#### **PZ5**

A simple unstabilized supply suitable for a

pair of Z40's in a simple system. Output voltage 30 volts. Price: £5.95 (plus VAT).

#### **■ VERO**

Vero Electronics Ltd, Industrial Estate, Chandler's Ford, Eastleigh, Hants SO5 3ZR. Tel: Chandler's Ford 2952.

#### **Audio Equipment Cases ★**

Wide range of equipment cases suitable for hi-fi units, tuners, power supplies and test gear. Available in various panel heights and with or without anodised aluminium front handles. Made in light gauge steel finished in RAF blue/grey vinyl paint. Integral aluminium trim. Neat slim-line appearance. Ventilation slots incorporated. Full list of sizes, accessories and prices, available on request. Ask for Vero 'D' series cases.

#### **Printed circuit boards ★**

Vero circuit boards comprise resin-bonded paper laminate clad on one side with loz copper foil of nominal thickness 1.5mm. Base material cut to width and punched with a matrix of holes. Copper foil is in parallel strips along the lines of holes. Enables small electronic assemblies to be built easily and quickly. Vero boards are produced in various sizes, also double-sided, in strips, with plug-in terminations, edge-connectors, breadboards and in plain non-coppered versions. Accessories include connector contacts, D-I-P sockets, terminal pins, pin insertion tool, spot face cutter and numerous design-aid sheets. Catalogue on request.

# Hi Fi Cabinets

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 27.

## ■ ABSTRACTA

Abstracta Construction Ltd, Unit C,  
Staples Corner Trading Estate, Edgware  
Road, Cricklewood, London, NW2.  
Tel: 01-450 2511.

### Home Frames

A range of slim-line chromium-plated steel tubular frameworks with white melamine faced shelves to accommodate hi-fi equipment. Twelve suggested layouts for audio storage, including space for records, tapes and books. Can be adapted for most types and makes of equipment. Sizes range from 33in to 71in and system can be extended as required. Supplied in flat packs for easy assembly. Additional shelves can be added if needed. Home Frames hi-fi leaflet available on request from makers.

## ■ A/R/D/

Audio Research & Development Ltd,  
Navas House, The Maultway,  
Camberley, Surrey, GU15 1QE.  
Tel: Camberley 24684.

### 2000

Contemporary table top cabinet designed to match the A/R/D amplifier and tuner. Incorporates facilities for switching the stereo output from an amplifier to 2 pairs of speakers and stereo headphones. Accommodates Garrard SP25 or Dual 1214, 1216 and 1218 record decks. Lift-up or lift-off lid. Size: 12½ × 16½ × 6½in. Finish: stove enamel silver, solid teak sides, dark grey tinted plastic lid. Available with units ready fitted. Price: (cabinet only) £26 (plus VAT).

## ■ ARNEX PRODUCTS LTD

London Road, Daventry,  
Northants NN11 4DU.  
Tel: Daventry 2231.

### Hi-Fi Table ★

Modern style table designed to accommodate hi-fi system or unit audio. Teak finish top, rack beneath to take bookshelf speakers or records, shaped metal legs with silent castors. Comes packed flat in carton for easy home assembly

using just a screwdriver. Full details and leaflet on request. Price: £14 (including VAT).

### Audio stand

Model E50 (black), E51 (chrome). A modern design, tubular steel stand with adjustable width clamping for audio equipment. Suitable for music centres etc. Height: 12in. Width: adjustable from 14 to 26in. Price: £6.25 (E50), £5.54 (E51) (including VAT).

### E56 Hi-Fi table

Designed to accommodate modern Hi-Fi equipment. Size: 91.5 × 40.6 × 48cm. Finish: teak veneer (top), satin chrome (frame) and castors. Price: on application.

### E52 Hi-Fi table

As E56 but with black painted frame. Price: on application.

## ■ BSR

BSR Ltd, Monarch Works, Cradley Heath,  
Warley, Worcs B64 5QH.  
Tel: Cradley Heath 69272.

### Plinths ★

Designed specially for the BSR 810 and 710 record decks. Finish: wooden plinth with teak veneer. Polished aluminium trim with opaque black brushed satin insert. Price £12.18 (plus VAT).

Designed to fit the BSR MP60 and H170



Arnex E56 Hi-Fi table



BSR plinth for 710 and 810

★ Indicates entry is illustrated

turntables. Finish: simulated teak plinth with black baseboard. Price: £5.67 (plus VAT).

#### Covers

Designed for the BSR 810 and 710 record decks. Finish: smoke-tinted low line perspex dust cover. Price: £5.58 (plus VAT).

Designed to suit the BSR MP60 and HT70 turntables. Finish: smoke-coloured styrene dust cover. Price: £3.96 (plus VAT).

### ■ CALYX

Calyx Furniture Ltd, Stanley Works,  
Belgrave Road, London SE25 5AN.  
Tel: 01-771 1221.

#### Groove 42 ★

Lowline style table with shelf and record storage beneath. Will accommodate most makes and models of tuner, tuner/amplifier, amplifier and record deck. Size: 42in wide, 18in deep, 24in high; also available in smaller size measuring 32in wide, 15in deep and 20in high. Finish: all teak in natural veneers or white with teak trim. The system incorporates two adjustable compressor plates to hold up to 250 records on solid 1½in teak rails. Price: on application.

#### Universal Console 56

Modern style equipment unit comprising top, middle shelf storage compartment for records with sliding doors at the bottom. Lower shelf contains spring loaded compressor plates to provide storage for up to 200 records and prevent warping. Accommodates most combinations of equipment. Size: 36 × 18 × 32in. Internal shelf is 16½in deep, top 8in high, lower shelf 18½in high. Price: on application.

#### M15 Audio Cabinet

Similar in style to the Universal console above, but smaller and without spring loaded plates in record storage compartment. Will accommodate most amplifiers or tuners, receivers, etc. and a record deck. Mounted on castors. Size: 26½ × 26½ × 18½in. Also available with two drawers to hold 32 cassettes. Internal shelf 17in deep. Finish: white or teak. Price on application.

#### P3 Calyxos

Record storage rack system. Made in acrylic and aluminium. Holds up to 50 LP records. Adjustable plates to keep records in good condition. Full details in colour brochure available on request with 7p stamp (not s.a.e.).

#### Sonata teak range

All products (except the record chest) are in teak finish hardwood frame stands. Sonata A table size 32 × 16 × 14. Price: £19 (plus VAT). Sonata B table, overall dimensions as above. Shelf beneath. (Top) 16 × 17in. About



Calyx Groove 42

50 records stored between dowels on top and bottom. Price: £22 (plus VAT). Sonata C sideboard type unit size 36 × 16 × 28½in. Two shelves with drawer to store 32 cassettes. Price: £40 (plus VAT). Record chest D fits tidily underneath this unit. A top-opening unit storing about 200 records, and is fitted with castors. Sonata E audio/record cabinet size 32 × 16 × 17in. Stand height 31in. Drop-flap front. Adjustable partitions.

#### Budget range

A low price range available in modules 24 in, 36in and 48in wide. Details on application with 7p stamp.

### ■ A. DAVIES & CO

56 Wellesley Road, London, NW5.  
Tel: 01-485 5775.

#### Handmade Cabinets

Equipment cabinets finished in period styles, to customers' exact requirements.

### ■ DYNATRON

Dynatron Radio Ltd, Ditton Walk,  
Cambridge CB5 8QD.  
Tel: Teversham 2781.

#### RSU 6

Teak veneered cabinet with vertical storage space for approximately 275 LP records. Storage dividers are removable if required and the pull down front opening door is held horizontally for maximum convenience when selecting records. Size: 38¾ × 17¼ × 25¼in. Price: to be announced.

#### RSU 8

Contemporary style record storage cabinet with two doors providing vertical storage space for approximately 150 LP records. Shelf for accessories. Size: 23¼ × 16¼ × 21¼in. Finish: teak veneers. Price: to be announced.

**RSU 10**

Period storage record unit in Queen Anne style with two lockable vertically hinged doors. Accommodates approximately 150 LP records with shelf for accessories. Size: 21¼ × 16¼ × 23½in. Finish: walnut using selected burr veneers. Price: to be announced.

**RSU 11**

Period record storage unit in Regency style with two lockable vertically hinged doors. Accommodates approximately 150 LP records with shelf for accessories. Size: 21¼ × 16¼ × 23½in. Finish: flame mahogany veneers. Price: to be announced.

**ST 27**

Metal-framed, two-tier trolley fitted with castors. Shelves finished in plastics laminate, one teak, the other walnut. Can be fitted to suit equipment. Top shelf designed to accept Dynatron audio separates, lower shelf for speakers. Record rack. Size: 26¾ × 16¾ × 27¾in. Finish: frame finished in matt black. Price: to be announced.

■ **EDWARDS CONSTRUCTION CO**

4 Brunswick Drive, Harrogate, Yorks.  
Tel: Harrogate 60921.

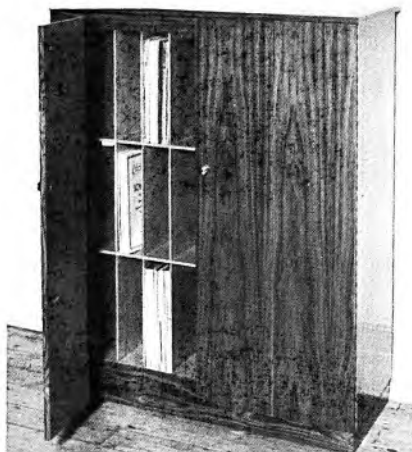
Handmade record cabinets and cupboards holding up to 1,500 LP records. Matching bookshelves. Cabinets for various designs and sizes to accommodate almost any combination of Hi-Fi equipment, records, cassettes, tapes and sheet music. Special designs considered for individual quotation.

**48 DN 4H ★**

Handmade contemporary style cabinet with either drop down doors or sliding doors. Ample room for almost any combination of Hi-Fi equipment. Internal partitioning can be made adaptable for cassettes, 7in records, tapes and sheet music. Size: 48 × 17¼ × 26½in. Finish: sapele, teak, African walnut and oak. Staining to darker shades on sapele, walnut and oak to customer's requirements (small extra charge). Price: £132.40 (plus VAT).

**48 Range 2 and 2A**

Handmade contemporary style cabinet with folding doors. Record storage for up to 600 records. Range 2A top compartments adapted for tapes and 7in records. Size: (Range 2) 48 × 16¾ × 32¼in. (Range 2A) 48 × 16¾ × 35½in. Finish: sapele, teak, African walnut and oak. Staining to darker shades on sapele, walnut and oak to customer's requirements (small extra charge). Price: (Range 2) £156.48 (plus VAT); (Range 2A) £177.78 (plus VAT).



*Edwards Construction 40 Range 3 DP*



*Edwards Construction 48 DN 4H*

**40 Range 3 DP and Range 3A ★**

Handmade contemporary style cabinet with double partitioning. Only folding doors available on large cabinets. Range 3 houses records and/or sheet music; Range 3A has top compartments adapted for tapes and 7in records. Size: (Range 3) 48 × 16¾ × 49in. (Range 3A) 48 × 16¾ × 52in. Finish: sapele, teak, African walnut and oak. Staining to darker shades on sapele, walnut and oak to customer's requirements (small extra charge). Price: (range 3) £204.62 (plus VAT); (Range 3A) £223.15 (plus VAT).

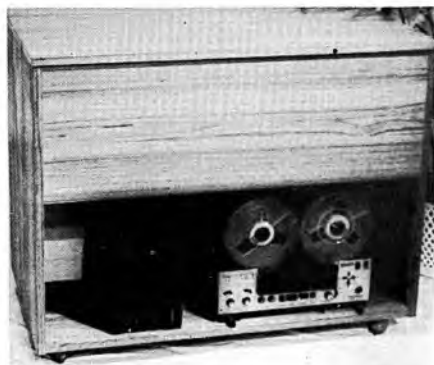
■ **GOODMANS**

Goodmans Loudspeakers Ltd,  
Downley Road, Havant, Hants PO9 2NL.  
Tel: Havant 6344.

**Cabinet Stand-CS2**

Chromium-plated stand for compact unit. Fits Model 1-102 compact. Packed flat. Size: 15¾ × 21¾ × 15¾in. Price: £16.96 (plus VAT).

★ Indicates entry is illustrated



*Hampstead High Fidelity Heath cabinet*

### Loudspeaker Stand-CS3

Balck, tubular stand for floorstanding loudspeaker systems, especially for use with Achromat 400, packed in pairs. Optional flat or 5 degree upward tilt. Size: 6½ × 11¼ × 11½in. Price: £17.29 per pair (plus VAT).

### ■ GUSDORF

Distributors: C. E. Hammond & Co Ltd, Lamb House, Church Street, London W4 2PB. Tel: 01-995 4551.

### Hi-Fi Furniture

48 different models to accommodate any hi-fi or unit audio system. Prices and details on application.

#### Model 3375

Hi-Fi trolley suitable for carrying complete audio system. Includes record rack. Packed flat for home assembly using a screwdriver only.

### ■ HAMPSTEAD HIGH FIDELITY

91 Heath Street, Hampstead, London, NW3. Tel: 01-435 6377 and 0999.

#### Hampstead

Low upright cabinet with split lift-up lids. Takes gram unit and tape deck. Pull-out front hopper for tuner and control unit or integrated amplifier. Accommodates any control unit or integrated amplifier not exceeding 14in in depth. Available with well to hold complete tape recorder not exceeding 9in high. Space to take Ferrograph or Revox with professional spools. Size: (standard model) 40 × 26 × 21in. Finish: teak; other finishes to order. Price: on application.



*Hampstead HQ1*



*Hampstead High Fidelity antique Commode*

### Heath ★

Equipment cabinet specially designed to accommodate Quad/Leak units mounted horizontally in top section, together with record deck. Base of cabinet will house 250 records or taperecorder and smaller number of records. Split lids with flap-back to expose amplifier control panel only. Size: 34 × 26 × 20in. Finish: teak; other special finishes to order. Prices: on application.

### HQ1 Housing Unit ★

Designed specifically to house Quad equipment neatly and efficiently. Accommodation for Quad 30, 33, 303 also Quad AM/FM tuner and choice of turntable. Supplied with cut-outs for Quad and Thorens equipment. Size: 24in wide, 20½in high, 23in deep. Made from high quality birch ply with tinted plastic lid. Desk top permits easy access to controls. Undertray protects equipment and contains all interconnecting wires. Shelf provides space for power unit and accessories. Finish: White or Mexican brown. Prices: on application.

**Music Bench**

A two-section unit with well to hold either tape recorder or gramophone turntable. Sectional record storage compartments below. Two pull-out drawers. Finish: rose-wood, teak or white. Size: approximately 63in wide (extending to 122in wide), 24½in high, 19½in deep. Prices: on application.

**Antique Commodes/Chests ★**

A fine selection of antique commodes and chests are available with or without suitable sound systems from stock. The prices range from about £150 (plus VAT) for the cabinet. Each cabinet is a genuine antique. Special cabinets and fittings made to order. Designs and drawings prepared for complete room or house hi-fi schemes.

■ **HOLDER PEARCE LTD**

66 Grove Road, Eastbourne, Sussex BN21 4UH.

Tel: Eastbourne 26565.

Built-in or free-standing equipment cabinets designed and built to meet customers' exact requirements. Lift-up or drop-down lids, accommodation to suit any equipment, all standard finishes to blend with furnishing. Details and prices on application.

**Jevington ★**

Elegant Regency style cabinet in four finishes, with reeded legs, front opening doors and lift-up lid to centre section. Provision for speakers each side could be used for record storage if preferred. Interior allows provision for player decks and receiver under lift-up lid for easy access. Adjustable shelf can accommodate units of varying heights. Weight: 31kg.

**Folkington**

A small version of the Jevington, it could be adapted for record storage, if preferred, or to house tape recorder and cassette storage. Weight: 19kg.

**Vulcan ★**

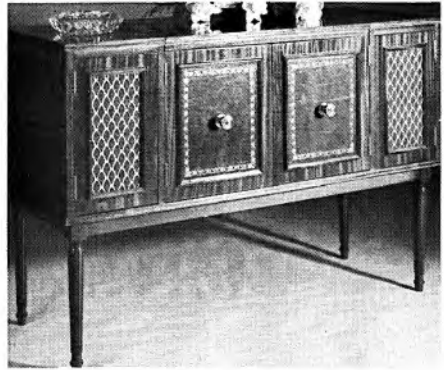
Distinctive and unusual cabinet in smoked glass with black iron frame. Sliding doors provide easy access for record storage section, which is fitted with metal rod supports. Shelf, plinth and back are in polished mahogany.

**Wilmington ★**

Two-door top section has a lift-up lid for easy access to player deck housed on adjustable shelf, with receiver below. Two-door lower section has capacious storage for 12in records. Weight: 33kg.

**Alfriston ★**

Special features are the lift-up lid and pull-down flap to top section, and the two-door record compartment below. Weight: 31kg.



*Holder Pearce Jevington*



*Holder Pearce Vulcan*



*Holder Pearce Wilmington*

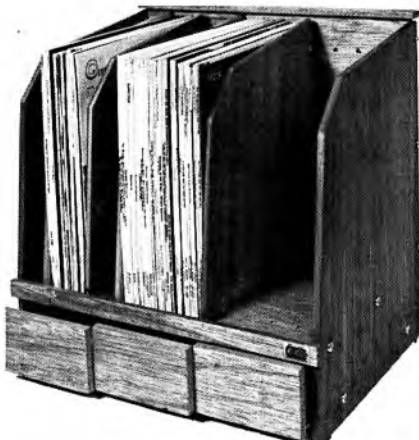
★ Indicates entry is illustrated



Holder Pearce Alfriston



New Classic Music Console



New Classic Compact 100 Plus

#### ■ HOWLAND-WEST LTD

3-5 Eden Grove, London N7 8EQ.

Tel: 01-609 0293.

##### Clearview HWI

Cabinet in teak, walnut or rosewood. Takes gram unit or tape deck. Lift-off Perspex lid. Overall size:  $18\frac{1}{4} \times 16\frac{1}{2} \times 8\frac{1}{2}$ in. Clearance above board  $3\frac{3}{4}$ in, below board  $4\frac{1}{2}$ in. Price: £20 (plus VAT).

##### Clearview HW14

De luxe turntable or tape deck cabinet with Perspex cover. Teak or rosewood with black base. Size:  $18\frac{3}{4} \times 19\frac{1}{4} \times 9\frac{1}{2}$ in. Space above board 4in, below top of board  $4\frac{1}{2}$ in. Fully-sprung anti-feedback base, adjustable feet for levelling, fitted with Bulgin mains socket and colour-coded phono sockets; supplied with Clearview lid stay and spirit level fitting by user. Price: £28.00 (plus VAT).

#### ■ NEW CLASSIC

J.W. (W.) Company, 14-16 Walton Street, Walton-on-the-Hill, Surrey.

Tel: Tadworth 3778.

##### Anti-warp record storage

Features of the New Classic storage system include spring-loaded panels that keep records flat, upright and easy to withdraw and replace. Also all models have built-in press for dealing with badly warped records.

##### Compact 100

Contemporary style storage unit with accommodation for 100 LP records. Incorporates anti-warp storage equipment as listed above. Size:  $16\frac{1}{2} \times 13\frac{3}{8} \times 13\frac{3}{8}$ in. Finish: meranti (to blend with teak finishes). Price: £9.10 (plus VAT).

##### Major 200

Traditional style record storage cabinet on legs. Accommodation for 200 LP records and record press built-in (as described above). Size:  $36\frac{1}{4} \times 27\frac{1}{2} \times 15\frac{1}{2}$ in. Finish: selected teak veneers hand polished to satin finish. Price: £58 (plus VAT).

##### Music Console ★

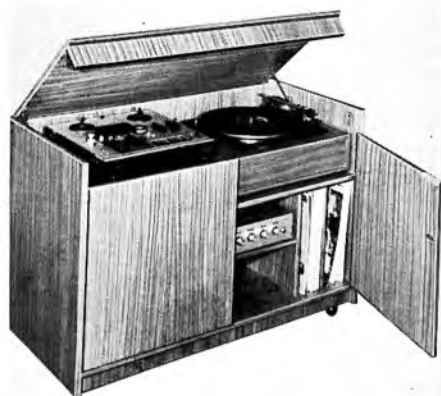
Contemporary style record storage unit with accommodation for 200 LP records and record press built-in. Designed to be large enough to house all transcription equipment. Size:  $34 \times 38\frac{3}{4} \times 18\frac{1}{4}$ in. Finish: selected teak veneers. Price: £41.50 (plus VAT); optional extras (sliding doors) £4.60 (plus VAT); (castors) £2.50 (plus VAT).

##### Compact 100 Plus ★

Compact 100 Plus is the latest extension of the



Pageantry cabinet



Record Housing President Cabinet

Compact 100 making it into a highly versatile dual storage cabinet for LP records and cassettes. Contemporary style design with facilities for storing 100 LP records and 48 boxed cassettes (in drawer below record storage). Size: 16½ × 13¾ × 17¾in. Weight: 15¾lb. Finish: brown meranti to match teak finishes. Price: £12.75 (plus VAT).

■ PAGEANTRY RADIO & TV CO LTD

104 Felsham Road, Putney SW15 1DQ.  
Tel: 01-788 5588.

Custom-built cabinets ★

Hand-made cabinets to house hi-fi systems. Two standard designs. Typical is antique reproduction model in selected walnut veneers hand-finished with traditional French polish. Features include intricate hand-carved mouldings on front side panels. Size: 54in wide, 21in deep, 32in high. Lower centre front houses record storage drawer running on precision runners. Size of drawer: 17in wide, 15½in deep, 13in high. Full details of hi-fi



Record Housing Highmaster Trolley

cabinets including prices and delivery available on request.

■ RECORD HOUSING

17a Newnham Road, London N22 5SS.  
Tel: 01-888 7487.

President Cabinet ★

Will house both a player unit and a tape recorder side by side under the lift-up lid. Below is a two-tier section for amplifiers, tape storage etc. Additional storage capacity for approx 100 LP records. Size: (overall) 37in wide, 26in high, 18in deep; (upper shelf) 35½in wide, 17in deep, with clearance of 7½in below lid; (two-tier section) 20in wide, 6in high, 16in deep. Finish: natural afrormosia. Price: £59 (plus VAT).

Highmaster Trolley ★

Lowline equipment and record cabinet on wheels. Two sliding type front-opening doors in lower section holding records. Accommodation for turntable, tape deck, tuner, amplifier and 250 LP records. Size: 36in long, 24in high, 16½in deep; (top measures) 36in by 16½in; (clearance for amplifier section) 6in. Finish: natural afrormosia. Price: £49.50 (plus VAT).

Stereo Trolley

Upright style equipment cabinet on wheels. General purpose equipment/record cabinet. Accommodation for turntable, amplifier (or tuner/amplifier) plus approx 125 LP records. Size: 19in wide, 18in deep, 23in high (including castors); (top measures) 19in by 18in; (amplifier section) 18in wide, 18in deep, 6in high. Finish: natural teak. Price £29.90 (plus VAT).



★ Indicates entry is illustrated



*Record Housing Transcription Trolley*



*Record Housing Windsor Cabinet*



*Record Housing Capricorn Cabinet*



*Staples Ladderax Hi-Fi*

### **Transcription Trolley ★**

Upright style equipment cabinet on wheels. General purpose equipment/record cabinet. Accommodation for turntable, amplifier (or tuner/amplifier) plus 150-175 LP records. Size: (overall) 27in high (including castors), 16½in deep, 25in wide; (top) 16½in deep, 24in wide; (internal tuner/amplifier section) 6in high, 15in deep, 24in wide. Finish: natural teak. Price: £39.90 (plus VAT).

### **Capricorn Cabinet ★**

Contemporary equipment cabinet on legs. Front-opening doors. Vertical record partitions which are removable and can function as shelves, providing flexible arrangement for housing records and equipment. Size: (overall) 32in wide, 16½in deep, 16in high, plus 12in legs and frame; inside height 15in, inside depth

15in. Distance between partitions 7½in. Finish: natural afrormosia. Price: £36 (plus VAT).

### **Scan Record Unit**

Contemporary style record storage cabinet. Accommodation for 100 LP records in each cabinet. Designed as add-on units permitting users to build up a library. Size: (overall) 19½in high, 15in wide, 16½in deep; (black plinth) 19in wide, 14in deep, 3in high. Finish: natural afrormosia. Price: £15 (plus VAT).

### **Windsor Cabinet ★**

Period style equipment/record cabinet on legs. Accommodation for an amplifier and tuner inside, the centre partition slides out and can be replaced as a horizontal shelf. Size: (overall) 27½in wide, 14½in deep, 31in high. Finish: walnut or mahogany. Price: £55.50 (plus VAT).

**Audiflex Cabinet**

Contemporary style equipment/record storage cabinet. Front-opening doors in lower section holding records. Accommodation for turntable (or tuner/amplifier) and amplifier (or tuner). Size: (overall) 24in high, 15½in deep, 25in wide; (top) 15½in deep, 24in wide; (amplifier section) 6in high, 15½in deep, 24in wide. Finish: teak. Price: £29.90 (plus VAT).

**Rolaflex Trolley**

Upright style equipment cabinet on castors. General purpose equipment/record cabinet. Accommodation for player unit, tape recorder, amplifier and tuner. Below there is storage for over 200 LP records. Size: (overall) 36in long, 24in high, 15½in deep; (top) 36in by 15½in; (amplifier section) 6in high, 15½in deep, 36in long. Finish: teak. Price £35 (plus VAT).

**■ SELMOR**

Selmore Engineering Industries Ltd,  
24 Mulberry Street, Tower Hamlets,  
London E1 1EH. Tel: 01-247 3344.

**Hi-Fi Trolley Stand**

Mounted on castors with shelves and fitted dividers for record storage. Teak finished shelves and five removable metal dividers. Price: £8.00 (plus VAT).

**■ STAPLES & COMPANY LTD**

Staples Corner, Junction Edgware Road and  
North Circular Road, London NW2 6LS.  
Tel: 01-452 1144.

**Ladderax ★**

Unit system hi-fi cabinet designed to fit Staples Ladderax assembly. Lift-up main lid giving access to space for tuner, control unit and record or tape deck. Front panel removable to facilitate installation. Will accept most modern equipment. Finish: teak or rosewood veneer. Full details of matching units on request.

**■ VERO**

Vero Electronics Ltd, Industrial Estate,  
Chandler's Ford, Eastleigh, Hants SO5 3ZR.  
Tel: Chandler's Ford 2952.

Wide range of equipment cases suitable for hi-fi units, tuners, power supplies and test gear. Available in various panel heights and with or without anodised aluminium front handles. Made in light gauge steel finished in RAF blue/grey vinyl paint. Integral aluminium trim. Neat slim-line appearance. Ventilation slots incorporated. Full list of sizes, accessories and prices available on request. Ask for catalogue of Vero 'D' series cases.

# We have ways of making you talk!



Nineteen ways in fact. Ranging from the RE-303 crystal lapel microphone at less than £1 to professional condenser microphones at around £16.

## ...and listen.

Ross Electronics stereo headphones are available in 13 models from about £4 to £30.



RE-240



RE-245



RE-250



RE-255



RE-264 Stereo/Quad



**ROSS  
ELECTRONICS**

Quality Hi-Fi from beginning to end.  
32 Rainbowe Place, London W1P 1AD. Tel: 01-580 7112/3

# Hi Fi Headphones & Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ADASTRA

Adastra Electronics Ltd, Unit N22,  
Cricklewood Trading Estate,  
Claremont Road,  
London NW2 1TU. Tel: 01-452 6288.

### H7

Mono headphones. Impedance: 16 ohms. Maximum input: 250mW. FR: 20Hz-10kHz. Weight: 15oz. 5ft lead. Fitted with dynamic boom mic. Two-tone grey. Adjustable headband. Washable ear cushions. Price £10.15 (plus VAT).

### H10

Stereo headphones. Impedance: 8-16 ohms. Maximum input: 500mW. FR: 20Hz-18kHz. Weight: 10oz. 6ft lead, fitted plug. Adjustable earpieces, foam cushioned. Sensitivity: 110dB. Price: £2.70 (plus VAT).

### H13

Stereo headphones. Impedance: 8-16 ohms. Maximum input: 650mW. FR: 25Hz-18kHz. Weight: 13oz. 9ft coiled lead. Moulded stereo jack plug. Individual volume controls. Adjustable headband. Washable ear cushions. Mono/stereo slide switch. Price: £8.50 (plus VAT).

### H14/G3333

Stereo headphones. Impedance: 4-32 ohms. Maximum input: 500mW. FR: 20Hz-20kHz. Weight: 17oz. 5½ft coiled lead. Stereo jack plug. Grey moulded earpieces. Separate 3in and 1½in units in each earpiece. Individual treble control for each earpiece. Soft ear cushions and adjustable headband. Price: £11.25 (plus VAT).

### H11/6111

Stereo headphones. Impedance: 4-16 ohms. Maximum input: 200mW. FR: 20Hz-12kHz. Sensitivity: 115dB. Weight: 8oz. 6ft lead fitted. Stereo plug. Adjustable headpieces, foam cushioned ear pads. Finish: two-tone grey. Price: £5.25 (plus VAT).

### H15/G3000B

Stereo headphones. Impedance: 8 ohms. Maximum input: 650mW. FR: 50Hz-19kHz. Weight: 19oz. 10ft coiled lead. White moulded earpieces with black and silver fittings. Control box in lead with volume controls and mono/stereo switch. Adjustable leather padded headband. Washable ear cushions. Price: £13.15 (plus VAT).

### H17/G6000

Stereo headphones. Impedance: 4-16 ohms. Maximum input: 500mW. FR: 15Hz-25kHz. Weight: 21oz. 15ft coiled cord. Stereo plug. Satin white earpieces with black trim. Open back housings with 3½in units. Slide volume controls. Adjustable headband. Washable ear cushions. Price: £13.50 (plus VAT).

### H18/G5555

Stereo headphones. Impedance: 4-16 ohms. Maximum input: 600mW. FR: 20Hz-20kHz. Weight: 17oz. 10ft coiled lead. Stereo jack plug. All-black moulding with chrome trim. 2½in units. Adjustable headband. Washable ear cushions. Price: £15.75 (plus VAT).

### H19/G3500

Stereo headphones. Impedance: 4-16 ohms. Maximum input: 900mW. FR: 15Hz-25kHz. Weight: 24oz. 8ft coiled lead. Moulded stereo jack plug. Black moulding with chrome trim. 3½in and 1½in units in each earpiece. Wire-wound volume controls. Adjustable headband and washable ear cushions. Price: £21 (plus VAT).

### H20/G8030

Stereo electrostatic headphones. Impedance: 4-16 ohms. Normal listening input: 8W. Maximum input: 10W. FR: 20Hz-19kHz. Weight: (headphones only) 19oz; (headphones and energiser unit) 5½lb. 8ft coiled lead. Black moulding with black leather headband. Adjustable padded headband. Price: £46.90 (plus VAT).

### H63/G1305

Headphone remote control unit. Slider volume controls for individual channel gain. Stereo/mono mode switch. Stereo jack socket. Moulded case. 10ft self-coiling lead with jack plug. Price: £3.75 (plus VAT).

### H40 "Sprite"

Featherweight stereo headphones. Impedance: 4 ohms. Maximum input: 200mW. FR: 30Hz-13kHz. Sensitivity: -105dB. Weight: 5oz. One-piece moulded headband in brilliant red. Black padded ear cushions. Fully adjustable. Mylar reproducer units. Price: £2.85 (plus VAT).

★ Indicates entry is illustrated

### **H23/G8000**

Stereo headphones with compact Mylar reproducers. Impedance: 4-16 ohms. Maximum input: 500mW. FR: 20Hz-22kHz. Weight: 12oz. Washable ear cushions secured with press-studs. Matching punched leather headband. 10ft coiled lead. Price: £10.90 (plus VAT).

### **H36/G3600**

Quadrasonic headphones with two full-range 2in units in each earpiece. Impedance: 8-16 ohms. Maximum input: 200mW. FR: 20Hz-20kHz. Weight: 2lb 10oz. Stereo/quadrasonic switching. 15ft coiled lead. Padded ear cushions and headband. Price: £20.25 (plus VAT).

### **H63/61305**

Headphone remote control unit. Provision for connecting headphone leads and includes slider controls for volume/balance adjustment. Switching for mono/stereo. 10ft coiled lead. Finish: black moulded case with silver coloured fascia. Price: £3.75 (plus VAT).

### **H61**

3-way junction box with loudspeaker and headphone connecting facility, with switching for function of either or both, amplifier protective circuitry, coded leads. Rating: 20W. Moulded case for free standing or wall mounting location. Size: 72 x 28 x 78mm. Price: £1.88 (plus VAT).

### **H62/G1301**

Free standing remote control listening station with stereo gain controls, dual stereo headphone input sockets, and loudspeaker muting switch. Operates from 4, 8 and 16 ohms. Price: £3.75 (plus VAT).

### **H65**

Compact stereo adaptor providing instant loudspeaker/headphone switching. Jack plug entry for 2 stereophones, DIN speaker sockets, loudspeaker connecting leads fitted with DIN plugs. Three position function switch. Rating: 3W. Moulded case for free standing or wall mounting location. Price: £2.85 (plus VAT).

For other Adastra headphone/speaker control units please see Speaker Accessories Section.

## ■ AKAI

Rank Audio Visual Ltd, PO Box 70,  
Great West Road, Brentford TW8 9JR.  
Tel: 01-568 9222.

### **ASE11 ★**

Stereo headphones with acoustic control. Impedance: 8 ohms. Maximum input: 500mW. FR: 25Hz-15kHz. Weight: 18oz approx. Length of cord: 6ft. Price: £11.65 (plus VAT).



Akai ASE 11



Akai ASE 22

### **ASE20**

Stereo headphones with acoustic loudness control. Impedance: 8 ohms. Maximum input: 500mW. FR: 25Hz-18kHz. Weight: 17oz approx. Length of cord: 6ft. Price: £14.65 (plus VAT).

### **ASE22 ★**

Stereo headphones. Built-in mechanical two-way system. Mylar film diaphragms. Impedance: 8 ohms. FR: 20Hz-10kHz. Normal input: 1mW. Maximum input: 500mW. Sensibility: 110dB. Weight: 18oz approx. Price: £16.65 (plus VAT).

## ■ AKG

AKG Equipment Ltd, 182-184 Campden Hill  
Road, Kensington, London W8 7AS.  
Tel: 01-229 3695.

### **K100**

Impedance: 600 ohms  $\pm$  20% per channel. 1mW per channel for 112dB SPL. Distortion: less than 1% max. loading. Fitted with 2m coiled cable and 6.3mm dia. stereo jack plug. Weight: 360gm. Adjustable headband. Price: £9.90 (plus VAT).

### **K140**

Dynamic stereo headphones. FR: 20Hz-20kHz. 50mW per channel for 112dB SPL.

Distortion: less than 1% max. loading. Impedance: 600 ohms  $\pm$  20% per channel. Fitted with 3m coiled cable and 6.3mm dia. stereo jack plug. Adjustable headband. Price: £16 (plus VAT).

**150**

Lightweight stereo headphones with easy interchangeable ear cushions type Z64. Fitted with 2m cable without connector. Impedance: 600 ohms Price: £14 (plus VAT).

**K154** Lightweight Headphone/Microphone Combination for educational use. Noise-cancelling microphone (230 ohms) and 600 ohms headphone system connected in parallel to give 300 ohms. Supplied with 1.4 metres (4.6ft.) cable without connector. Price £12.60 (including VAT).

**K160**

Dynamic stereo headphones. Double headband, detachable ear cushions. High quality transducer system offers distortion free reproduction even at very high volume. FR: 16Hz-20kHz. 1mW per channel for 112dB SPL. Distortion: less than 1% max. loading. Impedance: 600 ohms per channel  $\pm$  20%. Fitted with 2m coiled cable and 6.3mm dia. stereo jack plug. Weight: 330gm. Price: £22 (plus VAT).

**K180**

Impedance: 600 ohms  $\pm$  20% per channel. FR: 16Hz-20kHz. 1mW per channel for 112dB SPL. Distortion: less than 1% at max. loading. Large resilient ear cushions, rotary knob on each ear piece. Fitted with 2m coiled cable and 6.3mm dia. stereo jack plug. Price: £28 (plus VAT).

**K35/2** Professional quality headset. Noise cancelling close-talk microphone (240 ohms) and wide-range headphone systems (600 ohms per channel) Supplied with 1.5 metre (4.9ft.) 4 pole screened cable fitted with 3 pin DIN plug for microphone and 5 pin DIN plug for headphones. Weight: 470 grams (16.6ozs). Price: £39 (including VAT).

**K154/T301** As K154 but with built-in transistorized preamplifier T301 for high level output. Weight: 258 grams (9.1ozs.). Price: £21 (including VAT)

**K158** Headphone/Microphone Boom Combination: Noise cancelling microphone (230 ohms) and headphone system (600 ohms) connected in parallel to give 300 ohms. Cable length 2 metres (6.6ft.) Weight: 320 grams (11.3ozs.) £18 (including VAT)

**K158/T301** As K158 but with built-in transistorized preamplifier T301 for high level output. Weight: 328 grams (11.6ozs.) Price: £22.80 (including VAT)



Audio Technica AT701

**K158/P** As K158 but with 6 pin connector for use with connecting cables MK20A (Single Channel system) and MK20B (Twin Channel system). Weight: 328 grams (11.6 ozs.). Price: £20.70 (including VAT).

**K158/TP** As K158/P but with built-in transistorized preamplifier T301 for high level output. Price: £25.70 (including VAT).

**Spare ear cushions for headphones**

**Z50A** Pair of rubber ear cushions for K150, K154, or K158. Price: 80p (including VAT).

**Z60** Pair of adaptors for mounting Z61 on K150, K154, K158 or K160. Price: £1.80 (including VAT)

**Z61** Pair of soft ear cushions for use with adaptors Z60 on K150, K154, K158 or K160. Price: £2.60 (including VAT)

**Z64** Pair of thick foam snap-on ear cushions for K150, K154, K158 or K160. Price: £2.50 (including VAT).

**Z65** Pair of foam snap-on ear cushions with low acoustical damping for K150, K154, K158 or K160. Price: £2.10 (including VAT).

**Z68** Pair of transparent plastic ear pads for K16TV. Price: 70p (including VAT).

■ **ALPHA**

Highgate Acoustics,  
38 Jamestown Road, London NW1 7EJ  
Tel. 01-267 4937

**Alpha SDH-7**

Stereo headphones. Impedance: 4-16 ohms. Maximum input: 0.5W. FR: 25Hz-17kHz. Weight: 12oz 6ft cord. Three-pole jack plug. Finish: grey and black headbands and ear cushions. Adjustable headband. Price: £4.40 (plus VAT)

■ **AUDIO TECHNICA**

Shiro (UK) Ltd, Shiro House,  
The Ridgeway, Iver, Bucks SLO 9JL  
Tel: Iver 652222.

**AT701** ★

Dynamic headphones. Impedance: 4-16 ohms

★ Indicates entry is illustrated

Sensitivity: 97dB  $\pm$ 2dB at 1kHz. FR: 30Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: £14.70 (plus VAT).

#### AT702

Dynamic headphones. Sensitivity: 97dB  $\pm$ 2dB at 1kHz. FR: 20Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: £16.35 (plus VAT).

#### AT703

Dynamic headphones. Impedance: 4-16 ohms. Sensitivity: 95dB  $\pm$ 2dB at 1kHz. FR: 20Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: £18.58 (plus VAT).

#### AT706

Electrostatic headphones. Impedance: 4-16 ohms. Sensitivity: 98dB  $\pm$ 2dB at 1kHz. FR: 10Hz-25kHz. Maximum input power: 10W at 200Hz. Weight: 220gm. Diaphragm: push/pull electret. Adaptor with two headphone outlets, speaker switch and attenuator. Price: £43.09 (plus VAT).

#### AT707

Electret condenser headphones. Impedance: 4-16 ohms. Sensitivity: 94dB  $\pm$ 2dB at 1kHz. FR: 20Hz-25kHz. Maximum input power: 800mW at 200Hz. Weight: 310gm. Price: £29.70 (plus VAT).

### ■ BEYER

Beyer Dynamic (GB) Ltd,  
1 Clair Road, Haywards Heath, Sussex.  
Tel: Haywards Heath 51003.

#### DT96 ★

Lightweight moving coil stereo headphones. FR: 30Hz-17kHz. Impedances: 50 ohms or 400 ohms per earpiece. Max power: 100mW. Various cable lengths and terminations available. Also available with coiled cable. Price: on application.

#### DT100 ★

Moving coil stereo headphones. FR: 30Hz-20kHz. Various impedances and cable terminations available. Price: on application.

#### DT100RR

Similar to the DT100 but fitted with individual volume controls. Price: on application.

#### DT48

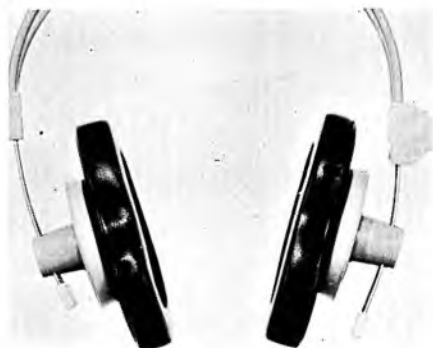
Moving coil stereo headphones. FR: 16Hz-20kHz. Impedance: 8 ohms, 25 ohms, 200 ohms per earpiece. Input: (8 ohms) 80mV, (25 ohms) 150mV, (200 ohms) 450mV. Cable: 6½ft open end. Price: on application.

#### DT480

Moving coil stereo headphones. FR: 20Hz-20kHz. Various impedances available. Rated input: 350mW, max 1W. Cable: 10ft. Various terminations offered. Price: on application.

#### DT900 ★

Moving coil stereo headphones. FR: 30Hz-18kHz. Impedance: 600 ohms per earpiece. Maximum input: 200mW. Lightweight, gaily coloured. Price: on application.



Beyer DT96



Beyer DT100



Beyer DT900

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General Sales Department  
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Room 11, Dorset House, Stamford Street,  
London SE1 9LU



Binatone Model 01/3943

### DT900RR

Similar to the DT900 but fitted with individual volume controls. Price: on application.

### ■ BINATONE

J. Parker & Co (London) Ltd,  
Parker House, Beresford Avenue,  
Wembley HA0 1YX. Tel: 01-903 5211.

### Model 01/3943 ★

Stereo headphones with padded headband and ear pads. Coil lead. Jack plug. Sliding volume control. Price: £12.50 (including VAT).

### ■ BUSH

Rank Radio International Ltd, PO Box 596,  
Pank Road, Chiswick, London W4 5PW.  
Tel: 01-994 6491.

### YX9003

Stereo headphones. FR: 40Hz-15kHz. Nominal impedance: 6-22 ohms. Cushioned ear-pieces and headband finished in black. Individual volume controls and coiled connecting lead. Price: £6.04 (plus VAT).

### YX9002

Stereo headphones. FR: 20Hz-15kHz. Nominal impedance: 4-22 ohms. Individual slider volume controls, mono/stereo switch, removable ear-muffs, coiled removable connecting lead. Price: £10.73 (plus VAT).

### ■ DAVIDCLARK

Hampshire Instruments Ltd, PO Box 28,  
Eastleigh, Hants SO5 5XD.  
Tel: Chandler's Ford 5232.

### Clark 75

Lightweight budget priced headset. Price £10.26 (including VAT).

**Clark 300**

Price: £13.50 (including VAT).

**Clark 250**

Individual left and right volume controls.

Price: £21.06 (including VAT).

**Clark 200**

Same as Clark 250 but without the volume controls. Price: £17.17 (including VAT).

**Clark 100A**

For the professional listener. Price: £30.78 (including VAT).

**Clark 4CH-A and DC-2A**

Can be plugged into the headphone socket of a stereo amplifier, or minus the decoder, direct into a fourchannel amplifier. Price: £59.40 (including VAT).

■ **DYNATRON RADIO LTD**

Ditton Walk, Cambridge CB5 8QD.

Tel: Teversham 2781.

**SP3**

Stereo moving coil headphones with separate bass and treble units. FR: 16Hz-22kHz. Sensitivity: 100dB at 600Hz at 1mV input. Max input: 0.5W. Impedance: 8-16 ohms each channel. Price: on application.

**SP4**

Stereo moving coil headphones with individual volume controls to each unit. Padded earpieces. Impedance: 8 ohms. FR: 20Hz to 20,000Hz. Price: on application.

■ **EAGLE INTERNATIONAL**

Heather Park Drive, Wembley HAO 1SU.

Tel: 01-902 8832

**S.E.5**

Budget stereo headphones. FR: 30Hz-15kHz. Lightweight single headband. Impedance: 8 ohms. Price: £4 (plus VAT).

**S.E.30**

Studio stereo/mono headphones. FR: 25Hz-16kHz. Built-in stereo/mono switch. Impedance: 8 ohms. Price: £10.60 (plus VAT).

**S.E.60**

Studio stereo headphones. FR: 25Hz-18kHz. Impedance: 8 ohms. Lightweight with punched ventilated headband. Price: £10.80 (plus VAT).

**JB3**

Stereo headphone and speaker switching and attenuation unit. Jack socket for phones. Switch permits phones only, speakers only, or both together. DIN version available. Moulded case. Price: £1.90 (plus VAT).

**FF16**

Stereo headphones. Impedance: 8 ohms. FR:

30Hz-15kHz. Three-pole jack plug. Washable brushed nylon ear cushions. Adjustable headband. Price: £5 (plus VAT).

**FF6**

Dynamic 8 ohms headphones with line-in control box containing volume controls for each channel and a mono/stereo switch. FR: 25Hz-18kHz. Jack plug. Price: £14.50 (plus VAT).

**FF44**

Four-channel headphones suitable also for stereo. Incorporates switched phase-shifting network to provide synthetic surround sound from a conventional stereo amplifier. Stereo jack plugs. FR: 18Hz-21kHz. Price: £24 (plus VAT).

**S.E.40**

Studio stereo headphones. Impedance: 8 ohms. FR: 30Hz-16kHz. Stereo jack plug. Price: £9.30 (plus VAT).

**FF29**

Four-channel headphones. Switchable for stereo or four-channel. Impedance: 8 ohms. FR: 20Hz-20kHz. Supplied with two three-pole jack plugs. Adjustable headband.

**G3000**

Dynamic 8 ohm headphones including an in-line control box with volume controls and stereo/mono switch. White finish. FR: 20Hz-20kHz. Jack plug. Price: £12.50 (plus VAT).

**G6000**

Dynamic 8 ohm headphones with slide volume controls on each earpiece and stereo/mono switch. White finish. FR: 20Hz-20kHz. Jack plug. Price: £12.86 (plus VAT).

**S.E.70**

Dynamic 8 ohm reflex stereo headphones, polyester film transducers, open back principle. Jack plug. FR: 25Hz-20kHz. Price: £10.20 (plus VAT).

**S.E.75**

Dynamic 8 ohm reflex stereo headphones, polyester film transducers, open back principle. Large earpiece pads. FR: 20Hz-20kHz. Jack plug. Price: £12.20 (plus VAT).

**H2008**

Dynamic vented reflex headphones. Mylar diaphragms, 7dB acoustic damping. FR: 20Hz-20kHz  $\pm$  5dB. 2nd HD less than 0.7% at 100Hz, at 1kHz less than 0.07%, both figures for 107dB response. 3rd HD less than 1% at 100Hz, at 1kHz less than 0.0018%, both figures for 107dB response. Impedance: 4-16 ohms. Price: £12 (plus VAT).

**H2009**

Dynamic vented reflex stereo headphones

★ Indicates entry is illustrated

with bass response selectors giving three different bass response curves. Mylar diaphragms. 7dB acoustic damping. FR: 20Hz-20kHz  $\pm 5$ dB. 2nd HD at 100Hz less than 0.7%, at 1kHz less than 0.07%, both figures for 107dB response. 3rd HD at 100Hz less than 1%, at 1kHz less than 0.0018%, both figures for 107dB response. Price: £16 (plus VAT).

#### ■ ECHO

Sole Distributors: Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU. Tel: 01-452 6288.

#### ■ H6/HS 606M

Dual impedance mono headphones. Specially designed for monitoring, electronic musical instruments, language laboratories, etc. Instant switching from 8-16 ohms to 4K. Adjustable earpieces. Soft padded ear cushions. FR: 25Hz-17kHz. Power handling capacity: 0.5W. Supplied with 10ft coiled cord lead fitted with jack plug. Price £6.75 (plus VAT).

#### ■ H71/JB400

Quadraphonic remote control unit. Hand size control unit with 4-slide controls for adjustment of individual channel gain on quadraphonic headphones. 6ft lead fitted with two standard stereo jack plugs. Price: £5.65 (plus VAT).

#### ■ H70/JB40

Quadraphonic remote control unit. Free standing moulded case in black and silver with individual slider channel controls and twin mode headphone/speaker switching headphone sockets. Rear tag terminals. Price: £7.50 (plus VAT).

#### ■ ELECTROPHONIC

J. Parkar & Co (London) Ltd, Parkar House, Beresford Avenue, Wembley HAO 1YX. Tel: 01-902 8991.

#### 01/3978

Volume control on each channel. Coiled cable and jack. Price: on application.

#### 01/3994

Complete with coiled cable and jack. Price: on application.

#### 01/3986

Separate volume and tone controls on each channel. Slider controls. Complete with coiled cable and jack. Price: on application.

#### ■ GOLDRING LTD

10 Bayford Street, Hackney, London E8 3SE. Tel: 01-985 1152.

#### ■ Lenco K105

Stereo headphones. Impedance: 8 ohms. Maximum recommended input: 700mW. FR: 18Hz-22kHz. Cable: 220cms coiled lead. Jack plug supplied. Price: £12.90 (plus VAT).

#### ■ GRUNDIG (GREAT BRITAIN) LTD

Hi-Fi Division, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

#### 215/ADR

Stereo headphones (DIN 45 500). Foam padded ear covers and headband. Fitted with 2.5m cable and plug to DIN 45 327. Total weight (including plug and cable): 400gm. FR: 20Hz-20kHz. Distortion factor:  $\geq 1\%$  at intensities of 120 phon. Maximum power handling: 100mW. Impedance: 400 ohms per system. Adaptor (279) supplied. Price: £18.75 (plus VAT).

#### 221/ADR

Stereo headphones (DIN 45 500). Foam padded ear covers and headband. Fitted with 2.5m cable and plug to DIN 45 327. Total weight (including plugs and cable): 550gm. FR: 20Hz-20kHz. Distortion:  $\geq 0.5\%$  at intensities of 120 phon. Maximum power handling: 100mW. Fitted with volume and balance controls. Plug adaptor (279) optional extra. Price: £12.27 (plus VAT).

#### ■ HACKER RADIO LTD

Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.

#### ■ Stereo Headphones HPI

Light and comfortable to wear. Supplied complete with coiled lead and jack plug. Impedance: 8-16 ohms. Price: £11 (plus VAT).

#### ■ HITACHI

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

#### ■ HD 404

4-channel moving coil headphones with built-in switch for 2-channel listening. FR: 20Hz-20kHz. Input power: 1mW. Maximum rated power input: 0.1W. Impedance: 8 ohms. Distortion: less than 1%. Cord length: 2m. Weight: (with cord) 610gm. Price: £34.90 (including VAT).

#### ■ HD 60

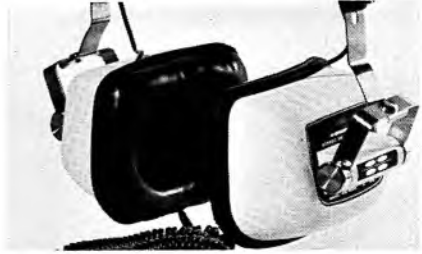
Moving coil stereo headphones. FR: 20Hz-20kHz. Input power: 1mW. Maximum rated power input: 0.5W. Impedance: 8 ohms. Distortion: less than 1%. Cord length: 1.5m. Weight: (with cord) 420gm. Price: £14.90 (including VAT).

#### ■ HD 50

Moving coil stereo headphones. FR: 20Hz-20kHz. Input power: 1mW. Maximum rated



Howland-West CIS.800



Howland-West CIS.4000



Howland-West Headphone Doubler



Howland-West CIS.600

power input: 0.3W. Impedance: 8 ohms. Distortion: less than 1%. Cord length: 1.5m. Weight: (with cord) 380gm. Price: £11.50 (including VAT).

■ **HOWLAND-WEST**

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6.

**CIS.200**

Stereo headphones. Impedance: 8 ohms. Maximum input: 200mW. FR: 20Hz-15kHz. Weight: 12oz. Fitted stereo jack plug. Finish: grey with black pads. Price: £4.90 (plus VAT).

**CIS.250**

Stereo headphones. Impedance: 8 ohms. Maximum input: 500mW. FR: 20Hz-20kHz. Weight: 14 oz. Special stretch cord. Standard jack. Finish: black. Price: £8.50 (plus VAT).

**CIS.300**

Stereo headphones. Supplied complete with standard stretch cable and alternative remote control cable featuring left and right-channel volume controls and mono/stereo switch. FR: 18Hz-21kHz. Impedance: 8 ohms. Price: £11.50 (plus VAT).

**CIS.800 ★**

Stereo headphones. Impedance: 8 ohms. Maximum input: 400mW. FR: 20Hz-17kHz. Weight: 14oz. Fitted stereo jack plug. Finish: available in red, yellow or white, with black earpads. Price: £8.10 (plus VAT).

**CIS.800V**

Similar to the CIS.800 but fitted with independent volume control on each earpiece. Price: £9.50 (plus VAT).

**Headphone Doubler ★**

Splits headphone outlet and permits two pairs of stereo phones to be used. Mono/stereo switch. Independent volume controls for left and right channels. Stretch cord connection with standard jack plug fitted. Neat moulded box with control panel on top and outlet sockets for headphones. Price: £3.60 (plus VAT).

**CIS.4000 ★**

Virtually two headphones built into one. Each earpiece contains two speakers, one angled towards the ear from a forward position and the other angled towards the ear from a rear position, simulating the placing of four loudspeakers. The double stretch cord is terminated in two jack plugs. The left-hand earpiece is fitted with a stereo/four-channel switch. Finish: white and black padding and headband. Price: £16.50 (plus VAT).

**CIS.600 ★**

Impedance: 8 ohms. FR: 20Hz-20kHz. Max. input 0.4W. Weight: 15 oz. Incorporates three controls, volume for left and right and a stereo/mono switch on the left-hand earpiece. Finish: black headband and earpieces with white border. Price: £10.50 (plus VAT).

★ Indicates entry is illustrated

### CIS. 1100 Waferlite ★

Lightweight stereo headphones. Max. input: 0.1W. Impedance: 4-150 ohms. FR: 18Hz-22kHz. Utilises earth magnet transducer with super thin 25 micron diaphragm. Headphone weight (less cord) 4.6oz. Price: £18.00 (plus VAT).

### CIS.900 ★

Impedance: 8 ohms. FR: 20Hz-22kHz. Max. input: 0.3W. Weight: 17½oz. Coiled lead and jack. Colouring in black and white. Price: £9.60 (plus VAT).



Howland-West CIS. 110 Waferlite



Howland-West CIS. 900

### Headphone Control Mk III

The unit's function is to enable two pairs of stereo headphones to be used simultaneously with each listener being able to obtain his own preferred listening level, by use of the volume control on the front panel. The loudspeakers which are also connected via the unit can be switched on or off. Price: £7.10 (plus VAT).

### ■ I.D. ELECTRONICS (EUROPE)

7 Priory Road, High Wycombe, Bucks.  
Tel: High Wycombe 36783.

#### SH 800

Impedance: 4-16 ohms. Maximum power input: 500mW. FR: 25Hz-19kHz. Cord length: 120in. Jack input. Stereo/mono switch, slide volume controls. Finish: black with cushion earpiece and adjustable headband. Price: £7.02 (including VAT).

#### SH 900

Impedance: 4-16 ohms. FR: 20Hz-22kHz. Cord length: 120in. Jack input. Stereo/mono switch, slide volume controls. Finish: black with cushion earpiece and adjustable cushion headband. Price: £11.88 (including VAT).

### ■ JECKLIN

Distributors: Belcaire Trading, 59 Cheriton High Street, Folkestone, Kent.  
Tel: Folkestone 76834.

#### Jecklin Float

Electrostatic headphones mounted on a metalized acrylic glass headband with foam cushioning. Transducers: electrostatic with constant-voltage charge. Size: 85 × 95mm. Membranes sealed in air-tight capsules. Interchangeable, plug-in modules. FR: 30Hz-18kHz. Sound level: 106dB for 10W into 8 ohms. Weight: 625gm. Cable length: 3 metres (10ft). Power supply/switching unit. Functions: speaker-headphone switching; polarizing supply for transducers; output transformer for electro-static loudspeakers. System voltage: 1500V/0.002mA. Input/output: 8 ohms. Power handling: 80W at 8 ohms. Two sets of headphones may be connected. Price: £97.90 (plus VAT).

### ■ JVC

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

#### 5944

Moving coil stereo and four-channel headphones. FR: 20Hz-20kHz. Impedance: (each channel) 8 ohms, (each terminal) 11 ohms. Nominal input: 1mW. Maximum input:



Koss K6LC

100mW. Distortion: <0.5% at 1mW. 6½ft coiled cord. Built-in phase shifter switches. Soft ear cushions, adjustable padded headband. Two units per earpiece. Price: £24.50 (plus VAT).

**HP-1000**

High velocity headphones. FR: 20Hz-20kHz. Impedance: 1000Ω. Sensitivity: 116dB. (1mW input at 600Hz). Max. input: (each unit) 100mW. Distortion: 0.1%. Weight: (without cord) 290gm; (with cord) 330gm. Price: £25 (plus VAT).

**HP-150**

High velocity headphones. FR: 20Hz-20kHz. Impedance: 150Ω. Sensitivity: 116dB (1mW input at 600Hz). Max. input: (each unit) 100mW. Nominal input: 1mW. Distortion: 0.1%. Weight: (without cord) 270 gm; (with cord: 310gm. Price: £17.50 (plus VAT).

**HP-20**

Moving coil type headphones. FR: 20Hz-20kHz. Input impedance: 8 ohms. Nominal input: 500mW (each channel). Distortion: less than 1% (at 1mW input). vci: 13.2mm. Total magnetic flux: 9,000 maxwells. Magnetic flux density: 6,800 gauss. Weight: (without cord) 360 gm; (with cord) 440 gm. Price: £46 (plus VAT).



Koss K711

■ **KOSS**

Tape Music Distributors Ltd.  
114 Ashley Road, St Albans, Herts AL1 5JR.  
Tel: St Albans 64337.

**K6**

Stereo headphones. Suitable for outputs of 4-600 ohms. Normal listening input: 95dB SPL -18mV. Maximum input: 3.7V. FR: 10Hz-16kHz. HD: unmeasurable at 95dB SPL. Weight: 450gm. Special coiled cord. 3ft coiled 10ft extended. Standard stereo jack plug. Bronze finish. Washable ear cushions. Adjustable headband. Price: £13.95 (plus VAT).

**K6LC ★**

Stereo headphones. Suitable for outputs of 4-600 ohms. Normal listening input: 95dB SPL -73mV. Maximum input: 1.25V. FR: 10Hz-16kHz. HD: unmeasurable at 95dB SPL. Weight: 450gm. Special coiled cord: 3ft coiled 10ft extended. Standard stereo jack plug. Bronze finish. Washable ear cushions. Individual volume adjustment for each ear. Adjustable headband. Price: £15.95 (plus VAT).

**K711 and KR711 ★**

Stereo headphones. Suitable for outputs of 4-600 ohms. Normal listening input: 95dB SPL



Koss KR711

★ Indicates entry is illustrated



Koss KO727B



Koss PRO-5LC



Koss KO747



Koss ESP6

-1.4V. Maximum input: 29V. FR: 10Hz-17kHz. HD: <0.5% at 110dB SPL. Weight: 320gm. Special coiled cord: 3ft coiled, 10ft extended. Standard stereo jack plug. Finish: (K711) black moulding; (KRD711) red moulding. Adjustable headband. Price: £12.50 (plus VAT).

#### **KO727B ★**

Stereo headphones. Suitable for outputs of 4-600 ohms. Normal listening input: 95dB SPL - 12mV. Maximum input: 2.6V. FR: 10Hz-18kHz. HD: unmeasurable at 95dB SPL. Weight: 450gm. Special coiled cord: 3ft coiled, 10ft extended. Standard stereo jack plug. Black finish. Washable ear cushions. Adjustable headband. Price: £18 (plus VAT).

#### **KO747 ★**

Stereo headphones. Suitable for outputs of 4-16 ohms. Wired for mono and stereo with changeover switch. Weight: 500gm. Special coiled cord: 3ft coiled, 10ft extended. Standard stereo jack plug. Finish: two-tone brown. Washable ear cushions. Individual volume adjustment. Adjustable headband. Fluid-filled ear cushions. Frequency response is 30 to

20,000Hz with a distortion of less than 1% at maximum output of 110dB SPL. Impedance is nominally 300 ohms each channel but can be used with systems having output taps of 4, 8, or 16 ohms as well as with stereophone jacks at resistance values to 600 ohms. 10ft coiled cord.

#### **PRO4AA**

Stereo headphones. Suitable for outputs of 4-16 ohms. Normal listening input: 95dB SPL - 260mV. Maximum input: 4.1V. FR: 10Hz-20kHz. HD: negligible at 95dB SPL. Weight: 650gm. Special coiled cord: 3ft coil, 10ft extended. Standard stereo jack plug. Finish: beige with black cushions. Washable ear cushions. Adjustable headband. Fluid-filled cushions. Price: £31.50 (plus VAT).

#### **PRO-5LC ★**

Professional dynamic headphones. FR: 10Hz-20kHz. Designed to work from amplifier outputs of 4-1000 ohms impedance. HC: not to exceed 5V RMS. Total harmonic distortion: <1% at 95dB SPL. Driver units: 1in diameter voice coils, 4sq in radiating area. 10ft coiled cable. Fluid filled vinyl ear cushions. Extendable headband with pivoting yokes in stainless

steel. Headband covered with soft moulded PVC and sponge rubber cushioning. Finish: beige with black cushions and cord, brushed chrome trim. Weight: 19oz. Price: £34.50 (plus VAT).

#### ESP6 ★

Electrostatic stereo headphones. Suitable for outputs of 4-16 ohms. Normal listening input: 1V at 80dB SPL. Maximum input: 20V. FR: 30Hz-19kHz  $\pm$  5dB. HD: <0.2% at 110dB SPL. Weight: 850gm. Special coiled cord: 3ft coiled, 10ft extended. Standard stereo jack plug plus connector box. Finish: black. Washable fluid-filled ear cushions. Neon level indicators. Adjustable headband. Carry case included in price. Price: £59 (plus VAT).

#### ESP9 ★

Electrostatic studio monitor stereo headphones. Suitable for outputs of 4-16 ohms. Normal listening input: 1V at 80dB SPL. Maximum input: 20V. FR: 15Hz-15kHz  $\pm$  2dB (10Hz-19kHz  $\pm$  5dB). Weight: 590gm. 6ft cord. Supplied with speaker output terminals. Finish: black. Fluid-filled ear cushions. AC or self-energised selector switch. Price: £79 (plus VAT).

#### K2 + 2 ★

Four-channel dynamic headphones. Wired for stereo and quadraphonic. Suitable for outputs of 3-600 ohms. Normal listening input: 1.4V at 95dB SPL. Maximum input: 29V. FR: 10Hz-20kHz. HD: negligible at 95dB SPL. Weight: 600gm. Special coiled cord: 3ft coiled, 10ft extended. Two headphone jack plugs. Black finish. Washable fluid-filled ear cushions. Adjustable headbands. Switch for two or four-channel operation. Price: £49 (plus VAT).

#### Two-way adaptor TPA

For connecting two pairs of headphones to single output. Extends length by 3ft. Price: £3.25 (plus VAT).

#### Extension cable EC25KK

25ft coiled cord terminated with stereo jack plug and socket. Price: £4 (plus VAT).

#### T3 Switchbox

Speaker/headphone switchbox. Jack socket for phones, terminals for speaker and connection to amplifier output. Switch selects speakers on or off. Price: £4 (plus VAT).

#### T4A Connector box

Accepts up to five pairs of stereo headphones. 14ft extension lead with jack plug for amplifier. Simulated rosewood base with black trim, spun aluminium panel. Price: £7.50 (plus VAT).



Koss ESP9



Koss K2 + 2

#### T-5D

Remote control station suitable for running two pairs of stereo headphones. Speaker on/off switch incorporated, but headphones are always on. The volume of headphones plugged into left-hand jack individually controlled (other set of headphones controlled by volume knob on amplifier). Fitted DIN sockets for amplifier and speaker connections. Matches any amplifier with 4, 8 or 16 ohms output. Finish: black with simulated walnut top. Connecting cable seven-core colour-coded 3ft long. Size:  $3\frac{1}{4} \times 3\frac{1}{4} \times 2\frac{1}{8}$ in. Weight: 10½oz. Price: £8.50 (plus VAT).

#### T10A

Chairside listening station. Provides separate volume controls for two pairs of stereo headphones, also speaker on/off switch. Wires directly to amplifier output. Seven-core flat cable suitable for under carpet installation. Tinted plastic cover. Price: £11.50 (plus VAT).

#### Continental adaptor leads

For use with amplifiers having DIN output sockets instead of jack sockets. Comprises:



★ Indicates entry is illustrated



Koss PRO-50



Koss KO-747Q



Koss HV-1A

two DIN speaker plugs with lead and stereo jack socket. Two 100-ohm resistors inserted for attenuation. Price: £1.50 (plus VAT).

#### K-61.CQ

Quadraphonic headphones with 4 drivers. Operate from 3.2 ohms to 600 ohms impedance. Power for normal listening level (1kHz): 160mW. Max. input: 5V RMS with provision for 14dB transients above this. FR: 20Hz-17kHz. THD: 0.5% at 109dB-SPL. Sensitivity: 90dB-SPL/100mV (2-channel) 96dB-SPL (4-channel). Cord length: 120in. Two stereo jacks. Brown finish. Price: £29 (plus VAT).

#### PRO-5Q ★

Quadraphonic headphones with four drivers. Operate from 3.2 ohms to 600 ohms. Power for normal listening level (1kHz): 160mW. Max. input: 5V RMS with provision for 14dB transient peaks beyond this. FR: 20Hz-20kHz. THD: <0.5% at 109dB-SPL. Sensitivity: 90dB-SPL/100mV (2-channel) 96dB-SPL/100mV (4-channel). Weight: 21oz. Cord length: 120in. Two stereo jack plugs. Brown finish. Price: £45 (plus VAT).

#### KO-747Q ★

Quadraphonic headphones with four drivers. Operate from 3.2 ohms to 600 ohms. Power for normal listening level (1kHz): 160mW. Max. input: 5V RMS with provision for 14dB transient peaks beyond this. FR: 20Hz-19kHz. THD: <0.5% at 109dB-SPL. Sensitivity: 90dB-SPL/100mV (2-channel) 96dB-SPL/100mV (4-channel). Weight: 22oz. Cord length: 120in. Two stereo jack plugs. Brown finish. Price: £42 (including VAT).

#### HV/ILC

High velocity stereo headphones. Specifications: Elements: 2in diameter velocity operated. Source impedance: 3.2 to 600 ohms. FR: 15Hz-20kHz. Distortion: 0.5% at 109dB-SPL. Sound pressure level: 95dB-SPL 0.6V RMS. Power handling: 5V RMS continuous. Ear cushions: soft acoustical foam. Volume/balance controls: one miniature rotary type per earcup. Weight: 280gm. Price: £29.95 (plus VAT).

#### HV-1A ★

High velocity stereophones with new deciliter drivers, reproducing all ten audible octaves. Operates from 3.2 to 600 ohms impedance. FR: 15Hz-20kHz. 10ft coiled cable. Weight: (less cord) 9.3oz. Price: £26.50 (plus VAT).

#### Phase 2

Stereo dynamic headphones with panoramic source controls and ambience expander. Comparator switch to compare ordinary stereo



Marantz SD-1



Marantz SD-5

with phase 2. FR: 10Hz-20kHz. Operates from 3.2 to 600 ohms impedance. Finish: beige with black air-filled cushions. Price: £42 (plus VAT).

#### ■ MARANTZ

Pyser Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA.  
Tel: Edenbridge 4111.

#### SD-1 ★

Electrostatic headphones. FR: 20Hz-20kHz  $\pm$  3dB. Distortion: 0.5PCF80 at all frequencies from 40Hz-20kHz and up to 100dB SPL. Automatic limiting of very loud passages. Impedance: 30 ohms. Weight: 14oz. Supplied with EE-1 energiser which has built-in speaker/headphone switching and will accept up to two headphones. EE-1 switches off if severely overdriven. Price: £59 (plus VAT).

#### SD-5 ★

Stereo headphones. Impedance: 8 ohms. FR: 30Hz-15kHz. Finished in gold and brown leather ear cushions. Fully adjustable headband. Weight: 16oz. Price: £17.50 (plus VAT).

#### ■ MICRO

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6

#### MX1

Comprises headset MS2 and power source MP1. Stereo electrostatic headphones. Impedance: 8 ohms. Maximum input: 8V at 1kHz RMS. FR: 20Hz-20kHz  $\pm$  1dB. HD: < 1% at 115dB sound pressure level. Sensitivity: 98dB sound pressure level at 1kHz. Cord: 8ft approx. Finish: metallic and black. Extension cable available to enable two sets of headphones to be used from a single power source. Power supply: single PP9 battery gives about 2000 hours listening. Price: £42 (plus VAT).

#### ■ PHILIPS

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01-437 7777.

#### N6301

Stereo headphones. Impedance: 600 ohms each channel. FR: 20Hz-20kHz. Price: £11.58 (plus VAT).

#### N6302

Stereo headphones fitted with stereo sound 'dimension control' to permit listener to adjust stereo effect to suit personal taste. FR: 16Hz-20kHz. Impedance: 600 ohms each channel. Price: £23.75 (including VAT).

#### N6310

Stereo headphones. Impedance: 600 ohms each channel. FR: 20Hz-20kHz. Price: £9.75 (including VAT).

#### ■ PICKERING

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

#### OA3

Dynamic 15 ohm headphones. Maximum input: 200mW RMS. FR: 20Hz-20kHz. Weight: 7.5oz. Cord length: 120in. Jack plug. Price: £18.50 (plus VAT).

#### PH4955

Dynamic 8 ohm headphones. Maximum input: 500mW RMS. FR: 10Hz-22kHz. Weight: 28oz. Cord length: 120in. Jack plug. Sensitivity: 100dB-SPL/0.11V. Price: £28 (plus VAT).

#### ■ PIONEER

Shriro (UK) Ltd, Shriro House, The Ridgeway, Iver, Bucks SLO 9JL.  
Tel: Iver 652222.

#### SE-505

Dynamic headphones. Impedance: 4-16 ohms.



Pioneer SE-700



Pioneer SE-Q404



Ross RE220



Ross RE-264

Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 108dB at 300mV. Weight: 690gm. Cord length: approximately 60in. Jack plug. Two-way speaker volume/tone controls. Price: to be announced.

**SE-305**

Dynamic headphones. Impedance: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 113dB at 300mV. Weight: 435gm. Cord length: 60in. Jack plug. Price: to be announced.

**SE-205**

Dynamic headphones. Impedance: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 115dB at 30mV. Weight: 450gm. Cord length: 84in. Jack plug. Price: to be announced.

**SE-700 ★**

Piezoelectric headphones. Impedance: 4-16 ohms. Static capacity: 0.1μF. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: more than 30V. Price: to be announced.

**SE-500**

Piezoelectric headphones. Impedance: 4-16 ohms. Static capacity: 0.08μF. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Price: to be announced.

**SE-300**

Piezoelectric headphones. Impedance: 4-16

ohms. Static capacity: 0.08μF. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Price: to be announced.

**SE-Q404 ★**

4-channel dynamic headphones. Impedance: 4-16 ohms. FR: 20Hz-20kHz. Sensitivity: 105dB 0.3V (4 channels driven) 111dB 0.3V (2-channels driven). Maximum input power: 500mW (each channel). Price: to be announced.

■ **ROSS ELECTRONICS**

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

**RE-220 ★**

Budget stereo headphones. Lightweight headband, padded earmuffs. FR: 20Hz-20kHz. Maximum input: 200mW. Impedance: 8 ohms. 10ft lead. Price: £3.57 (plus VAT).

**RE-225**

Stereo headphones with lightweight adjustable headband, padded earmuffs. FR: 20Hz-20kHz. Maximum input: 200mW. Impedance: 8 ohms. 3-metre spiral cord. Price: £4.80 (plus VAT).

**RE-230**

Stereo headphones with fully padded adjustable headband and earmuffs. Independent volume controls. FR: 20Hz-20kHz. Maximum

input: 200mW. Impedance: 8 ohms. 3-metre spiral cord. Price: £6.47 (plus VAT).

**RE-235**

Super lightweight stereo headphones: One-piece plastic covered adjustable headband; foam earmuffs. Earpiece and headband finished bright yellow. FR: 20Hz-17kHz. Impedance: 8 ohms. 6ft lead. Price: £7.04 (plus VAT).

**RE-237 ★**

Rellex stereo headphones featuring drive units with high velocity mylar diaphragms for wide-range, distortion-free response and ported earcups that provide a controlled awareness of ambient sound. Other features include a universally adjustable headband with leather grain cover, foam-filled ear cushions and a 3-metre coiled lead with moulded jack plug. Impedance: 8 ohms. FR: 15Hz-20kHz. Maximum input: 500mW. Sound press. Level: 115dB/mW. Price: £10.60 (plus VAT).

**RE-240**

Stereo headphones with leather grain padded headband and earmuffs. Fitted 3in diameter wide-range loudspeakers and slide volume controls. FR: 20Hz-20kHz. Maximum input: 1W. Impedance: 8 ohms. 3-metre spiral cord. Price: £8.72 (plus VAT).

**RE-245**

Mono/stereo headphones. Leather grain padded headband and earmuffs. Fitted 3in diameter loudspeakers, slide controls for volume and bass/treble. Mono/stereo switch. FR: 20Hz-20kHz. Maximum input: 1W. Impedance: 8 ohms. 3-metre spiral cord. Price: £10.22 (plus VAT).

**RE-250**

Semi-professional stereo headphones. Lightweight headband, padded earmuffs. Fitted with specially designed 60mm mylar cone loudspeakers. Independent slide volume controls. FR: 20Hz-22kHz. Maximum input: 500mW. Sensitivity: 130dB at 800Hz for 1mW. Impedance: 8 ohms. 3½-metre spiral cord. Price: £10.22 (plus VAT).

**RE-255**

Semi-professional stereo headphones. Padded adjustable headband and earmuffs. Fitted high-grade, wide-range loudspeakers and recessed, vertically-operated slide controls for volume and bass/treble. FR: 20Hz-20kHz. Sensitivity: 108dB at 1000Hz for 1mW output. Impedance: 8 ohms. 3-metre spiral cord. Price: £13.68 (plus VAT).

**RE-264 ★**

Stereo/quadrasonic headphones. Padded headband and earmuffs. Fitted with 50mm front and rear loudspeakers angled to provide



Ross Electronics RE-237



Ross Electronics RE-208 Stereo junction box

realistic 4-channel listening from discrete or matrix systems. Maximum input: 200mW per channel. Impedance: 8 ohms. Price: £9.84 (plus VAT).

**JB-3 Stereo Headphone Junction Box**

Provides switched selection of headphones only, loudspeakers only or both. Connecting leads have spade terminals. Price: £1.65 (plus VAT).

**JB-3D**

As JB-3, but with connecting leads fitted with 2-pin DIN plugs. Price: £1.85 (plus VAT).

**RE-208 Stereo Headphone Junction Box ★**

Provides 3-way switched selection of headphones only, loudspeakers only or both. Fitted with 2-pin DIN plug connectors and input sockets, and twin headphone sockets. Price: £2.45 (plus VAT).

★ Indicates entry is illustrated



Sansui SS10



Sansui SS50

**RE-202 Stereo Headphone Extension Lead**

Spiral lead fitted with stereo jack plug one end, jack socket at other. Lead extends to 25ft. Price: £1.50 (plus VAT).

■ **ROTEL**

Rank Audio Visual Ltd, PO Box 70, Great West Road, Brentford TW8 9HR. Tel: 01-568 9222.

**RH630**

Stereo headphones. Impedance: 8 ohms. Price: on application.

**RH700**

Stereo headphones. Impedance: 8-16 ohms. Maximum input: 500mW. FR: 20Hz-20kHz. 10ft coiled cord. Black headband and ear cushions. Adjustable headband. Price: £15.50 (including VAT).

**RH430**

Stereo headphones. Impedance: 8 ohms. Price: on application.

■ **SANSUI**

Vernitron Ltd, Thornhill, Southampton SO9 5QF. Tel: Southampton 444811.

**SS10 ★**

Stereo headphones. Impedance: 8 ohms. Normal listening input: 1mW. Maximum input: 500mW. FR: 20Hz-20kHz. HD: < 0.8%. Sensitivity: better than 110dB. Crossover frequency: 1kHz (6dB/Oct). Weight: 625gm. Three-pole jack plug. Washable ear cushions. Individual volume adjustment. Black headband, white earpieces. Price: £19.36 (plus VAT).

**SS20**

Stereo headphones. Impedance: 8 ohms. Normal listening input: 1mW. Maximum input: 500mW. FR: 20Hz-20kHz. THD: < 0.8%. Sensitivity: 110dB at 200Hz. Crossover frequency: 1kHz (6dB/Oct). Weight: 780gm. Individual volume adjustment. Individual tone adjustment. Adjustable headband. Dual extension lead. Two drive units in each earpiece. Black headband and ear cushions, white earpieces. Price: £25.84 (plus VAT).

**SH5**

Stereo headphones. Impedance: 25 ohms nominal. FR: 20Hz-20kHz. Maximum input power: 65mW. Sensitivity: 97dB. Weight: 245gm. Price: £18.96 (plus VAT).

**SS50 ★**

Stereo headphones, woofer 7.5cm, tweeter 3.3cm. Impedance: 8 ohms. FR: 20Hz-20kHz. Maximum input: 500mW. Sensitivity: 106dB at 200Hz. Crossover frequency: 1kHz (6dB/Oct). Weight: 800gm. Price: £37.40 (plus VAT).

**QH44**

2/4-channel headphones. Impedance: 25 ohms. FR: 20Hz-20kHz. Maximum input power: 100mW. Sensitivity: 98dB. High velocity full range dome type speakers. Weight: 430gm. Price: £37.66 (plus VAT).

■ **SENNHEISER ELECTRONIC**

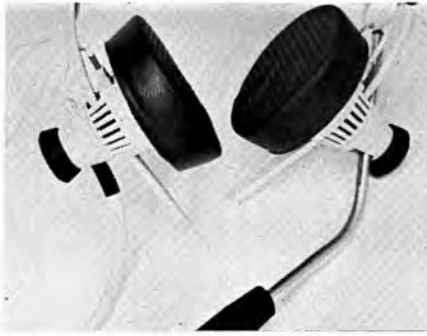
Distributors: Hayden Laboratories Ltd, Hayden House, 17 Chesham Road, Amersham, Bucks HP6 5AG. Tel: Amersham 5511.

**HD.110**

Stereo headphones wired for mono and stereo. Robust design. Removable washable ear cushions. Easily replaceable cable. FR: 20Hz-20kHz. Impedance: 200 ohms  $\pm$  15% per earpiece. Output: 1mW per capsule produces 98dB (16 $\mu$ bar) for 1% distortion. Weight: 100z. Price: £40.20 (plus VAT).

**HD.414**

Stereo headphones. Wired for mono or stereo.



Sennheiser HMD.414

Lightweight robust design. Removable washable sponge ear pads. FR: 20Hz-20kHz. Impedance: 2000 ohms per capsule. Weight: 5oz. Price: £18.80 (plus VAT).

**HMD.110**

Stereo headset type HD.110 with close-talking boom microphone. FR: 50Hz-14kHz. Response tailored for close speaking. Sensitivity: 0.07mV/ $\mu$ bar. Impedance: 200 ohms. Price: £46.45 (plus VAT).

**HMD.414 ★**

Stereo headset HD.414 with close-talking boom microphone located near corner of mouth. Especially high ratio of desired sound to background noise. Sensitivity: 0.1mV/ $\mu$ bar. Impedance: 200 ohms. Price: £45.45 (plus VAT).

**HD.44**

Ultra light stereo headphones with volume control on each capsule. Can be used mono. FR: 40Hz-15kHz. Impedance: 640 ohms. Weight: 33gm. Price: £12 (plus VAT).

**HD.424**

Stereo headphones (can be used mono) with good low frequency response. FR: 16Hz-20kHz. Impedance: 2K. Weight: 170gm. Price: £27 (plus VAT).

**HD.412**

Stick type headphone designed for use in record booths, etc. FR: 20Hz-20kHz. Impedance: 2K. Price: £20.35 (plus VAT).

**HD.4004**

Lightweight mono stethoset. Weight: 19gm. FR: 100Hz-6kHz. Impedance: 17 ohms. Price: £8.35 (plus VAT).

**■ SHARP**

Sharp Electronics (UK) Ltd. 107 Hulme Hall Lane, Manchester M10 8HL. Tel: 061-205 7321.

**HP100**

Stereo headphones. Fully adjustable slide fit-

tings. Double headband. Padded comfortable earpieces. FR: 30Hz-18kHz. Complete with lead and jack plug. Price: £7.49 (plus VAT).

**HP200**

Stereo headphones. Fully adjustable slide fittings. Single headband. Padded comfortable earpieces. FR: 30Hz-17kHz. Complete with lead and jack plug. Price: £5.45 (plus VAT).

**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. Price: £17.72 (plus VAT).

**■ SKANTIC**

Skantic (UK) Ltd. Station Road, Edenbridge, Kent TN8 6EY. Tel: Edenbridge 5231.

**Type AH-27**

Stereo headphones complete with coiled lead and jack. FR: 20Hz-20kHz. Price: on application.

**Type SM-220**

Stereo headphones complete with cable and jack. FR: 20Hz-18kHz. Price: on application.

**■ SONAB LTD**

PO Box 4, Oldfield Road, Hampton TW12 2HN. Tel: 01-079 0134.

**H10**

Stereo headphones. Moving coil. Impedance: 400 ohms per earpiece. Maximum input: 100mW. HD: <1% at 120dB at 1kHz. FR: 20Hz-16kHz. Close-fitting, plastic-faced, foam plastic ear cushions. 8 $\frac{3}{4}$ ft cable with jack plug. Finish: red moulded earpieces, gimbal mounted. Price: £23.98 (plus VAT).

**H20**

Stereo headphones. Moving coil. Impedance: 400 ohms per earpiece. Maximum input: 250mW. HD: <0.3% at 120dB at 1kHz. FR: 20Hz-20kHz. Close fitting, plastic-faced, foam plastic earcushions. 12 $\frac{1}{2}$ ft cable with jack plug. Finish: black moulded earpieces, matt nickel plate. Gimbal mounted. Price: £30.10 (plus VAT).

**■ SONY**

Sony (UK) Ltd, Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

**DR9**

Stereo headset with slider controls. Impedance: 8 ohms. Price: £10.88 (plus VAT).

**DR15**

Stereo headset. Impedance: 4-16 ohms. Price: £14.77 (plus VAT).

★ Indicates entry is illustrated

### HS25

Headset with mic for TC 96L. Price: £15.69 (plus VAT).

### ECR 500 ★

Electret condenser headphones. FR: 20Hz-20kHz. Sensitivity: 91dB SPL (at 1V, 300Hz input). Maximum sound pressure: 114dB SPL. HD: less than 0.32% (at 4V, 1kHz input). Max. input: 12V, 1kHz. 2m connecting cord. Weight: 1kg.



Sony Electret ECR500

### STAX

Wilmex Ltd, Stax Division, Compton House, New Malden, Surrey KT3 4DE. Tel: 01-949 2545.

#### Stax SR-3

Lightweight electrostatic headphones. Push/pull operation. FR: 30Hz-25kHz. Impedance: 130K at 10kHz. Sound pressure level: 95dB at input 100V RMS. Polarising voltage: 200V DC. Adjustable headband. All metal parts stainless steel. Ear cushions of soft vinyl leather, replaceable. Total weight approximately 1lb, including cord. Price: see SRD-6 electrostatic energiser below.

#### Stax SRD-6

Adaptor for use with SR-3 phones. Connects to amplifier output and provides switching between speakers and headphones, also supplies polarising voltage to phones. Mains: 110-240V AC, 200-240V AC. Price: (complete system comprising SR-3 phones and SRD-6 adaptor) approximately £56 (plus VAT).

#### Stax SRX Mk 2 ★

Lightweight electrostatic phones. Push/pull operation. FR: 20Hz-27kHz. Impedance: 130K at 10kHz. Sound pressure level: 95dB at input 100V RMS. Polarising voltage: 200V DC. Luxury vinyl leather earpads on stainless steel frame. Weight: 370gm (including cord). Price: see SRD-7 electrostatic energiser below.

#### Stax SRD-7

Electrostatic energiser for Stax SRX Mk 2 phones. Connects to amplifier output with switching between phones and speakers. Price: SRX Mk 2 plus Stax SRD-7 energiser £112 (plus VAT).



Stax SRX Mk 2 Headphone and Stax SRD-7 electrostatic energiser

Weight: 6oz. Delivered with 3m lead and DIN plugs for connection to loudspeaker outputs or with stereo jack for direct connection to the front output on Tandberg amplifiers and tape recorders.

#### TM4

FR: 50Hz-17kHz  $\pm 3$ dB. Spherical (omni-directional). Electro-dynamic. Sensitivity: 0.1mV/ $\mu$ bar (at 1kHz). Impedance: 200 $\Omega$ .

#### TM6

FR: 50Hz-15kHz +3dB -6dB. Spherical (omni-directional). Electro-dynamic. Sensitivity: 0.1mV/ $\mu$ bar (at 1kHz). Impedance: 250 $\Omega$ .

#### TM5

FR: 70Hz-13kHz -2dB -6dB Spherical (omni-directional) Electro-dynamic. Sensitivity: 0.2mV/ $\mu$ bar (at 1kHz). Impedance: 600 $\Omega$ .

### TECHNICS

Technics Hi-Fi Division, Building 63, 107-109 Whitby Road, Slough SL1 3DR. Tel: Slough 34522.

#### EAH-80E

Electric static headset. Input voltage: 5V. Input impedance: 4-16 ohms. Sensitivity: 101dB (1V, 500Hz). FR: 20Hz-20kHz.

### TANDBERG

Farnell-Tandberg Ltd, Farnell House, 81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds 35111.

#### HD 424

Lightweight headphones. FR: 16Hz-20kHz.

Distortion: 0.8% (500Hz, 101dB). 2m cable. Weight: 350gm. Price: on application.

**EAH-400**

Dynamic headset. Input voltage: 1,000mW. Input impedance: 4-16 ohms. Sensitivity: 92dB/mW. FR: 20Hz-20kHz. 3m cable. Weight: 670gm. Price: on application.

■ **TOSHIBA**

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

**HR50**

Stereo headphone with channel changeover switch for binaural and cross-field stereo sounds. Price: £16.34 (plus VAT).

**HR40**

Four channel/2-channel compatible stereo headphone. Price: £29.95 (plus VAT).

**HR80**

Cross-field stereo headphone with removable, washable ear pieces. Price: £8.15 (plus VAT).

**HR-700 ★**

Stereo headphone with separate volume, bass and treble controls on each earpiece. Drive units comprise two 8cm dynamic for low register and two 5cm dynamic for high register. Matching impedance: 4-16 ohms. Price: £31.76 (plus VAT).

■ **UHER**

Distributors: Uher (UK) Ltd, 15 Broomhills Estate, Braintree, Essex. Tel: Braintree 23192.

**W674**

Stereo moving coil headphones. FR: 20Hz-20kHz. Fitted with DIN loudspeaker plugs. Price: £22.20 (plus VAT).

**W675**

Stereo moving coil headphones. FR: 20Hz-20kHz. Fitted with DIN 5-pin headphone plug. Price: on application.

■ **WHARFEDALE**

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

**D.D.1**

Dynamic moving-coil stereo headphones. Two way system (i.e. separate bass and treble units) with electrical crossover network. Impedance: 8-16 ohms. FR: 16Hz-22kHz  $\pm$ 3dB. Distortion: less than 1%. Supplied with 4½m (15ft) non-tangle coiled cable. Cushions readily removable for easy cleaning. Price: £14.81 (plus VAT).

**Isodynamic Headphones ★**

High quality headphones using an electro-



Toshiba HR-700



Wharfedale Isodynamic headphones

magnetic technique which distributes the drive over the whole of the diaphragm in the manner of an electrostatic system. Impedance: 40 ohms per capsule but suitable for connection to the output terminals of amplifiers with impedance of 8 ohms. Response down to 35Hz without need for strong side force to seal the cups to the head. Light weight. Adjustable padded headband. Coiled lead. Soft ear pads. Modern white plastic appearance. Price: £21.86 (plus VAT).

■ **YAMAHA**

Natural Sound Systems Ltd, Strathcona Road, North Wembley HA9 8QL. Tel: 01904 0141.

**HP-900**

Sensitivity: 105dB at 600Hz. FR: 18Hz-22kHz. Matching impedance: 4-16 ohms. Max. input: 0.3W. Built-in separate left and right volume controls. Fitted with 2m coiled cable and stereo jack plug. Weight: 440gm. Price: £19.91 (plus VAT).

**HP-500**

Sensitivity: 104dB at 600Hz. FR: 18Hz-20kHz. Matching impedance: 4-16 ohms. Max. input: 0.5W. Fitted with 3m coiled cable and stereo jack plug. Weight: 450gm. Price: on application.





# Play safe this year

Magnetic tape is a storage space for sound.

And the safer that store, the better the tape.

So the fact that we can call Agfa-Gevaert tapes

'The Sound Safes' says a lot about their quality.

Our tape oxides are carefully formulated for the very best signal-to-noise ratio, frequency response and overload resistance.

Then we polish and compress them to cut head wear and increase tape-to-head contact.

We've put a matt back coating on our PEM open-reel tapes so they won't warp at high winding speeds.

And built our cassettes within precise tolerances to complement the very latest high-quality cassette machines.

Finally, we've made sure there's a 'Sound Safe' for every type of machine, whether it's a Nakamichi or a Nagra, a Tandberg or a Teac.

So if you've just decided on a tape machine, turn to page 177, and see which 'Sound Safe' suits it.



## The Sound Safes

For more details on Agfa tape, ring Ted Bowden on 01-560 2131.

# Magnetic Tape

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ AFGA-GEVAERT LTD

Great West Road, Brentford, Greater London. Tel: 01-560 2131.

### PE36

Low-noise, long-play tape supplied in plastic library case. 13cm 270m £2.35; 15cm 360m £2.70; 18cm 540m £3.89; 26cm 1280m £9.67. All prices include VAT.

### PE46

Low-noise, triple-play tape supplied in plastic library case. 13cm 360m £2.78½; 15cm 540m £3.89; 18cm 720m £4.81. All prices include VAT.

### PE66

Low-noise, triple-play tape supplied in plastic library case. 13cm 540m £4.03½; 15cm 720m £4.87½; 18cm 1080m £6.06. All prices include VAT.

### PEM368

Low-noise, long-play, matt backed tape supplied in plastic library case. Metal spools: 13cm 270m £3.40; 18cm 540m £5.63½; 26cm 1100m £14.02. Plastic spools: 13cm 270m £2.93; 18cm 540m £4.86; 26cm 1100m £12.09. All prices include VAT.

### PEM268

Low-noise, double-play, matt-backed tape supplied in plastic library case. Metal spools: 13cm 320m £4.04; 18cm 640m £6.97½; 26.5cm 1280m £14.73. Plastic spools: 13cm 320m £3.48½; 18cm 640m £6.02; 26.5cm 1280m £12.69. All prices include VAT.

### Compact Cassettes

Conventional and colour. C60 (2 × 30min) 82½p; C90 (2 × 45min) £1.14; C120 (2 × 60min) £1.71½. All prices include VAT.

### Cassette Album

Three C60 plus three C90 cassettes £5.89. 10-pack (10 × C60) in case £8.02. All prices include VAT.

### Stereochrome

Chromium dioxide tape cassettes. C60 (2 × 30min) £1.48; C90 (2 × 45min) £1.92; C120 (2 × 60min) £3.03. All prices include VAT.

### Super Cassettes

Super C60 + 6 (2 × 33min) £1.04½; Super C90 + 6 (2 × 48min) £1.37½; Super C120 (2 × 60min) £2.10. All prices include VAT.

For empty library boxes and spare spools see Tape Accessories Section.

## ■ BASF UNITED KINGDOM LTD

Audio/Video Tapes Division, PO Box 473, Knightsbridge House, 197 Knightsbridge, London SW7 1SA. Tel: 01-584 5080.

### LP35 LH Long Play Tape

Long play, low noise, high output. In plastic swivel box: 5in 900ft £2.34; 5½in 1200ft £2.70; 7in 1800ft £3.86; In cardboard box: 10in 3280ft £7.16; 10½in 4200ft £9.62. All prices exclude VAT.

### DP26 LH Double Play Tape

Double play, low noise, high output. In plastic swivel box: 5in 1200ft £2.78; 5½in 1800ft £3.88; 7in 2400ft £4.78. All prices exclude VAT.

### TP18 LH Triple Play Tape

Triple play, low noise, high output. In plastic swivel box: 5in 1800ft £4.02; 5½in 2400ft £4.84; 7in 3600ft £6.02. All prices exclude VAT.

### LP35 LH Super Long Play Tape

Super low noise, high output, long play. In plastic swivel box: 5in 900ft £2.66; 5½in 1200ft £3.20; 7in 1800ft £4.54. All prices exclude VAT.

### DP26 LH Super Double Play Tape

Super low noise, high output, double play. In plastic swivel box: 5in 1200ft £3.50; 5½in 1800ft £5.08; 7in 2400ft £6.28. All prices exclude VAT.

### LPR35 LH Matt Back 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 900ft £4.13. In soft plastic box, metal spool 7in 1770ft £5.94; 10½in 3610ft £11.55. All prices exclude VAT.

### DPR26 LH Matt Back Double Play Tape

As LPR35 LH Matt Back, but double play tape. In soft plastic box, metal spool 7in 2100ft £6.93; 8½in 3000ft £10.23; 10½in 4200ft £13.53. All prices exclude VAT.

### Compact Cassettes

BASF LH tape, in snap pack box: C30 68p; C60 91p; C90 £1.26; C120 £1.73. All prices exclude VAT.

### BASF LH Super Tape ★

Incorporated BASF special mechanics for smooth winding and avoidance of jamming, in snap pack box: C60 £1; C90 £1.30; C120 £1.80. All prices exclude VAT.



*BASF LH Super Cassettes*

#### **BASF Chromium Dioxide Tape**

Incorporated BASF special mechanics. CRO<sub>2</sub> tape, better dynamic range, lower background noise, when used with suitable machines, in snap pack box: C60 £1.50; C90 £1.90; C120 £2.50. All prices exclude VAT.

#### **8-Track Cartridges (Unrecorded)**

45min £1.60; 64min £1.75; 90min £2. All prices exclude VAT.

#### **Special Requirements Tapes**

See details in Tape Accessories Section.

#### ■ **EMI TAPE LTD**

Tape House, Dawley Road, Hayes UB3 1BT.  
Tel: 01-573 3888.

#### **HSP Standard Play**

5in 600ft £1.50; 5½in 900ft £1.90; 7in 1200ft £2.40. All prices exclude VAT.

#### **HLP Long Play**

5in 900ft £1.90; 5½in 1200ft £2.40; 7in 1800ft £3.10. All prices exclude VAT.

#### **HDP Double Play**

5in 1200ft £2.40; 5½in 1800ft £3.10; 7in 2400ft £4.07. All prices exclude VAT.

#### **825 Professional Tape**

5in 900ft £2.15; 7in 1800ft £3.65; 825/36N 10½in 3600ft £7.50. All prices exclude VAT.

#### **Emitape Hi-Dynamic**

Is supplied in transparent hinged library case.

A pre-folded index card is included. Card is designed to provide maximum space for titling with easily visible reference without opening the box. 825 Professional Tape is supplied in cardboard box with full indexing facilities.

#### **Compact Cassettes (Soundhog)**

C60 (1 hour playing time) 66p; C90 (1½ hours playing time) 90p; C120 (2 hours playing time) £1.27. All prices exclude VAT.

#### **Compact Cassettes (Hi-Dynamic)**

C30 58p; C60 77p; C90 £1.07; C120 £1.47. All prices exclude VAT.

#### **Compact Cassettes (X-1000)**

C60 99p; C90 £1.35. All prices exclude VAT. EMI Cassettes are supplied in library case with index sheet. Playing time is measured at the appropriate tape speed (normally 1⅞i/s).

#### ■ **FUJI**

Hanimex (U K) Ltd, Hanimex House,  
Faraday Road, Dorcan, Swindon, Wilts.  
Tel: Swindon 26211.

#### **Super low-noise range**

C-30 (30 min) 55p; C-60 (60 min) 65p; C-90 (90 min) 90p; C-120 (120 min) £1.25. All prices include VAT.

#### **Extra wide Dynamic range**

C-46 80p; C-60 95p; C-80 £1.20; C-90 £1.35. All prices include VAT.

#### ■ **GRUNDIG (GREAT BRITAIN) LTD**

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

#### **GL15 Hi-Fi**

Long-play: 5½in 1200ft.

#### **GD15 Hi-Fi**

Double-play: 5½in 1800ft.

#### **GL18 Hi-Fi**

Long-play: 7in 1800ft.

#### **GD18 Hi-Fi**

Double-play: 7in 2400ft.

#### **C60 HE**

Compact cassette. 60 minutes playing time at 1⅞i/s.

#### **C90 HE**

Compact cassette. 90 minutes playing time at 1⅞i/s.

#### **DC90**

Cassette. 90 minutes playing time. For model C100.

#### **DC120**

Cassette. 120 minutes playing time. For model C100.

**C60CR**

Compact cassette. 60 minutes playing time.

**C90CR**

Compact cassette. 90 minutes playing time.

**C120CR**

Compact cassette. 120 minutes playing time.

Price list on request.

■ **HITACHI**Hitachi Sales (UK) Ltd, Hitachi House,  
Station Road, Hayes UB3 4DR.

Tel: 01-848 8787.

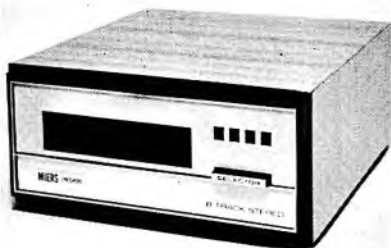
**Cartridges**8T-200 40 minutes £1.23; 8T-300 60 minutes  
£1.67; 8T-400 80 minutes £2.21. All prices  
include VAT.■ **LENNARD DEVELOPMENTS LTD**

206 Chase Side, Enfield EN2 0QX.

Tel: 01-363 8238.

**Playfair Compact Cassettes**Available in C60, C90 and C120 sizes. Price:  
to be announced.■ **MEMOREX**Memorex (UK) Ltd, Hoechst House,  
50 Salisbury Road, Hounslow West,  
Greater London. Tel: 01-570 7716.**MRX<sub>2</sub> Cassettes**C30 75p; C45 90p; C60 £1.10; C90 £1.55; C120  
£2.15. All prices exclude VAT.**CrO<sub>2</sub> Cassettes**CC45 £1.20; CC60 £1.50; CC90 £2.15. All  
prices exclude VAT.**Standard Play tapes**5in 600ft £2.15; 7in 1200ft £2.45. Both prices  
exclude VAT.**Long Play tapes**5in 900ft £2.25; 7in 1800ft £3.75. Both prices  
exclude VAT.**Double play tapes**5in 1200ft £2.45; 7in 2400ft £4.35. Both prices  
exclude VAT.■ **MUSONIC**Musonic Ltd, 34-38 Verulam Road,  
St Albans, Herts AL3 4DF.

Tel: St Albans 50611.

**MTI**C60 Professional low noise cassette. Price:  
72p (including VAT).**MIERS** *for* **B.S.R.**  
"MUSIC FOR THE MILLIONS"**"THE NEW MIERS LYRICHORD" 8-TRACK CARTRIDGE TAPE  
PLAYER and PREAMPLIFIER****FIT ONE TO YOUR**Mains operated mono or stereo record  
player, radiogram, unit audio and play  
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removing most of the difficulties common  
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copy. Better still, GO TO YOUR RADIO RETAILER AND ASK FOR THE NEW  
MIERS LYRICHORD.**R.R.P. £26.00**  
**excl. VAT.****N. MIERS & COMPANY LTD.**

28 Piercing Hill, Theydon Bois, Epping, Essex CM16 7LE

Tel. Theydon Bois 2611/2/3 (STD 037 881) Telex 897076

★ Indicates entry is illustrated

## MT2

C90 Professional low noise cassette. Price: 92p (including VAT).

## MT3

C120 Professional low noise cassette. Price: £1.12 (including VAT).

## MT4

8-track cartridge. 80 minutes. Price: £1.78 (including VAT).

## ■ NAKAMICHI

Natural Sound Systems Ltd, Strathcona Road, North Wembley HA9 8QL.  
Tel: 01-904 0141.

Chrome Dioxide cassettes in snap packs. Price: C60 £2.23 (plus VAT); C90 £2.67 (plus VAT).

Ex ferric cassettes in snap packs. Price: to be announced.

## ■ PHILIPS

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01-437 7777.

### Long Play (Red) in library case

Coercivity 26A/m, retentivity 950G, tensilised polyester base, S/N at 3 $\frac{1}{2}$  i/s better than 58dB, print-through less than 55dB, relative frequency response 333Hz-12.5kHz. Price: 5in 900ft £2.90; 5 $\frac{1}{2}$ in 1200ft £3.53; 7in 1800ft £4.53. All prices include VAT.

### Double Play (Blue) in library case

Coercivity 26A/m, retentivity 950G, tensilised polyester base, S/N at 3 $\frac{1}{2}$  i/s 58dB, print-through less than 55dB, relative frequency response 333Hz-12.5kHz. Price: 5in 1200ft £3.21; 5 $\frac{1}{2}$ in 1800ft £4.16; 7in 2400ft £5.15. All prices include VAT.

### 10 $\frac{1}{2}$ in cine centre

Red LP26 3600ft £8.95 (including VAT).

### Compact Cassettes

Double tensilised polyester/mylar base, bias adjustment 0dB, maximum output level (MOL) at 333Hz +2dB, maximum output level (MOL) at 8kHz -15.5dB, relative frequency response (RFR) at 10kHz -4dB, relative tape sensitivity (RTS) at 333Hz 0dB, S/N 53dB. C60 (one hour playing time) 93p; C90 (1 $\frac{1}{2}$  hours playing time) £1.27; C120 (2 hours playing time) £1.72. All prices include VAT.

### CrO<sub>2</sub> Hi-Fi Cassettes

Chromium dioxide tape in compact cassettes. Bias adjustment: +5dB. Max output level: (333Hz) +4dB; (8kHz) -9.5dB. S/N ratio: 59.5dB. Suitable for recorders with facilities

for recording with chromium dioxide tape, preferably models that conform to DIN 45 500 standards. C60 (one hour playing time) £1.51; C90 (1 $\frac{1}{2}$  hours playing time) £1.94. All prices include VAT.

### EL1907/52 Endless Loop cassette CE.10

Approximate playing time: 40 minutes at <sup>15</sup>/<sub>16</sub>i/s. Approximately 195ft. Price: £3.84 (including VAT).

## ■ PYRAL (UK) LTD

Airport House, Purley Way, Croydon, Surrey CRO OXY. Tel: 01-681 2833.

### CJ86 Matt Back (Professional)

Available in  $\frac{1}{4}$ in,  $\frac{1}{2}$ in, 1in and 2in widths:  $\frac{1}{4}$ in 180m plastic spool 83p; 375m £1.55; 750m £3.50. All prices exclude VAT.

### Standard Play (SD82)

750m £3.77; 375m £1.81; 180m £1.01. All prices exclude VAT. Long play and double play also available.

### Cassettes (Hi-Fi Low Noise)

C60 45p; C90 60p. All prices exclude VAT.

## ■ ROSS ELECTRONICS

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

### Ross 66 Series Compact Cassettes

High output, low noise. Super-calendered for consistent performance with minimum wear. Five-screw fixing. Supplied with library case and index. Prices: C30 33p; C60 45p; C90 65p; C120 81p. All prices exclude VAT.

## ■ SCOTCH

3M United Kingdom Ltd, 3M House, Wigmore Street, London W1A 1ET.  
Tel: 01-486 5522.

### Cassettes

C45 £1.30; C60 £1.62; C90 £2.16. All prices include VAT.

### Low noise Cassettes — Single

C60 98p; C90 £1.36; C120 £1.90. All prices include VAT.

### Low noise cassettes (Multipacks) — Triple

C60 £2.95; C90 £4.08; C120 £5.70. All prices include VAT.

### Low noise cassettes (Multipacks) — Double

C60 £1.97; C90 £2.72; C120 £3.80. All prices include VAT.

### High energy cassettes

C60 £1.23; C90 £1.63. Both prices include VAT.

### Chrome cassettes

C45 £1.19; C60 £1.51; C90 £1.94; C120 £2.69. All prices include VAT.



## We've taken the lid off new Scotch High Energy Cassettes to show you an invisible revolution

This is the part of a cassette you never see. But we thought you'd like to take a good look at the inside story of the most advanced of the new "super" ferric oxide cassettes.

Count the improvements of new High Energy cassettes.

**1** A unique new small-particle gamma ferric oxide tape. The uniformity and size of the needle-like crystals is controlled, during manufacture, to the highest standards of accuracy:

The result is a high performance coating which provides an extended response at all frequencies. A high frequency response up to 9dB better than standard cassettes.

**2** New High Energy is one of the family of Scotch cassettes; all with a number of features that ensure smoother performance. Features like Posi-Trak anti-static back coating for a smoother wind and jam-free playing, and therefore gives better tape transport across the heads.

**3** And features like fixed metal roller guides that do away with plastic moving parts.

**4** And a larger pressure pad to make the tape track better against the playing head, and deliver a cleaner sound.

**5** Finally, all Scotch cassettes have rigorous, built-in quality controls at all stages of manufacture. This together with the new high precision automated assembly, ensures uniformity of quality and minimises jamming problems.

### The Scotch family of cassettes

There is now a complete range of Scotch cassettes. One for every kind of cassette deck or recorder there is.

For instance, if you have a chrome bias switch on your machine, there's new Scotch Chrome cassettes which are coated with chromium dioxide giving you a vastly better signal-to-noise ratio than ordinary cassettes and pure, crystal-clear sound.

There's the new Scotch Dynarange "Jam-buster" cassettes for your everyday recording needs.

And of course, High Energy cassettes with new small-particle gamma ferric oxide tape, gives you fine performance at a very reasonable cost.

Discover the Scotch family of cassettes the next time you go into your hi-fi shop.



For further details write to Paul Edleston, 3M United Kingdom Limited, 3M House, Wigmore Street, London W1A 1ET. Telephone: 01-486 5522.

Name .....

Address .....

3M2293 3M, Scotch, Dynarange and Posi-Trak are trademarks.



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Precision Tapes cassettes and cartridges are the first choice for the discerning listener simply because they're the best. Produced at our own factory on up to the minute equipment, from top quality materials, Precision Tapes are guaranteed to give you great reproduction. We've got a catalogue of over 2,000 titles featuring every conceivable type of music from the worlds greatest performers, including several special low price series and a great Quadrophonic selection.

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For full free catalogue write to:  
Marketing Dept. HFY/75, Precision Tapes Ltd., Precision House,  
11 Denmark St., London WC2H 8NR



175

Standard play. 5in 600ft £2.16; 5½in 900ft £3; 7in 1200ft £3.59. All prices include VAT.

215

Long play. 4in 450ft £1.25; 5in 900ft £2; 5½in 1200ft £2.79; 7in 1800ft £3.50. All prices include VAT.

220

Double play. 5in 1200ft £2.79; 5½in 1800ft £3.72; 7in 2400ft £4.62. All prices include VAT.

222

Standard play. 5in 600ft £2.57; 5½in 900ft £3.37; 7in 1200ft £4.43. All prices include VAT.

223

Long play. 5in 900ft £3; 5½in 1200ft £3.65; 7in 1800ft £4.80; 8½in 2400ft £6.05. All prices include VAT.

224

Double play. 5in 1200ft £3.65; 5½in 1800ft £4.80; 7in 2400ft £6.05. All prices include VAT.

225

Triple play. 5in 1800ft £4.80; 5½in 2400ft £6.05; 7in 3600ft £8.77. All prices include VAT.

## ■ SYNCHROTAPE

Sole distributors: 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 7½s ½-track biased to give max output at 1kHz, with DIN 70µ Sec playback equalisation, main characteristics are: recorded flux for 2% third harmonic distortion 0.2 maxwell, unweighted RMS noise referred to 0.2 maxwell - 65dB, print-through after 72 hours at 20 C - 58dB.

### Standard Play

PVC base. 3in 150ft 30p; 5in 600ft 90p; 5½in 900ft £1.05; 7in 1200ft £1.45. All prices exclude VAT.

### Long Play

PVC base. 3in 225ft 33p; 4in 450ft 75p; 5in 900ft £1.05; 5½in 1200ft £1.27; 7in 1800ft £1.87. All prices exclude VAT.

### Double Play

Tensilised polyester base. 3in 300ft 45p; 4in 600ft £1.12; 5in 1200ft £1.68; 5½in 1800ft £2.18; 7in 2400ft £2.92. All prices exclude VAT.

### Triple Play

Tensilised polyester base. 3in 450ft 90p; 4in 900ft £1.42; 5in 1800ft £2.32; 5½in 2400ft £2.92;

7in 3600ft £4.12. All prices exclude VAT. Except for 3in spools, all Synchrotape tapes have leader, trailer and double metallic stop-foils.

### Syncassettes

Compact cassettes. C60 60p; C90 75p; C120 £1.08. All prices exclude VAT.

### Synchrotape Editing Kit

Instant cut and trim splicer, four reels coloured leader tape, one reel metallic stop-foil, one reel adhesive tape, six coloured tape-securing clips and 28 self-adhesive titling labels. Presented in see-through crush-proof carton. Complete with 12-page instruction and information booklet. Price: £2.85 (plus VAT).

## ■ TDK

Tape Distributor (UK) Ltd, 341 Brighton Road, South Croydon, Surrey CR2 6EQ. Tel: 01-688 7372.

### Cassettes

Extra Dynamic (EDC) cassettes available in: C45 £1.36; C60 £1.45; C90 £2.11. Super Dynamic (SDC) cassettes available in: C45 £1; C60 £1.10; C90 £1.50; C120 £2.14. Chromium dioxide (KROM-02) cassettes available in: C60 £1.65; C90 £2.35. Dynamic (DC) cassettes available in: C45 85p; C60 94p; C90 £1.36; C120 £1.80; C180 £4.25. All prices exclude VAT.

### 8-Track Cartridges

8T40SD £1.75; 8T80SD £2.30. All prices exclude VAT.

### Audua

L1800 1800ft £4.20; L3600 3600ft £11.53. All prices exclude VAT.

### Endless Loop

EC1M £2, EC3M £2.30; EC6M £2.57. All prices exclude VAT.

### Cassette Head Cleaner HC-1

Head cleaning tape, loaded into a standard cassette. Price: 79p (plus VAT).

### Open Reel Spools

7in metal spool AMR7 £3.87; 10½in metal spool AMR10 £6.27; NAB hub NAB2 £2.60. All prices exclude VAT.

## ■ TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough. Tel: Slough 33311.

### Telefunken Endless Tape Cassette

Price: £3.36 (plus VAT).

## ■ TMT

Tape Marketing Technology Ltd. 8 Green Street, London, W1. Tel: 01-493 4205.

### Blank Cassette Tapes

Lengths available: C40, C60, C90, C120. Price: on application.



# High quality equipment and service from Hampstead High Fidelity



**Two examples of quality sound systems suitably housed for  
A home with antique furniture and  
A home with modern furniture**

We supply the high fidelity sound equipment and the unit to house it. Expert advice and service are essential when you shop for a sound system and we can help you to ensure that your equipment is the best that your money can buy. We will then install it either into your own unit or we can supply one from our range of modern or genuine antique furniture.

Once in your home; we will continue to service it regularly to maintain the upmost benefit from the sound system of your choice.

We stock only the quality makes of equipment, and have an excellent Classical Record Department.

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Decca Records  
De-Lane Lea Studios  
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Dick James Music  
Disco Tape Recording Studios Sheffield  
Eden Studios  
Edgar Vetter  
EMI Studios  
EOS Recordings Barry  
Excel Services Shipley  
Funfair Records  
Griffiths Hansen Recordings  
Hollick & Taylor Recordings Birmingham  
IBC Sound Recording Studios  
IEA Recording Studios  
Indigo Sound Studios Manchester  
Island Studios  
Jackson Recording Co. Rickmansworth  
J & B Recordings  
John Hassel Recordings  
Kingsway Recorders  
Lansdowne Recording Studios  
Linguaphone Institute  
Livingstone Studios Barnet  
Majestic Recording Studios  
Marquee Studios  
Mayfair Studios

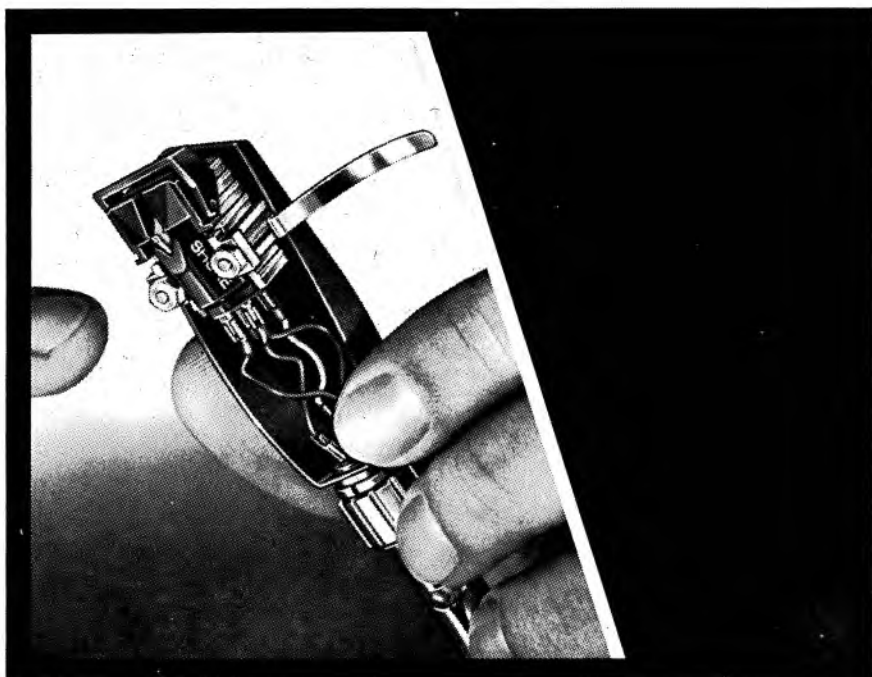
Maximum Sound Studios  
Midland Sound Recording Coventry  
Morgan Recording Studio  
Morton Sound Newcastle  
Multicord Studio Sunderland  
Mushroom Studios Bristol  
Northampton Sound Recording  
Nottingham Sound Studio  
Nova Sound Studios  
Olympic Sound Studios  
Orange Recording Studios  
Phillips Recording Service Liverpool  
Phonogram  
Pye Recording Studios  
Radio Luxembourg London  
RG Jones of Morden  
Richard Petre Oxford  
Saturn Recordings Worthing  
Scorpio Sound  
SIS Recording Northampton  
Stage Sound  
Stewart Johnson Productions  
Strawberry Recording Studios Stockport  
Studio Republic Pinner  
Sound Associates  
Sound Developments  
Sound News Productions  
Square Records Royston  
Sutton Sound  
SWM Recording Studios  
Tangerine Recording Studios  
Templar Film Productions Glasgow  
The Manor Oxford  
Tony Pike Music  
TPA Studios  
Trident Studios  
Victor Buckland Derby  
Warren Recordings  
Welsh Recording Llanelli  
Wessex Sound Studios  
Zella Recordings Birmingham

# AKG

## EQUIPMENT LTD

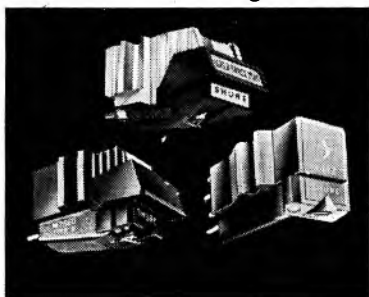
**182 CAMPDEN HILL ROAD  
LONDON W8 7AS. 01-229-3695.**





## The heart of hi-fi.

Beauty is truth, truth beauty. The fact is that all too few music lovers realise that while certain high fidelity components can be less than best, there is one component that cannot endure a sacrifice in quality: the cartridge. Because the hi-fi cartridge functions as the *source of sound* (the point at which



the recording is linked with the balance of the hi-fi system), its role is absolutely critical. Just as the camera can be no better than its lens, the finest hi-fi system in the world cannot compensate for an inferior cartridge. Suggestion: For a startling insight into the role of the cartridge in the overall hi-fi system, and a breathtaking recreation of your favourite recording, see your nearby Shure cartridge dealer. He'll introduce you to the Shure cartridge that is correct for your system and your exchequer. Or, next best, send for our brochure:

Shure Electronics Limited  
Eccleston Road, Maidstone ME15 6AU  
Telephone: Maidstone (0622) 59881



**SHURE**

®

# Microphones & Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ADASTRA

Adastra Electronics Ltd,  
Unit N22, Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

### Imp-Verta ★

Matches low impedance microphones, PU cartridges and tape heads into high impedance amplifier inputs. Solid state printed circuit device using silicon transistor. Automatically switched internal 9V battery. Negligible drain. Conversion factor approximately 20 (depending on load). Virtually no hum or signal loss. Metal case, black crackle finish. Size: 5 × 1½ × 1½in. Price: £3.45 (including VAT).

### M.12/EX.220

Condenser, cardioid pattern, with on/off switch, and battery (1½V) contained within die-cast aluminium body. Satin finish, supplied with U bracket and stand fitting stem, Busby type slip-on windshield, 6m lead fitted plug. Current drain 0.8mA. FR: 50Hz-15kHz. Impedance: 600 ohms. Sensitivity: -70dB. Price: £18.75 (plus VAT).

### M.14/B.7107

Condenser, cardioid pattern with on/off switch. Satin silver aluminium body housing 1½V battery cell providing approximately 10,000 hours life. Supplied with U bracket and stem, windshield and 6m special lead. Current drain: 0.2mA. FR: 30Hz-16kHz. Impedance: 600 ohms. Sensitivity: -70dB. Price: £14.50 (plus VAT).

### M.16/B.1238

Pencil slim condenser microphone in machine turned aluminium with 1½V internally located power cell. On/off switch. Omnidirectional performance. Supplied with push-on ball windshield, chrome and white moulded stand, and 3m lead. FR: 20Hz-13kHz. Impedance: 600 ohms. Sensitivity: -74dB. Price: £9.40 (plus VAT).

### M.19

Uni-directional cardioid microphone with dual impedance of 50K and 600 ohms. On/off switch. Heavy duty aluminium and steel body in spun silver and black finish. Wire mesh protected diaphragm. Impedance change effected by connections of 6m lead. Supplied with U bracket and stem. FR: 80Hz-13kHz. Sensitivity: -600 ohms -73dB, 50K -54dB. Price: £11.65 (plus VAT).

### M.20

Electret condenser microphone with omni-directional pick-up pattern. 1.5V power cell. On/off switch. Satin and matt black finish. Fitted with 5m lead and moulded plug. Supplied with vari-angle U bracket for stand fitting, and removable windshield. FR: 50Hz-13kHz. Impedance: 600 ohms. Sensitivity: -68dB. Price: £7.50 (plus VAT).

### M.21

Of similar conception to Adastra M.20, this electret condenser microphone has a uni-directional polar pattern and substantial cast diaphragm protective housing. On/off switch, U bracket. FR: 50Hz-14kHz. Other details as M.20. Price: £11.25 (plus VAT).

### M.124

Portable microphone stand with folding tripod legs and 2-piece chromed stem extending to give 50in height. Adjustable stem locking device. Price: £8 (plus VAT).

### M.125/B.1411

Studio microphone floor stand with easy-grip stem locking device, microphone lead retaining clip, 3-way coupling adaptor, 2-section extending to 63in. Supplied with heavy steel screw-in tripod legs fitted with rubber ferrules. Price: £15 (plus VAT).

### M.126/B.1415

Microphone boom arm 33in long with easy fitting clamp allowing tilt, length and lateral adjustment. Finished black and chrome. Price: £8 (plus VAT).



Adastra Imp-Verta

★ Indicates entry is illustrated

**M.127/B.1416**

Boom arm extending to 32in with instant key locking and adjustment bracket. Black moulded finger grip, multi-adaptor termination for acceptance of most microphones and accessories. Price: £11.25 (plus VAT).

**M.129/B.1430**

Three-section microphone floor stand adjustable for height up to 72in. Dual adaptor fittings. Case metal tube. Price: £7.50 (plus VAT).

**M.130**

Microphone stand with unique boom arm, counter balanced and rotatable through 360°. Additional slide adjuster will accept second microphone. Screw-in tripod legs with rubber ferruled ends. Maximum height: 5ft. Weight: 11lb. Price: £18.75 (plus VAT).

**M.131 and M.132**

Model M.131 is a portable 2-section floor stand featuring a moulded polypropylene base which receives the three 1.5in tubular support legs both for assembly and transportation. Chrome plated stem, height adjustable, rubber ferruled legs, cable retaining clip. Model M.132 has the addition of 32in boom arm fully adjustable through 360°. Prices: Model M.131 £9 (plus VAT); Model M.132 £15.75 (plus VAT).

**M.150/B.7101**

Anti-shock microphone suspension cradle with slip-in mount accepting most microphones. Aluminium frame with covered elasticated cord and adjustable angled bracket for fitting onto stands etc. Price: £9.40 (plus VAT).

**M.161/M.163/M.165**

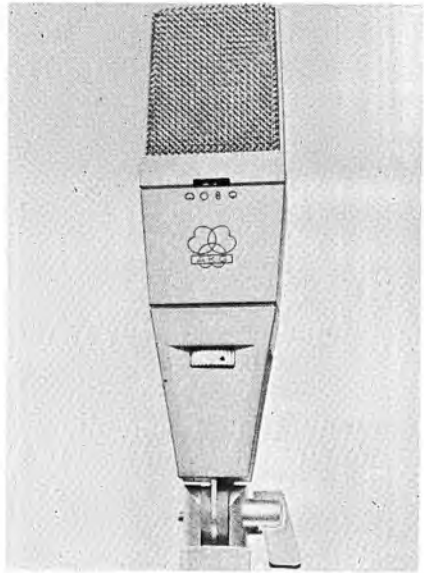
A new range of goosenecks with 5/8in male and female termination. Fully hollow flexible tube finished in tough grey PVC covering. M.161 10in long; M.163 15in long; M.165 20in long. Prices: (M.161) £2.25; (M.163) £3; (M.165) £3.75. All prices exclude VAT.

■ **AKG**

AKG Equipment Ltd, Eardley House,  
182-184 Campden Hill Road,  
Kensington, London W8 7AS.  
Tel: 01-229 3695.

**C414E/Comb.**

FET Studio Condenser Microphone with large capsule. Four switchable directional characteristics: Cardioid, Omni-directional, Figure-of-eight and Hypercardioid. Supplied with combined stand adaptor and connector and 20m (65.6ft) cable terminated in a Cannon



*AKG C414 Condenser Microphone*

XLR-3-12C connector. Price: £176 (Including VAT).

**C451E/Comb.**

FET Microphone Pre-amplifier C451E with Cannon 3 pin socket XLR-3-50 complete with Cardioid Capsule CK1 and Stand Adaptor SA15/1. Specify as: C451E/CK1/SA15/1. Price: £63 (including VAT).

**C451C/Comb.**

As C451E/Comb. but Pre-amplifier fitted with DIN 3 pin socket T3262. Specify as: C451C/CK1/SA15/1. Price: £63 (including VAT).

**C451EB/Comb.**

As C451E/Comb. but Pre-amplifier has 3 position switch: "flat" and bass Roll-off from 75Hz and 150z. Specify as: C451EB/CK1/SA15/1. Price: £75 (including VAT).

**C451CB/Comb.**

As C451EB/Comb. but Pre-amplifier fitted with DIN 3 pin socket T3262. Specify as: C451CB/CK1/SA15/1. Price: £75 (including VAT).

**C452E/Comb.**

As C451E/Comb. but designed for 48 volt operation. Specify as: C452E/CK1/SA15/1. Price: £63 (including VAT).

**C452C/Comb.**

As C452E/Comb. but Pre-amplifier fitted with DIN 3 pin socket T3262. Specify as:

**C452C/CK1/SA15/1.** Price: £63 (including VAT).

**C451E**

Microphone Pre-amplifier. Price: £37 (including VAT).

**C451C**

Microphone Pre-amplifier. Price: £37 (including VAT).

**C451EB**

Microphone Pre-amplifier. Price: £49 (including VAT).

**C451CB**

Microphone Pre-amplifier. Price: £49 (including VAT).

**C452E**

Microphone Pre-amplifier. Price: £37 (including VAT).

**C452C**

Microphone Pre-amplifier. Price: £37 (including VAT).

**CK1**

Cardioid (Unidirectional). Price: £23 (including VAT).

**CK1S**

Cardioid, with presence rise for added brilliance. Price: £23 (including VAT).

**CK2**

Omni-directional. Price: £23 (including VAT).

**CK5**

Cardioid. Capsule elastically suspended in robust windshield. Price: £38 (including VAT).

**CK8**

Short, (210mm/8.3inch) Hypercardioid "Gun" attachment. Price: £45 (including VAT).

**CK9**

Long, (610mm (24.5inch) "Gun" attachment. Price: £48 (including VAT).

**C505E**

Detachable Cardioid Capsule CE5 with Feeding Unit SE5E with built-in Cannon connector. Price: £56.80 (including VAT).

**C505C**

As above but with DIN connector. Price: £56.80 (including VAT).

**CE5**

Elastically suspended Cardioid Capsule. Price: £32.80 (including VAT).

**SE5E**

Feeding Unit for all Capsules of CMSE with built-in Cannon connector. Price: £24 (including VAT).

**SE5C**

As above but with DIN connector. Price: £24 (including VAT).

**C510E**

Miniature Electret Lavalier Microphone

comprising inconspicuous capsule CE10 and Feeding Unit SE5E with built-in Cannon connector. Price: £74 (including VAT).

**C510C**

As above but with DIN connector. Price: £74.90 (including VAT).

**CE10**

Miniature Lavalier Microphone with 7m (23ft.) 2-pole screened lead terminated with screw cap for connection to SE5E or SE5C Feeding Units. Price: £50.90 (including VAT).

**DST11/41**

Miniature Paging Unit comprising Directional Microphone mounted on Stand Base ST41 with on/off pushbutton switch, signal lamp and facilities for relay operation. 5 metre (16.4ft.) attached cable. Price: £26 (including VAT).

**DST11/43**

AS DST11/41 but mounted on Stand Base ST43 with three pushbutton switches giving additional facilities. Price: £30 (including VAT).

**D12**

Unidirectional Microphone for PA and Studio use with 5 metre (16.4ft.) attached cable. Available in 60 or 200 ohms impedance. Price: £48.50 (including VAT).

**D14S**

Economical Directional PA microphone with 5 metre (16.4ft.) attached cable. For stand mounting only. Available in 60 ohms. Price: £14 (including VAT).

**D90C**

Ultra-lightweight Unidirectional Microphone for PA, Vocalists and Recording. Built-in 3 pin miniature DIN plug. Supplied with matching DIN socket PC 1/2 and 5 metre (16.4ft.) cable and Stand Adaptor. Impedance: 600 ohms. Price: £14.50 (including VAT).

**D90E**

AS D90C but with Cannon 3 pin XLR series connectors. Impedance: 600 ohms. Price: £15.50 (including VAT).

**D109**

Slim, Lightweight Lavalier Microphone. Supplied complete with Lavalier cord and clip. Fitted with 5 metre (16.4ft.) attached cable. Impedance: 60 or 200 ohms. Price: £19.90 (including VAT).

■ **AIWA**

Johnsons of Hendon Ltd,  
14 Priestley Way, London NW2 7TN.  
Tel: 01-450 8070.

**CM-1011**

Electret condenser microphone. Directivity:

★ Indicates entry is illustrated

Non-directional. Semiconductor: 1 FET. Impedance: 250 ohms. Sensitivity: -75dB. Frequency response: 30-18000Hz. S/N ratio: 46dB. Power source: DC9. 1V size H-7D/A or phantom power supply. Dimensions: 20.5m × 270mm. Price: on application.

#### CM-1012A

Electret Condenser Microphone. Directivity: Uni-directional. Circuit: 1 FET. Impedance: 250Ω ± 30% 1kHz. Sensitivity: -74dB ± 3dB 55dB ± 3dB. Frequency response: 50-17,000Hz. S/N: more than 48dB. Power source: DC9. 1V size H-7D/A or phantom power supply. Price: on application.

#### CM-1015

Electret Condenser Microphone. Directivity: Non-directional. Circuit: 1 FET. Impedance: 600Ω. Sensitivity: -73dB ± 3dB. Frequency response: 40-20,000Hz. S/N: more than 46dB. Power Source: UM-3 (1.5V) × 1. Price: on application.

#### CM-1016

Electret Condenser Microphone. Directivity: Uni-directional. Circuit: 1 FET. Impedance: L 600Ω H 10KΩ. Sensitivity: L -73dB ± 3dB (0dB = 1V/N bar) H -61dB ± 3dB 1V/N bar). Frequency response: 50-15,000Hz. S/N: more than 46dB. Power source: UM-3 (1.5V) × 1. Price: on application.

#### CM-1016P

A pair of CM-1016 electret condenser microphones.

#### CM-1017

Electret condenser microphone. Directivity: Uni-directional. Output impedance: L.600 ohms H.10K ohms. Sensitivity: L.-74 ± 3dB (0dB 1v/μbar 1kHz) H.-62 ± 3dB (0dB 1v/μbar 1kHz). Frequency response: 50-17,000Hz. Power source: DC 1.5V size "AA" or UM-3 × 1. Dimensions: 34 × 219mm. Price: on application.

#### CM-1017P

A pair of CM-1017 electret condenser microphones.

#### CM-1018

Electret Condenser Microphone. Directivity: Uni-directional. Impedance: 250Ω. Sensitivity: -72 ± 3dB. -52 ± 3dB. Frequency response: 50-15,000Hz. Price: on application.

#### CM-2000A

One-point stereo electret condenser microphone. Directivity: Uni-directional. Semiconductors: 1 FET. Output impedance: 250 ohms. Sensitivity: -74dB ± 3dB (0dB 1V/μbar). Frequency response: 50-17,000Hz. Channel balance 2dB. Dimensions 50 × 215mm. Price: on application.

#### DM-51A

Moving-coil microphone. Directivity: Non-directional. Impedance: H, 50KΩ (1000Hz). Unbalanced type. L, 600Ω (1,000Hz) Balanced type. Sensitivity: H, -58dB (0dB = 1V/1μbar). L, -77dB (0dB = 1V/1μbar). Frequency response: 50-1,500 Hz. Price: on application.

#### DM-68N

Dynamic Microphone. Directivity: Uni-directional. Impedance: 250Ω or 10kΩ. Sensitivity: -73dB (250Ω), -59dB (10kΩ). Frequency response: 50-15,000Hz. Switch: Built-in tone selection switch. Price: on application.

#### DM-68NP

A pair of DM-68NP dynamic microphones.

#### DM-82A

Dynamic Microphone. Directivity: Uni-directional. Impedance: Dual impedance (600Ω-50kΩ). Sensitivity: -76dB (600Ω), -57dB (50kΩ). Frequency response: 100-12,000Hz. Switch: Built-in talk switch. Price: on application.

#### DM-85

Dynamic microphone. Directivity: Non-directional. Impedance: 250Ω. Sensitivity: -82dB. Frequency response: 150-10,000Hz. Price: on application.

#### DM-86

Dynamic microphone. Directivity: Non-directional. Impedance: 600Ω or 10kΩ. Sensitivity: -76dB (600Ω), -65dB (10kΩ). Frequency response: 150-10,000Hz. Switch: Press to talk remote switch. Weight: 0.341lbs. Price: on application.

#### DM-87

Dynamic microphone. Directivity: Non-directional. Impedance: 600Ω or 10kΩ. Sensitivity: -78dB (600Ω), -66dB (10kΩ). Frequency response: 40-15,000Hz. Switch: Built-in talk switch. Price: on application.

#### DM-90

Dynamic microphone. Directivity: Uni-directional. Impedance: 250 ohms. Sensitivity: -74dB ± 3dB. Frequency response: 30-15,000Hz. Switch: Built-in tone selection switch. Price: on application.

#### DM-91

Dynamic microphone. Directivity: Non-directional. Impedance: 250Ω. Sensitivity: -80dB. Frequency response: 70-10,000Hz. Switch: Built-in talk switch. Price: on application.

#### DM-93

Dynamic microphone. Directivity: Non-directional. Impedance: 600Ω or 50kΩ. Sensi-

tivity:  $-57\text{dB}$  ( $50\text{k}\Omega$ ),  $-76\text{dB}$  ( $600\Omega$ ). Frequency response:  $80\text{-}10,000\text{Hz}$ . Price: on application.

**DM-95**

Dynamic microphone. Directivity: Non-directional. Impedance:  $250\Omega$ . Sensitivity:  $-82\text{dB}$ . Frequency response:  $100\text{-}10,000\text{Hz}$ . Price: on application.

**DM-502**

Dynamic microphone. Uni-directional. Impedance:  $600\Omega$  or  $50\Omega$ . Sensitivity:  $-77\text{dB}$  ( $600\Omega$ ),  $-58\text{dB}$  ( $50\text{K}$ ). FR:  $100\text{Hz}\text{-}12\text{kHz}$ . Built-in talk switch. Price: on application.

**DM-503**

Dynamic microphone. Uni-directional. Dual impedance  $600\Omega$  or  $50\text{K}$ . Socket switchable. Sensitivity:  $-76\text{dB}$  ( $600\Omega$ ),  $-58\text{dB}$  ( $50\text{K}$ ). FR:  $100\text{Hz}\text{-}12\text{kHz}$ . Built-in talk switch. Price: on application.

**DM-504**

Dynamic microphone. Uni-directional. Impedance:  $600\Omega$  or  $50\text{K}$ . Sensitivity:  $-77\text{dB}$  ( $600\Omega$ ),  $-58\text{dB}$  ( $50\text{K}$ ). FR:  $100\text{Hz}\text{-}10\text{kHz}$ . Built-in talk switch. Price: on application.

**DM-506T**

Moving coil microphone. Uni-directional. Impedance:  $250\Omega$ . Sensitivity:  $-78\text{dB} \pm 3\text{dB}$ . FR:  $150\text{Hz}\text{-}10\text{kHz}$ . Built-in talk switch. Price: on application.

**DM-576**

Dynamic microphone. Uni-directional. Dual impedance  $600\Omega$  or  $50\text{K}$ . Socket switchable. Sensitivity:  $-76\text{dB}$  ( $600\Omega$ ),  $-57\text{dB}$  ( $50\text{K}$ ). FR:  $100\text{-}12,000\text{Hz}$ . Built-in talk switch. Price: on application.

**■ BEYER**

Beyer Dynamic (GB) Ltd,  
1 Clair Road, Haywards Heath, Sussex.  
Tel: Haywards Heath 51003.

**M55ML**

Mono moving coil omni-directional. FR:  $70\text{Hz}\text{-}16\text{kHz} \pm 4\text{dB}$ . Sensitivity: (low Z)  $0.17\text{mV}$ ; (high Z)  $1.5\text{mV}$ . Impedance: (low Z)  $500\text{ ohms}$ ; (high Z)  $50\text{K}$ . Rec. load: (low Z)  $2\text{K}$ ; (high Z)  $200\text{K}$ . Hand mic with plastic table stand and clamp. Polished metal finish. Price: on application.

**M57**

Mono moving coil omni-directional. FR:  $300\text{Hz}\text{-}14\text{kHz} \pm 3\text{dB}$ . Sensitivity:  $0.2\text{mV}/\mu\text{bar}$ . Impedance:  $200\text{ ohms}$ . Rec. load:  $1\text{K}$ . Hand mic with cable. Steel case. Price: on application.

**M64**

Mono moving coil cardioid, FR:  $100\text{Hz}\text{-}10\text{kHz} \pm 3\text{dB}$ . Sensitivity:  $0.2\text{mV}/\mu\text{bar}$ .

*Beyer M69**Beyer M260**Beyer M500*

Impedance:  $200$  or  $37.5\text{ ohms}$ . Rec. load:  $1\text{K}$ . Stand mic. Grey plastic case. Price: on application.

**M64H**

As M64 but with gooseneck and base plate. Price: on application.

**M67N**

Mono moving coil cardioid. FR:  $40\text{Hz}\text{-}18\text{kHz} \pm 2.5\text{dB}$ . Sensitivity:  $0.25\text{mV}/\mu\text{bar}$ . Impedance:  $37.5$  or  $500\text{ ohms}$ . Rec. load:  $1\text{K}$ . Rubber suspended hand mic. Brushed aluminium finish. Suitable for any climatic conditions. Built-in speech/music switch. Price: on application.

**M68**

Mono moving coil cardioid. FR:  $100\text{Hz}\text{-}10\text{kHz} \pm 3\text{dB}$ . Sensitivity:  $0.2\text{mV}/\mu\text{bar}$ . Impedance:  $37.5$  or  $200\text{ ohms}$ . Rec. load:  $1\text{K}$ . Fitted with gooseneck and built-in switch. Grey plastic finish. Price: on application.

**M69 ★**

Mono moving coil uni-directional cardioid. FR:  $50\text{Hz}\text{-}15\text{kHz} \pm 3\text{dB}$ . Sensitivity:  $0.24\text{mV}/\mu\text{bar}$ . Impedance:  $37.5$  or  $200\text{ ohms}$ . Rec. load:  $1\text{K}$ . Hand mic with optional speech-off- music switch. Steel case finished blue stove enamel. Price: on application.

**M81HL ★**

Mono moving coil cardioid. FR:  $50\text{Hz}\text{-}16\text{kHz}$  cardioid. FR:  $50\text{Hz}\text{-}16\text{kHz} \pm 3\text{dB}$ . Sensitivity: (low Z)  $0.23\text{mV}/\mu\text{bar}$ ; (high Z)  $1.7\text{mV}/\mu\text{bar}$ . Impedance: (low Z)  $500\text{ ohms}$ ; (high Z)  $25\text{K}$ . Rec. load: (low Z)  $2\text{K}$ ; (high Z)  $100\text{K}$ . Hand mic supplied complete with plated





Beyer M81HL

table stand and clamp. Polished metal finish. Price: on application.

#### M88

Mono moving coil hypercardioid. FR: 30Hz-20kHz  $\pm 2.5$ dB. Sensitivity:  $0.25\text{mV}/\mu\text{bar}$ . Impedance: 20 ohms. Rec. load: 1K. Hand mic available with cannon plug. Satin chrome case. Price: on application.

#### M101N

Mono moving coil omni-directional. FR: 40Hz-20kHz  $\pm 2.5$ dB. Sensitivity:  $0.13\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: 1K. Hand mic with windshield. Anodised aluminium case. Price: on application.

#### M111N

Mono moving coil omni-directional. FR: 60Hz-15kHz. Sensitivity:  $0.08\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: 1K. Lavalier mic. Anodised aluminium case. Price: on application.

#### M160

Mono double-ribbon super cardioid. FR: 40Hz-18kHz  $\pm 2.5$ dB. Sensitivity:  $0.1\text{mV}/\mu\text{bar}$ . Impedance: 37.5 or 200 ohms. Rec. load: 1K. Hand mic. Satin chrome steel case. Price: on application.

#### M260 ★

Mono ribbon super cardioid. FR: 50Hz-18kHz  $\pm 3$ dB. Sensitivity:  $0.09\text{mV}/\mu\text{bar}$ . Impedance: 37.5 or 200 ohms. Rec. load: 1K. Steel case stove enamelled blue. Price: on application.

#### M320

Mono ribbon super cardioid. FR: 30Hz-18kHz  $\pm 3$ dB. Sensitivity:  $0.1\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: 1K. Stand mic with three positions music-off-speech switch. Grey plastic case. Price: on application.

#### M360

Mono ribbon cardioid. FR: 30Hz-20kHz  $\pm 2.5$ dB. Sensitivity:  $0.14\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms switchable to 50 ohms. Rec. load: 1K. Stand microphone for studio use. Completely hand made. Supplied with lead. Metal case stove enamelled grey. Price: on application.

#### M410

Mono moving coil cardioid. FR: 300Hz-12kHz  $\pm 3$ dB. Sensitivity:  $0.25\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: 1K. Hand mic designed for heavy duty use. Black plasticised steel case. Price: on application.

#### M411N

Mono moving coil uni-directional cardioid. FR: 200Hz-12kHz. Sensitivity:  $0.14\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: 1K. Hand mic with built-in switch. Designed for close-talking applications. Anodised aluminium finish. Price: on application.

#### M500 ★

Mono ribbon hypercardioid. FR: 40Hz-18Hz. Sensitivity:  $0.13\text{mV}/\mu\text{bar}$ . Impedance: 500 ohms. Rec. load: 1K. Hand mic. Anodised aluminium finish. Price: on application.

#### M818HL ★

Stereo moving coil cardioid. Comprises pair of matched M81HL. FR: 50Hz-16kHz  $\pm 3$ dB. Sensitivity: (low Z)  $0.17\text{mV}/\mu\text{bar}$ ; (high Z)  $1.5\text{mV}/\mu\text{bar}$ . Impedance: (low Z) 500 ohms; (high Z) 25K. Rec. load: (low Z) 2K; (high Z) 25K. Polished metal case. Price: on application.

#### Soundstar XI

Mono moving coil cardioid. FR: 30Hz-18kHz  $\pm 2.5$ dB. Sensitivity:  $0.2\text{mV}/\mu\text{bar}$ . Impedance: (X1N) 200 ohms; (XIHLM) 200, 500 or 25K switchable. Rec. load: (X1N) 1K; (XIHLM) 1K, 2K, 100K. Stand mic with built-in pop filter and hum compensation. Cannon plug. Moulded case. Price: on application.

#### M550LM

Omni-directional moving coil. FR: 70Hz-18kHz. Sensitivity:  $0.17\text{mV}/\mu\text{bar}$ . (-75dB). Impedance: 500 ohms. Price: on application.

#### M810N

Cardioid moving coil. FR: 50Hz-16kHz. Sensitivity:  $0.23\text{mV}/\mu\text{bar}$  (-73dB). Impedance: 500 ohms. Price: on application.

#### M201N ★

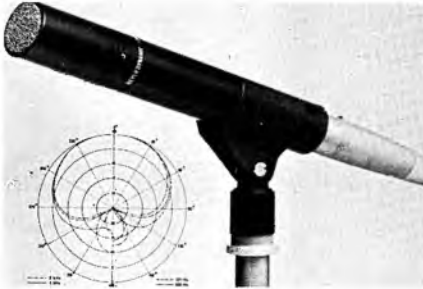
Hypercardioid moving coil. FR: 40Hz-18kHz. Output level:  $0.14\text{mV}/\mu\text{bar}$ . Impedance: 200 ohms. Rec. load: >1000 ohms.



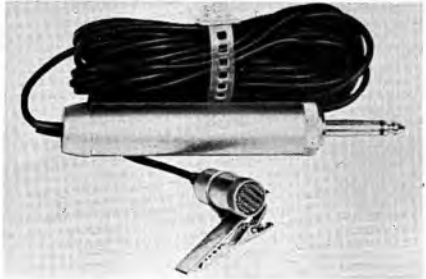
Beyer M818HL



Eagle DD6



Beyer M201N



Eagle PRO-M5

Hand-held or stand-mounted type. Size: 6in long 0.95in diameter. Weight: 8½oz. £51.09.

## ■ EAGLE INTERNATIONAL

Heather Park Drive, Wembley HAO 1SU.  
Tel: 01-902 8832.

### DM18HL

Mono moving coil. Omni-directional. FR: 60Hz-12kHz  $\pm 3$ dB. Sensitivity: -57dB. Impedance: 600 ohms and 50K. Built-in impedance switch. Rec load: 600 ohms and 50K. Stick mic for hand or stand. Fitting: 15.5 x 1mm thread. Complete with desk stand. Finish: black anodised aluminium. Price: £10.50 (plus VAT).

### UD50HL

Mono moving coil. Cardioid. FR: 40Hz-14kHz  $\pm 3$ dB. Sensitivity: -54dB at 50K, -74dB at 600 $\Omega$ . Impedance: 600 ohms and 50K. Hand and stand mic. Fitting: 15.5 x 1mm thread. Built-in on/off switch. Finish: satinised stainless steel. Price: £12.50 (plus VAT).

### DD5

Electret paging microphone. Omni-directional. FR: 600Hz-9kHz for optimum speech clarity. Sensitivity: -70dB (ref 1V/dyne/cm<sup>2</sup>). Impedance: 600 ohms. Rec load: 600 ohms or greater. Contacts for paging

over-ride circuit. Finish: chrome and matt black. Price: £14 (plus VAT).

### Model DD6 ★

Omni-directional dynamic lavalier type. Impedance: 600 ohms 50K. FR: 60Hz-12kHz. Sensitivity: -54dB (2.8mV/50K) -74dB (280 $\mu$ V/600 ohms). Price: £11.20 (plus VAT). Windshield included.

### Model DD7

Cardioid dynamic microphone complete with desk stand and gooseneck. On/off switch with spare contacts to operate a paging over-ride circuit. Impedance: 50K. FR: 600Hz-9kHz. Sensitivity: -54dB. Price: £12 (plus VAT).

### Model DM94

Omni-directional dynamic, supplied with windshield. Impedance: 50K. FR: 80Hz-10kHz. Sensitivity: -50dB. Price: £9.50 (plus VAT).

### PRO-M5 ★

Mono omni-directional capacitor microphone. FR: 50Hz-13kHz. Sensitivity: -65dB. Impedance: 600 ohms. Lapel type. Sub-miniature FET circuitry built into mic capsule. Price: £16 (plus VAT).

### PRO-M10

Mono omni-directional capacitor microphone. FR: 30Hz-17kHz. Sensitivity: -70dB. Sub-miniature FET circuit built in to mic capsule. Impedance: 600 ohms balanced

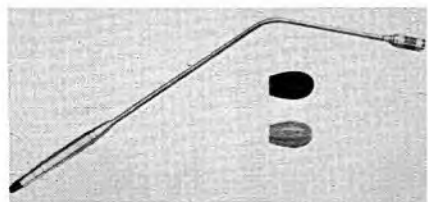
★ Indicates entry is illustrated



Eagle PRO-M20



Electro-Voice 635A



Eagle PRO-M25



Electro-Voice RE20

(floating). Hand or stand type. Supplied with stand adaptor. Built-in switch, windshield. Price: £35 (plus VAT).

#### PRO-M20 ★

Mono uni-directional capacitor microphone. FR: 30Hz-17kHz. Sensitivity: -60dB. Sub-miniature FET circuit built into mic capsule. Impedance: 600 ohms balanced (floating). Hand or stand type. Supplied with stand adaptor. Built-in switch, windshield. Price: £32 (plus VAT).

#### PRO-M25 ★

Mono cardioid capacitor boom-arm microphone. FR: 20Hz-18kHz. Sensitivity: -70dB. Sub-miniature FET circuit built into mic capsule. Impedance: 600 ohms balanced (floating). Stand type adaptor supplied. Built-in switch. 23½in boom arm. Price: £37.40 (plus VAT).

#### CO96

Mono electret condenser microphone. Powered by single cell. Cardioid response: better than 20dB. Impedance: 600 ohms. FR: 30Hz-16kHz. Sensitivity: -70dB. Price: £18 (plus VAT).

#### MDF 619

Cardioid dynamic microphone. Dual impedance: 600 ohms or 50K. FR: 200Hz-10kHz. Output: 2.2mV 50K. Stand mounting complete with windshield. Price: £18.40 (plus VAT).

#### PRO-M30

Omni-directional electret capacitor micro-

phone with desk stand. Impedance: 600 ohms. Sensitivity: -66dB (300µV). FR: 50Hz-13kHz. Price: £24 (plus VAT).

#### DFIX

Omni-directional dynamic microphone available in three versions: (DFIXL) 50K, -110dB sensitivity; (DFIXM) 600 ohms, -76dB sensitivity; (DFIXH) 50K, -57dB sensitivity. FR: 100Hz-10kHz. Mounting: desk stand or lavalier cord (both supplied). Clip can be detached from desk stand for use with a floor stand. Price: £6.86 (plus VAT).

### ■ ELECTRO-VOICE

Gulton Europe Ltd, Special Products Division, The Hyde, Brighton BN2 4JU. Tel: Brighton 66271.

#### 635A ★

Moving coil omni-directional hand/stand microphone. FR: 80Hz-13kHz. Sensitivity: -149dB E1A rated. Output: -55dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms. Supplied with 312A stand adaptor. Built-in pop filter. Fitted with Switchcraft connector and cable. Finish: non-reflecting steel case. Price: £35.10 (including VAT).

#### RE10

Moving coil super cardioid hand or boom microphone. FR: 90Hz-13kHz. Sensitivity: -150dB E1A rated. Output: -56dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms. Supplied with 312A stand adaptor, or 307

boom mounting. Fitted with Switchcraft connector and cable. Finish: non-reflecting Micomatte steel case. Price: £62.64 (including VAT).

**RE11**

Moving coil super cardioid hand or boom microphone. FR: 90Hz-13kHz. Sensitivity: -150dB EIA rated. Output: -56dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms. Supplied with 312A stand adaptor, or 307 boom mounting. Built-in pop filter. Fitted with Switchcraft connector and cable. Finish: non-reflecting Micomatte finished steel case. Price: £66.96 (including VAT).

**RE15**

Moving coil super cardioid hand or boom microphone. FR: 80Hz-15kHz. Sensitivity: -150dB EIA rated. Output: -56dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms. Supplied with 312A stand adaptor, or 307 boom mounting. Fitted with Switchcraft connector and cable. Bass tilt switch incorporated. Finish: fawn beige with Micomatte non-reflect finish. Price: £107.46 (including VAT).

**RE16**

Moving coil super cardioid hand or boom microphone. FR: 80Hz-15kHz. Sensitivity: -150dB EIA rated. Output: -56dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms. Supplied with 310A stand adaptor, or 307 boom mounting. Fitted with Switchcraft connector and cable. Built-in pop filter. Bass tilt switch incorporated. Finish: non-reflecting Micomatte finished steel case. Price: £111.78 (including VAT).

**RE20 ★**

Moving coil wide range cardioid stand or boom microphone. FR: 45Hz-18kHz. Sensitivity: -150dB EIA rating. Output: -57dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 50, 150 and 250 ohms selectable. Supplied with 302 stand adaptor, or 309 boom mounting. Fitted with Switchcraft connector and cable. Built-in pop filter. Finish: non-reflecting satin nickel steel case. Price: £172.80 (including VAT).

**RE55**

Moving coil omni-directional hand, stand or boom microphone. FR: 40Hz-20kHz. Sensitivity: -149dB EIA rated. Output: -55dB (ref 1mW/10 dynes/cm<sup>2</sup>). Supplied with 310A stand adaptor and metal carrying case. Fitted with Switchcraft connector and cable. Finish: non-reflecting satin nickel steel case. Price: £89.10 (including VAT).

**670, 670V Top Brass**

Moving coil cardioid hand or stand microphone. FR: 60Hz-14kHz. Sensitivity: -150dB

EIA rated. Output: -58dB (ref 1mW/10 dynes/cm<sup>2</sup>). Impedance: 150 ohms or high Z selectable. Model 670 has built-in switch and pop filter. Model 670V has built-in volume control and pop filter. Fitted with Switchcraft connector. Finish: anodised aluminium. Price: (670) £40.50 (including VAT); (670V) £43.74 (including VAT).

**DS35**

Cardioid dynamic microphone with built-in pop filter, Switchcraft connector. Impedance: 150K. FR: 60Hz-17kHz. Sensitivity: -56dB (0dB = 1mV/10 dynes/cm<sup>2</sup>). Supplied with stand adaptor and cable. Finish: non-reflecting grey. Price: £43.09 (including VAT).

**Model 660**

Super cardioid dynamic microphone with Switchcraft connector. Impedance: 120K or Hi-Z selectable. FR: 90Hz-13kHz. Sensitivity: Low-Z -56dB, High-Z -55.5dB (0dB = 1mV/10 dynes/cm<sup>2</sup>). Finish: chrome. Price: £43.20 (including VAT).

**Model 671**

Cardioid dynamic microphone with Switchcraft connector. Impedance: 150K or High-Z. FR: 60Hz-14kHz. Sensitivity: Low-Z -61dB, Hi-Z -60dB (0dB = 1mV/10 dynes/cm<sup>2</sup>). Supplied with stand adaptor and cable. Price: £39.42 (including VAT).

**■ FOSTER**

Distributors: Adastra Electronics Ltd.  
Unit N22, Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

**M53/MDF623C**

Mono moving coil cardioid stick microphone. FR: 200Hz-10kHz. Impedance: 600 ohms and 50K. Sensitivity: (600 ohms) -82dB, (50K) -63dB. Adjustable cradle fitting. Microphone holder and neck cord. Satin metal case. Price: £14.25 (plus VAT).

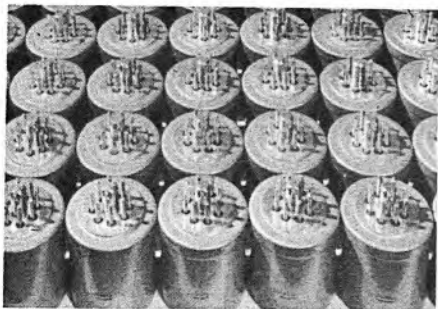
**M58/MDF619BC**

Mono moving coil cardioid stick microphone. FR: 200Hz-10kHz  $\pm$  6dB. Impedance: 600 ohms and 50K. Sensitivity: (600 ohms) -76dB  $\pm$  3dB, (50K) -58dB  $\pm$  3dB. Adjustable cradle fitting. Built-in switch. Windshield. 16ft cord. Satin gold finish with chrome trim. Price: £20.60 (plus VAT).

**M50**

Dynamic microphone with on/off switch. FR: 400Hz-5kHz  $\pm$  6dB. Sensitivity: -72dB  $\pm$  3dB at 600 ohms, -54dB  $\pm$  3dB at 50K. Dual impedance. Black moulded case. Heavy duty 1.5m (extended) coiled cord. Price: £7.50 (plus VAT).

★ Indicates entry is illustrated



Gardner mic transformers

### M51/DF1X

Dynamic stick/hand microphone offered in three impedance versions: 50K, 600 and 50 ohms. FR: 100Hz-10kHz. Sensitivity: -57dB. Omni-directional polar pattern. Supplied with matching base, adjustable U bracket and lavalier cord. Price: £6.40 (plus VAT).

## ■ GARDNERS

Gardners Transformers Ltd.  
Christchurch, Dorset BH23 3PN.  
Tel: Christchurch 2284.

### Audio transformers ★

Wide range of microphone and line transformers available in standard models. Obsolete items can be made to special order and quotations will be provided on request. Standard types available include miniature mic transformers, standard microphone and A.F. line matching transformers, wide band microphone and A.F. matching transformers, extra wide-band microphone and A.F. line matching transformers and super-fidelity wide band microphone and line matching transformers.

## ■ GRAMPIAN REPRODUCERS LTD

19 Hanworth Trading Estate,  
Hampton Road West, Feltham TW13 6EJ.  
Tel: 01-894 9141.

### DP4/H

Moving coil. FR: 50-15,000Hz. Sensitivity: -52dB, -70dB, -86dB, for high, medium and low impedance, 50,000, 600 and 25 ohms. Tubular case. Price including lead, high or medium impedance: on application; low impedance on application.

### DP6 ★

Moving coil. Omni-directional. FR: 200Hz-15kHz. Sensitivity: -87dB (25 ohms), -75dB (200 ohms), -50dB (600 ohms), -52dB (50K).

Built-in transformer fitted to all but low impedance model. Price: (low impedance) on application; (other three models) on application.

### GC2 and GC3

Mono moving coil microphone for hand (GC2) or desk mounting (GC3). Uni-directional response. FR: 70Hz-14kHz. Impedance: (L) 25 ohms; (X) 200 ohms; (M) 600 ohms; (H) 50K. Sensitivity: (L) -86dB 50 $\mu$ V, (X) -75dB 180 $\mu$ V, (M) -70dB 300 $\mu$ V, (H) -52dB 2.5mV. All sensitivity figures per microbar. Easily replaceable diaphragm and coil assembly. GC2 has on/off switch and is supplied with swivel holder for fitting to floor or table stand. Prices: on application.

### GRI

Ribbon. Unequal figure-of-eight. Response: 40Hz-15kHz. Sensitivity: -90dB (25 ohms), -81dB (200 ohms), -76dB (600 ohms), -58dB (50K). Imp: 25, 200, 600 ohms, 50K. Built-in transformer. Easily replaceable ribbon. Price: on application.

### GR2

Details as for GRI, but equal figure-of-eight response.

### DP8 series ★

Moving coil omni-directional microphones. FR: 50Hz-15kHz  $\pm$  5dB. Built-in on/off switch. Interchangeable leads. Hand type with swivel holder for stand use. Sensitivities, impedances and re-loads as for DP4 series. Prices: on application.

### Boom arm

Suitable for use with various types of mics and stands. The clamp, locked by a single lever, allows the reach and angle to be readily adjusted as required. Length: 34in. Weight: 1 $\frac{3}{4}$ lb. Thread termination for mic  $\frac{7}{16}$  in BSF male, thread termination for stand  $\frac{5}{8}$  in  $\times$  27tpi female. Supplied with adaptor to  $\frac{7}{16}$  in BSF female. Adaptors for other sizes available. Price: on application.

### Grampian Parabolic Reflector ★

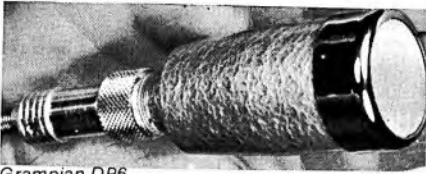
Diameter 24in, depth 5in. Gam 14dB 500Hz-5kHz. Takes Grampian DP4 and DP6 microphones. Weight: 4 $\frac{3}{4}$ lb. Prices: on application.

## ■ GRUNDIG (GREAT BRITAIN) LTD

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

### GDM308 Report

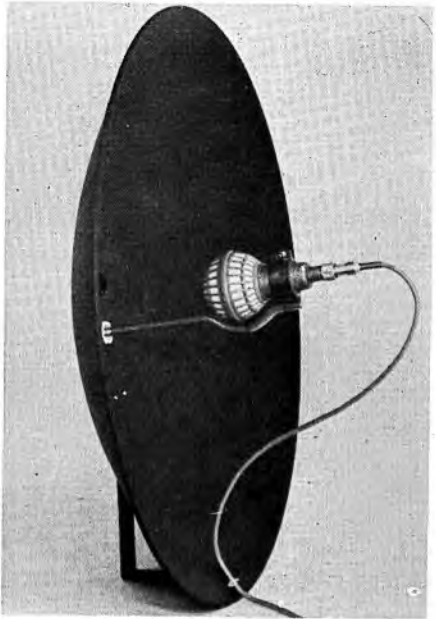
Mono moving coil hand microphone. Omni-directional. FR: 80Hz-15kHz. Sensitivity: -74dB (1cf 1V/dyne/cm<sup>2</sup>). Impedance: 700 ohms. On/off switch. Table stand supplied.



Grampian DP6



Grampian DP8



Grampian Parabolic Reflector

7-pin DIN plug. Price: on application.

#### **GDM314**

Mono moving coil hand microphone. Omni-directional. FR: 80Hz-15kHz. Impedance: 200 ohms and 10K. Table stand supplied. 3-pin DIN plug. Extension cable (MEC 10) available. Finish: black and metallic. Price: on application.

#### **GCSM332**

Stereo microphones assembly comprising two seperable units. 'Kidney' characteristic. FR: 60Hz-15kHz. Impedance: 1000 ohms. 3m lead. Fitted 6-pin DIN plug. Price: on application.

#### ■ **LAWTRONICS**

139 High Street, Edenbridge,  
Kent TN8 5AX. Tel: Edenbridge 5191.

#### **Model LM23**

A subminiature electret microphone with FR. 30Hz-15kHz  $\pm 6$ dB. Size: 24 x 10mm. Weight: 7.5gm. Powered from parent equipment or its own power adaptor. Supplied with adaptor, battery, spare connectors and tie pin in presentation case. Price: £18 (including VAT).

#### ■ **LEM**

Distributors: Douglas A. Lyons and Associates Ltd, 99 Larkhall Lane, London, SW4. Tel: 01-622 0287.

#### **DH80**

Miniature moving coil. Omni-directional. FR: 70Hz-14kHz  $\pm 4$ dB. Impedance: 50 ohms or 80K. Sensitivity: (low imp) -82dB, (high imp) -52dB. May be used as hand microphone, desk stand, or attached to floor stand. Price: from about £9 (plus VAT).

#### **DO35**

Miniature lavalier moving coil microphone. Omni-directional. FR: 80Hz-12kHz  $\pm 3$ dB. Sensitivity: -80dB. Impedance: 200 ohms. Can also be used as hand or stand microphone. Size: 2½in long, ¾in diameter. Weight: 1½oz. Price: approximately £25.

#### **DO21B**

Studio-quality omni-directional moving coil microphone. FR: 30Hz-16kHz  $\pm 3$ dB. Impedance: 50 ohms or 200 ohms. Sensitivity: (200 ohms) -77dB. Individually calibrated response curves. Suitable for hand or stand use. Price: approximately £25 (plus VAT).

★ Indicates entry is illustrated

## DO20

Hand or stand type coil microphone. Omni-directional. FR: 40Hz-15kHz. Impedance: 50 ohms, 200 ohms or 80K. Sensitivity: 50 ohms -82dB, 200 ohms -76dB, 80K -50dB. Internal element resiliently mounted to avoid mechanical shock. Price: approximately £17 (plus VAT).

## DO42

Miniature lavalier. Similar specification to type DO35 but incorporates special features to avoid rubbing noises. Price: approximately £27 (plus VAT).

## ■ MELODIUM

Keith Monks (Audio) Ltd.  
26-30 Reading Road South. Fleet,  
near Aldershot. Hants.  
Tel: Fleet 7316 and 3566.

### 76A★

Moving coil, cardioid. FR: 100Hz-15kHz (3dB). Sensitivity: -63dB (0dB = 1mW/10μ bars) 30 ohms or 200 ohms impedance. Windshields available. Price: (head) £24.27 (plus VAT).

### 78A or 78A/108

Moving coil cardioid. FR: 50Hz-15kHz ± 3dB. Sensitivity: -67dB (0dB = 1mW/10μ bar, 0.042 mV/μbar), 30 ohms or 600 ohms impedance. Stick, head removable for fitting to swan neck. Clamp or swan neck fitting. ½ in Whit. Switch available on microphone or swan neck. Windshields available. Steel. Price: (head) £28.93 (plus VAT).

### RM6

Ribbon bi-directional. FR: 30Hz-18kHz ± 2dB. Sensitivity: (200 ohms) -56dB 0.1mV/μbar, (50 ohms) -61dB 0.09mV/μbar (0dB = 1mV/10μbar), 50 ohms or 200 ohms impedance. Stick. Clamp fitting. Four position sensitivity and on/off switch. Price: on application.

### C121

Moving coil, cardioid. Noise-cancelling miniature. FR: 150Hz-14kHz ± 3dB. Sensitivity: -89dB (0.036mV). Removable head for fitting to swan neck for use as stick mic. With 3-pin DIN connector. Price: £23.02 (plus VAT).

### C133

Moving coil, cardioid. Stick type mic. FR: 50Hz-15kHz ± 3dB. Sensitivity: -83dB (0.072mV) at 30 ohms, -71dB (0.28mV) at 600 ohms. Built-in pop shield. With or without on/off switch. Melodium or 3-pin DIN screened plug. Price: (less on/off switch) £30.89 (plus VAT); (with on/off switch) £33.60 (plus VAT).



Melodium 76A

### C133SU

Moving coil, cardioid. FR: 40Hz-18kHz ± 3dB. Sensitivity: -83dB (0.072mV at 30 ohms). On/off switch and cannon XLR plug. Price: £41.42 (plus VAT).

### Optional accessories

Wide range of plugs, sockets, adaptors, clamps, goosenecks, stands, stereo bars, mounting blocks, windshields, lavalier cords, transformers and adaptors. Full details on request.

### Accessories

#### 340

Table stand with cast base. Price: £5.80 (plus VAT).

#### 330

Heavy duty gooseneck. Size: 28cm. Price: £4.67 (plus VAT).

#### 326

Heavy duty gooseneck. Size: 60cm. With panel mounting and 3-pin DIN. Price: £12.01 (plus VAT).

## ■ NEUMANN GMBH

Sole UK Agents: F.W.O. Bauch Ltd.  
49 Theobald Street, Boreham Wood,  
Herts WD6 4RZ. Tel: 01-953 0091.

### KM73

Transistor (FET) condenser. Omni-directional. FR: 40Hz-16kHz ± 2dB. Sensitivity across 1K: 2.5mV/dyne/cm<sup>2</sup>. Impedance: 200 ohms without transformer. Printed circuit. Miniature pressure mic. Price on application.

### KM74★

Transistor (FET) condenser. Cardioid. FR: 40Hz-16kHz ± 2dB. Sensitivity across 1K: 2.5mV/dyne/cm<sup>2</sup>. Impedance: 200 ohms without transformer. Printed circuit. Miniature pressure-gradient mic. Price on application.

**KM76 ★**

Transistor (FET) condenser. Switchable: omni-directional, cardioid, figure-of-eight. FR: 40Hz-16kHz  $\pm 2$ dB. Sensitivity across 1K: 2.6mV/dyne/cm<sup>2</sup>. Impedance: 200 ohms without transformer. Printed circuit. Miniature pressure-gradient mic. Price on application.

**KML**

Lavalier transistor (FET) condenser. Cardioid. FR: 40Hz-16kHz  $\pm 2$ dB. Sensitivity across 1K: 0.5mV (18V) or 1.8mV (45V) per dyne/cm<sup>2</sup>. Impedance: 50 or 200 ohms. Built-in transformer. Printed circuit. Battery driven (18V or 45V). Miniature pressure-gradient mic. Price on application.

**U77**

Condenser FET. Switchable omni-directional or cardioid or figure-of-eight. FR: 40Hz-16kHz. Sensitivity across 1K: 2.6mV/microbar (omni), 5mV/microbar (figure-of-eight), 3mV/microbar (cardioid). Impedance: 200 ohms. Pressure-gradient mic. Bass cut and sensitivity switch of -10dB. Price on application.

**KM83**

FET condenser. Omni-directional. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price on application.

**KM84**

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price on application.

**KM86**

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price on application.

**U87**

FET condenser. Switchable to omni-directional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Impedance: 50 or 200 ohms. Built-in transformer. Bass cut and sensitivity switch of -10dB. Price on application.

**KM88**

FET condenser. Switchable to omni-directional or cardioid. FR: 40Hz-16kHz. Impedance: 50 or 200 ohms. Sensitivity across 1K: approx 0.7mV/microbar. Built-in transformer. Sensitivity switch -10dB. Price on application.

**SM69 FET**

Stereo transistor condenser. Both systems separately remote controlled: omni-



Neumann KM74



Neumann KM76



Neumann U47 FET



Neumann KMS 85



★ Indicates entry is illustrated

directional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Sensitivity across 1K: 2mV/microbar. Impedance: 50 or 200 ohms. Built-in transformers. Pressure-gradient. Price on application.

#### U47 FET ★

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.8mV/ $\mu$ bar. Impedance: 150 ohms balanced. 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. Price: on application.

#### KMS 85 ★

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.6mV/ $\mu$ bar. Impedance: 150 ohms balanced. Recommended load:  $\geq 750$  ohms. Hand type. Multistage mechanical filter in front of condenser capsule provides protection against close-talking popping noises and other explosive sounds. Finish: matt nickel plated. Price on application.

#### KMA

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV open circuit. Impedance: 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. Price on application.

#### ■ PEARI.

Allotrope Ltd, 90 Wardour Street, London W1V 3LE. Tel: 01-437 1892.

#### M-68

Mono ceramic microphone. Noise-cancelling type. FR: 500Hz-5kHz -6dB. Sensitivity: 0dBm for normal voice  $\frac{1}{2}$ in from microphone. Impedance: 600 ohms. Hand type. Military specification with built-in on/off switch and four transistor pre-amplifier. External metal parts non-ferrous and black anodised. Price: on application.

#### CL-3

Sub-miniature omni-directional tie-pin capacitor microphone. FR: 80Hz-17kHz -3dB. Sensitivity: 32mV/Pascal. Impedance: 200 ohms. Recommended load:  $\geq 200$  ohms. Size:  $1\frac{1}{2} \times \frac{5}{16} \times \frac{1}{8}$ in. Finish: brass and satin chrome. Price: on application.

#### HM49

Moving coil omni-directional stand microphone. FR: 50Hz-18kHz -6dB. Sensitivity: -74dB. Impedance: 200 ohms. Rec. load:



Pearl DC73

$\geq 200$  ohms. Fitting:  $\frac{3}{8}$ in  $\times$  27tpi. Finish: black anodised alloy. Price: on application.

#### HM47

Moving coil omni-directional lavalier microphone. FR: 100Hz-10kHz -6dB. Sensitivity: -76dB. Impedance: 200 ohms. Rec. load:  $\geq 200$  ohms. Fitting: lavalier neck cord. Polyester diaphragm. Finish: brass, satin chrome. Price: on application.

#### RD34/36

Moving coil cardioid stand microphone. FR: 40Hz-16kHz -6dB. Sensitivity: -74dB. Impedance: (RD34) 200 ohms; (RD36) 200 ohms and high Z. Rec. load:  $\geq 200$  ohms. Fitting:  $\frac{3}{8}$ in  $\times$  27tpi adaptor. Polyester diaphragm. Finish: black anodised alloy. Price: on application.

#### RD16

Moving coil cardioid lavalier or stand microphone. FR: 80Hz-12kHz -6dB. Sensitivity: -70dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{3}{8}$ in  $\times$  27tpi adaptor. Polyester diaphragm. Finish: black anodised alloy. Price: on application.

#### LD18/19

Moving coil omni-directional stand microphone. FR: 80Hz-16kHz -6dB. Sensitivity: -74dB. Impedance: (LD18) 200 ohms; (LD19) 200 ohms and high Z. Rec. load:  $\geq 200$  ohms. Fitting:  $\frac{3}{8}$ in  $\times$  27tpi. Polyester diaphragm. Finish: black anodised alloy. Price: on application.

#### D44LS/BS

Moving coil cardioid lavalier or stand microphone. FR: 100Hz-13kHz -6dB. Sensitivity: -71dB. Impedance: (D44LS) 200 ohms; (D44BS) 200 ohms and high Z. Fitting:  $\frac{3}{8}$ in  $\times$  27tpi. Built-in on/off switch and windshield. Finish: anodised black alloy. Price: on application.

**ST8**

Capacitor stereo microphone with variable response pattern. FR: 30Hz-18kHz. Sensitivity: -61dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Stand fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Variable pattern with remote control, one capsule may be rotated through 180 deg. Finish: brass, satin chrome. Price: on application.

**FP92C/FP92K**

Capacitor mono stand microphone. Response: (FP92C) cardioid; (FP92K) omni-directional. FR: 30Hz-16kHz - 3dB. Sensitivity: -66dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Permanent pre-polarisation. Built-in 6V battery supply. Weight: 6oz. Finish: brass, satin chrome. Price: on application.

**TCV4V**

Capacitor stand microphone with variable remote-controlled response pattern. FR: 40Hz-18kHz - 3dB. Sensitivity: -56dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Finish: brass, satin chrome. Price: on application.

**DC96**

Capacitor stand microphone with cardioid response. FR: 30Hz-18kHz - 3dB. Sensitivity: -61dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Finish: brass, satin chrome. Price: on application.

**DC73★**

Capacitor hand or stand cardioid microphone. FR: 40Hz-17kHz - 3dB. Sensitivity: -60dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Switchable pop filter. Shockproof elastic suspension. Finish: brass, satin chrome. Price: on application.

**DC63**

Capacitor stand microphone with variable response pattern. FR: 30Hz-18kHz - 3dB. Sensitivity: -60dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Variable response pattern gives 44 combinations. Switchable bass cut. Switched attenuator. Finish: polished alloy and brass, satin chrome. Price: on application.

**DC20/DC21**

Capacitor stand microphone. Response: (DC20) omni-directional; (DC21) cardioid. FR: 30Hz-18kHz - 3dB. Sensitivity: -56dB. Impedance: 200 ohms. Rec load:  $\geq 200$  ohms. Fitting:  $\frac{5}{16}$ in  $\times$  27tpi. Miniature microphone measuring  $2\frac{1}{4}$ in long and  $\frac{3}{16}$ in diameter. Finish: polished alloy or brass, satin chrome. Price: on application.



*Philips Pye LBB9005 05*

**VM40/41**

The VM40 (omni-directional) and VM41 (cardioid) Condenser Microphones combine new design and construction with increased facilities. A four position ring switch mounted near the microphone head selects 10dB attenuation and/or low frequency roll off. Rec load: 200 ohms. FR: 30Hz-18kHz, 48V symmetrical signal cable powering. Price: on application.

**VM40/12 and VM41/12**

Condenser Microphones as VM40/41 above, but can be operated by a symmetrical signal cable supply of between 10 and 48V. Price: on application.

**SP84/85**

The SP84 (omni-directional) and SP85 (cardioid) are self-powered versions of the VM40/41 condenser microphones above. An internal 15V battery operates a a.c. to d.c. converter providing the capsule polarising voltage. The supply is controlled by a plunger on/off switch in the microphone body operated by the mating connector. Price: on application.

## ■ PHILIPS

Pye Business Communications Ltd,  
Cromwell Road, Cambridge CB1 3HE.  
Tel: Cambridge 45191.

**LBB9005/05 ★**

Moving coil cardioid microphone. FR: 40Hz-18kHz. Impedance: 500 ohms. Sensitivity: -71dB. On/off switch. Quick-release holder for stands with  $\frac{5}{16}$ ,  $\frac{1}{2}$  or  $\frac{3}{8}$ in Whit threads. 10ft twin screened lead. Price: £28 (plus VAT).

**LBB9007/05**

Moving coil cardioid microphone. FR: 40Hz-18kHz. Impedance: 200 ohms.

★ Indicates entry is illustrated



Philips LBB 9003/05

Combined on/off switch and impedance selector switch. Fitted with flexible shaft and 10ft twin screened lead. Finish: brushed satin stainless steel head and chromium plated shaft. Fits stand with  $\frac{3}{8}$ ,  $\frac{1}{2}$  or  $\frac{5}{8}$ in Whit threads. Price: £30 (plus VAT).

#### **LBB9100/05**

High quality cardioid microphone for speech and music. FR: 50Hz-16kHz. Impedance: 200 ohms. Front-to-back ratio: 18dB. Speech/music switch. Built-in DIN connector. All-metal housing. Price: £45 (plus VAT).

#### **EL.6042/05**

Professional quality omni-directional moving coil. FR: 30Hz-20kHz. Impedance: 200 ohms. Sensitivity: -79dB at 1kHz reference 1V/ $\mu$ bar. Size:  $5\frac{1}{2}$ in  $\times$   $\frac{3}{4}$ in. Finish: matt chrome plate. Quick-release holder-clamp for stands with  $\frac{3}{8}$ ,  $\frac{1}{2}$  or  $\frac{5}{8}$ in Whit threads. Three-pole plug for twin screened cable. Individually calibrated frequency response. Price: £47.50 (plus VAT).

#### **LBB9018/06**

High quality noise cancelling microphone. FR: 200Hz-12.5kHz. Front-to-rear sensitivity: 16dB. Impedance: 250 ohms. Supplied with four-core and screened cable. On/off button. Suspension bracket. Price: £24 (plus VAT).

#### **LBB9101/05**

Moving coil microphone with an all-metal housing. FR: 30Hz-20kHz. Speech/music switch. Built-in DIN connector. Impedance: 200 ohms. Price: £40 (plus VAT).

#### **EL6204**

Universal microphone table stand. Provided with  $\frac{5}{8}$ in Whit thread and possibility of mounting signal lamps or switches, etc. Price: £5.50 (plus VAT).

#### **ET907**

Telescopic floor stand with heavy base, 42in closed, 72in extended. Price: £14.50 (plus VAT).

#### **LBC1203/00**

Table stand. Tripod type. Price: £3 (plus VAT).

#### **LBC1207/00**

Windshield for LBB9005, LBB9007, LBB9008, LBB9100, LBB9101, LBB9500. Price: £1.50 (plus VAT).

#### **LBC1209/00**

Windshield for LBB9050. Price: £1.80 (plus VAT).

#### **EL6207**

Vibration damper for use with EL6033 on floor or table stands. Price: £4.50 (plus VAT).

#### **LBC1200**

Short flexible shaft fitted with socket to accept microphones EL6033, EL6042, LBB9100, LBB9101. Length 8in. Complete with 5 yards cable. Price: £10.50 (plus VAT).

#### **LBC1205/01**

Cable with switched plug for use with LBB9050, LBB9100, LBB9101, EL6042 and EL6033. Price: £7 (plus VAT).

#### **LBC1210/00**

Three-pole DIN microphone plug for use with LBB9050, LBB9100, LBB9101, EL6042, EL6033. Price: £1 (plus VAT).

#### **LBC1208/10**

Ten-metre extension cable complete with plugs. For use with LBB9050, LBB9100, LBB9101, EL6042, EL6033. Price: £7 (plus VAT).

#### **LBB9003/05 ★**

Moving coil omni-directional lavalier microphone. FR: 50Hz-15kHz. Impedance: 200 ohms. Sensitivity: -78dB. Suitable also for hand use. Complete with neck cord and 33ft cable. Price: £21 (plus VAT).

#### **■ PYE**

Pye Business Communications,  
Cromwell Road, Cambridge CB1 3HE.  
Tel: Cambridge 45191.

#### **LBB 9030**

Electret microphone for high quality speech and music reproduction. FR: 20Hz-20kHz. SPL: 119dB. Mounted on flexible stem. Sensitivity: 0.35mV/ $\mu$ bar (nominal). Battery holder for 1.5V penlight cell. Price: £33 (plus VAT).

#### **■ RESLOSOUND LTD**

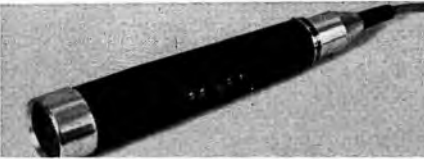
Spring Gardens, London Road, Romford,  
Essex RM7 9LJ. Tel: Romford 61926.



Reslo UD.1



Reslo Superstar 80



Reslo PD3



Reslo UD3

**UD.1 ★**

Uni-directional hand or stand microphone. FR: 50Hz-17kHz (-4dB at 100Hz, +8dB at 16kHz). Rear pick-up -10 to -20dB between 200Hz-15kHz. Sensitivity: -88dB at 30-50 ohms. Output: average voice 6in from front of mic 150 $\mu$ V (low imp), 250-450 $\mu$ V (medium imp), 2-4mV (high imp). Output increases approximately 10 times at one inch from microphone. Impedances: UD.1/L 30-50 ohms or 600 ohms; UD.1/M medium impedance, 200-300 ohms; UD.1/MT, 600-1000 ohms; UD.1/H, high impedance. Finish: main case beige nylon, top case satin silver. Price: £27 (plus VAT).

**Superstar 80**

Moving coil cardioid hand or stand microphone. FR: 50Hz-15kHz. Sensitivity: -58dB (50K). Impedance: (S80L) 30 or 600 ohms, (S80H) 250 ohms or 50K. Optional accessories: carry case, dual impedance cable set. Price: (both versions) £37 (plus VAT).

**UD3 ★**

Moving coil super cardioid stand microphone. FR: 100Hz-16kHz. Sensitivity: -58dB (50K). Impedance: (UD3/LM) 30 or 600 ohms, (UD3/MH), 200 ohms or 50K. Terminated with Reslo connector and suitable for use with any of the six flexible stems. Price: (both versions) £17 (plus VAT).

**PD3 ★**

Moving coil omni-directional pencil microphone. FR: 30Hz-17kHz. Sensitivity: -88dB (30 ohms). Impedance: (PD3/L) 30 ohms, (PD3/M Dual) 200 or 600 ohms, (PD3/H) 50K. Supplied with 16ft directly-connected cable. Optional extras: SA6019 stand holder MS500 desk base. Price: (switched) £15 (plus VAT).

**MR1**

Ribbon semi-cardioid stand microphone. FR: 35Hz-16kHz. Sensitivity: -58dB (50K). Impedance: (MR1/L) 30 ohms, (MR1/M Dual) 250 or 600 ohms, (MR1/H) 50K, (MR1/MT Level) bass version for transistor inputs of 600-1000 ohms. Price: £28 (plus VAT).

**MPD**

Moving coil omni-directional miniature pencil stand or lavalier microphone. FR: 50Hz-15kHz. Sensitivity: -88dB (30 ohms). Impedance: 30 ohms. Available as head only (MPD/HD), lavalier type (MPD/L) and desk version (MPD/D) with 8in flexible stem and desk base. Price: (MPD head) £11 (plus VAT); (MPD/lavalier) £15.50 (plus VAT); (MPD/D desk) £20 (plus VAT).

**MPD/L**

Dynamic, omni-directional, lavalier. FR: 50Hz-15kHz -12dB at 100Hz, +4dB at 14kHz. Sensitivity: 88dB below. Impedance: low. Finish: satin anodised. Price: £15.50 (plus VAT).

★ Indicates entry is illustrated

#### **MPD/D**

Dynamic, omni-directional, desk base fitted with 8in flexible stem. FR: 50Hz-10kHz. Sensitivity: 88dB below. Impedance: low. Finish: satin anodised microphone, chrome stem, grey enamel base. Price: £20 (plus VAT).

#### **Silverstar S91**

Cardioid electret microphone. Impedance: 50-600 ohms and high impedance. FR: 40Hz-20kHz. Sensitivity: -76dB. Stand mounting type. Price: £47 (including VAT). Switched version available.

#### **P200**

Parabolic reflector microphone, dynamic type. Impedance: 150-600 ohms. FR: 300Hz-15kHz. Sensitivity: -52dB. Hand or tripod mounting. Price: £45 (including VAT).

#### **EPM**

As for the P200, but FR: 150Hz-20kHz. Sensitivity: -42dB. Price: £132 (including VAT).

#### **MS.110B**

Adjustable floor stand. Minimum height: 40in, maximum height: 62in. Grey hammertone base, chrome outer and inner stem. Price: £14 (plus VAT).

#### **MS.175 and MS.180**

Boom arm fitting available for use with Reslo floor stands. Price: £21 (plus VAT).

#### **MS.200**

Adjustable table stand. Minimum height: 1ft 4in. Maximum height: 2ft 2in. Grey hammertone base with chrome stem and extension piece. Price: £10 (plus VAT).

#### **MS.300**

Circular desk stand. Grey hammertone base fitted with 3in chrome stem. Price: £6 (plus VAT).

#### **MS.500**

Rectangular desk base. Fitted with rubber feet. Finished in silver grey hammertone. Muting switch optional extra. Price: £4 (plus VAT).

#### **Reslo radio microphones**

Range of radio microphones for all purposes. Full details on request.

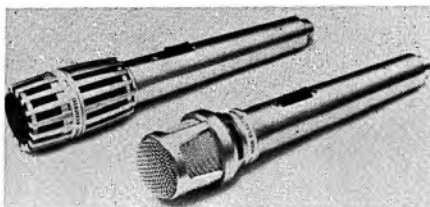
#### **ROSS ELECTRONICS**

32 Rathbone Place, London W1P 1AD.

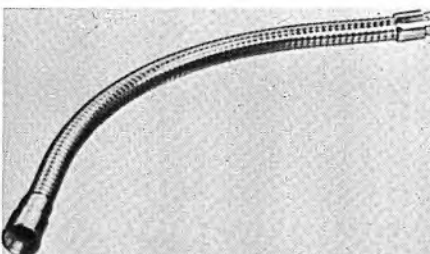
Tel: 01-580 7112.

#### **RE-320**

Dynamic, omni-directional ball type. Impedance: 50K. Response: 50Hz-12kHz. Sensitivity: -54dB at 50K. Satin finish, diecast case. On/off switch. Price: £8.53 (plus VAT).



Ross RE-345 (left) and RE-350



Ross 13in Gooseneck



Ross Electronics (left to right) RE-360 and RE-365



Ross Electronics RE-367

**RE-325**

Uni-directional, cardioid dynamic. Dual impedance: 600 ohms and 50K. Satin and black anodised finished, diecast case. On/off switch. Price: £9.66 (plus VAT).

**RE-330**

Uni-directional, cardioid dynamic. Dual impedance: 600 ohms and 50K. Response: 50Hz-15kHz. Sensitivity: -55dB at 50K. Satin finished diecast case. On/off switch. Price: £12.10 (plus VAT).

**RE-335**

Dynamic, omni-directional slimline type with detachable foam windshield. Dual impedance: 600 ohms and 50K. Response: 50Hz-17kHz. Sensitivity: -57dB at 50K. Satin finish, diecast case. On/off switch. Price: £12.10 (plus VAT).

**RE-345 ★**

Uni-directional, cardioid dynamic. Switched dual impedance: 600 ohms and 50K. Response: 50Hz-15kHz. Sensitivity: -72dB at 600 ohms, -56dB at 50K. Diecast casing finished matt silver with parallel flutes and black mesh screen. On/off switch. Price: £13 (plus VAT).

**RE-350 ★**

Uni-directional, cardioid dynamic. Switched dual impedance: 600 ohms and 50K. Response: 50Hz-15kHz. Sensitivity: -72dB at 600 ohms, -56dB at 50K. Case and machined head with deep drawn wire mesh screen. Price: £13.59 (plus VAT).

**Gooseneck ★**

½in diameter. Minimum bend radius 1½in. Male/female threaded ends. Available in 13in and 21in lengths. Prices: (13in) £2.45 (plus VAT); (21in) £3.57 (plus VAT).

**B.2004 Mixer**

4-channel transistorised audio mixer with mono/stereo selector switch. High impedance inputs into standard jack sockets; phono plug output. Max input 1V. Output 1.3V. Noise ratio: -60dB. Gain approximately 3dB. Price: £6.56 (plus VAT).

**RE-360 ★**

Omni-directional, dual-impedance, electret condenser type with FET pre-amplifier, dual-impedance transformer and battery all housed in microphone body, together with on/off switch. FR: 30Hz-18kHz. Impedance: 600 ohms and 50K. Sensitivity: -62dB at 600 ohms (1kHz), -48dB at 50K (1kHz). SPL: 130dB max. With stand holder, foam windshield. 20ft lead and jack plug. Price: £13.59 (plus VAT).



Ross Electronics RE-311

**RE-365 ★**

Uni-directional cardioid, dual-impedance electret condenser microphone, similar in construction to RE-360. FR: 20Hz-20kHz. Sensitivity: -68dB at 600 ohms (1kHz), -52dB at 50K (1kHz). SPL: 132dB max. With stand holder, foam windshield. 20ft lead and jack plug. Price: £14.91 (plus VAT).

**RE-367 ★**

Omni-directional tieclasp type with built-in FET pre-amplifier operated from a mercury cell. Fitted with 3m lead and moulded jack plug. Impedance: 600 ohms. FR: 50Hz-16kHz. Sensitivity: -60dB at 1kHz. SPL: 120dB max. Price: £12.09 (plus VAT).

**Desk stands ★**

RE-311. Weighted, black plastic base with fixed chrome pillar. Standard screwed end for microphone holder. Size: 5in dia. by 3in high. Price: £2.25 (plus VAT); RE-312. Base as RE-311 but fitted with single draw telescopic centre rod and friction grip. Size: 12in high (closed), 19½in (extended). Price: £3.75 (plus VAT).

**■ SENNHEISER ELECTRONIC**

Distributors: Hayden Laboratories Ltd, Hayden House, 17 Chesham Road, Amersham, Bucks HP6 5AG. Tel: Amersham 5511.

Audio equipment showroom, service department and despatch department: 6 Bendall Mews, Bell Street, London, NW1.

**MD21**

Omni-directional moving coil hand or stand microphone. FR: 40Hz-18kHz ± 3dB. Sensitivity: 0.2mV/μbar ± 3dB. Impedance: 200 ohms. Rec load: 1K. Light alloy case

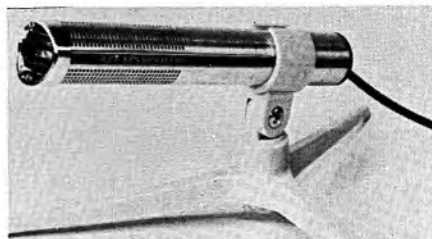
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Sennheiser MD214



Sennheiser MD441



Sennheiser MD402LM



Sennheiser MKH124

finished hammer stove enamel. Windshield MZW421 optional extra. Price: (microphone) £37.85 (plus VAT); (windshield MZW421) £4.10 (plus VAT); (desk stand MZT21) £4.55 (plus VAT).

#### **MD21HL**

Dual-impedance version of MD21. Price: £39.65 (plus VAT).

#### **MD211N**

Omni-directional moving coil miniature studio microphone. Hand or stand use. FR: 30Hz-20kHz  $\pm 2.5$ dB. Sensitivity: 0.13mV/ $\mu$ bar  $\pm 2.5$ dB. Impedance: 200 ohms. Rec load: 1K. Metal case with satin chrome finish. Windshield MZW201 optional extra. Price: (microphone) £53.80 (plus VAT); (windshield MZW201) £3.65 (plus VAT); (small tripod desk stand MZT104) £3.65 (plus VAT).

#### **MD214 ★**

Omni-directional moving coil lavalier microphone. Built-in 'natural voice' equaliser to studio standards. FR: specially designed for lavalier operation. Sensitivity: 0.10mV/ $\mu$ bar  $\pm 2.5$ dB. Impedance: 200 ohms. Rec load: 1K. Metal case finished special 'non-glare' enamel. Price: £63.10 (plus VAT).

#### **MD408N**

Super cardioid moving coil microphone with flexible shaft. Specially suitable for PA applications. FR: 50Hz-15kHz  $\pm 3$ dB. Impedance: 200 ohms. Sensitivity: 0.13mV/

$\mu$ bar  $\pm 3$ dB. Case of light gauze woven wire cloth. Price: £28 (plus VAT).

#### **MD420-2**

Super-cardioid noise cancelling moving coil mono microphone. FR: 200Hz-10kHz (special response curve for noise cancellation). Impedance: 200 ohms. Rec load: 1K. Sensitivity: 0.18mV/ $\mu$ bar. Hand or stand microphone with large Tuchel plug. Metal case with silver finish. Price: (MD420-2) £29.75 (plus VAT); (MD420-2T with switch) £33.35 (plus VAT).

#### **MD420-9**

Shorter version of MD420 for gooseneck mounting. Price: £29.75 (plus VAT).

#### **MD402LM ★**

Mono moving coil super cardioid microphone. FR: 80Hz-12.5kHz. Sensitivity: 2.3mV/ $\mu$ bar. Impedance: 750 ohms. Rec load: 4K. Hand mic with stand and clip. Rugged construction. Frequency response tailored for domestic applications. Finish: satin chrome. Price: £17.05 (plus VAT).

#### **MD409N**

Mono moving coil super cardioid. FR: 50Hz-15kHz. Sensitivity: 0.18mV/ $\mu$ bar. Impedance: 200 ohms. Rec load: 200 ohms or greater. Stand mounted musicians' microphone. Finish: black and gold. Price: £42 (plus VAT).

**MD421**

Mono moving coil cardioid microphone. FR: 30Hz-17kHz. Sensitivity: 0.2mV/ $\mu$ bar at 1kHz. Impedance: (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 with 1/4" thread fitting. Built-in bass cut switch. Low handling noise. Finish: (standard versions) grey plastic body with chrome grille. Price: (MD421N & MD421U) £59.95; (MD421HL) £61. All plus VAT.

**MD441 ★**

Mono moving coil super cardioid microphone. FR: 30Hz-20kHz. Sensitivity: 0.2mV/ $\mu$ bar  $\pm$  3dB. Impedance: 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. Price: (MD441N, MD441U & MD441-2) £85.60 (plus VAT).

**MKH105T**

Mono capacitor omni-directional microphone. FR: 20Hz-20kHz. Sensitivity: 2mV/ $\mu$ bar. Impedance: 20 ohms. Rec load: 200 ohms or greater. Hand/stand microphone. Table stands MZT104 and 105 available. Low self noise. Windshield (MZW201) optional extra. Finish: satin chrome on brass. Price: £121.55 (plus VAT).

**MKH124 ★**

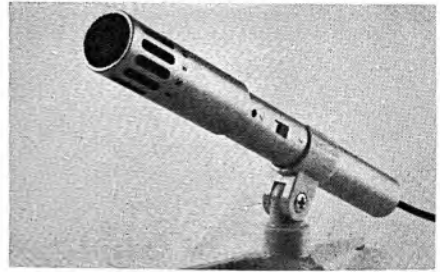
Mono capacitor omni-directional. FR: 40Hz-20kHz. Sensitivity: 0.32mV/ $\mu$ bar. Impedance: 150 ohms. Rec load: 200 ohms or greater. Lapel or lavalier microphone with clip or lanyard. Small size: flat frequency response. Presence lift. Finish: matt grey enamel. Price: £161.65 (plus VAT).

**MKH125**

Mono capacitor omni-directional microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ $\mu$ bar. Impedance: 10 ohms. Rec load: 200 ohms. Lapel/lavalier microphone with lanyard or clip. Small size. Flat frequency response. Presence lift. Finish: matt grey enamel. Price: £171.90 (plus VAT).

**MKH415T/U**

Mono capacitor super cardioid microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ $\mu$ bar. Impedance: 20 ohms. Rec load: 200 ohms. Hand/stand microphone. Table stand MZT415 available. Low self noise. Good wind noise rejection. Windshield MZW415. Finish: satin chrome on brass. Price: £149 (plus VAT).



Sennheiser MKE201

**MKH8151/TU**

Mono capacitor uni-directional (narrow beam) microphone. FR: 50Hz-20kHz. Sensitivity: 4mV/ $\mu$ bar. Impedance: 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. Price: £198 (plus VAT).

**MD412LM**

Moving coil super cardioid mono microphone. FR: 50Hz-12.5kHz. Impedance: 800 ohms. Sensitivity: 0.2mV/ $\mu$ bar  $\pm$  3dB. Built-in roll-off filter. With desk stand. Price: £25.10 (plus VAT).

**MKH435T/TU**

Studio quality capacitor microphone. Cardioid polar diagram. FR: 40Hz-20kHz. Sensitivity: 2mV/ $\mu$ bar  $\pm$  1dB. Impedance: 200 ohms. Hand/stand type microphone. Price: £142.45 (plus VAT).

**MD416NU**

Moving coil mono microphone. Cardioid polar diagram. Insensitive to handling or mechanical vibrations. Designed for vocal or instrumental soloists. FR: 50Hz-15kHz. Sensitivity: 0.13mV/ $\mu$ bar  $\pm$  3dB. Impedance: 200 ohms. Hand or stand microphone. Low sensitivity to pop and wind noises. Price: £49 (plus VAT).

**MD413NU**

Moving coil mono microphone. Cardioid diagram. FR: 50Hz-15kHz. Impedance: 200 ohms. Sensitivity: 0.13mV/ $\mu$ bar  $\pm$  3dB. Rec load: 200 ohms or greater. Hand or stand microphone. Built-in 'pop' protector. Good immunity to feedback. Finish: solid brass with satin chrome finish. Price: £39 (plus VAT).

**MKE201 ★**

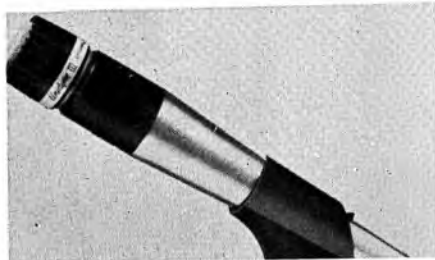
Electret omni-directional mono microphone. FR: 50Hz-15kHz. Sensitivity: 2mV/ $\mu$ bar  $\pm$  3dB. Rec load: (minimum) 1.5K. Battery requirement: 5.6V DC (Mallory PX23). Operating time on one battery greater than 600



★ Indicates entry is illustrated



Shure Model 565 Unisphere 1



Shure Model 545 Unidyne 111

hours. Hand or stand type supplied with MZT104 stand. Finish: satin nickel. Price: £40.55 (plus VAT).

#### **MKE401**

Similar specification to the MKE201 but with super cardioid polar diagram. Price: £47.35 (plus VAT).

#### ■ SHURE ELECTRONICS LTD

Eccleston Road, Maidstone,  
Kent ME15 6AU. Tel: Maidstone 59881.

#### **545 Unidyne 111 ★**

Cardioid moving coil. FR: 50Hz-15kHz. Sensitivity: -55dB. Source impedance: 25-250 ohms and high. Built-in transformer. Price: (545 less switch) £37.20 (plus VAT); (545SD with switch) £39.60 (plus VAT).

#### **565 Unisphere 1 ★**

Moving coil. Cardioid (with polar diagram uniform frequency, symmetrical about axis). FR: 50Hz-15kHz. Dual impedance: (50-250 ohms and high). Sensitivity: (low Z) -78dB, (high Z) -55dB. Hand or stand. Built-in wind/breath filter. Available with or without switch. Detachable 15ft three-core screened lead. Finish: satin chrome body with plated steel grille. Size: 6½in long, 2in diameter over head. Price: (565 less switch) £42 (plus VAT); (565SD with switch) £44.40 (plus VAT).

#### **588SA Unisphere B**

Moving coil. Cardioid. FR: 50Hz-13kHz. Impedance: high Z (low version 25-200 ohms available). Sensitivity: (high Z) -59dB, (low Z) -81.5dB. Hand or stand microphone supplied with swivel stand adaptor. Built-in switch with provision for locking on. Wind/breath filter. Detachable 15ft cable. Finish: satin chrome with steel mesh grille. Size: 6½in long, 2½in diameter. Price: (588SA high Z) £25.20 (plus VAT); (588SB low Z) £25.20 (plus VAT).

#### **515SA Unidyne B**

Moving coil. Cardioid. FR: 80Hz-13kHz. Sensitivity: -58dB. High impedance (low impedance version available). Hand or stand. On/off switch with lock. Size: 6½in long, 1½in diameter. Finish: satin chrome body with black grille and stainless steel screens. Price: 515SA (high impedance) £17.40 (plus VAT); 515SB (low impedance) £17.40 (plus VAT).

#### ■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

**F27** Low z cardioid mic. Price: £4.86; **F27S** Low z cardioid mic. with remote switch. Price: £5.23; **F99B** Stereo single point mic. 2 mini jack. Price: £7.73; **F99S** Stereo single point mic. combined plug. Price: £7.73; **ECM 22P** Electret mic. unidirectional low z. Price: £55.51; **ECM 95S** Electret mic. unidirectional low z. Price: £6.34; **ECM 99** Electret mic. stereo single point (mini jacks). Price: £14.77; **ECM 99A** Electret mic. stereo single point (¼in jacks). Price: £14.77; **ECM 200** Electret mic. unidirectional low z. Price: £8.29; **ECM 200S** Electret mic. unidirectional low z remote switch. Price: £8.80; **ECM 170** Electret mic. omnidirectional low z, FRT, bass roll off switch. Price: £21.76; **ECM 220** Electret mic.

unidirectional high or low z talk switch (incl. A-16 stand). Price: £15.69; **ECM 250** Electret mic. unidirectional low z FET. Price: £16.62; **ECM 270** Electret mic. unidirectional low z FET. Price: £21.76; **ECM 280** Electret mic. unidirectional low z FET, bass roll off switch. Price: £21.76; **A16** Microphone table stand for ECM 170/250/270/280. Price: £2.13. All prices exclude VAT.

#### ■ STC

Manufacturer and distributor:  
Coles Engineering (Hoddesdon) Co,  
Pindar Road, Hoddesdon, Herts.  
Tel: Hoddesdon 66685.

Distributor: Hampstead Hi-Fidelity,  
91 Heath Street, Hampstead, London, NW3.  
Tel: 01-435 0099.

#### 4037

Omni-directional moving coil stick microphone for field work and P.A. Extremely rugged in construction. FR: 80Hz-10kHz. Impedance: 30 ohms or 300 ohms. Sensitivity: -76dB. Long (A) or short (C) models available. Available in colours for use in discos and on colour television. Price: approximately £46.70 retail (plus VAT).

#### 4038 ★

Studio ribbon microphone. Accurate figure-of-eight response. Flat frequency response 30Hz-15kHz. Impedance: 30 ohms or 300 ohms. Sensitivity: -85dB. Non-linear distortion 0.1%. Controlled transient response. Price: approximately £110.75 retail (plus VAT).

#### 4104 ★

Broadcast quality commentator's noise-cancelling ribbon lip microphone. Output: -82dB. Impedance: 30 or 300 ohms. Price: approximately £75.50 retail (plus VAT).

#### 4105A

Cardioid moving coil microphone specially designed for speech. Flat response 60-10,000Hz. Impedance: 30 ohms. Sensitivity: -82dB. Front to back ratio 15-20dB. Price: approximately £46.70 retail (plus VAT).

#### 4136 ★

Condenser cardioid microphone, uniform polar frequency response. Front/back ratio better than 20dB. FR: 40Hz-18kHz. Impedance: 30 or 300 ohms. Sensitivity: -50dB at 300 ohms. FET head amplifier. Phantom power supply for combined mains and battery supply unit. Complete system with windshield and connecting cable. Price: approximately £174.14 retail (plus VAT).



Coles Engineering 4038



Coles Engineering 4104



Coles Engineering 4136

★ Indicates entry is illustrated

## ■ THORN CONSUMER ELECTRONICS LTD

284 Southbury Road, Enfield, Middlesex.  
Tel: 01-366 1155.

### TA24 Cardioid microphone ★

Dynamic microphones with variable cardioid characteristics. Switch positions for optimum results on speech and music. Supplied complete with desk stand and tripod adaptor. Low impedance version TA/24. High impedance version TA/20. Price: £11.55 (plus VAT).

## ■ TECHNICS

Technics Hi-Fi Division,  
Building 63, 107-109 Whitby Road,  
Slough SL1 3DK. Tel: Slough 34522.

### RP-3200E

Stereo microphone. Output impedance:  $600\Omega \pm 20\%$  (at 1kHz). Sensitivity:  $-72\text{dB}$ . FR: 50Hz-15kHz. Inherent noise: 35dB SPL. Wind noise: 55dB SPL. 5m cable. Price: on application.

### RP-3850E

Uni-directional microphone. Output impedance:  $600\Omega \pm 20\%$  (at 1kHz). Sensitivity:  $-72\text{dB}$ . Low cut switch:  $-8\text{dB}$  at 50Hz. PAD switch:  $-10\text{dB}$ . Inherent noise: 28dB SPL. Wind noise: 45dB SPL. 5m cable. Price: on application.

### RP-3830E

Uni-directional microphone. Output impedance:  $600\Omega \pm 20\%$  (at 1kHz). Sensitivity:  $-72\text{dB}$ . Low cut switch:  $-8\text{dB}$  at 50Hz. FR: 50Hz-15kHz. Inherent noise: 28dB SPL. Wind noise: 50dB SPL. 5m cable. Price: on application.

### RP-3550E

Uni-directional microphone. Output impedance:  $600\Omega \pm 20\%$  (at 1kHz). Sensitivity:  $-74\text{dB}$ . FR: 50Hz-15kHz. Inherent noise: 28dB SPL. Wind noise: 50dB SPL. 5m cable. Price: on application.

## ■ UHER

Distributors: Uher (UK) Ltd,  
15 Broomhills Estate, Braintree, Essex.  
Tel: Braintree 23192.

### M136

Omni-directional dynamic microphone with detachable table stand. FR: 50Hz-15kHz. Sensitivity:  $0.32\text{mV}/\mu\text{bar}$ . Plug wiring: unbalanced 3/2. Price: £8.50 (plus VAT).

### M154 ★

Dynamic microphone with remote control switch providing: record, stop, start, rewind. FR: 50Hz-20kHz. Impedance: 200 ohms. For use with model 5000 tape recorder. Price: approximately £22 (plus VAT).



Thorn Consumer Electronics TA24



Uher M154



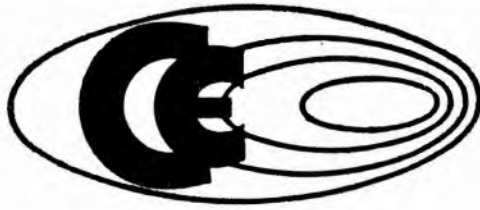
Uher M634 Stereo System

### M517

Dynamic cardioid microphone for use with battery portable series. Remote stop/start switch. Speech/music switch. FR: 70Hz-14kHz. Windshield fitted. Impedance: 500 ohms. Price: £23 (plus VAT).

### M534

Dynamic cardioid microphone with speech/music switch. Sensitivity:  $0.23\text{mV}/\mu\text{bar}$ . FR: 50Hz-16kHz. Impedance: 500 ohms. For recording under adverse acoustic conditions. Pressure diecast case. Includes table stand (M923). Plug wiring: unbalanced 3/2. Price: £19.90 (plus VAT).



# ACOUSTIC PRODUCTS



Coles have for the past three to four years manufactured the range of microphones formerly made and distributed by S.T.C. In April 1974 Coles aquired the full rights from ITT S.T.C. and have since under their own name, manufactured and distributed direct, and through their stockist "HAMPSTEAD HI-FI LTD" this well known range of acoustic products throughout the world, satisfying the ever increasing demand for quality and reliability.

**Coles Engineering (Hoddeson) Co.**

Pindar Road

Hoddesdon

Herts EN11 0BZ

Telephone Hoddesdon 66685

**M537**

Dynamic cardioid microphone with speech/music switch. Sensitivity:  $0.23\text{mV}/\mu\text{bar}$ . FR: 40Hz-18kHz. Impedance: 500 ohms. Flexibly supported microphone system. Includes stand connecting piece (M937) and table stand (M923). Supplied without connecting lead. Plug wiring: unbalanced 1-2/3. Price: £47.50 (plus VAT).

**M538**

Dynamic cardioid studio microphone. Sensitivity:  $0.14\text{mV}/\mu\text{bar}$ . FR: 30Hz-18kHz. Impedance: low Z. Sintered bronze head. Separate bass and treble systems incorporated. Includes stand connecting piece (M937) and table stand (M923). Supplied without connecting lead. Plug wiring: 1-2/3. Price: £74.50 (plus VAT).

**M539**

Dynamic omni-directional studio microphone. Sensitivity:  $0.18\text{mV}/\mu\text{bar}$ . FR: 40Hz-17kHz. Low impedance. Flexibly supported microphone system. Includes stand connecting piece (M937) and table stand (M923). Supplied without connecting lead and windshield. Plug wiring: balanced 1-2/3. Price: £49 (plus VAT).

**M634 (stereo) ★**

Dynamic cardioid stereo microphone system. Sensitivity:  $0.23\text{mV}/\mu\text{bar}$ . FR: 50Hz-16kHz. Impedance: 500 ohms. Comprises two M534 microphones, one M925 stereo bar and one M923 table stand. Speech/music switch. Price: £39.50 (plus VAT).

**M640**

Dynamic stereo microphone. Omni-directional characteristic, also suitable for mono recordings. Sensitivity:  $0.25\text{mV}/\mu\text{bar}$ . FR: 70Hz-15kHz. With stop/start switch for Uher cassette recorders. Price: £25.40 (plus VAT).

**M645**

Electret condenser microphone with FET pre-amplifier. Price: on application.

**M815**

Dynamic directional microphone. Specialist mic with extreme directional effect for 'aimed' recordings. Two stage bass attenuator Swivelling stand and connecting piece. Complete with case. Sensitivity:  $0.3\text{mV}/\mu\text{bar}$ . FR: 60Hz-12kHz. Plug wiring: balanced 1-2/3. Price: on application.

**■ UNISOUND**

Condor Electronics Ltd, 100 Combe Lane, London SW20 0AY. Tel: 01-946 0033.

**EM-82**

Electret capacitor microphone. Omni-directional. FR: 40Hz-18kHz. Impedance: 600

ohms. Sensitivity:  $-65\text{dB} \pm 3\text{dB}$ . Supply voltage: 1.1-1.5V. Cable:  $16\frac{1}{2}\text{ft}$  with plug. Size:  $6\frac{1}{8} \times \frac{1}{2}\text{in}$  diameter. Weight:  $6\frac{3}{4}\text{oz}$ . On/off switch. Holder. Lavalier cord. Windshield. Price: £9.95 (plus VAT).

**EM-82H**

Electret capacitor microphone. Omni-directional. FR: 40Hz-18kHz. Impedance: 50K. Sensitivity:  $-45\text{dB} \pm 3\text{dB}$ . Supply voltage: 1.1-1.5V. Cable:  $16\frac{1}{2}\text{ft}$  with plug. Size:  $6\frac{1}{8} \times \frac{1}{2}\text{in}$  diameter. Weight:  $6\frac{3}{4}\text{oz}$ . On/off switch. Holder. Lavalier cord. Windshield. Price: £9.95 (plus VAT).

**EM-83**

Electret capacitor microphone. Uni-directional. FR: 40Hz-18kHz. Impedance: 1K. Sensitivity:  $-68\text{dB} \pm 3\text{dB}$ . Supply voltage: 1.1-1.5V. Cable:  $16\frac{1}{2}\text{ft}$  with plug. Size:  $6\frac{1}{8} \times \frac{1}{2}\text{in}$  diameter. Weight:  $6\frac{3}{4}\text{oz}$ . On/off switch. Holder. Lavalier cord. Windshield. Price: £10.95 (plus VAT).

**EM-83H**

Electret capacitor microphone. Uni-directional. FR: 40Hz-18kHz. Impedance: 50K. Sensitivity:  $-50\text{dB} \pm 3\text{dB}$ . Supply voltage: 1.1-1.5V. Cable:  $16\frac{1}{2}\text{ft}$  with plug. Size:  $6\frac{1}{8} \times \frac{1}{2}\text{in}$  diameter. Weight: 6.9oz. On/off switch. Holder. Lavalier cord. Windshield. Price: £10.95 (plus VAT).

**EM84**

Tie-clip miniature electret capacitor microphone. FR: 50Hz-16kHz. Impedance: 600 ohms. Sensitivity:  $-65\text{dB} \pm 3\text{dB}$ . Supply voltage: 1.1-1.5V. Cable:  $13\frac{1}{2}\text{ft}$  with miniature plug. Size:  $1\frac{1}{8} \times \frac{1}{2}\text{in}$  approx. diameter. Weight: 2.3oz. Price: £9.95 (plus VAT).

**■ YAMAHA**

Natural Sound Systems Ltd, Strathcona Road, North Wembley HA9 8QL. Tel: 01-904 0141.

**DM 3000**

Cardioid dynamic microphone. FR: 150-15,000Hz. Output impedance: 600 ohms. Front-axis sensitivity:  $-79\text{dB} \pm 3\text{dB}$  (600 ohm),  $-60\text{dB} \pm 3\text{dB}$  (50K). It may be coupled to any Yamaha receiver or amplifier possessing a stand microphone jack. Price: on application.

**DM 500**

Stereo dynamic microphone. FR: 100-10,000Hz. Directionality: combination of two uni-directional cardioid microphones. Output impedance: 400 ohms  $\pm 30\%$  (at 1kHz). Front axis sensitivity:  $-74\text{dB} \pm 4\text{dB}$  (at 1kHz). Price: on application.

# Pickup Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ACOS

Cosmocord Ltd, Eleanor Cross Road,  
Waltham Cross, Herts EN8 7NX.  
Tel: Lea Valley 716666

### Dust Jockey ★

Record cleaner comprising brush to sweep the grooves and a plush pad to lay a film of anti static solution. Suction base for easy fitting. Automatic action. Designed to fit most single playing units and auto-changers when used manually. Price: on application.

## ■ ADASTRA

Adastra Electronics Ltd,  
Unit N22, Cncklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288

### Imp-Verta

Matches low impedance PU cartridges, microphones and tape heads into high impedance amplifier inputs. Solid state printed circuit device using silicon transistor. Automatically switched internal 9V battery. Negligible drain. Conversion factor approximately 20 (depending on load). Virtually no hum or signal loss. Metal case, black crackle finish. Size:  $5 \times 1\frac{1}{2} \times 1\frac{1}{2}$ in. Price: £3.45 (plus VAT).

### 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: £1.80 (plus VAT).

### Audio Leads

Over 40 different audio leads are now available in the Adastra hanging pack covering practically all audio applications.

### A.111/E.1300

Transistorised pre-amplifier with RIAA

equalisation circuitry, 47dB gain with F.R. of 30-20,000Hz. Internal 9V operation for amplifying signals from low output phono cartridges, tape heads, microphones etc. Metal case. On/off switch. Price: £3.75 (plus VAT).

### A.112/E.1310

Stereo, solid state 4 low noise silicon transistors pre-amplifier with built-in RIAA equalisation, gain of 34dB and F.R. of 30-20,000Hz. Input load, 50K, output from 50K-500K. Amplifies signals from 3mV to 38mV. Internal 9V operation. Channel separation over 50dB. Twin phono input and output sockets. On/off switch. Silver and black metal case. Price: £6.00 (plus VAT).

### A.114/E.1306

Completely cabinet mains operated stereo pre-amplifier suitable for low output magnetic cartridges, tape head etc. On/off switch. Tape/phono input selection, pilot lamp. Input impedance: up to 70K, cross-talk: -40dB, noise ration: -45dB. Input: 60mV max. Output: 2V. Price: £9.80 (plus VAT).

## ■ AUDIO PACKS

Tape Recorder Spares Ltd, -  
206-210 Hlderton 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.

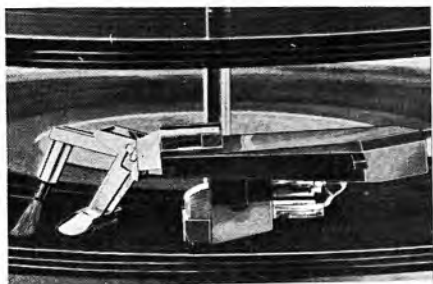
### Mains units

Three different 6-12V battery eliminators



Acos dust jockey

★ Indicates entry is illustrated



*Bib Model 45 Groov-Kleen*



*Bib stylus balance*



*Bib Compact Tape Head Cleaning Kit*



*Bib Cassette Storage Rack*

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 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. Prices on request.

#### ■ **BIB**

Bib Hi-Fi Accessories Ltd, PO Box 78,

Hemel Hempstead, Herts.

Tel: Hemel Hempstead, Herts HP2 4RH.

#### **Model 42/42L**

Record cleaner consisting of an aluminium arm with integral rest, fitted to a self-adhesive base with a brush and velvet roller attached. Price: £1.82 (plus VAT).

#### **Model 45 Auto-changer Groov-Kleen ★**

Finished in chrome and fits most units with flat top cartridge housings. Complete with flat and stylus cleaning brush. Adaptor available for the Zero 100. Price: 98p (plus VAT).

#### **Model 50 Groov-Kleen**

Has all the features of the Model 60 but is made in high quality plastic. The base is black and the cranked arm is white. Price: £1.08 (plus VAT).

#### **Model 43 Record care kit**

Contains Groov-Kleen in chrome finish, record dust off, spirit level, stylus and turntable cleaner. Price: £2.68 (plus VAT).

#### **Model 60 Groov-Kleen**

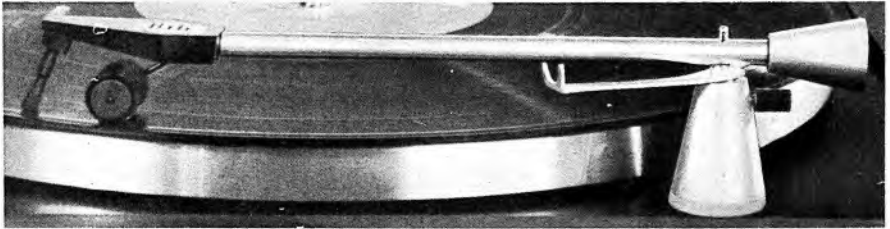
Chrome finished with armrest and counterweight to ensure light tracking. Reg. Design. Price: £1.72 (plus VAT).

#### **Stylus balance ★**

Made from non-magnetic material and fitted with non-scratch base. Measures from  $\frac{1}{4}$  to 5gm and calibrated to be accurate to within  $\frac{1}{10}$ gm. Simple to use and supplied with full instructions. In presentation case. Price: £1.24 (plus VAT).

#### **Hi-fi stereo hints and tips**

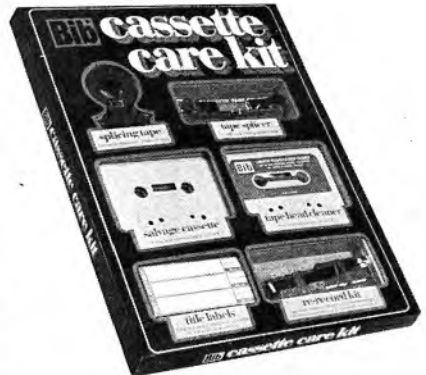
Book for hi-fi enthusiasts describing how to make the most of audio equipment. Contains illustrations, diagrams and reference tables. Written by John Borwick, B.Sc. Price: 38p (VAT exempt).



Bib Model 2000 Groov-Kleen



Bib Record Dust-Off



Bib Cassette Care Kit

**Stylus and turntable cleaning kit, Ref: B**

Includes: cleaning cloth, non-flammable antistatic cleaning fluid and small nylon brush applicator. Price: 38p (plus VAT).

**Record Handlers Ref: 25A**

For removing records from sleeves easily and protecting records from finger prints and dirt. Pack of 2. Price: 26p (plus VAT).

**Model 36A Record and stylus cleaning kit**

A kit for removing dust from records and stylus. Comprises two record cleaning cloths and a stylus cleaning brush. Price: 32p (plus VAT).

**Record Dust-off Ref: 48**

Record cleaning pad mounted on plastic handle. Size: 3½in long, 1in wide. Velvet cleaning pad with foam backing. Is applied to record on turntable while rotating to remove dust and dirt. Price: 26p (plus VAT).

**Model 2000 Groov-Kleen ★**

Cleans records while you play them. Improves reproduction and reduces record and stylus wear. Fitted with adjustable counterweight and arm rest. Finished in chrome. Spare replacement roller and tracking brush

provided. For low level turntables (model 2000/L). Price: £2.72 (plus 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: 66p (plus VAT).

**Ref: J. Compact Tape Head Cleaning Kit ★**

Ensures better recording and reproduction. Kit comprises bottle of tape head cleaner (non-flammable), 2 blue tape head applicator tools, 2 white tape head polisher tools, 10 applicator and polisher sticks, cleaning cloth, all enclosed in plastic wallet. Price: 68p (plus VAT).

**Ref: 65. Cassette Storage Rack ★**

Holds 30 cassettes in their library case. Measures 15½in long, 9in high and 2½in deep (405 × 230 × 64mm). Finished in simulated teak, and fitted with inserts so that cassettes can be removed quickly and easily. Price: £4.80 (plus VAT).



★ Indicates entry is illustrated

**Ref: T/5**

Cassette colour-coded title labels. Pack of 45 in three colours, self-adhesive. Price: 39p per pack (plus VAT).

**Ref: 45. Cassette Re-Recorded Kit**

Ideal for converting Musicassettes for further recordings and to make your own recorded cassettes erase-proof. Kit contains special tab removing and winding tool. 24 re-record tabs and 27 self-adhesive colour-coded title labels. Supplied in plastic container with instructions. Price: 80p (plus VAT).

**Ref: 51. Cassette Care Kit ★**

Containing splicing tape, tape splicer, salvage cassette, tape head cleaner, title labels, re-record kit. Price: on application.

■ **B + J IMPORTS**

66 Woodcock Hill, Kenton.  
Harrow HA3 0JF. Tel: 01-907 6667.

**Stereo Stamp**

Rubber stamp enabling records and tapes to be labelled for easy recognition. Price: 40p including postage.

■ **BSR**

BSR Ltd, Monarch Works, Cradley Heath,  
Warley, West Midlands B64 5QH.  
Tel: Cradley Heath 69272.

**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). Price: 59p (plus VAT).

■ **CLENDISC (Mail Order) LTD**

7 Trinity Court, Gray's Inn Road,  
London WC1X 8JX. Tel: 01-837 9088.

**Clendisc**

An anti-static cleaner and preservative for records, photographic and optical lenses, copying machines, tape heads and computers. 4 fl oz bottles. Price: 14p (plus VAT).

**Clendisc Cleaning Pad**

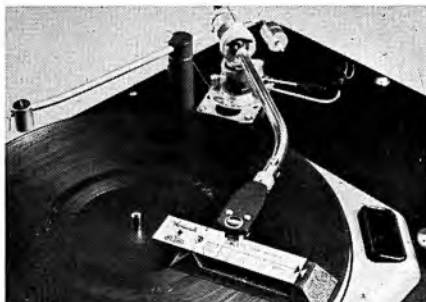
Pad impregnated with Clendisc fluid which assists in the removal of dust and dirt and also neutralises any electrostatic charges present. Price: 14p (plus VAT).

■ **COLTON**

Musonic Ltd, 34-38 Verulam Road,  
St. Albans, Herts AL3 4DF.  
Tel: St. Albans 50611

**Electroduster**

A pad of soft but firm fibres traverse the record, lifting dust and dirt out of the groove. It is then deposited onto a separate felt pad.



Colton Variscale



Connoisseur stylus balance



Decca record brush

Airborne dust settling on a record while it is playing is instantly picked up. Price: £5.89 (including VAT).

**Variscale**

A precision engineered stylus balance for determining stylus pressure from  $\frac{1}{2}$  to 5 gm (adequate to cover all modern lightweight pick-ups). Finished in silver on black base. Price: £1.36 (including VAT).

■ **CONNOISSEUR**

A.R. Sugden & Co (Engineers) Ltd,  
Connoisseur Works, Atlas Mill Road,  
Brighouse, Yorks HD6 1ES.  
Tel: Brighouse 2142.

**Connoisseur Stylus Balance ★**

Precision stylus balance with sliding weight adjustment. Scale calibrated 0-6gm. Simple operation giving accurate stylus pressure settings. Price: £1.30 (including VAT).

★ Indicates entry is illustrated

■ **DECCA**

Decca Special Products, Ingate Place, Queenstown Road, London SW8 3NT. Tel: 01-622 6677.

**Magnetic bias compensator**

Neat, simple, unobtrusive device using magnetism precisely to neutralise the forces which draw a pickup towards the centre of the turntable. Type A for Mk I and Mk I 'Super' *ffss* arms, and for Deram ARI arm. Price: £1.03 (plus VAT).

**Centre locator**

Fits on *ffss* arm like *ffss* head. Pickup arm is correctly positioned when the locator moulding fits the turntable centre spindle. Price: 28p (including VAT).

**Decalift**

Motorised lifting and lowering device which can be controlled at the turntable and/or remotely. Supplied with 6.3V AC transformer (suitable for 110/230V). Price: £7.70 (plus VAT).

**London cartridge adaptors**

Type A. Simple slide-on adaptor for use with *ffss* arms (Mk I, Mk I Super and Professional) to accommodate the London cartridge. Automatically adjusts playing weight. Price: £1.29 (plus VAT). Type B. Simple slide-on adaptor for use with International arm to accommodate the London cartridge. Collar arrangement to adjust for correct playing weight. Price: 21p (plus VAT).

**Record Brush ★**

One million conductive man-made bristles, each 8-9 microns in diameter. Cleans the record of dust and static. No anti-static fluids required. Price: £4.50 (plus VAT).

**Record Cleaner**

An electrically conducting arm carrying a brush made from 20,000 conducting man-made bristles. Can be accommodated on most turntables. Requires no anti-static fluid. Price: £4.50 (plus VAT).

■ **DISCWASHER**

Distributor: Unilet Products Ltd, 35 High Street, New Malden, Surrey KT3 4BY. Tel: 01-942 9567.

**Discwasher**

Disc mop on wooden handle, includes anti-static cleaning fluid. Price: £5.95 including postage.

■ **EAGLE INTERNATIONAL**

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



Eagle PRE 402 pickup preamp

**PRE 402 ★**

Mains powered stereo pickup preamplifier for magnetic cartridges including Eagle LC 05 and LC 07. Provided with dual phono sockets. RIAA equalization. Price: £8 (plus VAT).

**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. Price: £6 (plus VAT).

■ **EXPERT PICKUPS LTD**

PO Box No. 3, Ashtead, Surrey KT21 2QD. Tel. Ashtead 76604.

**Replacement stylus service**

For detachable cantilever systems using client's own stylus assembly. Radius to choice; from 0.5 thou (stereo) to 4 thou (78 oversize). Ellipticals where suitable. Radius checked using X 500 magnification.

**Grade A transcription diamond styli**

Finest quality, highly polished, giving minimum background noise and optimum results. Spherical or elliptical tip.

**Grade B**

Commercial standard, 0.5 thou to 2.5 thou only. Oversize sapphires and diamonds (Grade A only) for Pathe and Edison reproducers formed and fitted. Expert Pickup diamonds are manufactured only to customers' specifications.

**To collectors of 78rpm records**

Advice available as to the best method of reproducing from old 78rpm records.

**Replacement styli**

Complete range of new replacement styli in sapphire and commercial diamond, also professional Grade A diamonds of our own manufacture.

**Leak pickup servicing**

Sole agents for the servicing of Leak Mk I and Mk II pickups.

**EMI pickup servicing**

Sole agents for the repair of the EMI EPU 100 pickup head and arm.

★ Indicates entry is illustrated



*Groovac Vacuum Record Cleaner*

#### ■ GOLDRING

Goldring Ltd, 10 Bayford Street, Hackney, London E8 3SE. Tel: 01-985 1152.

#### Lencoclean

Record cleaning device mounted on turntable. Tracks in front of the pickup, dispensing a narrow band of special fluid. Leaves no deposit on record, cleans the groove and cools the point contact. Keeps stylus point clean. Price: £4.50 (plus VAT).

#### Lencoclean super refill

Price: 90p (plus VAT).

#### Goldring/Lenco VV7

Stereo preamplifier for magnetic cartridges. Input: 1mV 47K. Noise level: -60dB. Output: 100mV RMS. Mains: 200-240V 50Hz. Size: 4¼ × 2 × 1½in. Price: £12 (plus VAT).

#### ■ GROOVAC

R.I. Audio, Kernick Road, Penryn, Cornwall TR10 9DQ. Tel: Penryn 72753.

#### Vacuum record cleaner ★

Consists of a precision lightweight arm and a suction unit acoustically isolated in a special enclosure. Fitted with mains switch and indicator (unit inaudible at a distance of 2 metres). Tracking force 0.6gm. Fine hairs incorporated in nozzle to facilitate removal of dust from bottom of grooves. Counterbalanced. Fixes by magnetic base, or self-adhesive pad available as an extra. Adjustable height. Integral rest incorporates new anti-skate device. Price: £13.90 (plus VAT).

#### ■ G. F. C. HADCOCK

Audio Division, The Old Vicarage, Doveridge, Derby DE6 5NN. Tel: Uttoxeter 2452.

#### GH Uni-lift Mk III

Raising and lowering device suitable for most

pickup arms. Two-hole fixing for stability. Allen key provided for height adjustment and for controlling rate of descent. Suitable for sprung pickup mounting boards. Damped adjustable rate of descent ensures accurate lowering and cueing. Price: £5.40 (plus VAT).

#### ■ HOWLAND-WEST LTD

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

#### Howland-West 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: 40p (plus VAT).

#### Discduster ★

Record cleaning instrument comprising lightweight arm equipped with brush and cylindrical pad. Balance and height adjustable. Heavy stand permits full operation without need for permanent fixing to motor board. Supplied with two spare brushes and two spare cylinders. Polished tubular arm with black base. Price: £1.80 (plus VAT).

#### ■ LENNARD DEVELOPMENTS LTD

206 Chase Side, Enfield EN2 0QX. Tel: 01-363 8238.

#### Play-fair Stylus Timer

Manually operated device which indicates when stylus is due for replacement. Self-adhesive to attach to motor board if desired. Swiss mechanism. Neat plastic case with instructions. Two models: one for sapphires, one for diamonds. Price (either model): 85p (plus VAT).

#### Play-fair Cleaning Pad

Anti-static. Price: 12p (plus VAT).

#### Play-fair Stylus Cleaner

Cleaning fluid with separate brush. In presentation case. Price: 40p (plus VAT).

#### Play-fair Antistatic Cleaning Fluid

30cc polythene bottle. Price: 24p (plus VAT).

#### Play-fair Discoda

Record sleeve indexing device for quick identification of records. Price: 3 for 12p, 12 for 39p (plus VAT). (Bulk prices on application).

#### Micro-Diamond replacement styli

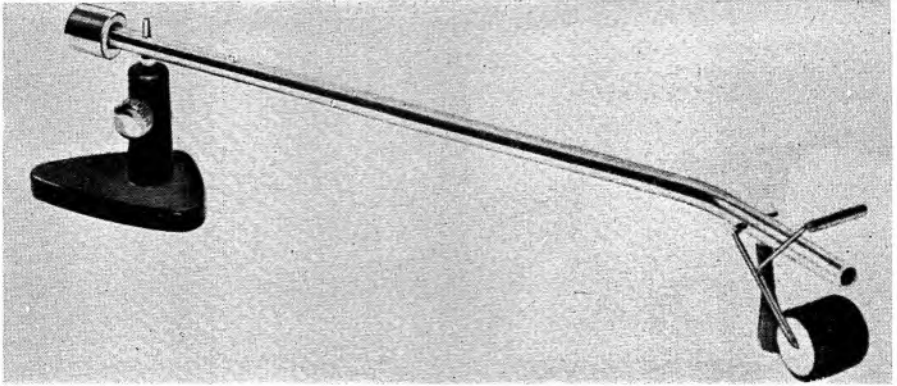
Comprehensive range. Also retipping service. Price: on application.

#### Micro-Sapphire replacement styli

Comprehensive range. Also retipping service. Price: on application.

#### Play-fair Discoduster

Record cleaning device. Two models; one for single play record decks, one for auto-



*Howland-West Discduster*

changers. Price: (single) £1.10; (record changer) 52p. All prices exclude VAT.

#### ■ LINN PRODUCTS LTD

235 Drakemire Drive, Castlemilk,  
Glasgow G45 9SZ. Tel: 041-634 3860.

#### Clean-ol

A natural fibre (Angora goat hair) disc cleaning device, used dry without antistatic fluids or water. Does not generate static and removes smallest particles from the bottom of the groove. Price: £1.51 (including VAT).

#### ■ METROCARE

Metrosound Audio Products Ltd,  
Audio Works, Cartersfield Road,  
Waltham Abbey, Essex EN9 1JF.  
Tel: Lea Valley 712712.

#### M.3 Record Care Kit No. 1

Comprising bottle of Metro-Spray spirit-based anti-static record cleaning fluid; special texture sponge applicator with moulded handle; and soft stylus cleaning brush. Price: 50p (plus VAT).

#### M4 Klenzatape Kit

Reel to reel tape recorder cleaner tape. Two 3in spools and bottle of specially formulated cleaning fluid; complete with polythene storage wallet. Price: 88p (plus VAT).

#### M 11 Hi-Fi Stylus Cleaning Kit

Bottle of specially developed mild solvent fluid. Moulded plastic retaining clip on bottle for soft nylon cleaning brush. Price: 44p (plus VAT).

#### M26 Ioniser

High-fidelity record cleaner. Permanently anti-static humid soft velvet enclosed in plastic moulding. Price: 55p (plus VAT).

#### M32 Head Cleaner Cassette

Complete cassette conforming to international specification; loaded with silicone impregnated, non-abrasive, fibrous tape; contained in plastic library case. Price: 50p (plus VAT).

#### M39 Cartridge Head and Capstan Cleaner

8-track cartridge moulding containing fluid tank with soft felt pad activated by sprung lever in rear cavity. Bottle of specially formulated cleaning fluid and nylon tuft brush for cleaning pad. Price: £1.10 (plus VAT).

#### M43 Super Groovemaster

High quality record cleaning arm finished in satin anodised aluminium and contrasting black; pivoted on dye-case free standing base. Brush supplied for cleaning velvet roller after use. Price: £1.98 (plus VAT).

#### M45 Percy Wilson Discmaster

Dual purpose record cleaning arm; includes wet cleaning version for pre-cleaning badly contaminated discs and dry version similar in specification to the M43 Groovemaster. Held in presentation tray complete with 100cc record cleaning fluid. Price: £3.08 (plus VAT).

#### M46 Stereo Test Cassette and Music Sampler

Pre-recorded test cassette containing commentary and music for correct phasing and setting up of cassette players. Price: £2.20 (plus VAT).

#### M48 Dolby Tone Test Cassette

A very carefully produced pre-recorded tape for correct setting up, alignment and calibration of high quality Dolby cassette players. Price: £1.80 (plus VAT).

#### M52 Metrocure Hi-Fi Kit No. 2

Moulded record cleaner with plush velvet foam backed pad held in protective tray. Bottle

★ Indicates entry is illustrated



Micro MSB-1

of record/stylus cleaning fluid and stylus cleaning brush. Price: 72p (plus VAT).

#### **M53 Metrocare 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: £1.20 (plus VAT).

#### **M54 Metrocare Hi-Fi Kit No. 4**

Metrocare Super Groovemaster, Ioniser, record/stylus cleaning fluid and stylus cleaning brush contained in permanent moulded storage case with tinted transparent cover. Price: £3.03 (plus VAT).

#### **M55 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 1½gm. Price: £1 (plus VAT).

#### **M60 Junior Groovemaster**

Record cleaning arm finished in bright chrome plated plastic, pivoted on adjustable self-adhesive base. Price: £1.32 (plus VAT).

#### **M62 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: 50p (plus VAT).

#### **M64 Phono Cartridge Kit**

Comprising microscope, screwdriver, tweezers, stylus cleaning fluid and brush. An essential for the safe installation and maintenance of pickup cartridges. Price: £1.80 (plus VAT).

#### **M66 Stylus Balance**

A professional stylus balance calibrated to within 1/20gm with scale divisions at 1/100gm between 0 and 3gm. Ensures accurate tracking weight of pickup in tone arm. Price: £2.50 (plus VAT).

Replacement kits and fluid are available indi-

vidually for all Metrocare Hi-Fi Audio Accessories.

Many other Metrocare products are available not listed here. Included among these are accessories for Thorens turntables.

#### ■ MICRO

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

#### **MSB-1 ★**

Micro shock absorber. Microsorber employs air-damped high efficiency materials to eliminate acoustic feedback to the record playing deck. Adjustable for height to equalise unbalanced weight of turntable. Price (set of four): £5.50 (plus VAT).

#### ■ KEITH MONKS (AUDIO) LTD

26-28 Reading Road South, Fleet, near Aldershot, Hants. Tel: Fleet 7316.

#### **Professional Record Cleaning Machine ★**

Used by broadcasting companies, sound studios, record retailers and gramophone libraries. Special washing, scrubbing and suction action leaves record clean and dry. Retail price: (single) £310.66 (plus VAT); (double) £426.66 (plus VAT).

#### **KMAL/S/SL**

Spirit level. High quality level with adhesive base. Metal. Price: £1.10 (plus VAT).

#### **KMAL/S/TFL**

Set of 3 adjustable feet for turntable and spirit level. All items have adjustable base. All metal construction with felt pads on feet. Price: £3.33 (plus VAT).

#### **KMAI/S/BA**

Record sweeper. High quality brush assembly with squirrel hairs, copper threads and connection for static to record deck. Price: £6 (plus VAT).

#### **KMAI/S/BAI**

Record sweeper with stylus gauge. As KMAL/S/BA but with built-in stylus gauge with adjustment up to 1/100gm. Price: £8.80 (plus VAT).

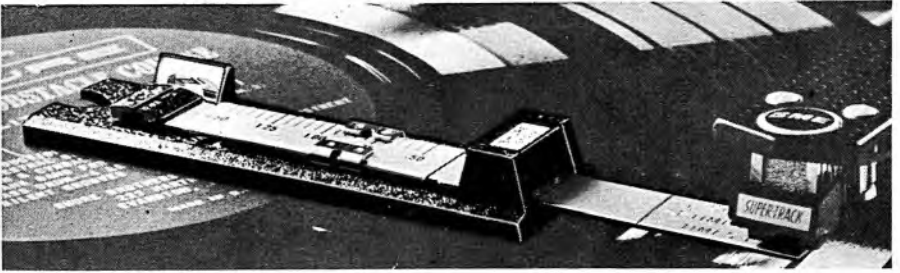
#### **Record Cleaning Service**

A record cleaning service is available to the public using Keith Monk's equipment. Further details on request.

#### ■ QAS

Quality Audio Supplies, Wollaton Road, Beeston, Nottingham NG9 2PB. Tel: Nottingham 256141.

Wide range of individually blister-packed audio accessories including phono plugs, DIN



Shure SFG2 Stylus Tracking Force Gauge



Keith Monks Professional Cleaning Machine



Transcriptors Stylus Scales

plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, connecting leads with all types of terminations, audio switching units and remote control stations.

#### Dusta-Disc

Counterbalanced arm to mount alongside turntable for cleaning records while playing. Comprises base with height adjustment, arm with counterbalance weight, super-fine brush for cleaning grooves, plus a soft fabric roller for applying anti-static fluid.

See Speaker Accessories Section for details of other QAS equipment

#### ■ ROSS

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.

#### Connectors

Plugs and sockets, chassis mounting and inline, to DIN and USA standards.

#### ■ SHURE ELECTRONICS LTD

Eccleston Road, Maidstone, Kent ME15 6AU. Tel: Maidstone 59881.

#### SFG2 Stylus gauge ★

Accurate beam balance type gauge designed for measuring tracking force in the range of 0.5gm to 3gm. Measures existing playing weight of arm, or can be used to adjust arm to a desired tracking force. Price: £3 (plus VAT).

#### M64-2F

Preamplifier for use with magnetic pickup head and amplifier not having sensitive enough input. Full specification and price in Amplifier Section.

#### ■ TRANSCRIPTORS

Transcriptors Ltd, Mycott House, Station Road, Boreham Wood, Herts. Tel: 01-953 9851.

#### Stylus Scales ★

Jewelled unipivot, with bubble readout, sensitive to 0.01gm, accurate to better than 0.05gm. All aluminium construction. Price: £5 (plus VAT).

★ Indicates entry is illustrated



Watts Manual Parastat with Humid Mop

### ■ CECIL E. WATTS LTD

Darby House, Sunbury-on-Thames.  
Tel: Sunbury-on-Thames 83252.

#### Watts Dust Bug

Claimed to be the most efficient method of removing static and dust from records as they are played. Instantly fitted, suitable for all types of records. Record quality is improved, surface noise and wear reduced. Price: £1.36 (including VAT).

#### Watts Disc Preener

For record maintenance where anti-static agents are not desirable (where stylus force is less than 2gm). Price: 47p (including VAT).

#### Watts Manual Parastat with Humid Mop ★

Manual model Parastat record cleaning machine. For cleaning and applying anti-static agents to LP records. Complete with humid mop for cleaning bristles and velvet pads. Price: £3.57 (including VAT).

#### Watts Manual Parastat

Available separately (without Humid Mop). Price: £3.24 (including VAT).

#### Watts Humid Mop ★

Available separately. Price: 33p (including VAT).

#### Hi-Fi Parastat Model Mk 4

Gramophone record maintenance and stylus cleaning kit. Designed for use on records in new condition which are played with pickups requiring very low tracking pressures. Price: £2.97 (including VAT).

#### Watts Stylus Cleaner

As included with Hi-Fi Parastat kit. Price: 30p (including VAT).

#### Watts Spares and Replacements

Dust bug nylon bristle and plush pad. Price: 14p (including VAT).

New Formula Dispenser. Price: (½oz) 20½p

(including VAT); (1oz) 33p (including VAT).

Preener Wicks. Price: (packet of four) 14p (including VAT).

Manual Parastat Brush. Price: 87p (including VAT).

Parastat Nylon Velvet Pad Covers. Price: 27p (including VAT) a pair.

Parastat White PVC Sponge. Price: 6½p (including VAT).

Humid Mop (sponge and four wicks). Price: 20½p (including VAT).

Hi-Fi Parastat Distilled Water Dispenser. Price: 27p (including VAT).

Hi-Fi Parastat pad cover and ribbons. Price: 14p (including 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: 75p, postage and packing included.

#### W.S.L. Side Thrust Corrector

Pulley device which may be fitted to any pickup to correct side thrust. Should be used in conjunction with W.S.L. Blank Disc for precise elimination of side thrust. Price: 45p, postage and packing included.

### ■ ZEROSTAT

Zerostat Instruments Ltd,  
9 Station Road, Huntingdon, Cambs.  
Tel: St Ives 62225.

#### Anti-Static Pistol

Where static is a problem, the use of the Zerostat pistol in conjunction with existing record care products assists the cleaning process and eliminates the subsequent attraction of airborne dust particles, reducing background noise and disc wear. The pistol which is hand-operated uses a high energy piezoelectric element to produce a high corona discharge at the barrel of the device. The ions produced are attracted to oppositely-charged surfaces until the surface charge is neutralised. The pistol produces positive ions on squeezing the trigger, negative ions on release. Price: £6.69 (including VAT).

# T2001

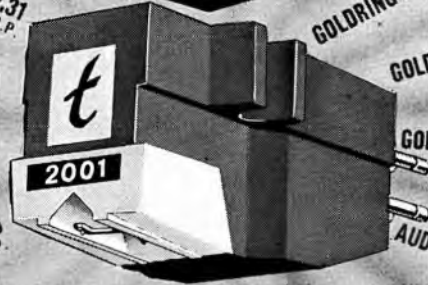
THIS CARTRIDGE CAN EQUAL THE PERFORMANCE OF ALL THESE .....

SHURE M75/B TYPE 2 £12.31  
Rec. R.P.

SHURE M75/G £8.10  
Rec. R.P.

SHURE M44/7 £7.45  
Rec. R.P.

PHILIPS GP400 £17.06  
Rec. R.P.



GOLDRING G800H £8.10  
Rec. R.P.

GOLDRING G820 £11.34  
Rec. R.P.

GOLDRING G800 £8.10  
Rec. R.P.

AUDIO TECHNICA AT/66 £5.98  
Rec. R.P.

## THE NEW *tenorel* STEREO 'MAGNEDUCT' CARTRIDGE

# £5.45

EXCL. VAT

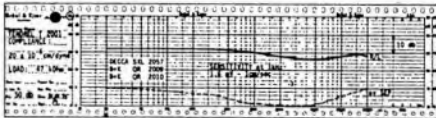
Recommended Retail Price

MADE IN HOLLAND

### TECHNICAL SPECIFICATIONS:

Separation.....	More than 25db at 1000 Hz
Frequency Response.....	15 to 25000 Hz
Compliance.....	20 x 10 <sup>-6</sup> CM/DYNE
Output.....	5.5 mV at 1000 Hz - 5cm/sec
Playing weight.....	1½ - 3 grammes
Channel Balance.....	2db at 1 KHz-dB
Tip Mass.....	1 mg
Stylus Radius.....	.0006-15u diamond
Load.....	47K ohms
Weight.....	7 grammes
Inductance.....	550 mH
DC Resistance.....	520 ohms
Measuring Records.....	DECCA SXL 2057 B + KOR 2009

a cartridge of tomorrow...TODAY!



# Condor

The fastest bird in the business

CONDOR ELECTRONICS LIMITED, 100 COOMBE LANE, LONDON SW20 0AY.  
TELEPHONE: 01-946 0033 (4 LINES). TELEX: 928502.

Distributors of cartridges, styli, record cleaners, condenser microphones, headphones, and adaptors etc. Guaranteed 24 hour despatch service.



# Acos for sound enjoyment

**Acos Record and Tape  
Care Accessories**  
Use Acos Care products  
to maintain your soft-  
ware fidelity.



**Acos Lustre Tone Arm**  
The proven quality tone  
arm for the enthusiast  
incorporating "dial a  
magnet" anti skating.



**Acos Replacement  
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We can provide mono  
and stereo cartridge  
types for Acos/B.S.P./  
Collart/E.R./Philips/  
Garrard/Pye/Goldring/  
Ronette/Sonotone

The Acos M6 range of  
magnetic cartridges  
are now incorporated  
in many unit audio  
equipments and pro-  
vide high performance  
at economic costs both  
for 2 and 4 channel  
stereo systems.



**Acos Replacement  
Styli** - protect your  
records and get sound  
enjoyment by obtaining  
your replacement styli  
from the full range  
available from one of  
the oldest manufacturers  
of cartridges and styli.



**Acos/Martin Microdan  
Loudspeakers**  
25 watts from a 6 1/2"  
cube. This incredible  
performance from a  
rigid IB critically  
damped cabinet.  
60Hz - 16KHz, 8 ohms,  
ideal for 2 and 4  
channel stereo systems.



Cosmocord Ltd, Eleanor Cross Rd, Waltham Cross, Hertfordshire EN8 7NX  
Telephone: Lea Valley 716666 , Telex 24294.

# Pickups and Arms

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ACOS

Cosmocord Ltd, Eleanor Cross Road,  
Waltham Cross, Herts EN8 7NX.  
Tel: Lea Valley 716666.

### GP91-1 SC ★

Mono/stereo compatible crystal cartridge. Turnover dual stylus. Pw: 3-6gm. Tip mass: 2.5mg (sapphire), 2.8mg (diamond). Dynamic compliance: vertical  $2 \times 10^{-6}$  cm/dyne, lateral  $4 \times 10^{-6}$  cm/dyne. FR: 50Hz-12kHz. Output: 178mV. Min load 1M. Price: (diamond) £1.78 (plus VAT); (sapphire) £1.38 (plus VAT).

### GP92-1 SC

Mono ceramic cartridge. Turnover stylus assembly. Stereo/LP 0.6/0.8 thou diamond or sapphire, 78 2.5 thou sapphire. Pw: 4-10gm. Tip mass: 2.5mg dynamic. Compliance:  $2.5 \times 10^{-6}$ . FR: 150Hz-16kHz  $\pm 3$ dB, 12dB down at 30Hz relative to 1kHz. Output: 100mV. Load impedance 1M. Low temperature coefficient. Price: (diamond) £1.93 (plus VAT); (sapphire) £1.51 (plus VAT).

### GP93 ★

Stereo crystal cartridge. Turnover dual stylus. Stylus 0.6/0.8 thou diamond or sapphire, 2.5 thou sapphire. Pw: 4-8gm. Tip mass: 2.5mg dynamic. Compliance: vertical  $2.2 \times 10^{-6}$  cm/dyne, lateral  $2.2 \times 10^{-6}$  cm/dyne. FR: flat 250Hz-18kHz 3dB down at 100Hz relative to 1kHz. Output: 250mV. Rec load 1M. Low temperature coefficient. Price: (diamond) £2.38 (plus VAT); (sapphire) £1.98 (plus VAT).

### GP94

Stereo ceramic cartridge. Turnover dual stylus. Stylus 0.6/0.8 thou diamond or sapphire, 2.5 thou sapphire. Pw: 2-4gm. Tip mass: 2.5mg dynamic. Compliance: lateral  $5 \times 10^{-6}$  cm/dyne, vertical  $6 \times 10^{-6}$  cm/dyne. FR: flat 100Hz-12kHz, 7-8dB at 30Hz relative to 1kHz. Separation 20dB at 1kHz, 8dB at 10kHz, minimum. Output: 80mV average. Load impedance: 1M each channel. High

capacity ceramic elements (1000pF). Low temperature coefficient. Price: (diamond) £2.74 (plus VAT); (sapphire) £2.32 (plus VAT).

### GP104

Stereo ceramic cartridge. Two versions; turnover and single-sided. Stylus: 0.5/0.7 thou and 2.5/3 thou. Sapphire or diamond. Pw: 3-4gm. Tip mass: 2-3mg. Compliance: (static) lateral  $20 \times 10^{-6}$ , vertical  $17 \times 10^{-6}$ ; (dynamic) lateral  $6 \times 10^{-6}$ , vertical  $5 \times 10^{-6}$ . Separation: 20dB at 1kHz, 7dB at 10kHz. FR: 70Hz-15kHz  $\pm 5$ dB. Output: 100mV. Rec load minimum 1M. Prices: (diamond) £3.07 (plus VAT); (sapphire) £2.68 (plus VAT).

### GP104 Transcription

Stereo ceramic cartridge. Single sided. Diamond stylus 0.5/0.7 thou. Pw: 2-5gm. Tip mass: 1.6-2.6mg. Compliance: (static) lateral  $20 \times 10^{-6}$  cm/dyne, vertical  $17 \times 10^{-6}$  cm/dyne; (dynamic) lateral  $6 \times 10^{-6}$  cm/dyne, vertical  $5 \times 10^{-6}$  cm/dyne. FR: 70Hz-12kHz  $\pm 5$ dB. Channel separation not less than 20dB at 1kHz. Output: 100mV. Rec load: 1M. Price: (diamond) £3.29 (plus VAT).

### M6 ★

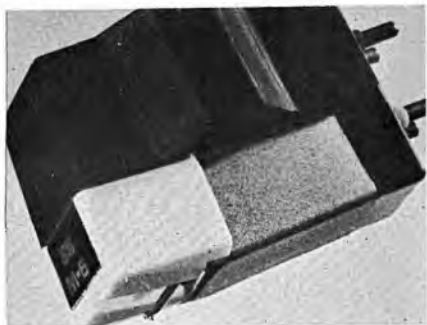
Stereo magnetic cartridge. Sensitivity: 1.25mV at 1cm/sec. Rec load: 47K. Separation:  $>15$ dB at 1kHz. FR: 20Hz-20kHz. Stylus: 0.5/0.7 thou. Pw: 1½-2½gm. Price: (diamond) £5.30 (plus VAT).



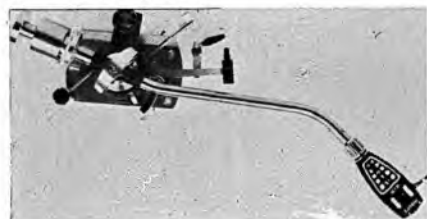
Acos GP93 Crystal Stereo



Acos GP91-1SC



Acos M6 cartridge



Acos Lustre arm

#### M6E

Stereo magnetic cartridge. Sensitivity: 1.25mV at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR: 10Hz-25kHz. Stylus: 0.25 × 0.8 thou. Pw: 1½-2gm. Price: (diamond) £11.84 (plus VAT).

#### M6EX

Stereo magnetic cartridge. Sensitivity: 0.8mV at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR: 10Hz-30kHz. Stylus: 0.25 × 0.8 thou. Pw: 1-2gm. Price: (diamond) £15.06 (plus VAT).

#### Lustre ★

Transcription pickup arm with headshell. Magnetic bias compensation. Easy height and overhand adjustment. Direct reading stylus pressure gauge with ½gm calibrated marks. Machine finish. Supplied with two headshells. Price: (diamond) £29.45 (plus VAT).

#### ■ ADASTRA

Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU. Tel: 01-452 6288.

#### D.11/J2203

Magnetic cartridge. Stylus: 0.7 thou diamond. Pw: 2gm. Compliance:  $9 \times 10^{-6}$  cm/dyne. FR: 30Hz-18kHz. Separation: 28dB at 1kHz. Output: 6mV per channel. Rec. load: 47K. Price: £4.75 (plus VAT). Replacement stylus (D.12/JSPI) £2.85 (plus VAT).

#### D.13/J2203E

Moving magnet stereo cartridge. Stylus: 0.8 × 0.3 thou diamond. All other details as per J2203 above. Price: £8.50 (including VAT); £10.00 (plus VAT).

#### D.14/J3000E

Moving magnet stereo cartridge. Stylus: 0.8 × 0.3 thou diamond. Pw: 1½-2½gm. Compliance:  $12 \times 10^{-6}$  cm/dyne. FR: 20Hz-20kHz. Separation: 20dB. Balance: within ±1dB. Rec. load: 2M. Output: 5mV. Supplied in presentation case with spare stylus. Price: (including spare elliptical diamond stylus) £13.15 (plus VAT).

#### J1111

Complete pickup arm with moving magnet stereo cartridge. Stylus: 0.7 thou diamond. Pw: 1½-2½gm. Compliance:  $12 \times 10^{-6}$  cm/dyne. FR: 20Hz-20kHz. Separation: 20dB. Balance: within ±1dB. Overall length: 11¼in. Effective length: 8¾in. Output: 5mV. Precision turned stainless steel arm. Weight/bias adjustment. Tracking error: 5°. Self-lubricating ball bearings. Supplied with D11/J2203 cartridge but will accept most other makes. Price: £10.25 (plus VAT).

#### ■ AUDIO DYNAMICS CORPORATION

Sole UK agents: Hisonic Ltd, Eccleston Road, Tovil, Maidstone, Kent. Tel: Maidstone 57258.

#### ADC XLM ★

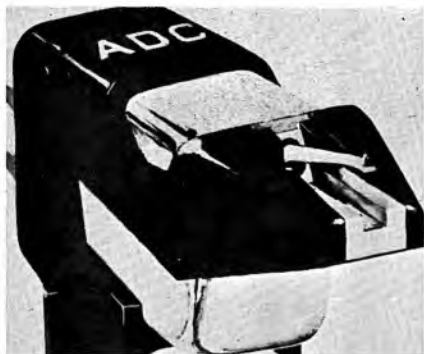
Stereo cartridge. Induced magnet with controlled electrodynamic damping. Sensitivity: 4mV at 5.5cm/sec. Separation: 25dB 50Hz-25kHz. FR: 10Hz-25kHz ±2dB. Vertical tracking angle 15°. Pw: 0.4-1gm. Stylus: 0.3 × 0.7 thou. Rec load: 47K. Compliance:  $50 \times 10^{-6}$  cm/dyne. Price: £28.40 (plus VAT).

#### ADC VLM ★

Stereo cartridge. Induced magnet with controlled electrodynamic damping. Sensitivity: 4mV at 5.5cm/sec. Separation: 25dB 50Hz-25kHz. FR: 10Hz-22kHz ±2.5dB. Vertical tracking angle 15°. Pw: 0.75-1.5gm. Stylus: 0.3 × 0.7 thou. Rec load: 47K. Compliance:  $35 \times 10^{-6}$  cm/dyne. Price: £23.20 (plus VAT).

#### ADC Q36

Stereo cartridge. Induced magnet with controlled electrodynamic damping. Sensitivity: 4.5mV at 5.5cm/sec. Separation: 25dB. FR: 10Hz-20kHz ±3dB. Vertical tracking angle 15°. Pw: 0.75-1.5gm. Stylus: 0.3 × 0.7 thou. Rec load: 47K. Compliance:  $30 \times 10^{-6}$  cm/dyne. Price: £13.95 (plus VAT).



ADC XLM\$VLM

**ADC Q32**

Stereo cartridge. Induced magnet with controlled electrodynamic damping. Sensitivity: 4.5mV at 5.5cm/sec. Separation: 20dB. FR: 10Hz-20kHz  $\pm$ 3dB. Vertical tracking angle 15°. Pw: 1-2gm. Stylus: 0.3  $\times$  0.7 thou. Rec load: 47K. Compliance: 25  $\times$  10<sup>-6</sup>cm/dyne. Price: £10.30 (plus VAT).

**ADC Q30**

Stereo cartridge. Induced magnet with controlled electrodynamic damping. Sensitivity: 4.5mV. Separation: 20dB. FR: 10Hz-18kHz  $\pm$ 3dB. Vertical tracking angle 15°. Pw: 1-2gm. Stylus: 0.5 thou spherical. Rec load: 47K. Compliance: 25  $\times$  10<sup>-6</sup>cm/dyne. Price: £7.50 (plus VAT).

## ■ AUDIO TECHNICA

Distributors: Shiro (UK) Ltd, Shiro House, The Ridgeway, Iver, Bucks SL0 9JL. Tel: Iver 652222.

**AT1005 Mk II**

Tubular counter-balanced pickup arm. Length 12 $\frac{3}{4}$ in. Effective length: 9 $\frac{1}{2}$ in. Bias compensation. Calibrated weight adjustment. Hydraulic lift and lowering. Tracking error: 1.5°.

**AT-14Sa**

Stereo/CD-4 V-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  $\times$  10<sup>-6</sup>cm/dyne.

**AT-15Sa**

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  $\times$  10<sup>-6</sup>cm/dyne. Channel separation: 33dB. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

**AT-20SLa**

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel balance: -1dB. Channel separation: -35dB. Output: 2.7mV at 5cm/sec. Compliance: 32  $\times$  10<sup>-6</sup>cm/dyne.

**AT10**

Stereo V-magnetic cartridge. Stylus: 0.7 spherical diamond. FR: 20Hz-20kHz. Channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec.

**AT11E**

Stereo V-magnetic cartridge. Stylus: 0.4  $\times$  0.7 elliptical diamond. FR: 15Hz-28kHz. Channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec.

**AT12S**

Stereo/CD-4 V-magnetic cartridge. Stylus: Shibata diamond. FR: 10Hz-45kHz. Channel separation: 30dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

**AT13E**

Stereo V-magnetic cartridge. Stylus: 0.2  $\times$  0.7 nude elliptical diamond. FR: 10Hz-45kHz. Channel separation: 30dB. Channel balance: 2dB. Output: 4.2mV at 5cm/sec.

**AT14S**

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-45kHz. Channel separation: 32dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

**AT15S**

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-45kHz.

**AT-20SL**

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel separation: 35dB. Channel balance: 1dB. Output: 2.7mV at 5cm/sec.

Prices for cartridges range from around £8 to £50. Full details on request.

**AT1005 II**

Tubular counter-balanced pickup arm. Overall length: 323mm. Effective length: 240mm. Tracking force: 0.30gm. Cartridge weight: 5.24gm. Effective mass: 20gm. (with AT14S). Bias compensation: calibrated weight. Hydraulic lift and lowering.

**AT1007**

Tubular counter-balanced pickup arm. Overall length: 327mm. Effective length: 240mm. Tracking force: 0-2.5gm. Cartridge weight: 5.24gm. Effective mass: 13gm. (with AT15S). Bias compensation: calibrated weight. Hydraulic lift and lowering.

★ Indicates entry is illustrated

#### AT1009

Tubular counter balanced pickup arm. Overall length: 330mm. Effective length: 240mm. Tracking force: 0-2.5gm. Cartridge weight: 4-12gm. Effective mass: 15gm. (with AT14S). Pneumatic lift and lowering with remote control.

Prices for tone arms range from around £25 to £60. Full details on request.

#### ■ BANG & OLUFSEN

Bang & Olufsen UK Ltd,  
Eastbrook Road, Gloucester GL4 7DE.  
Tel: Gloucester 21591.

#### SP10, SP12

Stereo cartridges. Standard  $\frac{1}{2}$ in centres. Moving iron. Pw: 1-1.5gm. Compliance:  $25 \times 10^{-6}$ cm/dyne. FR: 15Hz-24kHz  $\pm 3$ dB. Separation: >25dB at 1kHz. Output: 5mV per channel (1mV/cm/sec). Rec load: 47K. Effective tip mass: <1mg. SP10: 0.6 thou diamond. SP12:  $0.7 \times 0.2$  thou diamond (interchangeable). Price: (SP10) £16.90, (SP12) £21.90 (including VAT).

#### SP10A, SP12A

Plug-in versions of the SP10 and SP12. Price: (SP10A) £16.90, (SP12A) £21.90 (including VAT).

#### SP14, SP14A

Identical to SP10 and SP10A respectively except for compliance which is  $15 \times 10^{-6}$ cm/dyne. Price: £11.50 (including VAT).

#### MMC 4000

Stereo magnetic integrated cartridge. Factory sealed assembly and therefore no replacement stylus available. Stylus:  $0.2 \times 0.65$  thou diamond. Pw: 1gm. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 50Hz-20kHz  $\pm 1.5$ dB. Separation: 24-30dB at 1kHz, 20dB at 500Hz-10kHz. Output: 0.6mV. Rec load: 47K. Rin mounting bracket available. Price: £21.50 (including VAT).

#### ■ COLTON

Musonic Ltd, 34-38 Verulam Road, St Albans, Herts AL3 4DF. Tel: St Albans 50611.

#### MC101

Pick-up arm with lateral balance and anti-skate bias adjustment. Tracking error:  $+1.5^\circ$ ,  $-0.5^\circ$ . Price: £25.20 (plus VAT).

#### ■ CONDOR

Condor Electronics Ltd, 100 Coombe Lane, London SW20 0AY. Tel: 01-946 0033.

#### SM500/5

Stereo magnetic cartridge. Conical diamond stylus, tip:  $13\mu$ m. Pw: 1.2-2.2gm. Effective tip mass: 0.7mg. Lateral and vertical compliance:



Connoisseur SCU1

$10 \times 10^{-6}$ . FR: 15Hz-22kHz, 50Hz-15kHz ( $-1$ dB,  $+4$ dB). Separation: 20dB at 1kHz, 16dB from 50Hz-6kHz. Output: 3.5mV at 5cm/s. Rec load: 47k ohms. Price: £7.91.

#### SM500/E

Stereo magnetic cartridge. Elliptical diamond stylus, tip:  $6.5 \times 20\mu$ m. Pw: 1.2-1.8gm. Effective tip mass: 0.6mg. Lateral and vertical compliance:  $10 \times 10^{-6}$ cm/dyne. FR: 10Hz-25kHz, 50Hz-15kHz ( $-1$ dB,  $+3$ dB). Separation: 20dB at 1kHz, 16dB from 50Hz-6kHz. Output: 3.5mV at 1kHz, 5cm/s. Rec load: 47k ohms. Price: £12.95.

#### SM500/7

Stereo magnetic cartridge. Conical diamond stylus, tip:  $15\mu$ m. Pw: 1.5-2.5gm. Effective tip mass: 0.8mg. Lateral and vertical compliance:  $10 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz, 50Hz-15kHz ( $-2$ dB,  $+4$ dB). Separation: 18dB at 1kHz, 15dB from 50Hz to 6kHz. Output: 3.5mV at 1kHz, 5cm/s. Rec load: 47k ohm. Price: £7.95.

#### Tenorel T 2001

Stereo magnetic cartridge. Separation: more than 25dB at 1kHz. FR: 15Hz-25kHz. Compliance:  $20 \times 10^{-6}$ cm/dyne. Output: 5.5mV at 1kHz 5cm/sec. Playing weight:  $1\frac{1}{2}$ -3gm. Channel balance: 2dB at 1kHz. Tip mass: 1mg. Stylus radius: 0.0006- $15\mu$ . Load: 47K. Weight: 7gm. Inductance: 550mH. DC resistance: 520 ohms. Price: £5.95.

#### ■ CONNOISSEUR

A.R. Sugden & Co (Engineers) Ltd  
Connoisseur Works, Atlas Mill Road,  
Brighouse, Yorks HD6 1ES.  
Tel: Brighouse 2142.

#### SCU1 ★

Stereo ceramic cartridge with  $\frac{1}{2}$ in fixing centres. Stylus diamond 0.5-0.6 thou or 1 thou for mono. Pw: 2.4gm. Tip mass 1mg. Compliance: lateral  $12 \times 10^{-6}$ cm/dyne; vertical  $8 \times 10^{-6}$ cm/dyne. Range: 25Hz-18kHz  $\pm 3$ dB. Separation (1kHz) 25-30dB; (10kHz) 18dB. Output with rec load of 100K, 50mV

per channel, RIAA equalisation required. Output with 2M load, 150mV per channel, no equalisation required. Features: Four-terminal output, easily replaceable diamond stylus. Price: £7.02 (including VAT).

#### SAUZ

Pickup arm with gimbal mountings on ball bearings set at 45/45. Automatic bias compensator. Hydraulic lowering device. Decoupled counter balance weight. Additional weight supplied to accommodate different cartridges. Single hole fixing. Height adjustable from 1in to 2in. Lightweight shell with  $\frac{1}{2}$ in fixing centres. Five-pin plug connection to base of pick-up. Low resistance self-cleaning contacts. New head shell allows backward-forward horizontal adjustment so that minimum tracking error is obtained with all cartridges. Alignment protractor provided. Supplied with set of leads and separate precision balance with range 0-6gm. Price: £17.28 (including VAT). Extension stem for use with high turntables. Price: 47p (including VAT).

#### ■ DECCA

Decca Special Products, Ingate Place, Queenstown Road, London SW8 3NT. Tel: 01-622 6677.

#### Deram ceramic (New series)

Stereo/mono cartridge. White shell transcription quality. Pw: 2.5gm. Tip mass: 0.6mg. Compliance:  $9 \times 10^{-6}$  lateral,  $5 \times 10^{-6}$  vertical. FR: 18Hz-18kHz  $\pm 3$ dB. Separation better than -20dB at 1kHz. Output: 200mV at 5cm/sec. Rec load impedance: 2M. Stylus: diamond. Price: (spherical stylus) £4.31 (plus VAT); (elliptical stylus) £5.17 (plus VAT).

#### Deram ceramic ★

Mono cartridge. Stylus 1 thou diamond. All other details as for stereo/mono cartridge. Price: £4.31 (plus VAT).

#### NOTE

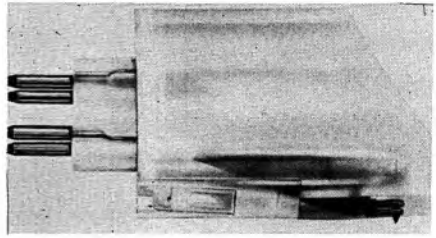
All Deram cartridges are of transcription quality, the black shell range intended primarily for cheaper auto-changers is discontinued.

Deram heads are suitable for use with amplifiers having a sensitivity of 100mV.

Replacement Deram diamond styli: Double Deram pack (2 stereo styli) £2.22 (plus VAT); or £1.25 each (plus VAT); elliptical £2.15 each (plus VAT).

#### London

Stereo magnetic cartridge: *ffss* sum — and difference system. Stylus: 0.6 thou spherical diamond. Pw: 3gm. Effective tip mass:



Decca Deram Cartridge

<1mg. Compliance: (lateral)  $12 \times 10^{-6}$ cm/dyne, (vertical)  $5 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Channel separation: better than 20dB. Output: 7.5mV for 5cm/sec. Rec load: 47K. Price: £29.09 (plus VAT).

#### London cartridge adaptors

Type A. Simple slide-on adaptor for use with *ffss* arms (Mk I, Mk I Super and Professional) to accommodate the London cartridge. Automatically adjusts playing weight. Price: £1.29 (plus VAT). Type B. Simple slide-on adaptor for use with International arm to accommodate the London cartridge. Collar arrangement to adjust for correct playing weight. Price: 21p (plus VAT).

Decca *ffss* pickup heads can be inspected for a charge of 87p (plus VAT). When the stylus is worn on a Decca *ffss* head it must be returned to the maker for replacement. The service offered is complete replacement of the head with a reconditioned head having a new stylus. Performance is guaranteed to be as new.

#### ■ EAGLE

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

#### LC05

Stereo cartridge. Moving magnet. FR: 30Hz-18kHz. Compliance:  $9 \times 10^{-6}$ cm/dyne. Separation: 20dB at 1kHz. Output: 6mV per channel. Rec load: 47K. Price: £5.60 (plus VAT).

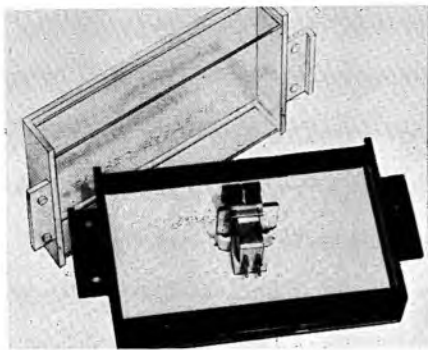
#### LC07

Stereo cartridge. Moving magnet. LP and stereo. FR: 20Hz-21kHz. Compliance:  $12 \times 10^{-6}$ cm/dyne. Separation: 28dB at 1kHz. Output: 7mV per channel. Rec load: 47K. Price: £6.80 (plus VAT).

#### FF12E ★

Stereo cartridge. Magnetic.  $\frac{1}{2}$ in fixing centres. Elliptical diamond stylus. Pw: 2gm. Compliance:  $15 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: 28dB at 1kHz. Output: 5mV at 5cm/sec. Rec load: 47K. Price: £12 (plus VAT).

★ Indicates entry is illustrated



Eagle FF12E



Eagle FF20E

### FF20E ★

Stereo cartridge. Magnetic.  $\frac{1}{2}$ in fixing centres. Elliptical diamond stylus. Pw: 1.5gm. Compliance:  $15 \times 10^{-6}$ cm/dyne. FR: 20Hz-25kHz. Separation: 30dB at 1kHz. Output: 5mV at 5cm/sec. Rec load: 47K. Price: £9.80 (plus VAT).

### ■ ELAC

Ambionic Sound Reproducers Ltd,  
Omal House, North Circular Road,  
London NW10 7UF. Tel: 01-965 8787.

### STS 155-17

Stereo/mono magnetic cartridge. Diamond stylus radius  $17\mu$  conical. Playing weight: 1.5 to 3gm. Effective tip mass: 0.8mg. Compliance:  $20 \times 10^{-6}$ cm/dyne. FR: 20Hz-16kHz  $\pm 2$ dB. Channel separation:  $< 2$ dB at 1kHz. Output voltage: 2mV. Rec load impedance: 47K. Price: £10.80 (plus VAT).

### STS 255-17

Stereo/mono magnetic cartridge. Diamond

stylus radius  $17\mu$  conical. Playing weight: 1.5 to 3gm. Effective tip mass: 0.75mg. Compliance:  $20 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz  $\pm 2$ dB. Channel separation:  $< 2$ dB at 1kHz. Output voltage: 1.8mV. Rec load impedance: 47K. Price: £16.20 (plus VAT)

### STS 355-17

Stereo/mono magnetic cartridge. Diamond stylus radius  $17\mu$  conical. Playing weight: 1 to 2gm. Effective tip mass: 0.60mg. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 20Hz-22kHz  $\pm 2$ dB. Output voltage: 1.1mV. Rec load impedance: 47K. Price: £19.44 (plus VAT).

### STS 355-E

Stereo/mono magnetic cartridge. Diamond stylus elliptical  $6/18\mu$ . Playing weight: 1 to 2gm. Effective tip mass: 0.60gm. Compliance:  $30 \times 10^{-6}$ cm/dyne static. FR: 20Hz-22kHz  $\pm 2$ dB. Output voltage: 1.1mV. Rec load impedance: 47K. Price: £25.92 (plus VAT).

### STS 455-12

Stereo/mono magnetic cartridge. Diamond stylus radius  $12\mu$  conical. Playing weight: 0.75 to 1.50gm. Effective tip mass: 0.5gm. Compliance:  $40 \times 10^{-6}$ cm/dyne static. FR: 10Hz-25kHz  $\pm 1.5$ dB. Channel separation:  $< 1.5$ dB at 1kHz. Output voltage: 1mV. Rec load impedance: 47K. Price: £25.92 (plus VAT).

### STS 455-E

Stereo/mono magnetic cartridge. Diamond stylus elliptical  $6/18\sqrt{V}$ . Playing weight: 0.75 to 1.5gm. Effective tip mass: 0.5mg. Compliance:  $40 \times 10^{-6}$ cm/dyne static. Channel separation:  $< 1.5$ dB at 1kHz. Output voltage: 1.1mV. Rec load impedance: 47K. Price: £31.32 (plus VAT).

### STS 555-12

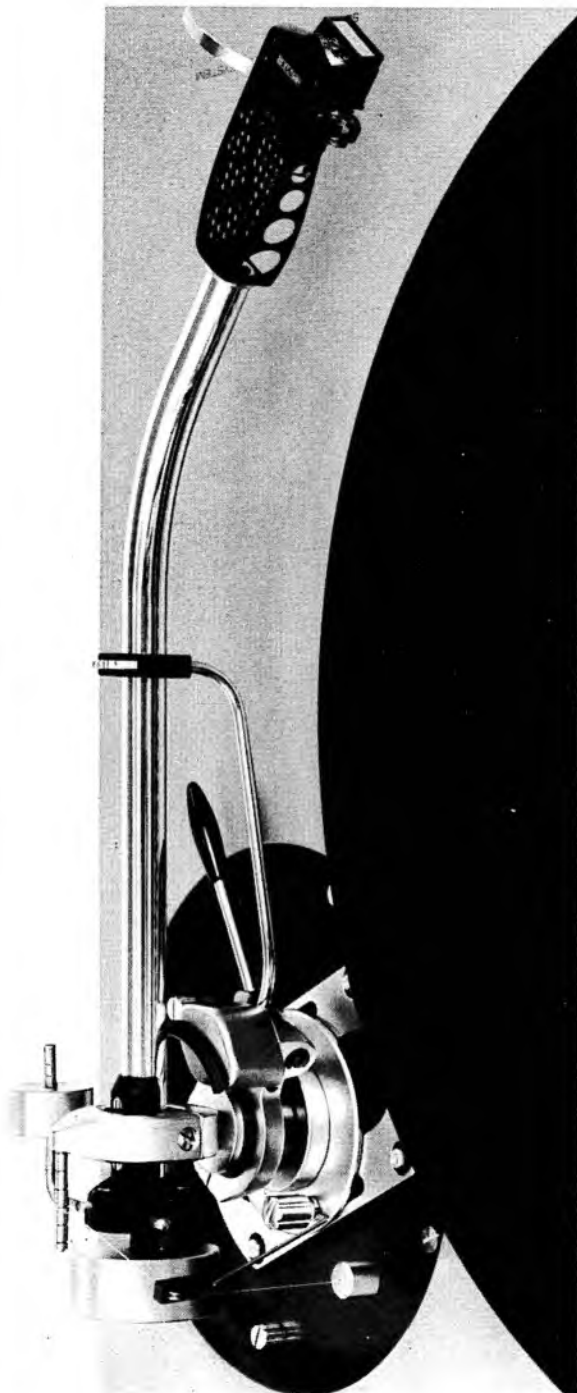
Stereo/mono magnetic cartridge. Diamond stylus radius  $12\mu$  conical. Playing weight: 0.5 to 1gm. Effective tip mass: 0.5mg. Compliance:  $45 \times 10^{-6}$ cm/dyne static. FR: 10Hz-27kHz  $+ 1.5$ dB. Output voltage: 1mV. Channel separation:  $< 1.5$ dB at 1kHz. Price: £36.72 (plus VAT).

### STS 555-E

Stereo/mono magnetic cartridge. Diamond stylus elliptical  $6/18\mu$ . Playing weight: 0.5 to 1gm. Effective tip mass: 0.5mg. FR: 10Hz-27kHz  $+ 1.5$ dB. Output voltage: 1mV. Channel separation:  $< 1.5$ dB at 1kHz. Rec load impedance: 47K. Price: on application.

### STS 655-D4

Quad/stereo magnetic cartridge. Diamond stylus Shibata. Playing weight: 1 to 2gm. Effective tip mass: 0.35mg. Compliance:



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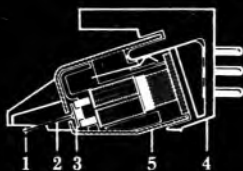
**SME**

The best pick-up arm in the world

LTD/S34



# Why an MMC integrated cartridge adds up to a lot of everything except money



**1** High quality diamond polished into an elliptical profile for accurate tracking of stereo recordings, or into the remarkable Pramanik profile for perfect CD-4 reproduction. Frameless mounting inhibits the collection of dust.

**2** Cantilever of stereo models is made of a strong, light alloy, resulting in a low Effective Tip Mass. CD-4 reproduction requires even lower masses in the stylus assembly, so 4-channel MMC models have beryllium shafts.

**3** Moving Micro-Cross (MMC) performs the vital function of changing the physical movements of the stylus into electrical signals. In many cartridges the stylus has to move magnets, but in MMC cartridges the swivelling of the arms of this tiny cross is the only mechanical movement required to produce signals in the coils. This is how the inertia of MMC styli is kept low. In addition, stereo channel separation is wide. In our CD-4 model(s), this technique simplifies the correct decoding of Quadradiscs.

**4** The overall weight of a cartridge is a vital consideration in the performance of

the cartridge tone arm combination. Illustration of MMC cartridge actual size. Its light weight also makes it adept at tracking warped records.

**5** An integrated cartridge is a laboratory-adjusted stylus unit in which all the coils and magnets are included – and perfectly matched. In a normal two-piece pick-up, all the factory-matched tolerances between stylus and body can be lost when the stylus is replaced. With an integrated cartridge you get perfect, built-in matching with every replacement. After all 80% of a cartridge's cost lies in the stylus, so we have simply ensured perfect performance in the valuable stylus by making the body disposable.

With  $\frac{1}{2}$  in fixing, the cartridges in the MMC range are designed for modern light weight low-mass arms. Stereo and CD-4 models are available. Send for free booklet to Dept HFYB, Bang & Olufsen UK Limited, Eastbrook Road, Gloucester GL4 7DE

**Universal cartridges from  
Bang & Olufsen**

$30 \times 10^{-6}$ cm/dyne static. Channel separation: <1.5dB. Output voltage: 0.8mV. Rec load impedance: 47-100K. Price: £52.92 (plus VAT).

### ■ EMPIRE SCIENTIFIC

Empire Scientific Corporation, U.S.A.  
Distributors: Rank Audio Visual Ltd,  
PO Box 70, Great West Road,  
Brentford TW8 9HR. Tel: 01-568 9222.

#### 999VE/X

Stereo magnetic cartridge. Hand polished elliptical diamond stylus. Tip:  $0.2 \times 0.7$  thou. Pw:  $\frac{1}{4}$ - $1\frac{1}{4}$ gm. Compliance:  $35 \times 10^{-6}$ cm/dyne. FR: 4Hz-40kHz. Separation: 35dB at 1kHz, 25dB at 20kHz. Output: 5mV per channel. Price: £42.05 (including VAT).

#### 1000ZE/X

Stereo magnetic cartridge. Hand polished diamond stylus. Tip:  $0.2 \times 0.7$  thou. Pw:  $\frac{1}{4}$ - $1\frac{1}{4}$ gm. Compliance:  $35 \times 10^{-6}$ cm/dyne. FR: 4Hz-40kHz. Separation: 35dB at 1kHz, 25dB at 20kHz. Output: 5mV per channel. Price: £58.87 (including VAT).

#### 999QE/X

Stereo magnetic cartridge. Elliptical diamond stylus. Tip:  $0.2 \times 0.7$  thou. Pw: 1-4gm. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 15Hz-25kHz. Separation: 30dB. Output: 8mV. Price: £14.50 (including VAT).

#### 999RE/X

Stereo magnetic cartridge. Elliptical diamond stylus. Tip:  $0.2 \times 0.7$  thou. Pw:  $1\frac{1}{2}$ - $2\frac{1}{4}$ gm. Compliance: 10cm/dyne. FR: 15Hz-20kHz. Separation: 30dB. Output: 8mV. Price: £10.75 (including VAT).

#### 999XE/X

Stereo magnetic cartridge. Elliptical diamond stylus. Tip:  $0.2 \times 0.7$  thou. Pw:  $\frac{1}{4}$ - $1\frac{1}{4}$ gm. Compliance: 30cm/dyne. FR: 8Hz-34kHz. Separation: 35dB. Output: 6mV. Price: £17.50 (including VAT).

#### 4000D/11

4-channel/stereo cartridge. FR: 5Hz-50kHz. Output voltage per channel: 3mV (ref velocity 3.54cm/sec) at 1kHz. Pw:  $\frac{1}{4}$ - $1\frac{1}{4}$ gm. Channel separation: (left to right) 35dB at 1kHz, (front to back) 25dB. Suitable for discrete 4-channel, matrix 4-channel and stereo. Price: £87.50 (including VAT).

#### 4000D/11

De-luxe standard 4-channel/stereo cartridge. FR: 5Hz-45kHz. Output voltage per channel: 3mV (ref velocity 3.54cm/sec) at 1kHz. Pw:  $\frac{3}{4}$ - $1\frac{1}{2}$ gm. Channel separation: (left to right) more than 35dB at 1kHz, (front to back) more

than 25dB. Suitable for discrete 4-channel, matrix 4-channel and stereo. Price: £74.50 (including VAT).

#### 4000D/1

4-channel/stereo cartridge. FR: 10Hz-40kHz. Output voltage per channel: 3mV (ref velocity 3.54cm/sec) at 1kHz. Pw:  $\frac{3}{4}$ -2gm. Channel separation (front to back) more than 25dB, (left to right) more than 35dB at 1kHz. Suitable for discrete 4-channel, matrix 4-channel and stereo. Price: £52.50 (including VAT).

All 4000D styli — miniature diamond with 0.1ml tracing radius.

#### 2000E/III

Stereo cartridge. FR: 5Hz-35kHz. Output voltage per channel: 4mV (ref velocity 3.54cm/sec) at 1kHz. Pw:  $\frac{1}{2}$ - $1\frac{1}{2}$ gm. Separation: more than 35dB at 1kHz. Stylus:  $0.2 \times 0.7$ ml bi-radial hand polished nude elliptical diamond. High compliance cartridge suitable for use in quality tone arms. Price: £19.90 (including VAT).

### ■ GOLDRING LTD

10 Bayford Street, London E8 3SE.  
Tel: 01-985 1152.

#### Goldring/Lenco L75

Transcription pickup arm. Calibrated stylus pressure adjustment. Removable plug-in shell with adjustable stylus position. Anti-skating bias compensator. Price: £14.10 (plus VAT).

#### Goldring/Lenco L69

Pickup arm. Stereo. Low mass tubular arm. Removable plug-in shell with stylus position adjustment. Sliding counterweight stylus pressure adjustment, height adjustment. Price: £11.10 (plus VAT).

#### CS90

Stereo ceramic cartridge. Stylus 0.5 or 0.7 thou diameter. Pw: 2gm. Compliance:  $8 \times 10^{-6}$ cm/dyne. FR: 30Hz-20kHz. Separation: 20dB at 1kHz, 10dB at 10kHz. Output: 80mV. Recload: 1-2M. Price: £4.50 (plus VAT).

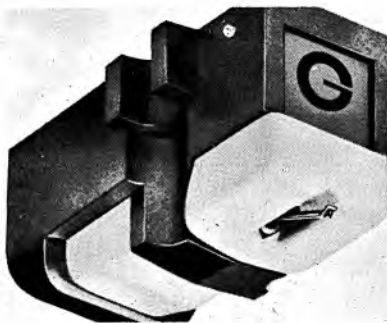
#### CS91E

Stereo/LP ceramic cartridge. Stylus: elliptical diamond. Pw: 1-3gm. Tip mass: 1mg. FR: 30Hz-20kHz. Separation: 20dB. Output: 30mV. Rec load: 1-2M. Price: £7.20 (plus VAT).

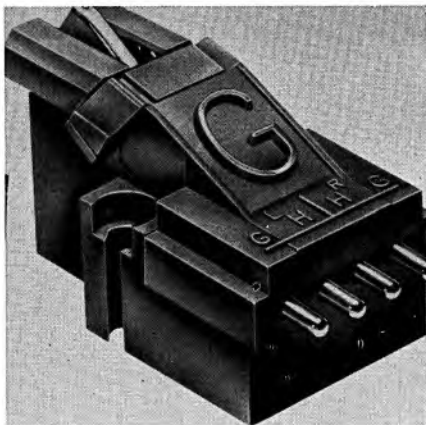
#### '800' ★

Stereo magnetic cartridge. Stylus 0.5 thou diamond. Pw:  $1\frac{1}{2}$ - $2\frac{1}{2}$ gm. Tip mass less than 1mg. Compliance:  $20 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz  $\pm 3$ dB. Separation: 20dB at 1kHz, 15dB at 10kHz. Output: 1mV. Rec load: 47K. Price: £7.50 (plus VAT).

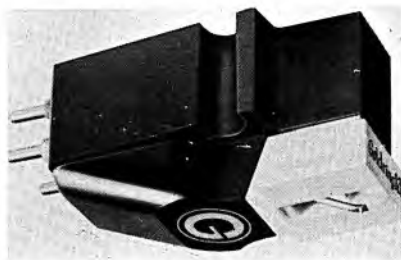
★ Indicates entry is illustrated



Goldring 800



Grado F series



Goldring 820



Hadcock GH Unipoise

### **G800F**

Stereo magnetic cartridge. Stylus:  $0.3 \times 0.7$  thou diamond. Pw:  $\frac{3}{4}$ - $1\frac{1}{2}$ gm. Tip mass: less than 1mg. Compliance:  $30 \times 10^{-6}$ cm/dyne lateral and vertical. FR: 10Hz-23kHz. Separation: 20dB at 1kHz, 15dB at 10kHz. Output: 1mV. Rec load: 47K-100K. Price: £11.40 (plus VAT).

### **G800F Super F**

Stereo magnetic cartridge. Single-sided with elliptical diamond,  $0.3 \times 0.7$  thou replaceable. Pw:  $\frac{1}{2}$ - $1\frac{1}{4}$ gm. Tip mass less than 1mg. Compliance:  $35 \times 10^{-6}$ . FR: 10Hz-23kHz. Channel separation: 25dB (1kHz) and better than 15dB (10kHz). Output voltage: 0.8mV. Rec load: 47K. Price: £17.40 (plus VAT).

### **Goldring G800/H**

Magnetic stereo cartridge. Single-sided with 0.7 thou tip radius diamond. Replaceable. Pw:  $2\frac{1}{2}$ - $3\frac{1}{2}$ gm. Tip mass 1.2mg. Compliance:  $18 \times 10^{-6}$ . FR: 20Hz-20kHz. Separation: 20dB at 1kHz, 10dB at 10kHz. Output: 1.6mV. Rec load: 47K. Price: £7.50 (plus VAT).

### **Goldring 850**

Magnetic stereo cartridge. Single-sided,  $\frac{1}{2}$ in

fixing centres. Stylus: 0.7 thou diamond, replaceable. Pw: 2-4gm. FR: 20Hz-18kHz. Separation: 20dB at 1kHz. Output: 1.6mV. Rec load: 47K-100K. Price: £5.25 (plus VAT).

### **820 ★**

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond spherical stylus. Pw: 2gm. Tip mass: 1mg. Compliance:  $20 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: 20dB. Output: 1mV. Rec load: 47K-100K. Price: £10.50 (plus VAT).

### **820E**

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond elliptical stylus. Pw: 1.5gm. Tip mass: <1mg. Compliance:  $25 \times 10^{-6}$ cm/dyne. FR: 10Hz-23kHz. Separation: 20dB. Output: 1mV. Rec load: 47K-100K. Price: £15 (plus VAT).

### **820F Super**

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond-elliptical stylus. Pw: 1.25gm. Tip mass: <1mg. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 10Hz-23kHz. Separation: 25dB. Output: 0.8mV. Rec load: 47K-100K. Price: £21 (plus VAT).

### ■ GRADO

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

#### F3E ★

Stereo magnetic cartridge. Stylus: 0.7 × 0.3 thou diamond. Pw: 1½-3½gm. FR: 10Hz-35kHz. Output: 3mV. Price: £15 (plus VAT).

#### F2 ★

Stereo magnetic cartridge. Stylus: 0.6 × 0.3 thou diamond. Pw: 1-2gm. FR: 7Hz-60kHz. Output: 3mV. Price: £25 (plus VAT).

#### F1R ★

Stereo magnetic cartridge. Stylus: 0.6 thou spherical diamond. Pw: 1½-3½gm. FR: 10Hz-35kHz. Output: 3mV. Price: £7 (plus VAT).

#### F1E ★

Stereo magnetic cartridge. Stylus: 0.7 × 0.3 thou diamond. Pw: 1½-3½gm. FR: 10Hz-35kHz. Output: 3mV. Price: £11 (plus VAT).

### ■ G.F.C. HADCOCK

Audio Division, The Old Vicarage,  
Doveridge, Derby DE6 5NN.  
Tel: Uttoxeter 2452.

#### GH Unipoise Series 3 ★

Precision low mass pickup arm. Pivot friction: less than 0.006gm. Tubular aluminium arm with slotted headshell suitable for low mass high compliance cartridges. Standard 0.5in (12.7mm) centres. Bias adjustable to vertical tracking force. Easily adjusted calibrated weight 0-3gm. Length: 11.65in (295.9mm). Pivot to stylus tip: 9in (228.6mm), rear overhang: 2.25in (51.75mm). Price: £21 (plus VAT).

GH Unilift lowering device available separately. (See Pickup Accessories).

#### GH Unipoise Super Pickup Arm

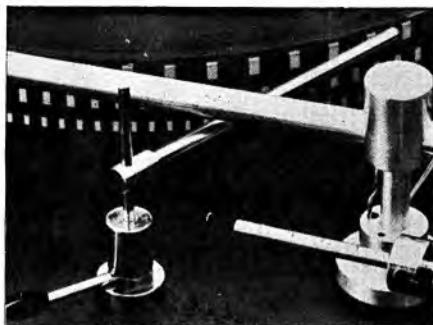
Exceptional low-mass pick-up arm including unipivot with a bearing friction of less than 0.006gm. Slotted headshell for all low-mass cartridges with 0.5in (12.7mm) centres weighing 3-9gm. Provision for damping if required and special solution is provided. Counterweight is double decoupled and vernier adjustment allows accurate playing weights of 0-3gm. Pivot to stylus: 9in (228.6mm), rear overhang 2.2in (55.8mm). The GH Unilift Mk is available separately. Price: £28 (plus VAT).

### ■ LINN PRODUCTS LTD

235 Drakemire Drive, Castlemilk,  
Glasgow G45 9SZ. Tel: 041-634 3860.

#### Supex SD-900/E

Stereo cartridge, moving coil type 0.3 × 0.8



*Hadcock GH Uni-lift*

mil elliptical stylus. Frequency range: 5-40,000Hz ±1.5dB. Employs low compliance cantilever and tracks at 1½gm. If a suitable pre-amplifier is not available, as the output voltage is 0.2mV, a matching transformer should be employed. Price: £54 (including VAT).

#### Supex SDT-77

Transformer for use with SD-900/E stereo cartridge. Price: £43.20 (including VAT).

#### Supex SDT-180

Transformer for use with SD-900/E stereo cartridge. Price: £91.80 (including VAT).

The Supex SD-900/E cartridge is available with a Shibata stylus giving a frequency range up to 60kHz. Prices and details on application.

#### Supex SM-100

Stereo conical cartridge tracking at 1½gm with a 4mV output. Price: £13.44 (including VAT).

#### Supex SM-100/E

Elliptical cartridge tracking at 1½gm with a 4mV output. Price: £44 (including VAT).

#### Grace F-8L

Stereo cartridge stylus 0.2 × 0.8 mil elliptical diamond stylus. Playing weight: 1½gm. Output: 5mV. Price: £32.40 (including VAT).

#### Grace F-8C

Stereo cartridge stylus 0.2 × 0.8 mil elliptical diamond stylus. Playing weight: 1gm. Output: 5mV. Price: £38.88 (including VAT).

#### Grace F-8E

Stereo cartridge stylus 0.2 × 0.8 mil elliptical diamond stylus. Playing weight: 1gm. Output: 3.5mV. Price: £43.20 (including VAT).

#### Grace F-9E

Stereo cartridge stylus 0.2 × 0.8 mil elliptical diamond stylus. Playing weight: 1gm. Output: 3.5mV. Price: £48 (including VAT).

★ Indicates entry is illustrated

### Grace F-9F

Quadraphonic cartridge Shibata stylus. Playing weight: 1½gm. Output: 3.5mV. Price: £56 (including VAT).

All the Grace range of cartridges can be used with Shibata styli, and are fully compatible with CD-4. The cartridges employ a single point cantilever support, made from special low mass alloy for optimum strength and transient response. A full range of broadcast and professional cartridges are available. Details and prices on application.

### Grace PM-1 Stylus Balance

An extremely accurate genuine balance giving maximum flexibility and ease of operation. Supplied complete with full range of weights and manipulatory tweezers. Price: £6.26 (including VAT).

### Grace G-707

Pick-up arm. 9in quadmaster fixed headshell tone arm, complete with bias compensation and arm lift/lowering device, and low capacitance shielded cord for optimum CD-4 performance. Effective length: 237mm. Stylus overhang: 15mm. Stylus pressure adjustment calibrated to 0.1gm calibration. Price: £44 (including VAT).

### Grace G-840 F

9in multi-master stereo tone arm, complete with lightweight detachable headshell, and bias adjustment. Arm lift/lowering device, and low capacitance shielded cord. Price: £47 (including VAT).

### Grace G-940

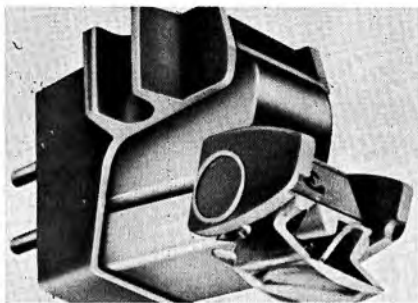
9in multi-master damped uni-pivot arm, complete with super lightweight detachable headshell, bias adjustment and lift/lowering device. Low capacitance shielded cord. Price: £65 (including VAT).

A range of broadcast and professional arms is also available. Full details and prices on application.

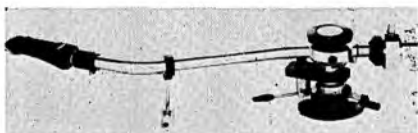
The Grace G 707 series of tone arms were designed specifically for use with CD-4 cartridges. All the Grace range of tone arms have low mass and geometric accuracy as features. The G-707 and G 840 F employ gimballed bearings utilising aircraft micro-pivots giving friction resistance of less than 20mg in all planes. The uni-pivot of the G-940 arm employs a jewelled pivot. All arms are resonance free within the audio frequency range. The G-707 arm is free of tube resonance to above 50kHz.

## ■ MAYWARE LTD

17 Heronsgate, Edgware HA8 7LD.  
Tel: 01-958 9421.



Micro VF3200E



Micro MA101 Mk II

### Formula 4

Tone arm for mono/stereo or quadraphonic transcription. Jewelled unipivot with provision for damping resonances. Bias adjustable to correspond with tracking force which can be calibrated up to 3gm. Incorporated hydraulic lift/lower device with radial cueing which does not twist the stylus angle during operation. Can track badly warped discs with a cartridge of lateral and vertical compliance exceeding  $80 \times 10^{-6}$ cm/dyne at 0.25gm. Surface impurities provide the only discernible degradation of reproduction. Effective length (stylus pivot) 240mm. Effective mass 4.05gm. Inertia moment (lateral) 5300gm CM<sup>2</sup> with a cartridge weighing 5gm. Price: £32 (plus VAT).

## ■ MICRO

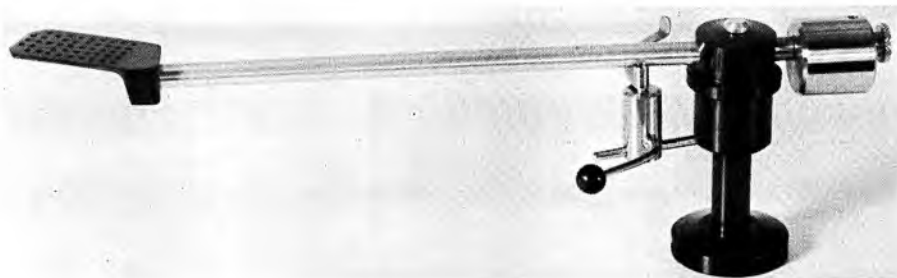
Howland-West Ltd, 3-5 Eden Grove,  
London N7 8EQ. Tel: 01-609 0293.

### VF3200/6

Stereo variable flux cartridge. ½in fixing centres. Stylus: 0.6 spherical diamond. Pw: 1.5gm. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 5Hz-35kHz. Separation: 30dB at 1kHz. Output: 3mV at 1kHz at 3.54cm/sec. Rec load: 47-50K. Price: £6.50 (plus VAT).

### VF3200XE

Stereo variable flux cartridge. ½in fixing centres. Stylus: 0.3 × 0.8 thou diamond. Pw: 1.5gm. Compliance:  $30 \times 10^{-6}$ cm/dyne. FR: 5Hz-35kHz. Separation: 30dB at 1kHz. Output: 3mV at 1kHz at 3.54cm/sec. Rec load: 47-50K. Price: £10 (plus VAT).



Keith Monks M9BA Mk 3

#### VF3200E ★

Stereo variable flux cartridge.  $\frac{1}{2}$ in fixing centres. Stylus:  $0.3 \times 0.8$  thou low-mass diamond. Pw: 1.5gm. Compliance:  $30 \times 10^{-6}$  cm/dyne. FR: 5Hz-35kHz. Separation: 30dB at 1kHz. Output: 3mV at 1kHz at 3.54cm/sec. Rec load: 47-50K. Price: £13 (plus VAT).

#### MA101 Mk II ★

Transcription pickup arm without cartridge. Damped cueing device. Spring-loaded adjustable bias compensation. Revolving dual counter weight. Tracking error  $<1.5^\circ$ . Stylus pressure: adjustable 0-3gm. Price: £33 (plus VAT).

#### ■ N. MIERS & CO LTD

28 Piercing Hill, Theydon Bois, Epping, Essex CM16 7LE. Tel: 037 881 2611.

#### SX6M

Stereo crystal cartridge. LP/78 diamond stylus. Pw: 4-6gm. Output: 280mV. Price: £2.60 (plus VAT).

#### SX6H

Stereo crystal cartridge. LP/78 diamond stylus. Pw: 7gm. Output: 700mV. Price: £2.60 (plus VAT).

#### XSM

Monaural crystal compatible cartridge, sapphire stylus. Pw: 3-6gm. Output: 400mV. FR: 40Hz-10kHz. Price: £1.50 (plus VAT).

#### X5H

Monaural crystal compatible cartridge, sapphire stylus. Pw: 5-9gm. Output: 1V. FR: 40Hz-10kHz. Price: £1.50 (plus VAT).

#### SC12M

Stereo ceramic cartridge. Output: 100mV. Stylus pressure: 2-6gm. Sapphire or diamond stylus. Price: (sapphire) £3.02 (plus VAT); (diamond) £3.62 (plus VAT).

#### SC12H

Stereo ceramic cartridge. Output: 170mV. Stylus pressure: 4-6gm. Sapphire or diamond

stylus. Price: (sapphire) £3.02 (plus VAT); (diamond) £3.62 (plus VAT).

#### ■ KEITH MONKS

Keith Monks (Audio) Ltd, 26-28 Reading Road South, Fleet, Aldershot, Hants. Tel: Fleet 7316.

#### M9BA Mk 2 & 3 ★

Pick-up arm. 9in arm length pivot to stylus. Designed for low mass ultra high compliant 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: 9gm. LF res: 10Hz for 5gm cartridge. Friction lateral and vertical: 4mg approx. Torque: 25 to 35mg. Price: (Mk 2 with fixed base) £34.38 (plus VAT); (Mk 3 with sliding adjustable base) £39.30 (plus VAT); (spare top arm) £17.19 (plus VAT); (sliding base) £6.55 (plus VAT); (extra counter-weight) £4.83 (plus VAT).

#### ■ ORBIT

Distributors: Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

#### NM22

Stereo magnetic cartridge. Diamond stylus. FR: 20Hz-20kHz. Channel separation: 20dB at 1kHz. Output: 5mV. Rec load: 50K-100K. Pw: 2-3gm. Price: (complete cartridge) £4 (plus VAT); (replacement stylus) £2.40 (plus VAT).

#### ■ ORTOFON

Distributed in the UK by Metrosound (Sales) Co Ltd, Cartersfield Road, Waltham Abbey, Essex EN9 1JF. Tel: Lea Valley 712712.

#### SL15/E

Moving coil stereo cartridge. Pw: 1-2gm. Tip mass: 0.9mg. Compliance:  $25 \times 10^{-6}$  cm/dyne. FR: 10Hz-40kHz. Separation: 20-30dB. Output: 0.04mV/cm/sec (loaded). Output impedance: 2 ohms. Matching transformer

★ Indicates entry is illustrated

required for most amplifiers (see transformer below). Stylus diamond  $0.6 \times 0.3$  thou. Tracking angle:  $15^\circ$ . Price: £37.35 (plus VAT).

#### SL15

Similar specification to SL15/E but with spherical  $0.6$  thou diamond stylus. Price: £33 (plus VAT).

#### Transformer module

Primary impedance: 2 ohms. Secondary impedance: 15K. Load: 10K to 50K without change in frequency response. FR: 20Hz-40kHz. Price: £13.20 (plus VAT).

#### M15E Super ★

Moving magnet stereo cartridge. Compliance: (horizontal)  $50 \times 10^{-6}$  cm/dyne; (vertical)  $30 \times 10^{-6}$  cm/dyne. Trackability:  $80\mu\text{m}$ . Output: 0.8mV. FR: 20Hz-20kHz. Pw:  $\frac{3}{4}$ -1½gm. Separation: better than 25dB at 1kHz. Price: £38.55 (plus VAT).

#### M15 Super

Moving magnet stereo cartridge. Compliance: (horizontal)  $50 \times 10^{-6}$  cm/dyne; (vertical)  $30 \times 10^{-6}$  cm/dyne. Trackability:  $80\mu\text{m}$ . Output: 0.8 mV. FR: 20Hz-20kHz. Pw:  $\frac{3}{4}$ -1½gm. Separation: better than 25dB at 1kHz. Price: £31.80 (plus VAT).

#### F15E ★

Stereo cartridge. Compliance: (horizontal and vertical)  $25 \times 10^{-6}$  cm/dyne. Trackability:  $60\mu\text{m}$ . Output: 1mV. FR: 20Hz-20kHz. Separation: better than 25dB at 1kHz. Pw: 1-2gm. Price: £14.85 (plus VAT).

#### F15

Stereo cartridge. Compliance: (horizontal and vertical)  $25 \times 10^{-6}$  cm/dyne. Trackability:  $60\mu\text{m}$ . Output: 1mV. FR: 20Hz-20kHz. Separation: better than 25dB at 1kHz. Pw: 1-2gm. Price: £12.15 (plus VAT).

#### FF15E

Stereo cartridge. Compliance: (horizontal and vertical)  $20 \times 10^{-6}$  cm/dyne. Trackability:  $60\mu\text{m}$ . Output: 1mV. FR: 20Hz-20kHz. Separation: better than 25dB at 1kHz. Pw: 1-3gm. Price: £14.85 (plus VAT).

#### FF15

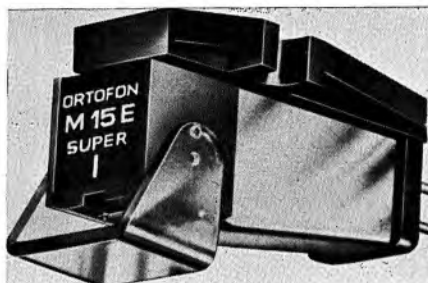
Stereo cartridge. Compliance: (horizontal and vertical)  $20 \times 10^{-6}$  cm/dyne. Trackability:  $60\mu\text{m}$ . Output: 1mV. FR: 20Hz-20kHz. Separation: better than 25dB at 1kHz. Pw: 1-3gm. Price: £12.15 (plus VAT).

#### Replacement styli

SL15E elliptical diamond. Price: £16.50 (plus VAT); SL15 0.6 thou spherical diamond. Price: £14.25 (plus VAT); M15E Super elliptical diamond stylus. Price: £21.90 (plus VAT); M15 0.6 thou spherical diamond. Price: £17.55 (plus VAT); F15. Price: £6.60 (plus VAT);



Ortofon M15E super



Ortofon F15E cartridge

F15E. Price: £8.55 (plus VAT); FF15. Price: £6.60 (plus VAT); FF15E. Price: £8.55 (plus VAT); N20E elliptical. Price: £17.55 (plus VAT); VMS20E elliptical. Price: £16.50 (plus VAT); VMS20S elliptical. Price: £12.60 (plus VAT).

Note: SL15 Series styli are factory-replaceable only and the charge includes re-conditioning the cartridge.

#### AS212

12in pickup arm for stereo and mono cartridges. Playing weight: adjustable 0-3gm. Magnetic anti-skating device. Hydraulic lifting, lowering and cueing. Easy to mount. Arm base to turntable centre: 8½in. Height adjustable: 1¼-2½in. Effective length: (stylus to pivot) 9in. Optimum overhang: ¾in. Maximum tracking error: 0.16 deg/cm. Price: £38.55 (plus VAT).

#### M Shell

Type M metal shells for 15 Series cartridges. Price: £1.50 (plus VAT).

#### VMS20E

Moving magnetic stereo cartridge. Compliance: (horizontal)  $40 \times 10^{-6}$  cm/dyne; (vertical)  $30 \times 10^{-6}$  cm/dyne. Trackability:  $70\mu\text{m}$ . Output: 1mV at 1kHz. FR: 20Hz-20kHz. Price: £21.90 (plus VAT).

**VMS20S**

As VMS20E but with spherical stylus. Price: £18.15 (plus VAT).

**PICKERING**

Distributors: Highgate Acoustics,  
38 Jamestown Road, London NW1 7EJ.  
Tel: 01-267 4937.

**XV-15 DCF Series ★**

With Dustamatic. Stereo magnetic cartridges all with 35dB channel separation. Series comprises the following:

**1200E**

Price: £42.50 (plus VAT).

**750E**

Output: 4.4mV. FR: 10Hz-25kHz. Pw: ½-1gm. Stylus: 0.2 × 0.9 thou. Price: £32.50 (plus VAT).

**400E**

Output: 4.5mV. FR: 10Hz-25kHz. Pw: ¾-1½gm. Stylus: 0.3 × 0.9 thou. Price: £21 (plus VAT).

**140E**

Output: 8mV. FR: 10Hz-20kHz. Pw: 3-5gm. Stylus: 0.4 × 0.9 thou. Price: £16.85 (plus VAT).

**350**

Output: 6mV. FR: 10Hz-25kHz. Pw: 1-3gm. Stylus: 0.7 thou spherical. Price: £16 (plus VAT).

**150**

Output: 8mV. FR: 10Hz-25kHz. Pw: 2-5gm. Stylus: 0.7 thou. Price: £13.50 (plus VAT).

**100**

Output: 8mV. FR: 10Hz-20kHz. Pw: 3-7gm. Stylus: 0.7 thou. Price: £11.50 (plus VAT).

**V15 Micro IV AME**

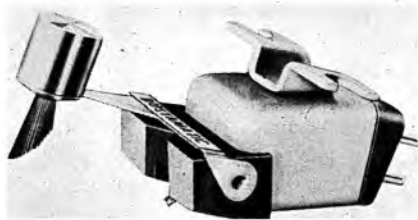
Stereo magnetic cartridge. Stylus: 0.3 × 0.7 thou elliptical diamond. Pw: 1-2gm. FR: 20Hz-20kHz. Channel separation: 30dB. Output: 5.5mV. Rec load: 47K. Price: £17 (plus VAT).

**V15 Micro IV AM**

Stereo magnetic cartridge. Stylus: 0.7 thou spherical diamond. Pw: 1-3gm. FR: 20Hz-20kHz. Channel separation: 30dB. Output: 6.5mV. Rec load: 47K. Price: £13.50 (plus VAT).

**V15 Micro IV AT**

Stereo magnetic cartridge. Stylus: 0.7 thou spherical diamond. Pw: 2-4gm. FR: 20Hz-18kHz. Rec load: 47K. Price: £11.50 (plus VAT).



*Pickering V-15 Series*

**V15 Micro IV ACE**

Stereo magnetic cartridge. Stylus: 0.4 × 0.9 thou elliptical diamond. Pw: 3-5gm. FR: 20Hz-17kHz. Channel separation: 26dB. Output: 7.5mV. Rec load: 47K. Price: £11.50 (plus VAT).

**V15 Micro IV AC**

Stereo magnetic cartridge. Stylus: 0.7 thou spherical diamond. Pw: 4-6gm. FR: 20Hz-17kHz. Channel separation: 26dB. Output: 7.5mV. Rec load: 47K. Price: £10.25 (plus VAT).

**P Series P/ATE**

Stereo magnetic cartridge. Stylus: 0.5 × 1.0 thou elliptical diamond. Pw: 2-5gm. FR: 20Hz-20kHz. Channel separation: 35dB. Output: 5.5mV. Rec load: 47K. Price: £10.25 (plus VAT).

**P Series P/AT**

Stereo magnetic cartridge. Stylus: 0.7 thou spherical diamond. Pw: 2-5gm. FR: 20Hz-20kHz. Channel separation: 35dB. Output: 6.9mV. Rec load: 47K. Price: £8 (plus VAT).

**P Series P/AC**

Stereo magnetic cartridge. Stylus: 0.7 thou spherical diamond. Pw: 3-7 gm. FR: 20Hz-20kHz. Channel separation: 35dB. Output: 7.5mV. Rec load: 47K. Price: £6.50 (plus VAT).

**UV-15/2400Q**

Stereo and quadrasonic magnetic cartridge. The special stylus is designed to match the requirements for scanning carrier quadrasonic records as well as conventional stereo or matrix quadrasonic records. FR: 10Hz-50kHz. Separation: 35dB. Output: 0.69mV. Rec load: 100K and 100pF. Price: £59 (plus VAT).

**SHURE**

Shure Electronics Ltd, Ecclestone Road,  
Maidstone ME15 6AU.  
Tel: Maidstone 59881.



★ Indicates entry is illustrated



Shure M55E



Shure M75ED Type 2



Shure V15-III

### M3D

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.7 thou diamond. Pw: 3-6gm. Compliance:  $4 \times 10^{-6}$ cm/dyne. FR: 20Hz-15kHz. Separation: 20dB at 1kHz. Output: 1mV. Load impedance: 47K. Price: £5.40 (plus VAT).

### M44C

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.7 thou diamond (1 thou and 3 thou styli available). Pw: 3-5gm. Compliance:  $7.5 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: 25dB at 1kHz. Output: 1.8mV. Load impedance: 47K. Price: £6.90 (plus VAT).

### M44E

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus:  $0.7 \times 0.4$  thou bi-radial diamond (3 thou stylus available). Pw:  $1\frac{1}{4}$ -4gm. Compliance:  $15 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: >25dB at 1kHz. Output: 1.8mV. Rec load: 47K. Price: £7.50 (plus VAT).

### M44G

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.6 thou diamond (1 thou and 3 thou styli available). Pw:  $\frac{3}{4}$ -1 $\frac{1}{2}$ gm. Compliance:  $25 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: 25dB at 1kHz. Output: 1.4mV. Load impedance: 47K. Price: £6.90 (plus VAT).

### M44-7

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.7 thou diamond (1 thou and 3 thou styli available). Pw:  $1\frac{1}{2}$ -3gm. Compliance:  $20 \times 10^{-6}$ cm/dyne. FR: 20Hz-20kHz. Separation: 25dB at 1kHz. Output: 2.2mV. Load impedance: 47K. Price: £6.90 (plus VAT).

### M55E ★

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus:  $0.7 \times 0.2$  thou elliptical diamond (3 thou stylus available). Pw:  $\frac{3}{4}$ -2gm. Compliance:  $15 \times 10^{-6}$ cm/dyne. Output: 1.3mV. Load impedance: 47K. Price: £8.40 (plus VAT).

### M75B Type 2

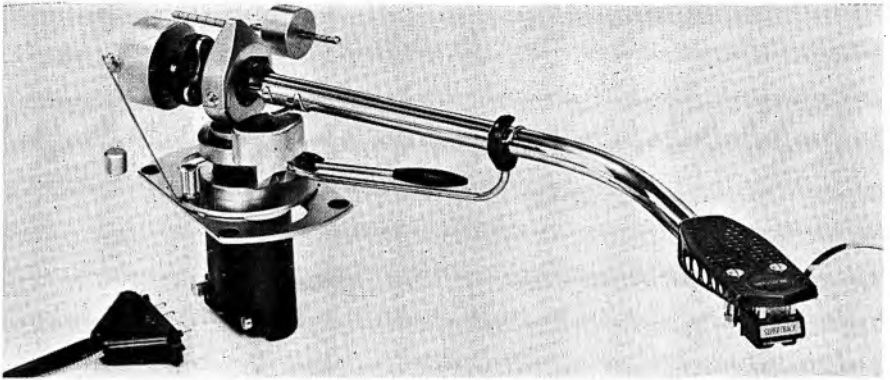
Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.6 thou conical diamond (3 thou stylus available). Pw:  $1\frac{1}{2}$ -3gm. Trackability (see note at end) at 2gm in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 10kHz 20cm/sec. FR: 20Hz-20kHz. Separation: >25dB at 1kHz. Output: 1mV. Rec load: 47K per channel. Price: £11.40 (plus VAT).

### M75ED Type 2 ★

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in centres. Stylus:  $0.7 \times 0.2$  thou elliptical diamond (3 thou stylus available). Pw:  $\frac{3}{4}$ -1 $\frac{1}{2}$ gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 22cm/sec, 1kHz 33cm/sec, 5kHz 28cm/sec, 10kHz 19cm/sec. FR: 20Hz-20kHz. Separation at 1kHz: 25dB. Output: 5mV. Rec load: 47K per channel. Price: £15.90 (plus VAT).

### M75G Type 2

Stereo Dynetic cartridge. Moving magnet.  $\frac{1}{2}$ in fixing centres. Stylus: 0.6 thou conical diamond (3 thou stylus available). Pw:  $\frac{3}{4}$ -1 $\frac{1}{2}$ gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 20cm/sec, 1kHz 28cm/sec, 10kHz 18cm/sec. FR: 20Hz-20kHz. Separation:



SME 3009 (Series II Improved)

tion: >25dB at 1kHz. Output: 1mV. Rec load: 47K per channel. Price: £12.30 (plus VAT).

#### M75EJ Type 2

Stereo Dynetic cartridge. Stylus: 0.7 × 0.4 thou bi-radial diamond. Pw: 1½-3gm. Trackability at 2gm in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 10kHz 20cm/sec. Price: £13.50 (plus VAT).

#### V15-Type III ★

Stereo Dynetic cartridge. Moving magnet. ½in fixing centres. Stylus: 0.7 × 0.2 thou bi-radial diamond (0.6 thou and 2.5 thou spherical tips also available). Pw: ¾-1½gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 26cm/sec, 1kHz 38cm/sec, 5kHz 35cm/sec, 10kHz 26cm/sec. FR: 10Hz-25kHz. Separation: 25dB at 1kHz, 20dB at 10kHz. Output: 3.5mV at 1kHz (5cm/sec peak recorded velocity). Rec load: 47K. Price: £40.50 (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.

#### ■ SME

SME Ltd, Steyning, Sussex BN4 3GY.  
Tel: Steyning 814321.

#### Model 3009

Series II Improved precision pickup arm. Non-detachable shell. Pivot to stylus 9in nominal. Effective mass 5.5gm. Low-friction pivots. Vertical axis; high precision fully protected ball races. Horizontal axis; knife edges. Less than 0.020gm applied at the stylus will deflect the arm in either plane. Low inertia;

fixed elements of the balance system are light, moveable elements are heavy and close to the fulcrum. Low distortion geometry. Bias adjustable to correspond with tracking force. Base slides on bedplate for tracking adjustment with protractor. Arm mass divided by elastic coupling. Tracking force 0-1.5gm applied precisely without the use of a gauge. Lever operated hydraulically damped lowering and raising control. Shell accepts all cartridges with ½in (12.7mm) fixing centres and weighing 4-9gm. 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. Recommended price: £39.84.

#### Model 3009/S2 ★

Series II Improved precision pickup arm. Detachable shell. Effective mass 9.5gm. Other details as above. Recommended price: £43.65.

#### Accessories

S2 Shell for use with Model 3009/S2 and earlier Series II arms. Price: £3.18.

P1 Spacer. Required where height difference between motor board and turntable is greater than 1½in. Price: £1.74.

#### Pickup Mounting Boards:

TD124/3009 for Model 3009 on Thorens TD124. Price: £3.66.

TD150/3009 for Model 3009 on Thorens TD150. Price: £3.66.

TD125/3009 for Model 3009 on Thorens TD125. Price: £3.66.

TD160/3009 mounting kit Model 3009 Series II Improved on Thorens TD160. Price: £3.60.

★ Indicates entry is illustrated

SL110/3009 for Model 3009 on National Technics SL-110. Price: £7.50.

#### Mounting Brackets:

Can be used for fitting Thorens TD125 to motor board. Price: £1.57.

Spring mounts complete with foam damping blocks. (Set of 4). Price: £5.07.

#### United Kingdom only

All prices subject to VAT at the current rate.

### ■ SONOTONE

Vernitron Ltd, Thornhill, Southampton, Hants SO9 5QF. Tel: Southampton 444811.

#### 2T

Monaural ceramic cartridge with turnover stylus. Stylus sapphire 2.5 thou (78), 0.7 thou (LP). Pw: 8-10gm. Compliance:  $1 \times 10^{-6}$ cm/dyne. Output: 180mV/cm/sec at 1kHz. Capacitance: 650pF. Serviceable under all climatic conditions and compatible for 33 $\frac{1}{2}$ , 45 and 78rpm records. Price: £1.37 (including VAT).

#### 8T4A

Stereo ceramic cartridge with turnover stylus. Sapphire, 2.5 thou (78), 0.7 thou (LP). Pw: 4-6gm. Compliance:  $1.4 \times 10^{-6}$ cm/dyne. Separation: 24dB at 1kHz. Output: 90mV/cm/sec at 1kHz. Capacitance: 650pF. Price: £1.92 (including VAT).

#### 9TA

Stereo turnover ceramic cartridge. Sapphire stylus. Pw: 2-4gm. Tip mass: 3.5mg. Compliance:  $5.3 \times 10^{-6}$ cm/dyne. FR: 30Hz-15kHz  $\pm$ 3dB. Separation: 27dB. Output voltage: 80-120mV. Load imp: 2M. Price: £2.75 (including VAT).

#### 9TA-G

As 9TA but for single-hole slim fitting head shells.

#### 9TAD

Similar specification to 9TA but with diamond stylus. Price: £3.57 (including VAT).

#### 9TAHC

Stereo turnover ceramic cartridge. Choice of both sapphire styli or sapphire 78/diamond stereo LP. FR: 20Hz-20kHz  $\pm$ 3dB from 1kHz. Rec load: 2M. Sensitivity: 55-85mV/cm/sec at 1kHz. Lateral compliance:  $8.5 \times 10^{-6}$ cm/dyne. Separation: 25dB at 1kHz. Pw: 1-3gm. Tip mass: 2.5mg. Capacitance: 800pF. Price: (with sapphire stylus) £2.75 (including VAT); (with diamond stylus) £3.57 (including VAT).

#### 9TAHC-G

As 9TAHC but for single-hole slim fitting head shells.

#### 2109

Mono Rochelle cartridge. Output at 1kHz 700mV/cm/sec. Capacitance: 1000pF. Compliance:  $1.5 \times 10^{-6}$ cm/dyne. Tracking: +12dB at 6gm. FR: 100Hz-8kHz  $\pm$ 3dB. Rec stylus force: 6-8gm. Price: £1.52 (including VAT).

#### 2509

Stereo Rochelle cartridge. Output at 1kHz: 340mV. Capacitance: 1000pF. Channel difference less than 3dB. Separation at 1kHz better than 12dB. Pw: 7gm. FR: 50Hz-8kHz  $\pm$ 3dB. Price: £2.15 (including VAT).

#### 2539

Stereo Rochelle cartridge. Output at 1kHz 550mV/cm/sec. Capacitance: 1000pF. Channel difference less than 3dB. Separation at 1kHz better than 12dB. Tracking: +12dB at 9gm. FR: 100Hz-8kHz. Rec stylus force 8-10gm. Price: £2.15 (including VAT).

#### 3509

Stereo ceramic cartridge. Output at 1kHz: 140 mV/cm/sec. Channel difference less than 3dB. Separation at 1kHz: better than 15dB, typically 20dB. Capacitance: 600pF. Tracking: +12dB, typically +15 at 5gm. FR: 100Hz-10kHz  $\pm$ 3dB. Rec stylus force: 5-7gm. Price: (with sapphire stylus) £2.75 (including VAT); (with diamond stylus) £3.13 (including VAT).

#### 3559

Ceramic stereo cartridge with stylus. Pw: 2 $\frac{1}{2}$ -4gm. FR: 20Hz-12kHz. Separation: better than 15dB at 1kHz. Output: 70mV/cm/sec nominal. Rec load: 2M and 100pF. Price: (sapphire stylus) £2.75 (including VAT); (with diamond stylus) £3.13 (including VAT).

#### 3549

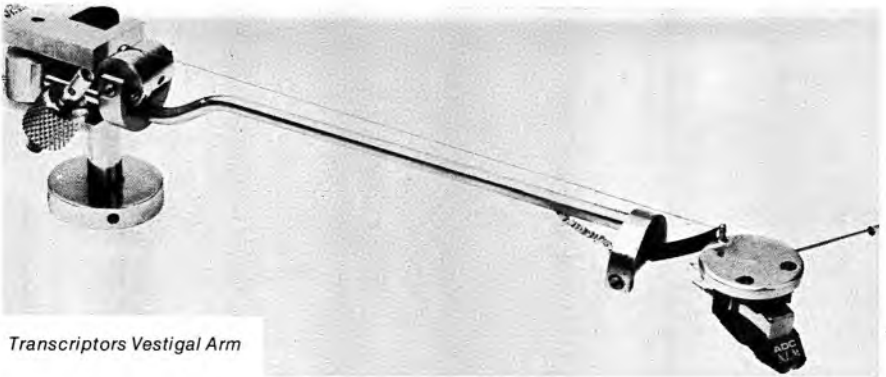
Ceramic stereo cartridge with stylus. Pw: 3-5gm. FR: 30Hz-10kHz. Separation: better than 15dB at 1kHz. Output: 100mV/cm/sec nominal. Rec load: 2M and 100pF. Price: (sapphire stylus) £2.75 (including VAT); (with diamond stylus) £3.13 (including VAT).

#### V100

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond styli with 0.6 thou spherical tip. Pw: 2-2 $\frac{1}{2}$ gm. Tracking: +18dB at 2 $\frac{1}{2}$ gm (CBS STR111-band 4B). FR: 20Hz-20kHz. Separation: better than 20dB at 1kHz. Output: 1.4mV at 1cm/sec at 1kHz. Rec load: 200mH per channel. Price: £8 (including VAT).

#### V200S

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond stylus with 0.6 thou spherical tip. Pw: 2-2.8gm. Tracking: +18dB at 2.4gm. (CBS STR111-band 4B). FR: 15Hz-25kHz. Separation: better than 20dB at 1kHz. Output: 1mV at 1cm/sec at 1kHz. Rec load: 360mH per



*Transcriptors Vestigal Arm*

channel. Price: £10 (including VAT).

#### **V200E**

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond stylus with  $0.8 \times 0.3$  tip. Pw: 2-2.8gm. Tracking: +18dB at 2.4gm. (CBS STR111-band 4B). FR: 10Hz-30kHz. Separation: better than 20dB at 1kHz. Output: 1mV at 1cm/sec at 1kHz. Rec load: 360mH per channel. Price: £15 (including VAT).

#### **V200EX**

Stereo magnetic cartridge.  $\frac{1}{2}$ in fixing centres. Diamond stylus with  $0.8 \times 0.2$  tip. Pw: 2-2.5gm. Tracking: +18dB at 2.2gm. (CBS STR111-band 4B). FR: 10Hz-35kHz. Separation: better than 20dB at 1kHz. Output: 0.6mV at 1cm/sec at 1kHz. Rec load: 360mH per channel. Price: £20 (including VAT).

#### ■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

#### **Phono cartridges style II**

VM26G Cartridge for PS5520/PS230/  
HP511A/SQP20/PS5550. Price: £7.36.

VL 30G Cartridge for HMP40/HMK40/  
HMP70/HMK70. Price: £7.36.

VM 10P Cartridge for HP211A/HP239A.  
Price: £5.88.

VX 24P Cartridge for HMP20/HMW20/

HMK20. Price: £1.86.

ND 132G Stylus for PS5520/PS230/  
HP511A/SQP20/PS5550. Price: £5.09.

ND 133G Stylus for HMP40/HMK40/  
HMP70/HMK70. Price: £5.09.

ND 114P Stylus for HP211A/HP239A. Price:  
£3.60.

ND 150P Stylus for PS5011. Price: £5.09.

NS 128P Stylus for HMP20/HMW20/  
HMK20 (pair). Price: £1.16.

#### ■ SWA

South Western Agencies,  
Spring Gardens, Bigbury, Kingsbridge,  
Devon TQ7 4AP. Tel: Bigbury-on-Sea 323.

Full range of stereo and single channel styli  
and cartridges available. Further details and  
prices on application.

#### ■ TRANSCRIPTORS LTD

Mycott House, Station Road,  
Boreham Wood, Herts. Tel: 01-953 9851.

#### **Vestigal Arm ★**

All aluminium construction, articulated front  
vestigal arm remotely counter-weighted.  
Horizontal swing neutralised in relation to  
gravity. Mass: 37.5gm (horizontal), 25gm (ver-  
tical). Stylus compliance:  $35 \times 10^{-6}$ cm/  
dyne. Tracking weight: 0.1-0.5gm. Special  
stylus assemblies of  $120 \times 10^{-6}$ cm/dyne  
under development. Price: £30 (plus VAT).

#### ■ TOSHIBA

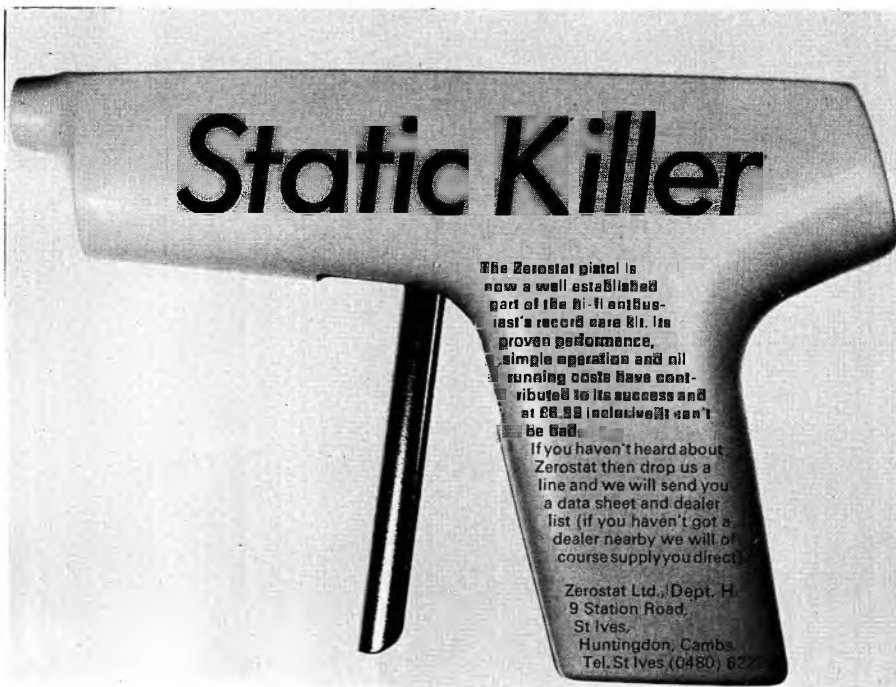
Toshiba (UK) Ltd, Toshiba House,  
Great South West Road, Feltham,  
Greater London. Tel: 01-751 1281.

#### **C401S ★**

Direct electret transducer cartridge. FR:  
20Hz-35kHz. Modulator and demodulator un-  
necessary. Used with SZ-200Y equaliza-  
tion amplifier where necessary. Price: (C401S)  
£58.80; (SZ-200Y) £24.45. Prices include  
VAT.



*Toshiba Electret cartridge*



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Zerostat Ltd., Dept. H,  
9 Station Road,  
St Ives,  
Huntingdon, Cambs.  
Tel. St Ives (0480) 62

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IPC Electrical-Electronic Press Ltd  
Dorset House, Stamford Street, London SE1 9LU*

# Radio Tuners

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ACCUPHASE

Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.

### T101

Stereo FM tuner. Tuning range: 88 MHz-108MHz. Sensitivity:  $20\mu\text{V}$  for 40dB quieting. S/N: 70dB at 2mV input. THD: not more than 0.2% at 1kHz. Audio FR: 20Hz-15kHz -1dB. Stereo separation: 35dB at 100Hz, 45dB at 1kHz. Stereo and muting threshold:  $5\mu\text{V}$ . Output impedance: 200 ohms (fixed), 2.5K (controlled). FM antenna inputs: 300 ohms balanced, 75 ohms unbalanced. Signal strength meter, centre tuning meter and multipath meter. Mains: 100, 117, 220, 240V AC 50/60Hz. Consumption: 26W. 2 FETs, 7ICs, 25 transistors, 24 diodes. Size: 455mm wide, 152mm high, 355mm deep. Weight: 11.1kg. Price: £245 (plus VAT).

### T100 ★

Stereo AM/FM tuner. Tuning range: 88MHz-108MHz. Sensitivity:  $15\mu\text{V}$  (distance),  $150\mu\text{V}$  (local). S/N: 50dB. THD: not more than 0.1% at 1kHz. Stereo separation: 45dB at 1kHz. FM antenna inputs: 300 ohms balanced, 75 ohms unbalanced. Signal strength meter, centre tuning meter, multipath meter. Mains: 100, 117, 220, 240V AC 50/60Hz. Power consumption: 26W. 7 FETs, 45 transistors, 9 IC's, 43 diodes. Size: 445mm wide, 152mm high, 355mm deep. Weight: 14kg. Price: £350 (plus VAT).

## ■ ACOUSTICAL MANUFACTURING

See Quad.

## ■ AKAI

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

### AT 550 ★

AM/FM stereo tuner. Tuning range: FM

88MHz-108MHz, AM 535-1605kHz. FR: 50-15,000Hz  $\pm 1.5\text{dB}$ . HD: 0.8%. S/N ratio: better than 70dB. Selectivity: (IHF) better than 70dB. Aerial input impedance: 300 ohms balanced/75 ohms unbalanced. Mains: 100-240V AC 50/60Hz. Power consumption: 15W. Size:  $17.1 \times 5.6 \times 12.6\text{in}$ . Weight: 16.9lb. Price: on application.

### AT 580

AM/FM stereo tuner. Tuning range: FM 88-108MHz, AM 535-1605kHz. FR: 50-15,000Hz  $\pm 1.5\text{dB}$ . HD: less than 0.8%. S/N ratio: better than 70dB. Selectivity: (IHF) better than 80dB. Aerial input impedance: 300 ohms balanced/75 ohms unbalanced. Mains: 100-240V AC 50/60 Hz. Power consumption: 15W. Size:  $17.1 \times 5.6 \times 12.6\text{in}$ . Weight: 17.2lb. Price: on application.

## ■ ALBA

Alba Radio & Television Ltd, Bull Lane, Edmonton, London N18 1RA. Tel: 01-803 445.

### UA 800 ★

AM/FM stereo tuner with multiplex decoder designed for use with the Alba UA 700 amplifier. Tuning range: MW 1640-535kHz, LW 280-162kHz, FM 87-104MHz. Switchable AFC. Pushbutton switching for wavebands. Rotary tuning control. Stereo beacon. Stereo broadcast muting facility. THD: less than 1%. VHF aerial impedance: 75 ohms. Price: on application.



Accuphase T100

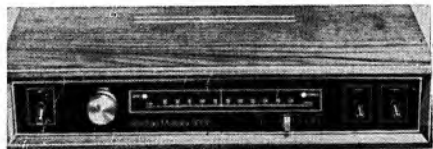


Akai AT550



Alba UA800D

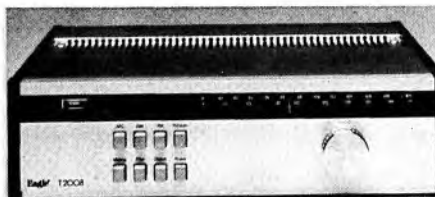
★ Indicates entry is illustrated



Amstrad Multiplex 3000



Bang & Olufsen Beomaster 1700



Eagle T2008

## ■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

### Executive 0007

FM stereo tuner. Five preset stations. Phase lock loop stereo decoder. Quiet tuning facility. Auto stereo/mono switching. AFC. Ceramic IF filters. Usable sensitivity:  $1.8\mu\text{V}$ . FR: 20Hz-15kHz  $\pm 1\text{dB}$ . Hum and noise:  $-60\text{dB}$ . Capture ratio: 3.5dB. Aerial inputs: 75 ohms coaxial and 300 ohms balanced twin. Output: (1) 50mV 10K, (2) 500mV 10K. Size:  $16\frac{3}{4} \times 6 \times 3\frac{3}{4}\text{in}$ . Finish: teak veneer. Mains: 110 or 240V 50-60Hz. Price: £49.50 (plus VAT).

## ■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road, London, E8. Tel: 01-249 5237.

### Multiplex 3000 ★

Stereo FM tuner. Range: FM/VHF. Variable tuning. Phase locked loop decoder. Usable sensitivity:  $5\mu\text{V}$ . Aerial input: 70 ohms coaxial. Output: 500mV nominal. Light emitting diode stereo beacon. Mains: 220-240V AC. Size:  $17 \times 3 \times 7\frac{1}{2}\text{in}$ . Finish: teak cabinet with black facia and silver trim. Preset gain control incorporated. Price: £46.60 (plus VAT).

## ■ BEOMASTER

Bang & Olufsen UK Ltd, Eastbrook Road, Gloucester GL4 7DE. Tel: Gloucester 21591.

### Beomaster 1700 ★

FM stereo tuner. Range: 87.5-104MHz. Variable tuning plus 3 preset stations. 'Balanced light' tuning indicator. Sensitivity  $< 2.0\mu\text{V}$ . AFC. Aerial input: 75 ohms coaxial and 300 ohms balanced. Output: 0-1V variable

and 90mV approx. Decoder fitted. Size:  $19.7 \times 9.1 \times 2.9\text{in}$ . Finish: teak or rosewood. Price: (teak) £74.90 (including VAT); (rosewood) £75.90 (including VAT).

## ■ DECCA

Decca Radio & Television, Neachells Lane, Willenhall, Staffs WV13 3RW. Tel: Willenhall 67367.

### T1501

AM/FM stereo tuner. Range: FM 87.5-107.5MHz, MW 185-588m. Variable tuning. AFC. Stereo decoder fitted. Size:  $15\frac{3}{4} \times 10\frac{3}{4} \times 5\text{in}$ . Finish: teak. Price: £50 (plus VAT).

## ■ EAGLE

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

### T2008 ★

AM/FM stereo tuner matching Eagle A2004 and A2006 amplifiers. Range: FM 88-108MHz, MW187-560m. Variable tuning, switchable AFC, meter tuning indicator, tuning arrows, inter station muting. Sensitivity: FM  $3\mu\text{V}$  for 30dB quieting. AM  $150\mu\text{V}$  for 20dB quieting. Stereo separation: 30dB at 1kHz. Aerial input: 75 ohms coaxial or 300 ohms balanced. Also MW aerial and internal MW aerial. Capture ratio: 3dB at rated sensitivity. AM rejection: 53dB. Image rejection: FM 50dB, MW 45dB. IF rejection: FM 60dB, MW 40dB. FR: FM 20Hz-15kHz  $\pm 2\text{dB}$ . Output: 0-1V adjustable. Size:  $15 \times 10\frac{1}{2} \times 4\frac{1}{4}\text{in}$ . Finish: teak cabinet with metal fascia. Price: £75 (plus VAT).

### ■ FERROGRAPH

The Ferrograph Company Ltd,  
Auriema House, 442 Bath Road,  
Cippenham, Slough, Bucks SL1 6BB.  
Tel: Burnham 62511.

#### SFM 1

VHF stereo tuner. Range: 87.5-108MHz, variable. AFC: switched. Tuning and signal strength meters. Sensitivity:  $1.5\mu\text{V}$  (IHF). Aerial: 300 and 75 ohm. VHF S/N: 60dB at 1mV input. Distortion: 1.0%. Output: 200mV for 25kHz deviation into 300 ohms. Mains: 100-120V, 200-240V AC. Size:  $18 \times 9 \times 4\frac{1}{2}$ in. Finish: teak, walnut or white cabinet with brushed aluminium fascia. Continuously adjustable mute threshold and adjustable stereo separation control from 40dB (1kHz) to zero (mono). Price: £114 (including VAT).

### ■ FUTURISTIC AIDS

Futuristic Aids Ltd,  
104 Henconner Lane, Leeds LS13 4LQ.  
Tel: Pudsey 5478.

New range of models to be introduced later this year. No details available as this edition of the Year Book closed for press.

### ■ HARMON KARDON

Highgate Acoustics, 38Jamestown Road,  
London NW1 7EJ. Tel: 01-267 4937.

#### Citation 15

FM stereo receiver. Bands: 88-105 MHz. Manual tuning, meter. Sensitivity:  $2.0\mu\text{V}$  IHF. Aerial: 75 or 300 ohms. S/N ratio: -70dB. THD: mono 0.25%, stereo 0.35%. Output: (voltage) 2V fixed and 2V variable into 100K. Mains: 110-240V. Size:  $16 \times 13\frac{3}{4} \times 4\frac{1}{2}$ in. Fitted with a patented signal-to-noise ratio meter. Price: £279 (plus VAT).

### ■ HEATHKIT

See Constructional Kits Section.

### ■ HITACHI

Hitachi Sales (UK) Ltd, Station Road,  
Hayes UB3 4DR. Tel: 01-848 8787.

#### FT600

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-572m. Usable sensitivity: FM  $1.8\mu\text{V}$ , MW  $15\mu\text{V}$ . Tuning light indicator. Capture ratio: 1.5dB. Output: 1.5V (fixed) and 0-1.5V adjustable. Quiet tuning facility. Noise filter. Stereo decoder with auto switching and beacon. 28 transistors, 21 diodes, three ICs, one FET. Variable tuning and pushbutton selectors. Size:  $16\frac{1}{4} \times 4\frac{3}{4} \times 12\frac{1}{2}$ in. Weight:  $16\frac{1}{2}$ lb. Price: £98 (including VAT).



Leak 2300 tuner

### ■ JVC (UK) LTD

Eldonwell Trading Estate,  
Staples Corner, 6-8 Priestley Way,  
London, NW2. Tel: 01-450 2621.

#### VT-500

AM/FM stereo tuner. Range FM and MW. Quiet tuning facility. Stereo decoder fitted. Variable tuning. Signal strength tuning meter. Provision for connecting quadraphonic decoder. Aerial inputs for 300 ohm balanced twin and 75 ohms coaxial. Size:  $15 \times 5\frac{1}{2} \times 12$ in. Weight:  $15\frac{1}{2}$ lb. Price: £85.50 (plus VAT).

#### VT-700

AM/FM stereo tuner. Range: FM and MW. Variable tuning. Stereo decoder fitted. Provision for quadraphonic decoder. FET front end. Capture ratio: 0.8dB. Signal strength meter and centre-zero tuning meter. Quiet tuning facility. Aerial input: 300 ohm balanced twin or 75 ohm coaxial. Size:  $16\frac{1}{2} \times 5\frac{1}{2} \times 12\frac{1}{2}$ in. Weight:  $16\frac{1}{2}$ lb. Price: £125 (plus VAT).

#### JTV-310

AM/FM stereo tuner. Usable sensitivity:  $2\mu\text{V}$ . THD: 0.5%. S/N ratio: 70dB. Capture ratio: 1.5dB. Image rejection: 55dB. Stereo separation: 40dB at 1kHz. No further product information as this edition of the Year Book closed for press. Price: £85 (plus VAT).

### ■ LEAK

Rank Radio International Ltd,  
PO Box 596, Power Road, Chiswick,  
London W4 5PW. Tel: 01-994 6491.

#### Model 2300 ★

FM/MW/LW stereo tuner. Bands: 87.5-108 MHz FM, 150-350kHz LW, 510-1650kHz MW. Manual tuning, switched AFC, centre tuning meter. Sensitivity:  $1.6\mu\text{V}$  IHF (FM),  $20\mu\text{V}$  AM. Aerial: 75 and 300 ohms. S/N: > -65dB. Distortion: 0.5% at 1kHz. Output: 400mV 600 ohms for 30% modulation. Mains: 240V 50-60Hz AC. Size:  $5.2 \times 16.3 \times 12.2$ in. Weight: 13.2lb. Teak finish. Variable mute level, quasi stereo control. Price: £105.58 (plus VAT).



★ Indicates entry is illustrated



L & H Signalmaster Mk III 6087



Marantz Model 105B



Marantz 120



Marantz Model 115B

## ■ L & H

Distributors: Britimpex Ltd,  
8-12 Rickett Street, London SW6 1RU.  
Tel: 01-385 0883.

### Signalmaster Mk III 6087 ★

Self-contained battery-operated FM/VHF tuner. Will also operate from 32V from L & H Audiomaster amplifier. Plug-in V aerial. Socket for 70 ohms external aerial. Pushbutton on/off and AFC. Illuminated tuning scale. Transistors. Range: 86-104MHz. PP9 or equivalent battery. Consumption: 9mA. Teak case. Size:  $11\frac{1}{4} \times 3\frac{1}{2} \times 7\frac{1}{8}$ in. Price: £31.45.

### Stereo decoder module

Plug-in type suitable for Signalmaster Mk III. Fits inside case. Channel separation better than 32dB at 1kHz. Consumption: 3mA. Automatic stereo beacon. Price: £7.87. Connecting lead with 5-pin plug. Price: 75p.

## ■ MARANTZ

Pyser Ltd, Fircroft Way, Edenbridge,  
Kent TN8 6HA. Tel: Edenbridge 4111.

### Model 120B ★

Stereo AM/FM tuner. Range: FM 88-108MHz, MW 187-555m. Variable tuning. Ratio detector. Oscilloscope tuning indicator. Phase lock loop stereo demodulator. Usable sensitivity: AM  $20\mu\text{V}$ , FM  $1.4\mu\text{V}$  for 30dB quieting. Aerial input: 300 ohms balanced, 75 ohms coaxial. Size:  $15\frac{3}{8} \times 5\frac{3}{8} \times 13$ in. Gold anodised front panel. Price: £280 (including VAT).

### Model 105B ★

AM/FM stereo tuner. Range: FM

88-108MHz, MW 187-555m. Variable tuning with 'Gyrotouch'. AFC not necessary. Ratio detector. Phase lock loop demodulator. Meter tuning indicator. Usable sensitivity: FM  $2.8\mu\text{V}$ , MW  $25\mu\text{V}$ . Aerial input: 75 ohms coaxial, 300 ohms balanced twin. Stereo decoder fitted. Mains: 110, 220, 240V AC. Size:  $14\frac{1}{2} \times 4\frac{3}{4} \times 12$ in. Finish: walnut, teak, white (optional cabinet) or simulated walnut metal chassis. Price: £99 (including VAT).

### Model 115B ★

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-555m. Variable tuning with 'Gyrotouch' AFC not necessary. Ratio detector. Phase lock loop. Signal strength meter. Centre-zero tuning meter. Usable sensitivity: FM  $1.7\mu\text{V}$ , MW  $20\mu\text{V}$ . Aerial input: 75 ohms coaxial, 300 ohms balanced twin. Stereo decoder fitted. Mains: 110, 220, 240V AC. Size:  $15\frac{3}{8} \times 5\frac{3}{8} \times 13$ in. Finish: walnut (cabinet optional), simulated walnut metal chassis. Output level control. Quiet tuning facility with threshold level control. Price: £150 (including VAT).

## ■ MILLBANK ELECTRONICS GROUP LTD

Bellbrook Estate, Uckfield,  
Sussex TN22 1PS. Tel: Uckfield 4166.

### MET2001C ★

AM/FM stereo tuner designed for building in or rack mounting. Range: FM 88-108MHz, MW 190-590m, LW 830-2010m, SW 40-52m. Variable tuning. Switchable AFC. Foster-Seeley discriminator. Meter tuning indicator. Usable sensitivity:  $3\mu\text{V}$  for 26dB

S/N with 125kHz deviation. Aerial input: (FM) 80 ohms coaxial, (AM) ferrite rod plus external terminals. Output: 100mV. Stereo decoder fitted. Mains: 220-240V 50-60Hz. Four-stage IF amplifier with automatic control of bandwidth. Module construction for easy servicing. Size: 19 × 3½ × 5½in. Price: £110.25 (plus VAT).

**METS500FM**

FM tuner designed for building in. Range: 88-108MHz. Tuning by remote pushbutton unit (varicap tuner). Switchable AFC. Tuning meter. Usable sensitivity: 5µV for 30dB S/N ratio at 25kHz deviation. Aerial input: 80 ohms coaxial. Mains: 220-250V 50-60Hz. Output: 500mV. No multiplex decoder. Metal housing. Price: £52.98 (plus VAT).

■ **MOTION ELECTRONICS**

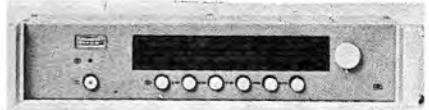
Addlestead Farm, Tonbridge Road, East Peckham, Kent.  
Tel: East Peckham 871354.

**Television Sound Monitor ★**

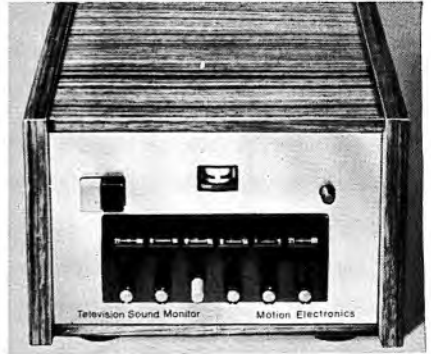
Tuner unit designed to receive VHF and UHF television sound broadcasts. Varicap tuning with six preset pushbuttons, all manually adjustable. Ratio detector for FM, diode detector for AM. Centre-zero tuning meter. Sensitivity: 10 microvolts. Aerial input: 75 ohms coaxial or 300 ohms balanced. Output adjustable up to 0.5V. Mains: 110-240V AC. Consumption: 5W. Available in cabinet or chassis form for building-in. Cabinet teak veneered with finely grained silver finished front panel. Suitable for vertical or horizontal mounting. VHF coverage: 41-66.75MHz and 176-215MHz. UHF coverage: 470-846MHz. Prices: (VHF-only chassis) £36.10; (VHF-only in cabinet) £39.56; (UHF- only chassis) £35.56; (UHF-only in cabinet) £39.15; (VHF/UHF chassis) £40; (VHF/UHF in cabinet) £43.50.

**Television Sound Monitor plus VHF Radio**

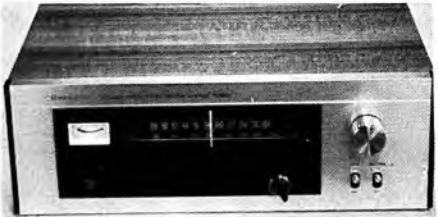
Television section similar to specification for Sound Monitor listed above. Radio section employs vari-cap tuning. Built-in stereo decoding with automatic switching. Centre-zero tuning meter. Stereo beacon. Mono over-ride control. Pushbutton programme selection. AFC. Separation: better than 45dB at 1kHz. Sensitivity: 5µV for 35dB signal-to-noise. Ultrasonic frequency rejection: (19kHz) 40dB, (38kHz) 40dB. Output impedance: 5K per channel. Output: 0-1.5V balanced to within 1dB. Aerial input: 75 ohms coaxial. Available in chassis form or in teak or walnut veneered cabinet. Mains: 110-120V AC and 210-240V AC. Size:



Millbank MET2001C



Motion Electronics TV Tuner



Nippon Sound ST606

(chassis) 5½ × 3½ × 10½in. deep; (cabinet) 6½ × 5 × 11½in. deep. Price: (UHF/VHF stereo radio chassis) £53.65; (UHF/VHF stereo radio in cabinet) £57.20.

■ **NIPPON SOUND**

I. D. Electronics (Europe), 7 Priory Road, High Wycombe, Bucks.  
Tel: High Wycombe 36783.

**ST606★**

FM/MW stereo tuner. Variable tuning. Switched AFC. Range: FM 88 - 108MHz, MW 535 - 1605kHz. Tuning meter. Sensitivity: FM 3µV IHF, MW 25µV. Aerial impedance: 300 ohms balanced, 75 ohms unbalanced. Provision for extra aerial for AM, also built-in ferrite rod. S/N ratio: 55dB IHF. Output voltage: 1V. Mains: 220-240V AC. Size: 15 × 9½ × 5½in. Finish: teak. Muting switch. Price: £70.31 (including VAT).

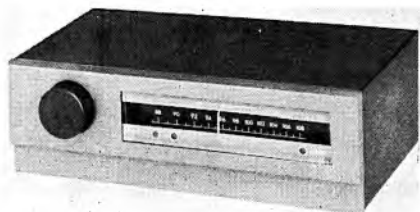
★ Indicates entry is illustrated



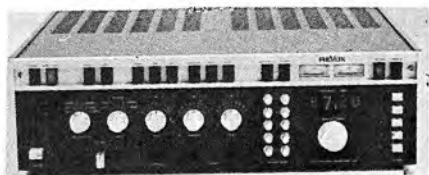
Philips RH621



Revox A76



Quad FM3



Revox Digital FM Tuner/Preamp A720

## ■ PHILIPS

Philips Electrical Ltd, Century House,  
Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01-437 7777.

### RH621 ★

AM/FM stereo tuner. Range: FM 87.5-104MHz, MW 187-577m, LW 857-2000m, SW16.7-50.4m, variable tuning plus five presets on FM. Switchable AFC. Ratio detector. Moving coil tuning meter. Usable sensitivity: FM 0.7 $\mu$ V at 75 ohms for 26dB quieting, AM 80 $\mu$ V for 26dB S/N. Aerial input: 75 ohms coaxial, 300 ohms balanced. Output: FM 0.6V at 40kHz deviation, AM 350mV at 30% modulation. Stereo decoder fitted. Mains: 110, 127, 220 and 240V AC. Size: 16½ × 11¼ × 4½in. Finish: walnut veneer cabinet with brushed aluminium fascia. Silent tuning facility on FM. Price: £134.26 (plus VAT).

## ■ PIONEER

Distributors: Shriro (UK) Ltd, Shriro House,  
The Ridgeway, Iver, Bucks SLO 9JL.  
Tel: Iver 652222.

### TX5300

FM/AM stereo tuner. Sensitivity: 1HF 1.9 $\mu$ V (50dB quieting 4.5 $\mu$ V). S/N ratio: 68dB (stereo). THD: 0.4% at 100Hz, 0.4% at 1kHz. Capture ratio: 1dB. Selectivity: 60dB ( $\pm$ 400kHz). FR: 20Hz-15kHz  $\pm$ 0.2dB. Separation: 35dB at 1kHz. Image rejection: 60dB. 1F rejection: 90dB. Spurious rejection: 75dB. AM suppression: 50dB. Sub-carrier suppression: 40dB. Muting threshold: 2.2 $\mu$ V. Antenna input: 300 ohms balanced, 75 ohms

unbalanced. Size: 399 × 165 × 366mm. Price: on application.

### TX7500

AM/FM stereo tuner. Sensitivity: 1HF 1.9 $\mu$ V. S/N ratio: 83dB. THD: 0.2% at 100% modulation. Outputs: 650mV (fixed) 50mV-1.5V (variable). Size: 420 × 150 × 365mm. Price: on application.

### TX9500

AM/FM stereo tuner. Sensitivity: (1HF) 1.5 $\mu$ V. S/N ratio: 80dB. THD: 0.15% at 100% modulation. Outputs: 650mV (fixed) 70mV-2V (variable). Built-in signal oscillator for checking recording levels. Ultra wideband linear phase detector. Size: 420 × 150 × 365mm. Price: on application.

## ■ PHOTAX (LONDON) LTD

Hampden Park, Eastbourne, Sussex.  
Tel: Eastbourne 51197.

### Concertone 620X

VHF/MW stereo tuner. Range: VHF, 88-108 MHz, MW 54-150m variable tuning. AFC: switched. Tuning meter fitted. Sensitivity: 2.2 $\mu$ V (1HF) VHF, 25 $\mu$ V (1HF) MW. Aerial: 300 and 75 ohm. VHF S/N: >65dB. VHF distortion: <0.5% mono, <0.8% stereo. Output: fixed, VHF 1V at 75kHz deviation 330mV at 30% AM. Variable 0-1V. Mains: 100-240V AC, 50-60Hz. Teak case, aluminium fascia. Price: £72.52 (including VAT).

## ■ QUAD

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

**Quad FM3 ★**

Stereo FM tuner. Range: 88-108MHz. Variable tuning. High stability tuned stages maintain accuracy without AFC. Twin neon tuning indicator. Sensitivity:  $2\mu\text{V}$  for full limiting. Aerial input: 75 ohms coaxial 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  $\pm$  1dB. Separation: 40dB at 1kHz. Distortion: 1kHz at 40kHz deviation, 0.3%. Recommended load: greater than 50K. De-emphasis: 50 $\mu$ Sec or 75 $\mu$ Sec as required. Mains: 100-125V, 200-250V 50-60Hz. Dual gate MOS FET input stage. Integrated circuits (ICs) in IF and decoder. Ceramic filters in IF chain. Output via 5 pin DIN connector. Size: 10 $\frac{1}{4}$   $\times$  5 $\frac{1}{2}$ in. Price: £74 (plus VAT).



Ravensbrook tuner

■ **RADFORD AUDIO LTD**

Ashton Vale Road, Bristol BS3 2HZ.  
Tel: Bristol 662301.

**Model FMT 5**

FM tuner with varicap tuning, FET front end. Uses varicap front end having two radio frequency stages of five tuned circuits and four field effect transistors. Intermediate frequency amplifiers contain ceramic ladder filters and high gain integrated circuits. Incorporates phase locked stereophonic decoder. Size: 17  $\times$  4 $\frac{3}{4}$   $\times$  11in. Price: £135 (plus VAT).

■ **REVOX**

Distributors: C.E. Hammond & Co Ltd.  
Lamb House, Church Street,  
London W4 2PB. Tel: 01-995 4551.

**Model A76 ★**

Stereo tuner, VHF only: 87.5-108MHz, variable tuning. Two tuning meters. Sensitivity:  $1\mu\text{V}$  mono (IHF),  $10\mu\text{V}$  stereo (IHF). Aerial: 60 ohms. VHF S/N: 70dB at 75kHz deviation. VHF distortion: 0.2% at 1kHz. 40kHz deviation mono or stereo. Output: 1V at 75kHz deviation. Mains: 110-250V, 50-60Hz AC. Price: £229 (plus VAT).

**Model A720 Digital Tuner/pre-amp★**

Stereo tuner and preamplifier combined. VHF only, tuning range: 87-107.95MHz in 50kHz steps. Tuner uses frequency synthesiser. Sensitivity:  $1\mu\text{V}$  mono (IHF),  $10\mu\text{V}$  stereo (IHF). Tuning indication by digital readout on Nixie tubes. Aerial: 75 ohms, BNC socket or 300 ohms DIN. VHF S/N: 70dB weighted

ASA-A. Distortion: 0.2% at 1kHz, 40kHz deviation. Output: 1.5V at 40kHz deviation. Pre-amp section; Inputs: Aux, 100mV/100K sensitivity variable over 20dB range. Tape 1, 100mV/100K sensitivity variable over 20dB range. Tape 2, 100mV/100K sensitivity variable over 20dB range. Phono 1, (RIAA) 3mV/50K  $\pm$  5dB. Phono 2, (RIAA) 3mV/50K  $\pm$  5dB. Overload margin on all inputs >30dB. Outputs: 1 and 2: 1.5V into load >10K. Tape out, front panel and two rear: 200mV into load >50K. Phono socket, bass, treble and presence controls. Low, high and loudness filter. Distortion: 0.1% at 1.5V output. FR: 20Hz-20kHz  $\pm$  1dB. S/N: phono, 65dB. Other inputs: 85dB. Price: £590 (plus VAT).

■ **ROGERS DEVELOPMENTS (ELECTRONICS) LTD**

4-14 Barmstone Road, Catford,  
London SE6 3BN. Tel: 01-698 7424/4340.

**Ravensbrook FET FM tuner, Series II ★**

Range: 88-108MHz. Variable tuning. Quadrature detector. Centre-zero meter. Sensitivity: better than  $5\mu\text{V}$  (IHFM). Aerial impedance: 75 ohms coaxial and 300 ohms balanced. Output: 200mV for 30% modulation. Phase lock loop stereo decoder. Switchable AFC. Three-gang FET front-end. Dual ceramic IF filters using IC techniques. Built-in 55kHz filter. Switchable interstation noise suppression. Mains: 105-125V, 200-250V, 50-60Hz. Consumption: 9W. Size: (chassis) 3 $\frac{3}{4}$   $\times$  10 $\frac{1}{2}$   $\times$  10in; (cabinet) 5  $\times$  11 $\frac{1}{2}$   $\times$  10in. Prices: (chassis) £45 (plus VAT); (in cabinet) £50 (plus VAT).

**Ravensbourne 2 FET tuner, Series II**

Range: 88-108MHz. Variable tuning. Quadrature detector. Centre-zero tuning meter. Sensitivity; better than  $24\mu\text{V}$  for 30dB quieting. Aerial impedance: 75 ohms coaxial. Output: 200mV average for 30% modulation. Dual ceramic IF filters using IC techniques. Built-in 55kHz filter. Switched AFC. FET front end. Inter-station noise suppression.

★ Indicates entry is illustrated

Phase lock loop stereo decoder. Mains: 200-250V AC. Consumption: 8W. Size: (chassis)  $11\frac{1}{2} \times 11 \times 4$ in; (case)  $12\frac{1}{2} \times 11\frac{1}{2} \times 5\frac{1}{2}$ in. Prices: (chassis with decoder) £57.50 (plus VAT); (in cabinet with decoder) £61.50 (plus VAT).



Rotel RT 322

## ■ ROTEL

Rank Audio Visual Ltd, PO Box 70,  
Great West Road, Brentford TW8 9HR.  
Tel: 01-568 9222.

### RT322 ★

Stereo VHF/MW tuner with fixed AFC and tuning meter. Sensitivity:  $2\mu\text{V}$  (IHF) VHF,  $200\mu\text{V}$  (IHF) MW. Aerial: 75 ohms. VHF S/N: 65dB (IHF). VHF distortion:  $<0.5\%$ . Output: 120mV into load of 150K. Mains: 100-240V AC. Case:  $14 \times 7\frac{1}{2} \times 4\frac{1}{2}$ in. Cabinet finish: brushed stainless steel front panel, teak/walnut sleeve. Price: £78.25 (plus VAT).

### RT 222

Stereo VHF/MW tuner with fixed AFC and tuning meter. Sensitivity:  $4\mu\text{V}$  (IHF) VHF,  $250\mu\text{V}$  (IHF) MW. Aerial: 75 ohms. VHF S/N: 63dB (IHF). VHF distortion:  $<0.5\%$ . Output: 120mV. Rec. load: 150K. Mains: 100-240V AC. Case:  $13 \times 6\frac{1}{2} \times 4$ in. Cabinet finish: brushed stainless steel front panel, teak/walnut sleeve. Price: £55.47 (plus VAT).

### RT 622

No specifications available at time of going to press. Price: £124.55 (plus VAT).

### RT 1220

Stereo VHF/MW tuner with fixed AFC and tuning meter. Sensitivity:  $1.5\mu\text{V}$  (IHF) VHF,  $15\mu\text{V}$  (IHF) MW. Aerial: 75 ohms. VHF distortion:  $<0.5\%$ . Case:  $16\frac{1}{2} \times 12 \times 5\frac{1}{2}$ in. Uses supersensitive MOS FET front end tuner section. Price: £155.10 (plus VAT).

## ■ SANSUI

Vernitron Ltd, Thornhill,  
Southampton SO9 5QF.  
Tel: Southampton 444811.

### TU4400

AM/FM stereo tuner. Tuning range: FM 88-108MHz, MW 535-1605kHz. Signal meter and tuning meter, aerial input for 300 and 75 ohms. Sensitivity: FM  $2\mu\text{V}$ . Size:  $400 \times 120 \times 240$ mm. Price: to be announced.

### TU5500

AM/FM stereo tuner. Tuning range: FM 88-108MHz, MW 535-1606kHz. Signal meter and tuning meter, aerial input for 300 and 75 ohms. FM sensitivity:  $1.9\mu\text{V}$ . S/N ratio:



Sansui TU9500

better than 70dB. Size:  $434 \times 130 \times 243$ mm. Price: to be announced.

### TU7700

AM/FM stereo tuner. Tuning range: FM 88-108MHz, MW 535-1605kHz. Signal meter and tuning meter, aerial input for 300 and 75 ohms. LED indicator switch to enable signal meter to be used as multi-path signal indicator. FM sensitivity:  $1.8\mu\text{V}$ . S/N ratio: better than 75dB. Selectivity: better than 80dB. Size:  $434 \times 130 \times 243$ mm. Price: to be announced.

### TU9500 ★

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-560m. Variable tuning. AFC. Ratio detector. Meter for AM signal strength. Centre-zero FM tuning meter. Usable sensitivity: FM  $1.7\mu\text{V}$ . Aerial input: 0-1V adjustable. Stereo decoder fitted. Mains: 100, 117, 220, 240V 50-60Hz. Size:  $19\frac{3}{4} \times 13\frac{3}{4} \times 5\frac{1}{2}$ in. Finish: matt black with satin chrome trim (matches AU9500). Quiet tuning facility. Direct recording outlet. Price: £210.28 (plus VAT).

## ■ SCOTT

Photax (London) Ltd, Hampden Park,  
Eastbourne, Sussex. Tel: Eastbourne 51197.

### T33S

FM/Digital stereo tuner. Band: 87.5-107.9MHz. Digital tuning accurate 0.001%, digital readout, station pre-selection by punched cards to within 100kHz, with

scanning and memory. Sensitivity:  $1.8\mu\text{V}$  IHF. Aerial: 75 or 300 ohms. S/N: 70dB ref N: 70dB ref  $\pm 75\text{kHz}$  deviation. Distortion: 0.25% mono, 0.35% stereo. Output: 1V (adjustable). Mains: 100-120V or 200-240V AC 50-60Hz. Price: £381.12 (including VAT).

■ SHARP

Sharp Electronics (UK) Ltd,  
107 Hulme Hall Lane,  
Manchester, M10 8HL.  
Tel: 061-205 7321.

ST-510-H

VHF/MW/LW/SW stereo tuner meeting DIN 45 500 Hi-Fi Standard. Sensitivity:  $2.5\mu\text{V}$  (DIN). Tuning range: FM 87.5-107.5MHz, MW 520-1620kHz. Finish: teak. Price: £69.09 (plus VAT).

■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames,  
Tel: Sunbury 87644.

ST 5066

AM/FM stereo tuner. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 15W RMS per channel into 8 ohms. IM distortion: 0.8% at 1kHz. DF: better than 22dB at 1kHz into 8 ohms. Inputs: phono 2.5mV 47K, tuner 250mV 50K, aux 250mV 50K, tape 1, 2 250mV 50K, DIN 250mV 50K. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. High filter: 6dB/Oct above 5kHz. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 410 x 120 x 280mm. Price: on application.

ST-5055L

MW/LW/VHF stereo tuner. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 20W per channel into 8 ohms. IM distortion: 0.5% at rated output. DF: 22 into 8 ohms. Inputs: phono 2mV 47K, mic 2mV 47K all other inputs 250mV 50K. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. High filter: 6dB/Oct above 5kHz. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 410 x 120 x 284mm. Price: on application.

ST-5150

AM/FM stereo tuner. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 30W RMS per channel into 8 ohms. HD: 0.2% at rated power. DF: 100 into 8 ohms. Inputs: phono 2mV 47K all other inputs 140mV 50K. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. High filter: 6dB/Oct above



J.E. Sugden R21



J.E. Sugden R51

5kHz. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 400 x 149 x 316mm. Weight: 8.3kg. Price: on application.

■ J.E. SUGDEN & CO LTD

Carr Street, Cleckheaton, Yorks BD19 5LA.  
Tel: Cleckheaton 2501.

R21 and R51 ★

FM stereo tuner. Range: 88-104MHz. Variable and preset tuning. Ratio detector. Centre-zero tuning indicator. Sensitivity:  $2\mu\text{V}$  for 20dB quieting. Aerial input: 75 ohms coaxial and 300 ohms balanced. Output: 0.5V. Stereo decoder fitted. AFC. Mains: 110, 120, 220, 230 and 240V AC. Thermometer type tuning dial. Special decoder filter to prevent spurious responses. Switchable decoder filter for low-level transmissions. R21 designed to match J.E. Sugden A21 and A48 amplifier. R51 designed to match J.E. Sugden C51 amplifier. Size: (R21) 12 x 9 x 5in; (R51) 11 x 4 x 7in. Price: (R21) £78 (plus VAT); (R51) £83 (plus VAT).

■ TECHNICS

Technics Hi-Fi Division, Building 63,  
107-109 Whitby Road, Trading Estate,  
Slough SL1 3DR. Tel: Slough 34522.

ST-3500

FM/AM stereo tuner. Tuning range: FM

★ Indicates entry is illustrated



Technics ST-3500

88-108MHz, AM 520-1610kHz. S/N ratio: mono 75dB, stereo 60dB. Designed to match the Technics SU-3500 amplifier. Sensitivity: 1.7µV. Selectivity: 85dB. Precise tuning by dual meters. Finish: brushed aluminium. Size: 410 × 140 × 360mm. Weight: 7.4kg. Price: £133.80 (plus VAT).

#### ST-3200

FM/AM stereo tuner. Tuning range: FM 88-108MHz, AM 520-1610kHz. S/N ratio: mono 75dB, stereo 60dB. Designed to match the Technics SU-3200 amplifier. THD: 0.3%. Sensitivity: 15µV. Selectivity: 30dB. Power consumption: 16W. Mains: 110-240V AC 50/60Hz. Size: 410 × 140 × 360mm. Weight: 6.9kg. Price: £110.65 (plus VAT).

#### ST-3000

FM/AM stereo tuner. Tuning range: FM 88-108MHz, AM 520-1610kHz. S/N ratio: mono 60dB, stereo 50dB. THD: 0.7%. Sensitivity: 30µV. Selectivity: 20dB. Power consumption: 12W. Mains: 110-240V AC 50/60Hz. Size: 336 × 115 × 310mm. Weight: 4.9kg. Price: £68.14 (plus VAT).

### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

#### ST-500 ★

FM/AM stereo tuner. Tuning range: FM 88-108MHz, AM 530-1605kHz. RF amplification and double stage AGC. High blend switch. Signal, strength and centre channel meters. Output terminal for 4-channel broadcast decoder. FM muting. Price: £99.54 (plus VAT).

### ■ TRIO

Distributors: B. H. Morris & Co (Radio) Ltd, Trio House, The Hyde Industrial Estate, The Hyde, London NW9 6JP. Tel: 01-205 6441.

#### KT2001A

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-556m. Variable tuning. Meter tuning indicator. Sensitivity: 2µV

(IHF standard). Aerial input: 75 ohms coaxial and 300 ohms balanced. Output: 1V FM, 0.4V AM. Stereo decoder fitted. Circuit incorporates ICs. Multiplex noise filter fitted (switchable). Mains: 110-120V and 220-240V AC 50-60Hz. Size: 13 × 4½ × 9½in. Price: £78 (plus VAT).

#### KT 4005

FM/AM stereo tuner. Bands: 88-108MHz FM, 540-1600kHz AM. Manual tuning, signal strength and centre tuning meters. Sensitivity: 1.9µV IHF (FM), 18µV (AM). FR: 20Hz-15kHz (+0.2dB, -1.5dB). THD: 0.4% mono, 0.7% stereo. S/N: 70dB. Output: 1.5V 12.5K. Aerial: 75 or 300 ohms. Price: £110 (plus VAT).

#### KT8005

AM/FM two-band stereo tuner. Range: 88-108MHz, MW 187-556m. Variable tuning. Signal strength meter, centre-tune tuning meter. Usable sensitivity: FM 1.5µV (IHF). Multipath detection in FM stereo mode. Stereo decoder fitted. Special switchable muting circuit cuts out mono stations and receives stereo only. Aerial input: 75 ohms coaxial or 300 ohms balanced. Output: (FM) 1.5V, (AM) 150mV. Mains: 110 or 230V AC. Weight: 24.9lb. Size: 17½ × 6½ × 11½in. Price: £190 (plus VAT).

### ■ YAMAHA

Natural Sound Systems Ltd, Stratcona Road, North Wembley HA9 8QL. Tel: 01-904 0141.

#### CT 800

VHF/MW stereo tuner with touch sensitive AFC switch, tuning and signal strength meters. Variable tuning. Sensitivity: 1.7µV (IHF). Capture ratio: 1dB. Aerial: 300 ohms and 75 ohms. VHF/S/N: 75dB (IHF). VHF distortion: 0.3% at 400Hz, 1% 50Hz-10kHz. Output: 100mV and 0-1V variable. Rec. load: 40K. Mains: 110-240V AC. Cabinet finish: satin aluminium fascia, American walnut case. Price: £139.90 (plus VAT).

#### CT7000

VHF stereo tuner. Tuning range: 88-108MHz, variable. Sensitivity: <1µV (IHF). Aerial: 300 ohms and 75 ohms. VHF S/N: better than 75dB. THD: <0.08% at 400Hz and 1kHz. Capture ratio: 0.6dB. IF rejection: <120dB. Outputs: 100mV/40K, 0-1V/40K. Mains: 110-240V AC. Finish: satin aluminium fascia and American walnut case. Uses a 7-gang solid state filter front end. Price: to be announced. AC. Finish: satin aluminium fascia and American walnut case. Uses a 7-gang solid state filter front end. Price: to be announced.

# Receivers

grain side panels and satin metal control panel.  
Price: £146.90 (including VAT).

## ■ ALBA

Alfa Radio & Television Ltd, Bull Lane,  
Edmonton, London, N18. Tel: 01-803 4451.

## U A 100/D

4 waveband tuner and stereo amplifier. Stereo decoder. Output: 15W per channel. Flywheel tuning on all wavebands. Switchable AFC. Internal aerials for all AM wavebands. Price: on application.

## ■ ALPHA

Hightgate Acoustics, 38 Jamestown Road,  
London NW1 7EJ. Tel: 01-267 4937.

## FR5000

Stereo VHF/AM receiver. VHF 88-108 MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF)  $3\mu\text{V}$ , AM  $25\mu\text{V}$ . Aerial impedance: 300(75) ohms. S/N ratio: (VHF) IHF 50dB. Output voltage: 250mV. Load impedance: 100K. Mains: 110-240V AC. Loudness control, low filters, high filters. Size:  $16\frac{1}{8} \times 11\frac{3}{4} \times 5\frac{1}{2}$ in. Finish: teak with brushed aluminium front. Price: £99 (plus VAT).

## FR6000

Stereo VHF/AM receiver. VHF 88-108 MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF)  $2\mu\text{V}$ , AM  $25\mu\text{V}$ . Aerial impedance: 300 (75 ohms). S/N ratio: (VHF) IHF 50dB. Output voltage: 250mV. Load impedance: 100K. Mains: 110-240V AC. Loudness control, low filters, high filters. Size:  $17\frac{1}{8} \times 11\frac{3}{4} \times 6\frac{3}{16}$ in. Price: £115 (plus VAT).

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ AKAI

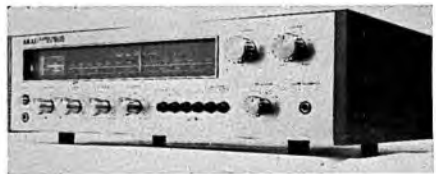
Rank Audio Visual Ltd, PO Box 70,  
Great West Road, Brentford TW8 9HR.  
Tel: 01-568 9222.

### AA8030 ★

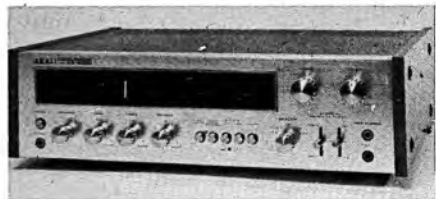
AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-560m. Sensitivity: FM  $2.5\mu\text{V}$ , MW  $250\mu\text{V/m}$ . Variable tuning. Centre-zero tuning meter. Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. Output: 25W RMS per channel into 8 ohms. HD:  $<0.05\%$ . FR: 15Hz-40kHz  $-3\text{dB}$ . Inputs: mag PU  $3\text{mV } 50\text{K}$ , aux  $150\text{mV } 50\text{K}$ , tape  $150\text{mV } 50\text{K}$ . H and N: (PU input)  $-60\text{dB}$ , (other inputs)  $-75\text{dB}$ . Separation: better than 50dB. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz, loudness  $+8\text{dB}$  at 100Hz  $+5\text{dB}$  at 10kHz, high filter  $-8\text{dB}$  at 10kHz. 4l transistors, one FET, one IC, 3l diodes. Mains: 100-240V 50-60Hz. Size:  $18\frac{1}{4} \times 6\frac{1}{4} \times 13\frac{1}{2}$ in. Weight: 25 $\frac{1}{2}$ lb. Price: £149.50 (including VAT).

### AA8080 ★

AM/FM stereo tuner/amplifier. Range: 88-108MHz, MW 187-560m. Sensitivity: FM  $2\mu\text{V}$ . MW  $300\mu\text{V/m}$ . Variable tuning. Signal strength meter. Centre-zero tuning meter. Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. Output: 40W RMS per channel into 8 ohms. HD:  $<0.03\%$  at 8 ohms 20W. FR: 10Hz-50kHz  $-3\text{dB}$ . Inputs: mag PU  $3\text{mV } 50\text{K}$ , aux  $160\text{mV } 50\text{K}$ , tape  $160\text{mV } 50\text{K}$ , mic  $2.5\text{mV } 50\text{K}$ . H and N: (PU input)  $-65\text{dB}$ , (other inputs)  $-80\text{dB}$ . Separation: (PU input) 55dB, (other inputs) 65dB. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz, loudness  $+8\text{dB}$  at 100Hz  $+5\text{dB}$  at 10kHz, high filter  $-5.5\text{dB}$  at 10kHz, low filter  $-4.5\text{dB}$  at 50Hz. 50 transistors, two FETs, two ICs. 38 diodes. Mains: 100-240V 50-60Hz. Size:  $18\frac{1}{4} \times 5\frac{3}{4} \times 15\frac{1}{2}$ in. Weight: 30lb. Finish: wood



Akai AA8030



Akai AA8080



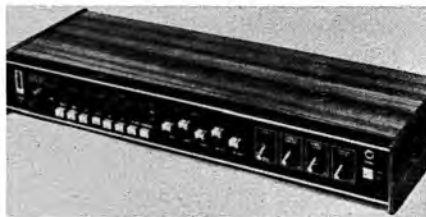
★ Indicates entry is illustrated

### ■ AMSTRAD

AMS Trading (Amstrad) Ltd,  
89 Ridley Road, London, E8.  
Tel: 01-249 5237.

#### Model 5000 ★

25W RMS/channel MW, LW and VHF facility. AFC, muting, in-built stereo decoder, headphones, four speaker outputs. Inputs: phono (mag), phono (cer). Tape in/out. Tuner sensitivity:  $2\mu\text{V}$ . THD: 0.1% at 20W. Scratch, rumble and loudness filters mono/stereo, bass, treble and middle, separate volume controls. Size:  $23\frac{3}{4} \times 8\frac{3}{4} \times 3\frac{1}{2}$ in. Price: £91.20 (plus VAT).



Amstrad Model 5000



Beomaster 901



Beomaster 6000

### ■ BEOMASTER

Bang & Olufsen (UK) Ltd, Eastbrook Road,  
Gloucester GL4 7DE.  
Tel: Gloucester 21591.

#### Beomaster 901 ★

20W per channel tuner/amplifier. Tuning range: FM 87.5-104MHz, LW 147-350kHz, MW 520-1610kHz. Variable tuning. 'Balanced light' tuning indicator. Sensitivity:  $<1.8\mu\text{V}$  FM;  $<15\mu\text{V}$  LW;  $<20\mu\text{V}$  MW. AFC. Aerial input: 75 ohms coaxial and 300 ohms balanced. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD:  $<0.5\%$  at full output. S/N ratio: mag PU  $>55\text{dB}$ , other inputs  $>65\text{dB}$ . Inputs: mag PU 2.5mV 47K, tape 150mV 470K. Outputs: 4 ohms and headphones 100 ohms minimum. Mains: 110-130 and 220-240V AC 50/60Hz. Size:  $19.6 \times 9 \times 2.95$ in. Price: (teak) £134.90 (including VAT); (rosewood) £135.90 (including VAT).

#### Beomaster 1100

Stereo FM tuner/amplifier with four pre-set stations. Tuning range: 87.5-108MHz. Variable tuning. Power output: 22W RMS per channel. AFC. Sensitivity:  $<2.5\mu\text{V}/75$  ohms IHF. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$  (DIN). HD:  $<0.5\%$  at full output. Inputs: mag PU 2.5mV/47K. Speakers: 4 ohms. Headphones: max 10V/200 ohms. Mains: 110-240V AC switchable. Two sets of speaker connections. Finish: black anodised fascia. Size:  $19\frac{1}{2} \times 3\frac{1}{2} \times 10\frac{1}{2}$ in. Price: (teak) £128.50 (including VAT); (rosewood) £129.50 (including VAT).

#### Beomaster 2000

Stereo FM/AM tuner/amplifier with five pre-set FM stations. Output: 40W RMS per channel. Variable tuning. 'Balanced light' tuning. AFC. Sensitivity:  $<2\mu\text{V}/75$  ohms IHF,  $85\mu\text{V}$  LW. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD:  $<0.1\%$  at 40W per channel. Speakers: 4 ohms. Headphones: max 8V/200 ohms. Tape:

( $\times 2$ ) 15mV/20K. Inputs: mag PU 2.5mV/47K at 1kHz. Tape: ( $\times 2$ ) 175mV/1M. Anodised aluminium control panel with white finish, black anodised aluminium with teak or rosewood finishes. Size:  $27 \times 3 \times 10\frac{1}{2}$ in. Price: (teak) £215 (including VAT); (rosewood or white) £216 (including VAT).

#### Beomaster 3000-2

Stereo, transistorised, 40W per channel. Range: 87.5-104MHz. Variable tuning plus six presets. Meter indicator. Decoder fitted. Ratio detector. Switched AFC. Aerial: IEC sockets for 75 ohms and 240 ohms. FR: ( $\pm 1\text{dB}$ ): 40Hz-20kHz. HD: 0.3%. Noise level:  $-65\text{dB}$ . Inputs: mag PU variable 1.5-100mV 47K; crystal/ceramic variable 200mV-3V 1M; tape variable 200mV-3V 1M. Controls: tuning and presets, volume, balance, mono L, mono R, Speakers 1, Speakers 2, low filter (80Hz, 12dB/octave), high filter (4kHz, 12dB/octave), bass  $\pm 17\text{dB}$  at 50Hz, treble  $\pm 14\text{dB}$  at 10kHz. Features include: FETs, ceramic filters, integrated circuits, special tuning device, variable input sensitivities, slider controls. Mains: 110, 130, 220, 240V 50-60Hz. Dimensions:  $22\frac{3}{4} \times 10\frac{1}{4} \times 3\frac{3}{4}$ in. Price: (teak) £198.50; (rosewood or white) £199.50 (including VAT).

#### Beomaster 4000

Stereo 60W per channel FM tuner/amplifier. Tuning range: 87.5-104MHz. Variable tuning plus six preset stations. Meter indicator plus

'balanced light' tuning. AFC. Sensitivity:  $<1.4\mu\text{V}$ . Aerial inputs: 75 ohms coaxial and 300 ohms balanced. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD:  $<0.2\%$  at 60W. S/N ratio: mag PU  $>62\text{dB}$  at full output, tape  $>75\text{dB}$  at full output. Inputs: mag PU 3mV 47K variable, tape (1) 250mV 1M variable, tape (2) 250mV 1M variable. Outputs: speakers 4 ohms, ambiphonic speakers 4 ohms, plus headphones. Special features include ambiphonic reproduction via side or rear speakers, black anodised panel. Mains: 110-130 and 220-240V AC 50-60Hz. Size:  $22.4 \times 10.6 \times 3.7\text{in}$ . Price: (teak) £250; (rosewood) £251 (including VAT).

#### Beomaster 6000 ★

4-channel FM tuner/amplifier with remote control capable of reproducing mono/stereo/SQ and discrete. Variable tuning with five pre-set stations. FM tuning range: 87.5-104MHz. Cordless remote control unit. Feather-touch controls with large illuminated scales. AFC. Sensitivity:  $<2\mu\text{V}/75$  ohms IHF. FR: 20Hz-30kHz  $\pm 1.5\text{dB}$ . HD: 0.1% at 40W. Power output: 40W RMS all channels. Inputs: phono (4) 200mV 470K, aux (2) low 2.5mV 47K switchable to high 200mV 470K, tape (4) 200mV 470K. Outputs: tape (4) 15mV 10K. Stereo headphones: (2 pairs) 13V/200 ohms. Speakers: 4 ohms each channel. Size: (Beomaster 6000)  $26\frac{1}{4} \times 3\frac{1}{4} \times 12\frac{1}{2}\text{in}$ . Price: (rosewood or white) £450 (including VAT).

#### Beomaster 6000 Commander ★

Remote control unit for Beomaster 6000 receiver. Price: on application.

#### ■ CROWN

Crown Radio Co Ltd, Russell Gardens, Wickford, Essex SS11 8RT.  
Tel: Wickford 63414.

#### Model SM 120 ★

FM/AM stereo receiver. Bands: 88-108MHz plus AM/MW. Fitted with AFC and tuning meter. Sensitivity:  $3\mu\text{V}$  IHF (FM),  $25\mu\text{V}$  AM. Aerial: 300 ohms plus AM ferrite rod. Inputs: phono (mag) 4mV, aux 200mV, phono (ceramic) 250mV, tape 200mV. S/N:  $>50\text{dB}$  phono, 70dB aux. Output: 14W per channel into 8 ohms. THD:  $<0.5\%$  at 12W. FR: 30Hz-20kHz. Size:  $387 \times 120 \times 290\text{mm}$ . Price: £96.12 (plus VAT).

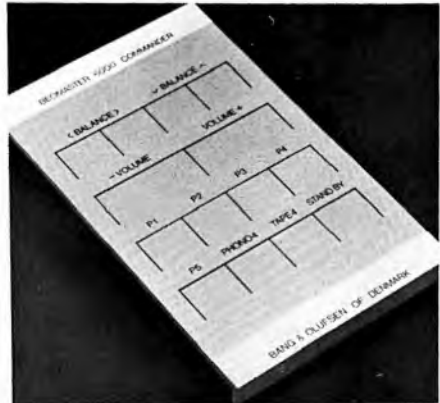
#### ■ GOODMANS

Goodmans Loudspeakers Ltd, Downley Road, Havant, Hampshire, PO9 2NL. Tel: Havant 6344.

#### Model One Ten ★

AM/FM stereo tuner/amplifier. Range: FM 87.5-108MHz, MW 187-570m, LW 1130-

2000m, SW 48-51m. Variable tuning. Switched AFC. Signal strength meter. Aerial input: 75 ohms coaxial, 240 ohms balanced. Usable sensitivity: (FM 75 ohms)  $1\mu\text{V}$ ; (FM 240 ohms)  $2\mu\text{V}$ ; AM typically 20-40 $\mu\text{V}$ . Ceramic filters in 1F amplifier. Quiet tuning facility on FM. 89 semi-conductors. Inputs: mag PU 2.5mV 56K, ceramic PU 200mV 1 megohm, tape play 200mV 100K. Noise level: mag PU  $-70\text{dB}$ , other inputs  $-80\text{dB}$ . Overload capability:  $+30\text{dB}$ . Output: 50W RMS into 4 ohms. Controls: balance, bass, treble,



Beomaster 6000 Commander

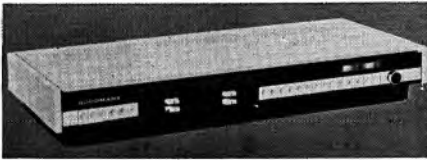


Crown SM-120

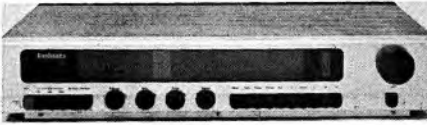


Goodmans Model One Ten

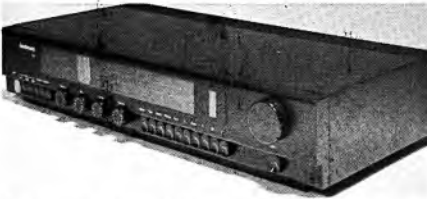
★ Indicates entry is illustrated



Goodmans Module 90



Goodmans Model 1-20



Goodmans Model 1-20

volume, contour, plus 17 tabs for all functions. HD: <0.01% at 30W, <0.1% at any power up to maximum. FR: 15Hz-45kHz  $\pm$ 3dB. 20Hz-20kHz  $\pm$ 1dB. Mains: 115-125V, 200-250V AC. Size: 23  $\times$  5 $\frac{1}{8}$   $\times$  12in. Finish: teak or walnut with brushed aluminium fascia, or black and white with white controls and black fascia. Electronic protection of output stages. Price: £149.57 (plus VAT).

#### Module 90 ★

AM/FM stereo tuner-amplifier. Range: FM 87.5-108MHz, MW 525-1630kHz, four pre-selected FM stations and variable tuning. Switched AFC. Illuminated tuning/weak signal indicator. Aerial inputs: 240 ohms balanced FM and AM sockets. Usable sensitivity: typically 2 $\mu$ V FM, 50 $\mu$ V AM. Ceramic filters in IF amplifier, 73 semiconductors. Inputs: mag PU 3mV 50K, ceramic PU 100mV 500K, tape play 200mV 33K. Noise level: tape -75dB, PU -60dB. Overload capability: +23dB. Output: 45W RMS into 4 ohms. Controls: slides for treble, bass, volume/balance, rotary/tuning, 15 tabs for functions and four pre-selected FM stations. HD: less than 0.1% at 35W. FR: 25Hz-30kHz +0-3dB. Mains: 220-245V AC, 122V dealer adjustable. Size: 24 $\frac{1}{2}$   $\times$  11 $\frac{1}{8}$   $\times$  4in. Finish: teak, walnut veneered or white lacquer sleeve. Price: £131.86 veneer, £134.11 white finish. Both prices exclude VAT.

#### Model 1-20 ★

AM/FM stereo tuner/amplifier. Range: FM 87.5-108MHz, MW 187-570m, LW 1130-2000m, SW 48-51m. Variable tuning. Switched AFC. Signal strength meter. Aerial input: 75 ohms coaxial, 240 ohms balanced. Usable sensitivity: (FM 75 ohms) 1 $\mu$ V; (FM 240 ohms) 2 $\mu$ V; AM typically 20-40 $\mu$ V. Ceramic filters in IF amplifier. Quiet tuning facility on FM. 89 semiconductors. Inputs: mag PU 2.5mV 56K, ceramic PU 200mV 1 megohm, tape play 200mV 100K. Noise level: mag PU -70dB, other inputs -80dB. Overload capability: +30dB. Output: 50W RMS into 4 ohms. Controls: balance, bass, treble, volume, contour, plus 17 tabs for all functions. HD: <0.01% at 30W, <0.1% at any power up to maximum. FR: 15Hz-45kHz  $\pm$ 3dB. 20Hz-20kHz  $\pm$ 1dB. Mains: 115-125V, 200-250V AC. Size: 23  $\times$  5 $\frac{1}{8}$   $\times$  12in. Finish: black fascia and sleeve or brushed aluminium with walnut sleeve. Price: £149.57 (plus VAT).

#### Model 1-50

AM/FM stereo receiver. Tuning range: FM 87.5-108MHz, MW 520-1625kHz, LW 148-350kHz. Variable tuning plus seven presets. Tuning indicator meter. Aerial impedance: 240/300 ohm coaxial. FM 75 ohms. Inputs: mag PU 2mV 50K, aux 50mV 500K, tape 100mV 50K. Overload capability: 38dB. S/N: tape 80dB, mag PU 70dB, aux 80dB, FM 70dB, AM 20dB. THD: 0.02% typically. Five rotary controls plus 17 pushbuttons. FR: 20Hz-30kHz -3dB. Surround sound facility. Signal strength and FM tuning meters. Loudspeaker protection by overload trip circuits. Price: to be announced.

#### ■ GRUNDIG

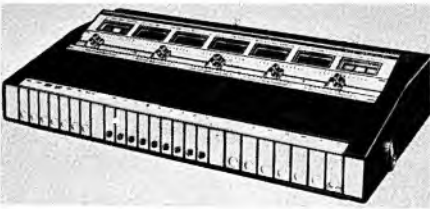
Grundig (Great Britain) Ltd, Hi-Fi Division, Newlands Park, London SE26 5NQ. Tel: 01-659 2468.

#### RTV 901 ★

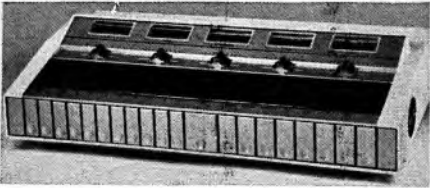
FM/AM stereo and synthesized four channel receiver. Bands: 87.5-108MHz FM, 145-350kHz LW, 510-1620kHz MW, 5.4-16.2 MHz SW. Seven preset selectors for FM, manual for AM. Sensitivity: 1.9 $\mu$ V DIN (FM), 12-25 $\mu$ V MW, 21-21.5 $\mu$ V LW, 4.7-5.2 $\mu$ V SW. Aerials: 240 ohms (FM) wire (AM). Inputs: phono (mag) 3.3mV 470K, phono (ceramic) 300mV 470K, tape 300mV 470K. Output: 25W per channel into 4 ohms. Damping factor: 20. THD: 0.5% at 1kHz and full rated power. FR: 40Hz-16kHz  $\pm$ 2dB. Size: 23 $\frac{1}{2}$   $\times$  5 $\frac{1}{2}$   $\times$  1 $\frac{1}{2}$ in. Price: on application.

#### RTV 1040Q ★

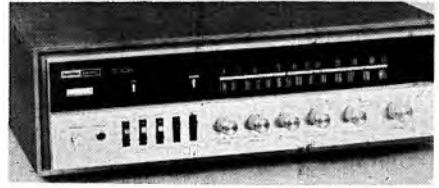
Four-channel receiver. Bands: FM 87.5-108MHz, LW 145-350kHz, MW 510-1620



Grundig RTV 1040Q



Grundig RTV 820



Harman Kardon 330A



Harman Kardon 630

kHz, SW 5.4-16.2MHz. Seven preset selectors for FM. Sensitivity:  $1.6\mu\text{V}$  240 $\Omega$ . FM, 4-12 $\mu\text{V}$  MW, 11-25 $\mu\text{V}$  LW, 5-6.5 $\mu\text{V}$  SW. AFC. Stereo decoder. Aerial sockets: FM VHF dipole 240K, AM external aerial and earth. Distortion:  $\leq 0.3\%$  at 1kHz. Output: 30W per channel, 25W all channels. FR: 20-20,000Hz  $\pm 1\text{dB}$  (discrete/stereo), 40-20,000Hz  $\pm 1.5\text{dB}$  (matrix). Damping factor: 28.5 at 4 ohms. Mains: 110, 130, 220, and 240V AC 50/60Hz. Size: 61 x 15 x 33cm. Price: on application.

#### RTV 820 ★

Stereo receiver, with facilities for 4D stereo. Automatic stereo decoder built-in. Bands: FM 87.5-108MHz, LW 145-350kHz, MW 510-1620kHz, SW 5.4-16.2MHz. Sensitivity: FM 2.2 $\mu\text{V}$  240 $\Omega$ , MW 8 $\mu\text{V}$ , LW 11 $\mu\text{V}$ , SW 5 $\mu\text{V}$ . Aerial sockets: FM VHF dipole 240 $\Omega$ , AM external aerial and earth. A switch allows the VHF aerial to be used on AM. Distortion:  $\leq 0.5\%$  at 1kHz. FR: 40-16,000Hz  $\pm 1.5\text{dB}$  for input tape/phono crystal and  $\pm 2\text{dB}$  for input phono magnetic. Price: on application.

#### ■ HARMAN-KARDON

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

#### 330A ★

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 175-600m. Variable tuning. AFC. Ratio detector. Meter tuning indicator. Usable sensitivity: MW 25 $\mu\text{V}$ , FM 1.9 $\mu\text{V}$ . Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. Inputs: mag PU 1.9mV 47K, aux 300mV 20K. S/N ratio:

PU 65dB. Overload capability: (PU) 90mV. Output: 22.5W RMS per channel. Tone controls: (independent bass and treble controls for each channel) bass  $\pm 12\text{dB}$ , treble  $\pm 12\text{dB}$ , contour +8dB at 50Hz. HD: 0.2% at 20W. Output impedance: 8 ohms. FR: 7Hz-50kHz  $\pm 1\text{dB}$  at 20W. Mains: 110, 240V AC. Finish: black cabinet with brushed aluminium trim, walnut sleeve optional extra. Price: £110 (plus VAT).

#### 330B

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 175-600m. Variable tuning. AFC. Ratio detector. Meter tuning indicator. Usable sensitivity: MW 25 $\mu\text{V}$ , FM 1.9 $\mu\text{V}$ . Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. Inputs: mag PU 1.9mV 47K, aux 300mV 20K. S/N ratio: PU 65dB. Overload capability: (PU) 90mV. Output: 22.5W RMS per channel. Tone controls: (independent bass and treble controls for each channel) bass  $\pm 12\text{dB}$ , treble  $\pm 12\text{dB}$ , contour +8dB at 50Hz. HD: 0.2% at 20W. Output impedance: 8 ohms. FR: 7Hz-50kHz  $\pm 1\text{dB}$  at 20W. Mains: 110, 240V AC. Price: £115 (plus VAT).

#### 630 ★

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 175-600m. Variable tuning. AFC. Ratio detector. Meter tuning indicator. Usable sensitivity: MW 15 $\mu\text{V}$ , FM 1.9 $\mu\text{V}$ . Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. Inputs: mag PU 1.5mV 47K, aux (1) 300mV 20K, aux (2) 300mV 20K. Noise level: PU input 65dB, aux

★ Indicates entry is illustrated

inputs 85dB. Output: 30W RMS per channel. Tone controls: (independent bass and treble controls for left and right channels) bass  $\pm 12$ dB, treble  $\pm 12$ dB, contour +8dB at 50Hz, high cut filter -8dB at 10kHz (6dB/octave). HD: 0.2% at 30W. Output impedance: 8 ohms. FR: 4Hz-70kHz  $\pm 0.5$ dB. Mains: 110, 240V AC. Size: 12  $\times$  4 $\frac{1}{2}$   $\times$  13 $\frac{1}{2}$ in. Finish: black case with brushed aluminium trim, walnut sleeve optional extra. External Dolby B input/output equalisation. Quiet tuning facility on FM. Price: £189 (plus VAT).

#### 930

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 175-600m. Variable tuning. AFC. Ratio detector. Tuning indicators: FM centre-zero meter. AM/FM signal strength meter. Usable sensitivity: MW 15 $\mu$ V, FM 1.8 $\mu$ V. Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. Quiet tuning facility on FM, FET front end. Rotating AM ferrite rod aerial. Inputs: mag PU (1) 1.5mV 47K, mag PU (2) 1.5mV 47K, aux (1) 300mV 20K, aux (2) 300mV 20K. Noise level: PU inputs 65dB, aux inputs 85dB. Overload capability: (PU inputs) 90mV. Output: 45W RMS per channel. Tone controls: (independent bass and treble controls for each channel) bass  $\pm 12$ dB, treble  $\pm 12$ dB, high cut filter -8dB at 10kHz (6dB/octave), low cut filter -15dB at 25Hz, contour +8dB at 50Hz. HD: 0.2% at 45W. Output impedance: 8 ohms. FR: 8Hz-100kHz. Separate power supply for left and right channels. Size: 17  $\times$  4 $\frac{1}{2}$   $\times$  13 $\frac{1}{2}$ in. Mains: 110, 240V AC. Finish: black case with brushed aluminium trim, walnut sleeve optional extra. Price: £259 (plus VAT).

#### Model 50+

FM/AM stereo or quadraphonic receiver. Bands: 84-108MHz FM, 535-1605kHz AM. Manual tuning meter. Sensitivity: 2.9 $\mu$ V IHF (FM), 30 $\mu$ V (AM). Aerial: 75 or 300 ohms. S/N: 62dB FM. THD: stereo 0.9%. Size: 15 $\frac{1}{8}$   $\times$  12 $\frac{1}{4}$   $\times$  4 $\frac{1}{2}$ in. SQ and discrete 4-channel facilities. No further details available concerning amplifier section. Price: £139 (plus VAT).

#### Model 70+

FM/AM stereo or quadraphonic receiver. Bands: 84-108MHz FM, 535-1605kHz AM. Manual tuning meter. Sensitivity: 2 $\mu$ V IHF (FM), 15 $\mu$ V (AM). Aerial: 75 or 300 ohms. S/N: 70dB (FM). THD: 0.6% mono, 0.7% stereo. Size: 17  $\times$  16 $\frac{1}{4}$   $\times$  5 $\frac{1}{2}$ in. SQ matrix and discrete 4-channel facilities. No further details concerning amplifier section. Price: £219 (plus VAT).

#### ■ HEATHKIT

See Constructional Kits Section.

#### ■ JVC

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

#### 4VR5456

FM/AM stereo and quadraphonic receiver. Bands: 88-108MHz FM, 525-1605kHz AM. Sensitivity: 1.8 $\mu$ V IHF (FM), 30 $\mu$ V AM. Tuning meter, manual tuning. Inputs: phono (1) 3mV, phono (2) 1.5mV, aux (1 & 2) 200mV, tape play 200mV. Output: 45W per channel (4) into 8 ohms at 1kHz. THD: 0.5% 10Hz-50kHz  $\pm 1$ dB. Size: 20  $\times$  7 $\frac{1}{8}$   $\times$  15 $\frac{1}{2}$ in. Sound effects amplifier: CD-4 demodulator and matrix decoder. Price: £425 (including VAT).

#### 4VR5446

FM/AM stereo and quadraphonic receiver. Bands: 88-108MHz FM, 525-1605kHz AM. Sensitivity: 2.0 $\mu$ V IHF (FM), 30 $\mu$ V AM. Tuning meter, manual tuning. Inputs: phono (1) 3mV, phono (2) 1.5mV, aux (1 & 2) 200mV, tape play 200mV. Output: 22W per channel (4) into 8 ohms at 1kHz. THD: 0.5%  $\times$  15 $\frac{1}{2}$ in. Sound effects amplifier. CD-4 demodulator and matrix decoder. Price: £320 (including VAT).

#### VR 5525L

FM/MW/LW stereo receiver. Bands: 88-108MHz FM, 515-1605kHz MW, 150-390kHz LW. Manual tuning, tuning meter. Sensitivity: 2.2 $\mu$ V IHF (FM), 30 $\mu$ V AM. Inputs: phono 2.5mV, aux (1 & 2) and tape play 150 $\mu$ V. S/N: phono 65dB, all others 70dB. Output: 25W per channel into 8 ohms at 1kHz. THD: 0.5%. FR: 10Hz-50kHz. Size: 18 $\frac{1}{8}$   $\times$  6 $\frac{1}{8}$   $\times$  12 $\frac{1}{2}$ in. Sound effects amplifier, mic mixing. Price: £195 (including VAT).

#### VR 5505L

FM/MW/LW stereo receiver. Bands: 88-108MHz FM, 515-1605kHz MW, 150-390kHz LW. Sensitivity: 2.2 $\mu$ V IHF (FM). 100 $\mu$ V (AM). Manual tuning, tuning meter. Inputs: phono 3.0mV, aux and tape 100mV. Output: 10W per channel into 8 ohms at 1kHz. FR: 20Hz-20kHz. Size: 18 $\frac{1}{4}$   $\times$  5 $\frac{1}{4}$   $\times$  13in. Price: £112 (including VAT).

#### ■ KLH

Webland International Ltd, Mirabel House, 117-121 Wandsworth Bridge Road, London, SW6. Tel: 01-736 0980.

#### Model 55

Stereo AM/FM receiver. Range: FM 87-109MHz. MW 182-571m. Variable tuning. Signal strength meter. Usable sensitivity: FM 2.0 $\mu$ V. MW 300 $\mu$ Vhm. Built in FM and AM aerials. Stereo decoder, 3 gang. FM



Armstrong Series 600, model 626 AM-FM hi-fi stereo receiver.

# The AM-FM receiver.

Hi-fi stereo systems which can only come up with woolly facts usually produce a woolly performance to match.

An Armstrong like to be specific.

With the Series 600 we have not only surpassed ourselves.

But probably every other competitor in the running.

It's an achievement that we believe is only possible to an independent company like ours.

Designing and developing the Series 600 took enthusiasm, dedication—and some of the very best technical minds in the industry.

In this advertisement you have all the evidence you need to make up your own mind.

Please compare it with any other system within any reasonable parameter of price.

And then we think when it comes to making a choice you too will be most decidedly picking:

Armstrong Series 600, and nothing but.

## The 626

The 626 Receiver combines in one handsome, slim-line package, the 621 stereo amplifier and the 623 AM-FM tuner.

It is, if you like, the showpiece of the Series 600; as technologically advanced and qualitatively superior a piece of equipment as even the most demanding enthusiast could wish for.

It is best considered in its separate functions.

## Amplifier

Five years in the developing (with a host of additions and improvements since the launch of Series 600 in 1973), this amplifier delivers up to 100 watts of continuous sine wave power with negligible distortion and a wide frequency range.

This tremendous reserve of power provides for an unmistakable, effortless beauty of sound only obtainable from a few of the world's top designs.

And when it comes to facilities, there's precious little lacking.

Specially matched rotary controls for volume, bass, treble and balance.

Input selection by Armstrong's new silent form of Electronic Gateswitching.

Simple, smooth-acting press keys for other controls. Headphones and two-pairs of speakers can be used simultaneously or enjoyed independently.

There are two treble filters (with a 'slope' control providing a choice of four characteristics), two choices of disc sensitivity and adjustable tape recording outputs ensure easy matching to virtually all types of record player and tape recorder equipment.

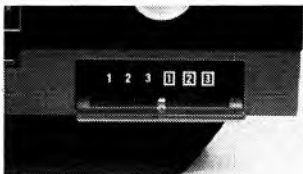
## Tuners

The design concept of the FM tuner selection was to achieve a specification very close to the theoretical performance limits of the FM broadcasting system.

And Armstrong have achieved just that:

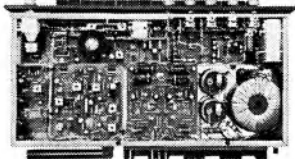
Bandpass filtering, dual gate F.E.T.'s, variable product tuning, ceramic I.F. Filters, integrated circuits and a phase locked loop stereo decoder all combine to give ultra high sensitivity and selectivity—and almost unmeasurable distortion.

The AM section is hardly less impressive; you'll find none of the usual chaotic distortion here. It has been overcome by using the latest communication receiver techniques—and the result is a very high performance and relative freedom from unwanted interference.



Finishing touch: on the 626, you can pre-set three AM stations and three more FM stations.

## Inside out



High quality engineering has always been beautiful in its own right and even for those who know nothing of electronic design there is plenty to admire inside Series 600.

It is an Armstrong engineering principle not to design just a product but a series of products conceived as an integrated whole. In Series 600, each model is related to each of the others in a logical pattern which enables extensively tooled parts and electronic modules to be used interchangeably.

## Price note

It is this concept, providing large, economical and efficient production runs, which largely accounts for the highly competitive prices of Armstrong products.

621 Stereo Amplifier:	£92.58
623 AM-FM Stereo Tuner:	£98.42
624 FM Stereo Tuner:	£73.74
625 FM Stereo Receiver:	£136.62
626 AM-FM Stereo Receiver:	£163.94

Prices are R.P.P. exclude VAT and are correct at time of going to press.

## Specifications

<b>Amplifier Section</b>	
Power Output (8Ω)	40 watts/channel RMS
Harmonic Distortion	less than 0.08%
Frequency Response (±1dB)	20Hz - 25k Hz
Hum & Noise (unweighted) all inputs	better than -65dB
Damping Factor (8Ω)	better than 50
<b>AM Tuner Section</b>	
Coverage (continuous L.W. & M.W.)	145-1625 kHz
Sensitivity (Ferrite Aerial IIF)	250µV/metric
(External Aerial IIIF)	25µV
Selectivity	60dB
<b>FM Tuner Section</b>	
FM Sensitivity: IIF 75	1.5µV
Selectivity, Alternate Channel IIF	36dB
Capture Ratio IIIF	1.75dB

## Expert opinion

"The 626 has a superb performance on radio which could not be faulted and was more over equal up to that specified..."

There is no doubt either about the excellent performance of the amplifier section... go out and buy the 626."  
F. C. Judd - Audio.

"After extensive laboratory and listening tests I have no hesitation in proclaiming the Armstrong 626 one of the best British tuners/amplifiers currently available."

John Earl - Records and Recording.

"A great deal of design effort has undoubtedly been injected into the 600 series. How encouraging to see that British hi-fi is taking the lead once again."  
Gordon J. King - Hi-Fi News.

## Armstrong service

For many years Armstrong have held a reputation for unusually efficient and courteous service to their customers. Expert advice on any aspect of Armstrong products is freely available, either by phone or letter, irrespective of the age of your equipment.

In the event of a unit needing attention, it can be returned to the factory, either directly or through your dealer, where it will receive attention within 48 hours. For service performed at our factory within the 12 months guarantee period, no charge is made. Components, labour and return carriage are free.

# Armstrong

A British-owned private company, established in 1929. (You'll enjoy our independence.)

Please send me the Armstrong 12 page colour brochure, press review booklet & list of franchised dealers.

Name .....

Address .....



HFYB:76

Armstrong Audio Limited, Warlters Road, London N7 0RZ. Telephone: 01-607 3213



## If your monitor class speaker comes in too large a volume, get the new unabridged bookshelf edition.

With the Achromat 400, Goodmans launched the first of a whole new generation of high fidelity speakers exhibiting astonishingly little colouration in their sound quality.

Now—incredibly—this same ability to reproduce over the full frequency range with almost negligible distortion has been achieved from a very much reduced speaker volume.

The new Achromat 100 has a specification and performance that sets new and previously unrealised standards of sound quality in a bookshelf loudspeaker system.

It takes its place among the growing number of “small monitor class speaker systems with as much of the intrinsic performance parameters that we have come to expect from the larger well established systems” (*Hi-Fi for Pleasure*: May 1975).

So your highest quality receiver and transcription deck don't now rely on a pair

of big, floor-standing speakers to do them real justice... taking up a sizeable chunk of both floor space and bank balance.

The Achromat 100 (350x212x233 mm) fits neatly into your bookshelf, suits amplifiers between 25 and 50 Watts music power.

And at the recommended retail price of £102.66 a pair including VAT they make your hi-fi budget go further.

The same sound engineering that went into the Achromat 400; the meticulous design and construction of the drive units and critical crossover frequencies—inhibiting every measurable delayed resonance—has produced a supremely good little speaker in the Achromat 100.

So good you get a 5 year written warranty.

So if you were under the impression that the bigger the speaker the better the reproduction—our little volume has a rather different story to tell.

# Goodmans Achromat 100



Klinger KC95

FET front end. Inputs: phono,  $2.5\mu\text{V}$  47K, aux  $330\mu\text{V}$  55K, tape mon.  $330\mu\text{V}$  55K. S/N ratio: phono 55dB, aux 67dB. Tape mon 67dB, FM 60dB, AM 40dB. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. HI filter:  $-3\text{dB}$  at 4.2kHz. 6dB/octave slope. Loudness:  $+10\text{dB}$  100Hz,  $+3\text{dB}$  10kHz. Balance and volume controls: output 13W RMS per channel, both driven into 8 ohms. THD:  $<0.1\%$  at 1W. IMD  $<0.5\%$  at 1W. Power bandwidth: 20Hz-20kHz. FR: 15Hz-22.5kHz. Damping factor:  $>20$ . Walnut case included. Size (max):  $5\frac{1}{4} \times 16\frac{1}{2} \times 19\frac{1}{8}$ in. Weight: 16 $\frac{1}{2}$ lb. Price: £129.17 (plus VAT).

#### Model 52

Stereo AM/FM receiver. Range: FM 87-109MHz. MW 182-571m. Variable tuning. Signal strength and tuning meters. Usable sensitivity (FM)  $1.8\mu\text{V}$ , (MW)  $300\mu\text{V/m}$ . Built-in FM and AM aeriels. Stereo decoder. 4 gang FM FET front end. Inputs: phono,  $3.5\mu\text{V}$  47K, aux  $500\mu\text{V}$  47K. Tape monitor,  $500\mu\text{V}$  47K. S/N ratio: phono 69dB, aux 75dB. Tape mon 75dB, FM 70dB, AM 50dB. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. HI filter  $-3\text{dB}$  at 3.5kHz, 6dB/octave slope. Loudness  $+10\text{dB}$  100Hz,  $+3\text{dB}$  10kHz. Balance and volume controls. Output 33W RMS per channel, both channels into 8 ohms. THD  $<0.1\%$  at 1W. IMD  $<0.3\%$  at 1W. Power bandwidth 15Hz-30kHz. FR: 15Hz-22.5kHz. Damping factor:  $>20$ . Unconditionally stable. Walnut case included. Size (max):  $5\frac{1}{4} \times 18 \times 18\frac{1}{8}$ in. Weight: 22 $\frac{1}{2}$ lb. Price: £180.56 (plus VAT).

#### KLINGER

Klinger Controls Ltd, Spencer Court,  
7 Chalcot Road, London NW1 8LU.  
Tel: 01-586 2922.

#### KC96 ★

FM stereo tuner/amplifier. Range: 87.5-108MHz. Five preset stations. Switchable AFC. Usable sensitivity:  $2\mu\text{V}$ . Aerial input: balanced and coaxial. Stereo decoder fitted. Circuit comprises 37 transistors, 40 diodes and one IC. Inputs: mag PU  $2\text{mV}$  47K, tape  $50\text{mV}$  220K, aux (1)  $100\text{mV}$  470K, aux (2)  $0.15\text{mV}$  30 ohms. Noise level: (mag PU)

60dB, (other inputs) 70dB. Overload capability: 30dB. Output: 25W RMS per channel. Output impedance: 8 ohms. Tone controls: bass  $\pm 15\text{dB}$ , treble  $\pm 15\text{dB}$ , scratch filter 18dB/octave from 8kHz, rumble filter 12dB/octave from 80Hz. Full range balance control. HD: 0.1% at 20W. FR: 35Hz-35kHz  $\pm 2\text{dB}$  at 20W. Stabilised power supply. Two pairs of switched speaker sockets. Two outlets for stereo headphones. Direct and switched mains outlets. Finish: teak with diecast enamelled sides. Size:  $21 \times 4\frac{1}{2} \times 8$ in. Price: £88.80 (plus VAT).

#### KORTING

Europa Electronics Ltd, 9 Howard Place,  
Shelton, Stoke-on-Trent ST1 4NW.  
Tel: Stoke-on-Trent 29316.

New range of stereo tuner/amplifiers. No details available as this edition of the Year Book closed for press.

#### THOMAS LANEY AUDIO

Electronic Manufacturing Co (UK) Ltd,  
Devonshire House, High Street, Deritend,  
Birmingham B 12 0LP.  
Tel: 021-772 3659/7145.

#### TLA200

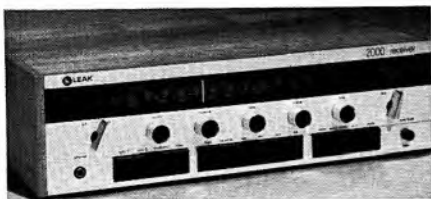
FM/AM stereo tuner/amplifier. Range: FM 87.5-108MHz. Variable tuning plus five presets. Switchable AFC. Aerial input: 75 ohms coaxial, 240 ohms balanced twin. Sensitivity:  $2\mu\text{V}$  for 30dB quieting. Limiting complete at  $5\mu\text{V}$ . Stereo decoder fitted. Capture ratio: 1.5dB. Inputs: mag PU  $2\text{mV}$  47K, aux  $100\text{mV}$  100K. S/N ratio: (PU input) 65dB, (aux) 70dB. Overload capability: (PU input)  $100\text{mV}$ , (aux) 1V. Controls: bass  $\pm 12\text{dB}$  at 40Hz, treble  $\pm 12\text{dB}$  at 10kHz, filter 12dB/octave at 4kHz, 7kHz and 10kHz, balance, volume, input selector. Bass, treble and balance controls are sliders with centre 'click' position. Output: 50W RMS per channel into 4 ohms, 30W RMS per channel into 8 ohms. HD:  $<0.1\%$  (typically  $<0.02\%$ ) 35Hz-20kHz. Power bandwidth: 20Hz-40kHz  $+0\text{dB}$   $-3\text{dB}$ . Mains: 110, 120, 130, 220, 230, 240V AC. Two AC outlets (one switched). Two headphone jack sockets behind flap on front panel. Quiet tuning facility. Output fully protected against any load condition. Details of cabinet finish and size not available as this edition of the Year Book closed for press. Finish: teak or rosewood. Price: on application.

#### LEAK

Rank Radio International Ltd, PO Box 596,  
Power Road, Chiswick, London W4 5PW.  
Tel: 01-994 6491.



★ Indicates entry is illustrated



Leak 2000



Lux R800



Lux R600

**Leak 2000 ★**

AM/FM stereo tuner/amplifier. Range: FM 87.5-108MHz, MW 510-1650kHz, LW 150-350kHz. Variable tuning. Sensitivity: FM  $1.6\mu\text{V}$  (IHF). Inputs: phono 2.2mV or 6mV 47K switchable, tape 140mV 100K, tuner 140mV 100K (all at 1kHz for 35W output). Outputs: tape/cassette 140mV, DIN 1.4mV/K. Speakers: 30W per channel into 8 ohms, 40W per channel into 4 ohms, both channels sine wave driven at 1kHz. High power single channel mode 80W. Damping factor: 40 at 80Hz. THD: 0.1% at 30W into 6 ohms. Power bandwidth: 10Hz-40kHz -2dB at 35W. Mains: 240V AC 50/60Hz. Tone controls: treble  $\pm 13\text{dB}$  at 15kHz, bass  $\pm 13\text{dB}$  at 50Hz, filter -3dB at 5kHz (-10dB at 10kHz), loudness +10dB at 50Hz (-40dB volume setting). Input resistance: 47K. FR: 20Hz-50kHz -2dB. Crosstalk: -90dB at 10kHz. Special facilities include normal/matrix switch, pre-amp and main amp normal/separate switch, variable level FM muting control, quasi stereo. Size: 132mm high, 471mm wide, 292mm deep. Weight: 9.7kg. Finish: teak. Price: £164.97 (plus VAT).

■ **LUX**

Distributors: Howland-West Ltd,  
3-5 Eden Grove, London N7 8EQ.  
Tel: 01-609 0293/6.

**R800 ★**

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-540m. Variable tuning. AFC. Signal strength meter and centre-zero tuning meter. Usable sensitivity: FM  $1.8\mu\text{V}$ , MW  $200\mu\text{V}$ . Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. Inputs: mag PU (2), aux (2), tape (2), mic (2). Noise level: (mic) 60dB, (PU) 65dB, (other inputs) 80dB. Overload capability: (PU) 130mV. Output: 40W RMS per channel. Controls: treble  $\pm 10\text{dB}$  at 10kHz, bass  $\pm 10\text{dB}$  at 300Hz, low cut 20Hz-70Hz 6dB/octave, high cut 6kHz-12kHz 6dB/octave. HD: <1% at 40W. Output impedance: 8 ohms. FR: 10Hz-40kHz  $\pm 1\text{dB}$ . Mains: 100, 120, 220, 240V 50-60Hz. Finish: rosewood cabinet with champagne panel. Price: £232 (plus VAT).

**R600 ★**

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-540m. Variable tuning. AFC. Signal strength meter and centre-zero tuning meter. Usable sensitivity: FM  $1.8\mu\text{V}$ , MW  $200\mu\text{V}$ . Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. Inputs: mag PU (2), aux (2), tape (2), mic (2). Noise level: (mic) 60dB, (PU) 65dB, (other inputs) 80dB. Overload capability: (PU) 130mV. Output: 30W RMS per channel. Controls: treble  $\pm 10\text{dB}$  at 10kHz, bass  $\pm 10\text{dB}$  at 300Hz, low cut 20Hz-70Hz 6dB/Oct, high cut 6kHz-12kHz 6dB/Oct. HD: <1% at 40W. Output impedance: 8 ohms. FR: 10Hz-40kHz +1dB. Mains: 100, 120, 220, 240V 50/60Hz. Finish: rosewood cabinet. Price: on application.

■ **MARANTZ**

Pyser Ltd, Fircroft Way, Edenbridge, Kent.  
Tel: Edenbridge 4111.

**Model 2015**

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-555m. Variable tuning with 'Gyro touch'. AFC not necessary. Ratio detector. Meter tuning indicator. Usable sensitivity: FM  $2.6\mu\text{V}$ , MW  $25\mu\text{V}$ . Aerial input: 75 ohms coaxial, 300 ohms balanced twin. Stereo decoder fitted. Stereo beacon. Inputs: mag PU 2.2mV 47K, high level 150mV 120K, radio, aux. Overload capability: (PU input) 100mV. Output: 15W RMS per channel into 4 or 8 ohms. Controls: treble  $\pm 12\text{dB}$  at 15kHz, bass  $\pm 12\text{dB}$  at 50Hz, balance, tuning. Pushbuttons for tape monitor, FM quieting tuning, loudness, remote/



Marantz 2245



Nikko STA-8080

main speakers. Headphone jack socket. HD: 0.3%. FR: 20Hz-20kHz  $\pm 1.5$ dB at 1W. Mains: 110, 220, 240V AC. Size: 14 $\frac{1}{2}$   $\times$  4 $\frac{1}{2}$   $\times$  12in. Finish: walnut, teak or white (cabinet optional) or simulated walnut metal chassis. Front panel gold anodised. Price:  $\pounds 147$  (plus VAT).

#### Model 2220

Stereo AM/FM tuner/amplifier. FM 88-108MHz, MW 187-555m. Variable tuning. Ratio detector. Tuning meter. Usable sensitivity: AM 26 $\mu$ V, FM 2.0 $\mu$ V for 30dB quieting. Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. 56 transistors and one IC. Inputs: PU 2.1mV 47K, mic 2.1mV, aux 150mV. Output: 20W RMS per channel (both channels driven) into 8 ohms. Tone controls: bass  $\pm 12$ dB at 50Hz, treble  $\pm 12$ dB at 15kHz. HD: 0.3% 20Hz-20kHz. Size: 16 $\frac{1}{8}$   $\times$  5  $\times$  14in. Gold anodised front panel. Price:  $\pounds 179$  (plus VAT).

#### Model 2230

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-555m. Variable tuning. Ratio detector. Tuning meter. Usable sensitivity: AM 20 $\mu$ V, FM 2 $\mu$ V for 30dB quieting. Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. 68 transistors plus one IC. Impedance: PU 1.8mV 47K, mic 1.8mV, aux 180mV. Noise level: (PU input) -96dB. Output: 30W RMS per channel, both channels driven. Output impedance: 8 ohms. Tone controls: bass  $\pm 15$ dB at 50Hz, treble  $\pm 15$ dB at 15kHz, middle  $\pm 6$ dB at 700Hz. HD: <0.5% 40Hz-20kHz. FR: 20Hz-20kHz  $\pm 0.5$ dB. Size: 16 $\frac{1}{8}$   $\times$  5  $\times$  14in. Finish: gold anodised front panel. Price:  $\pounds 235$  (plus VAT).

#### Model 2245 ★

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-555m. Variable tuning. Ratio detector. Tuning meter and signal strength meter. Usable sensitivity: AM 20 $\mu$ V, FM 1.7 $\mu$ V for 30dB quieting. Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. 87 transistors plus one IC. Inputs: mag PU 1.8mV 47K, mic 1.8mV, aux 180mV. Noise level: PU input -96dB. Output: 47W per channel RMS into 4 and 8 ohms, both channels driven. Output impedance: 8 ohms. Tone controls: bass  $\pm 15$ dB at 50Hz, treble  $\pm 15$ dB at 15kHz, middle  $\pm 6$ dB at 700Hz. HD: <0.3%. FR: 7Hz-70kHz for 0.3%. THD. Size: 16 $\frac{1}{8}$   $\times$  5  $\times$  14in. Finish: gold anodised front panel. Price:  $\pounds 295$  (plus VAT).

#### Model 2270

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 187-555m. Variable tuning. Ratio detector. Signal strength meter and tuning meter. Usable sensitivity: AM 20 $\mu$ V, FM 1.7 $\mu$ V for 30dB quieting. Aerial input: 300 ohms balanced, 75 ohms coaxial. Stereo decoder included. 87 transistors and one IC. Inputs: mag PU 1.8mV 47K, mic 1.8mV, aux 180mV. Noise level: -96dB. Output: 70W per channel RMS into 8 ohms, both channels driven. Output impedance: 8 ohms. Tone controls: bass  $\pm 15$ dB at 50Hz, treble  $\pm 15$ dB at 15kHz, middle  $\pm 6$ dB at 700Hz. HD: <0.3%. FR: 20Hz-20kHz  $\pm 0.25$ dB. Size: 16 $\frac{1}{8}$   $\times$  5  $\times$  14in. Finish: gold anodised front panel. Price:  $\pounds 360$  (plus VAT).

#### ■ NIKKO

Distributors: Howland-West Ltd,  
3-5 Eden Grove, London N7 8EQ.  
Tel: 01-609 0293/6.

#### STA-8080 ★

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 182-556m. Variable tuning. AFC. One signal strength meter, one centre-zero tuning meter. Usable sensitivity: FM 2 $\mu$ V, MW 150 $\mu$ V. Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. 78 transistors. Inputs: mag PU (2) 2.2mV 50K, aux (1) 160mV 100K, aux (2) 320mV 120K, tape 160mV 100K. Output: 55W RMS per channel. Controls: bass  $\pm 10$ dB at 70Hz, treble  $\pm 10$ dB at 10kHz, loudness +9dB at 70Hz +5.5dB at 10kHz, speaker switch (A, A+B, B), balance, mono/stereo, FM muting, low filter -8dB at 70Hz, high filter -7dB at 10kHz, tape/dubbing. HD: 0.1% at 1W, 0.5% at rated output. Output impedance: 8 ohms. FR: 10Hz-50kHz  $\pm 1$ dB. Mains: 120, 220,

★ Indicates entry is illustrated

240V 50-60Hz. Size: 18 × 14 $\frac{1}{8}$  × 5 $\frac{3}{8}$ in. Finish: wood cabinet with metal trim. Price: £180 (plus VAT).

#### STA-7070 ★

AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 182-556m. Variable tuning. AFC. Meter tuning indicator. Usable sensitivity: FM 2 $\mu$ V, MW 150 $\mu$ V. Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted, 76 transistors. Inputs: mag PU (2) 2.2mV 50K, aux (1) 160mV 100K, aux (2) 320mV 120K, tape (2) 160mV 100K. Noise level: (mag PU input) -65dB, (other inputs) -80dB. Output: 40W RMS per channel into 8 ohms. Controls: bass  $\pm$ 10dB at 70Hz, treble  $\pm$ 10dB at 10kHz, loudness +9dB at 70Hz +5.5dB at 10kHz, speaker switch (A, A+B, B), balance, mono/stereo, FM muting, low filter -8dB at 70Hz, high filter -7dB at 10kHz, tape/dubbing. HD: 0.1% at 1W, 0.5% at rated output. Output impedance: 8 ohms. FR: 10Hz-50kHz  $\pm$ 1dB. Mains: 120, 220, 240V 50-60Hz. Size: 18 × 14 $\frac{1}{8}$  × 5 $\frac{3}{8}$ in. Finish: wood cabinet and metal trim. Price: £160 (plus VAT).

#### STA-5050

AM/FM multiplex stereo receiver. Tuning range: FM 88-108MHz, AM 540-1600kHz. Variable tuning. Double function tuning meter. FM muting. Stereo separation FM: 38dB at 1kHz. Output: 24W RMS per channel, both channels driven into 8 ohms (26W per channel into 4 ohms). FR: 20Hz-30kHz  $\pm$ 1dB. Distortion: 0.8% at rated output. Input sensitivity/impedance: phono 2.0mV 50K, aux 200mV 50K, tape monitor 200mV 50K. S/N: phono 60dB (other) 75dB. Tone controls: bass  $\pm$ 12dB at 70Hz, treble  $\pm$ 12dB at 10kHz, +10dB at 70Hz, loudness +10dB at 70Hz. Damping factor: 30 into 8 ohms. 35 transistors, 21 diodes, 1 FET, 1 IC. Power consumption: 110W. Mains: 120V (or 220/240V AC) 50/60Hz. Size: 450mm wide, 380mm deep, 135mm high. Weight: 9kg. Price: on application.

#### ■ NIPPON SOUND

I.D. Electronics (Europe), 7 Priory Road, High Wycombe, Bucks.

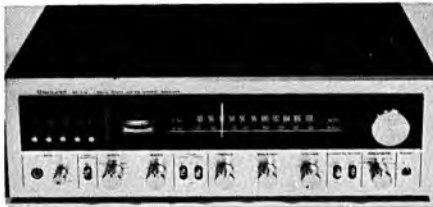
Tel: High Wycombe 36783.

#### SR770 ★

AM/FM stereo receiver. Tuning range: MW 525-1620kHz, FM 87.5-108.5MHz. Variable tuning. Built-in AFC. Solid state. Meter tuning indicator. Sensitivity: FM 2 $\mu$ V, AM 30 $\mu$ V. Aerial: 300 ohms and 75 ohms. Loop ferrite rod for AM and external AM connection. Loudness muting, A or B Speakers, headphone and mic sockets, tape monitor,



Nikko STA-7070



Nippon Sound SR770



Nippon Sound SR660

mode, bass, treble, balance and volume controls, low/high filter switches. Price: on application.

#### SR660 ★

AM/FM stereo receiver. Tuning range: MW 535-1605kHz, FM 88-108MHz. Variable tuning. Built-in AFC. Solid state. Meter tuning indicator. Sensitivity: FM 2 $\mu$ V, AM 30 $\mu$ V. Aerial: 300 ohms or 75 ohms. Built-in ferrite loop stick for AM. Output: 22W per channel into 8 ohms. THD: 0.3%. FR: 20Hz-35kHz. Built-in protection circuit. Loudness 50Hz +14dB, 10kHz -10dB; high filter 10kHz -10dB, low filter 50kHz -10dB, treble 10 kHz  $\pm$ 12dB, bass 50Hz  $\pm$ 12dB. Stereo/mono switch, tape monitor, line fuse, power sockets for unswitched power supply. A or B speakers. Size: 18 $\frac{1}{8}$  × 5 $\frac{3}{8}$  × 14 $\frac{1}{8}$ in. Price: £128.52 (including VAT).

#### ■ NORDEMELENDE

Vessco Vision & Radio Ltd, Unit 4, Blackwater Way, Ash Road, Aldershot, Hants GU1 4DL. Tel: Aldershot 312661.

#### 6005 ST ★

Stereo tuner/amplifier. Ranges: VHF, LW, MW, SW and 49 metre band. Electronic

mono/stereo switching with indicator. Five VHF presets. Signal strength meter. Output: 15W RMS per channel. Price: £92.13 (plus VAT).

#### Quadronado QXL 160 ★

Quadraphonic tuner/amplifier. Ranges: VHF, LW, MW, SW with seven VHF presets. Illuminated 4-channel balance control, stereo beacon and signal strength meter. Output: 30W RMS all channels driven. Fitted SQ decoder using external decoder. Price: £255.09 (plus VAT).

#### Quadronado QX 80

As QXL 160 except power output 60W RMS ( $4 \times 15W$  RMS). Price: £219.44 (plus VAT).

#### Quadronado Q80

As QXL 160 except power output 60W RMS ( $2 \times 30W$  RMS). Suitable for SQ quadraphony only. Price: £193.98 (plus VAT).

#### ONKYO

J. Parkar & Co (London) Ltd, Parkar House, Beresford Avenue, Wembley HAO 1YX. Tel: 01-903 5211.

#### Integra 225 ★

AM/FM stereo tuner/amplifier incorporating IC in decoder stage, four-gang tuning, six-element ceramic IF filter and four-stage limiter. Range: FM 88-108MHz, MW 187-565m. Variable tuning. Sensitivity: FM  $2\mu V$ , MW  $40\mu V$ . S/N ratio: FM 65dB, MW 45dB. Stereo decoder with auto switching. Stereo beacon. Tuning meter. Quiet tuning facility on FM. Inputs: PU 2mV 50K, aux 100mV 100K. Tone controls: bass +14dB -18dB at 20Hz, treble +11dB -14dB at 20kHz, low filter -6dB/octave from 70Hz, high filter -6dB/octave from 7kHz. Output: 22W RMS per channel. Output impedance: 4-16 ohms. Outlets for headphones and AC mains. FR: 15Hz-30kHz  $\pm 1dB$ . HD:  $<0.3\%$  at rated output. H and N: better than 70dB on PU input, better than 85dB on aux input. Mains: 100-110V or 220-240V 50-60Hz. Size:  $17\frac{1}{2} \times 5\frac{3}{4} \times 13\frac{1}{2}$ in. Weight: 22 $\frac{1}{2}$ lb. Price: £156.39 (including VAT).

#### Y3A

AM/FM stereo and four-channel tuner/amplifier. Range: FM 88-108MHz, MW 187-568m. Variable tuning. Meter tuning indicator. Usable sensitivity: FM  $2\mu V$  for 30dB signal-to-noise, AM  $12\mu V$  for 20dB signal-to-noise. Stereo decoder fitted. Output: 20W RMS per channel (stereo); 12W RMS per channel (quadraphonic). Mains: 110, 120, 220, 240V 50-60Hz. Size:  $20 \times 5\frac{3}{4} \times 13\frac{3}{4}$ in. Finish: walnut. Microphone mixing. Four-channel

matrix system. Discrete four-channel tape input. Price: £133.52 (including VAT).

#### PHILIPS

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS. Tel: 01-437 7777.

#### RH720 ★

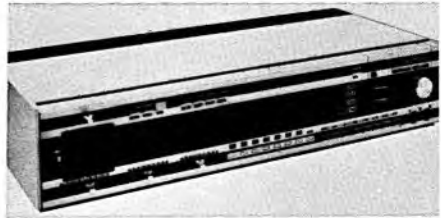
AM/FM stereo tuner/amplifier with stereo surround sound facility. Tuning range: FM 87.5-104MHz, MW 187-577m, LW 857-2000m, SW 16.7-50.4m. Variable tuning plus six presets with touch controls. Switchable AFC. Ratio detector. Moving coil tuning meter. Usable sensitivity: FM  $1.4\mu V$  for 26dB quieting, AM  $80\mu V$  for 26dB S/N ratio. Aerial input: 300 ohms balanced. Stereo decoder fitted. Silent tuning facility on FM. 75



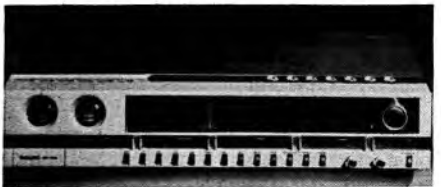
Nordmende 6005 ST



Nordmende Quadronado QXL 160



Onkyo Model 225



Philips RH720

★ Indicates entry is illustrated



Philips RH 734



Photax-Concertone Tuner/Amp 22

transistors plus two ICs. Inputs: mag PU 2mV 50K, crystal PU 80mV 100K, tape 250mV 100K, mic 1mV 2K. Output: 30W RMS. Output impedance: 4 ohms. Tone controls: bass  $\pm 14$ dB at 50Hz, treble  $\pm 15$ dB at 10kHz. Two-position loudness control. HD:  $< 0.1\%$  at 20W per channel. FR: 15Hz-35kHz +0.5dB -3dB. Mains: 110, 127, 220, 240V AC. Size:  $21\frac{1}{2} \times 4\frac{3}{4} \times 11\frac{3}{4}$ in. Finish: walnut veneer cabinet, brushed aluminium fascia. Socket outlet for headphones. Scratch filter. Price: £258.33 (plus VAT).

#### RH 734 ★

FM/AM stereo receiver. Tuner section: range FM 87.5-104MHz, MW1 211-577m, MW2 187-214m, LW 882-2000m, SW 30.7-50.4m. Sensitivity:  $1.3\mu\text{V}$  DIN (FM),  $90\mu\text{V}$  (AM). Tuning: manual with five FM presets. Tuning meter. Aerials: 300 ohms (FM). Internal AM ferrite rod. Inputs: phono 1.8mV 50K, tape 260mV 500K, mic 1.1mV 2K, phono (ceramic) 260mV 500K. S/N: 55dB referred to rated output. Output: 20W per channel into 4 ohms. THD: 1% at 20W. FR: 20Hz-20kHz  $\pm 1$ dB. Size:  $23 \times 4\frac{1}{2} \times 10\frac{1}{2}$ in. Price: £165.74 (plus VAT).

#### ■ PHOTAX-CONCERTONE

Photax Ltd, Hampden Park, Eastbourne, Sussex. Tel: Eastbourne 51197.

#### Model 22 ★

FM/AM stereo receiver. Bands: 88-108MHz FM, 535-1605kHz AM. Sensitivity:  $2.2\mu\text{V}$  IHF (FM),  $20\mu\text{V}$  (AM). Signal strength

meter. Aerial: 300 ohms external and internal ferrite rod. Inputs: phone 3mV 50K, phone (ceramic) 100mV 100K, aux 150mV 50K. S/N: phono (mag) 55dB, aux 60dB. Output: 10W per channel into 8 ohms. THD:  $< 0.8\%$  at rated output. Power bandwidth: 25Hz-35kHz. Price: £78.69 (plus VAT).

#### Model 333

FM/AM stereo receiver. Bands 88-108MHz FM, 535-1605kHz AM. Sensitivity:  $3\mu\text{V}$  IHF (FM),  $200\mu\text{V}$  AM. Aerial: built-in ferrite rod and 300 ohms unbalanced external. Inputs: phono (1) 2.5mV 50K, phono (2) 200mV 800K, aux 100mV, tape 100mV 100K. S/N: phono 50dB, aux 70dB. Output: 22W per channel into 8 ohms. THD: 0.4% at rated output. Power bandwidth: 40Hz-15kHz (IHF). Price: £104.14 (plus VAT).

#### ■ PIONEER

Distributors: Shiro (UK) Ltd, Shiro House, The Ridgeway, Iver, Bucks SLO 9JL. Tel: Iver 652222.

#### SX 300 ★

FM/AM stereo receiver. Bands: 88-108MHz FM plus AM band on MW. Manual tuning. Centre tuning meter. Sensitivity:  $2.3\mu\text{V}$  IHF (FM),  $15\mu\text{V}$  AM. Aerial: 75 and 300 ohms. Inputs: phono 2.5mV 50K, aux 150mV 100K tape (1 & 2) 150mV 100K. S/N: 65dB FM, 50dB AM, ref full power. Output: 10W per channel into 8 ohms, 12W per channel into 4 ohms. Damping factor: 20 at 1kHz into 8 ohms. THD: 0.1% at rated power. FR: 20Hz-15kHz +0.2dB -2dB. Size:  $17\frac{3}{8} \times 5\frac{3}{16} \times 12\frac{1}{2}$ in. Price: on application

#### SX 434 ★

FM/AM stereo receiver. Bands: 88-108MHz FM plus AM/MW band. Manual tuning. Centre tuning meter. Sensitivity:  $1.9\mu\text{V}$  IHF (FM),  $15\mu\text{V}$  AM. Aerial: 75 and 300 ohms. Inputs: phono 2.5mV 50K, mic 10mV 90K, aux 150mV 80K, tape 150mV 80K. S/N: 70dB FM, 50dB AM, ref full power. Output: 16W per channel into 8 ohms, 18W per channel into 4 ohms. Damping factor: 25 at 1kHz into 8 ohms. THD: 0.1% at rated power. FR: 20Hz-15kHz +0.2dB -2dB. Size:  $16\frac{3}{16} \times 5\frac{1}{2} \times 13\frac{3}{16}$ in. Price: on application

#### SX 636 ★

FM/AM stereo receiver. Bands: FM 88-108MHz and AM/MW. Manual tuning. Centre tuning meter. Sensitivity:  $1.9\mu\text{V}$  IHF (FM)  $15\mu\text{V}$  AM. Aerial: 75 and 300 ohms. Inputs: phono 2.5mV 50K, mic 7mV 85K, aux 150mV 60K, tape (1) 150mV 60K, tape (2) DIN 150mV 60K. S/N: 70dB FM, 50dB AM, ref full power. Output: 27W into 8 ohms, 30W into 4



Pioneer SX 300



Pioneer SX 636



Pioneer SX 434



Pioneer SX 737

ohms. Damping factor: 35 at 1kHz into 8 ohms. FR: 20Hz-15kHz +0.2dB -2dB. Size: 22 x 8½ x 18½in. Price: on application.

**SX 737 ★**

FM/AM stereo receiver. Bands: FM 88-108 MHz and AM/MW. Manual tuning. Centre tuning meter. Sensitivity: 1.9µV 1HF (FM), 15µV AM. Aerial: 75 and 300 ohms. Inputs: phono 2.5mV 50K, mic 2.5mV 50K, aux 150mV 50K, tape (1 & 2) 150mV 50K. S/N: 70dB FM, 50dB AM ref full power. Output: 40W into 8 ohms, 50W into 4 ohms. Damping factor: 40 at 1kHz into 8 ohms. THD: 0.05% at full rated power. FR: 20Hz-15kHz +0.2dB -2dB. Size: 24 x 10 x 19in. Price: on application.

**SX 838**

FM/AM stereo receiver. Bands: 88-108MHz FM and AM/MW. Manual tuning. Centre tuning meter. Sensitivity: 1.8µV 1HF (FM), 15µV (AM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, mic 2mV 50K, aux 150mV 80K, tape (1) 150mV 80K, tape (2) pre-out 150mV-1V 2K. S/N: 70dB FM, 50dB AM. Outputs: 55W into 8 ohms, 70W into 4 ohms. Damping factor: 45 at 1kHz into 8 ohms. THD: 0.3% at full rated power. FR: 20Hz-15kHz +0.2dB -2dB. Size: 20¾ x 6¾ x 16in. Price: on application.

**SX 939**

FM/AM stereo receiver. Bands: 88-108MHz FM, 550-1600kHz AM/MW. Manual tuning. Centre tuning meter. Sensitivity: 1.8µV 1HF (FM), 15µV AM. Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, mic 2mV 50K, aux 150mV 70K, tape (1 & 2) 150mV 70K. S/N: 70dB FM, 50dB AM referred to full output. Output: 75W into 8 ohms, 100W into 4

ohms. Damping factor: 45 at 1kHz into 8 ohms. THD: 0.3% at full power. FR: 20Hz-15kHz +0.2dB -2dB. Size: 20½ x 6¾ x 16in. Price: on application.

**SX 1010**

FM/AM stereo receiver. Bands: 88-108MHz FM, 550-1600kHz AM/MW. Manual tuning. Centre tuning meter. Sensitivity: 1.7µV 1HF (FM), 15µV (AM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, mic 2mV 50K, aux 150mV 70K, tape (1) 150mV 70K, tape (2) DIN 150mV 70K. S/N: 72dB FM, 50dB AM ref full output. Output: 110W into 8 or 4 ohms. Damping factor: 50 at 1 kHz into 8 ohms. THD: 0.1% at full power. FR: 20Hz-15kHz +0.2dB -2dB. Size: 20 x 6¾ x 17in. Price: on application.

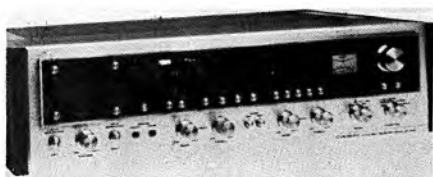
**QX646**

FM/AM stereo-quadrasonic receiver. Bands: 88-108MHz FM, 550-1600kHz AM/MW. Manual tuning. Signal strength meter. Sensitivity: 2.2µV 1HF (FM), 15µV AM. Aerial: 75 or 300 ohms. Inputs: phono 2.5mV 100K, aux 180mV 90K, tape monitor (2-channel, 4-channel) 180mV 100K. S/N: 65dB FM, 50dB AM, ref to full power. Output: 10W (4-channel) into 8 ohms, 11W (4-channel) into 4 ohms. Damping factor: 40 at 1kHz into 8 ohms. THD: 1% ref to full power. FR: 10Hz-30kHz power bandwidth. Size: 20 x 5¾ x 14in. All regular matrix, SQ and CD-4 systems decoded. Price: on application.

**QX 747**

FM/AM stereo-quadrasonic receiver. Bands: 88-108MHz FM, 550-1600kHz AM/MW. Manual tuning. Centre tuning meter. Sensitivity: 1.9µV 1HF (FM), 15µV (AM). Aerial: 75 or 300 ohms. Inputs: phono 2.2mV

★ Indicates entry is illustrated



Pioneer 4 Channel Receiver QX949



Rogers Ravensbrook

50K, aux 140mV 100K, tape monitor 140mV 100K, tape rec (2) 140mV 100K. S/N: 70dB FM, 50dB AM. Output: 25W (4-channel) into 8 ohms, 30W (4-channel) into 4 ohms. Damping factor: 35 at 1kHz into 8 ohms. THD: 0.2%. Power bandwidth: 7Hz-40kHz. Size: 21 × 6 × 16in. All regular matrix, SQ and CD-4 sources decoded. Price: on application.

#### **QX 949 ★**

FM/AM stereo-quadraphonic receiver. Bands: 88-108MHz FM, 550-1600kHz AM. Manual tuning. Centre tuning and signal strength meters. Sensitivity: 1.8μV 1HF (FM), 15μV (AM). Aerials: 75 or 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, aux 150mV 100K, tape mon (1) 150mV 100K, tape rec 150mV. S/N: 70dB FM, 50dB AM ref full power output. Output: 44W (4-channel) into 8 ohms, 58W (4-channel) into 4 ohms. Damping factor: 35 at 1kHz into 8 ohms. THD: 0.3% at full power. Power bandwidth: 7Hz-40kHz. Size: 21 × 6 × 17in. All regular matrix, SQ and CD-4 sources decoded. Price: on application.

#### **ROGERS**

Rogers Developments (Electronics) Ltd,  
4-14 Barmeston Road, Catford,  
London SE6 3BN. Tel: 01-698 7424/4340.

#### **Ravensbrook ★**

Integrated stereo tuner/amplifier. Range: 88-108MHz. Variable tuning. Quadrature detector. Aerial input: 75 ohms coaxial and 300

ohms balanced. Phase lock loop stereo decoder. Three-gang FET front end. Dual ceramic IF filters using IC techniques. Interstation quiet tuning. Output: 13W RMS per channel into 15 ohms, 20W RMS per channel into 8 ohms. HD: <0.1% at rated output. FR: 20Hz-50kHz -3dB. S/N: PU input -53dB. Pushbutton input selector. Controls: bass, treble, volume, balance, high filter, low filter. Tuning meter. Price: (chassis) £95 (plus VAT); (in cabinet) £102.50 (plus VAT).

#### **ROTEL**

Rank Audio Visual Ltd, PO Box 70,  
Great West Road, Brentford TW8 9HR.  
Tel: 01-568 9222.

#### **RX150A**

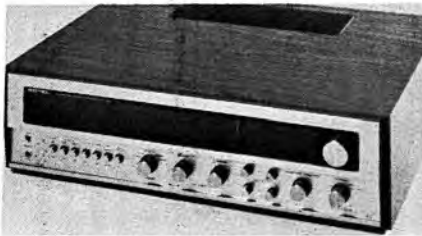
AM/FM stereo tuner/amplifier. Range: FM 88-108MHz, MW 188-545m. Variable tuning. Usable sensitivity: FM 5μV, MW 30μV. Meter tuning indicator. Aerial input: 300 ohms. Stereo decoder fitted. Inputs: mag PU 2.8mV 45K, ceramic PU 100mV 190K, aux 250mV 125K. Noise level: PU inputs -60dB, aux inputs -70dB. Output: 11W RMS per channel into 4 ohms. Output impedance: 4-8 ohms. Tone controls: bass +14dB -11.5dB, treble +11dB -14dB. HD: 0.35% at 30W. FR: 30Hz-20kHz at 30W. Mains: 240V AC. Size: 16½ × 6½ × 5½in. Weight: 10lb. Finish: wood grain. Price: £78.25 (plus VAT).

#### **RX-454 ★**

4-channel stereo receiver. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. AFC. Sensitivity: FM 2.5μV, AM 250μV/m. Selectivity: FM 45dB, AM 35dB. Output: 45W RMS per channel, both channels driven or 20W RMS all channels driven into 8 ohms at less than 1% THD. IM distortion: 0.2%. FR: 15Hz-90kHz -3dB at 8 ohms. Power bandwidth: (1HF) 20Hz-50kHz at 8 ohms. Input sensitivity/impedance: phono mag 2.5mV 45K, aux 100mV 25K, tape monitor 200mV 55K, tape DIN 330mV 100K. Residual noise: 1.6mV. S/N ratio: phono 65dB, aux, tape 70dB. Damping factor: 30 at 8 ohms. Controls: bass ±12dB at 50Hz, treble ±12dB at 10kHz, high filter -10dB at 10kHz, loudness +9dB at 50Hz. Speaker impedance: 4-16 ohms. Mode control enables listener to switch from discrete 4-channel to SQ matrix, to external decoder (for CD-4 listening) plus stereo simulated 4-channel surround sound. Size: 18½ × 5 × 13½in. Weight: 22lb. Price: £78.25 (plus VAT).

#### **RX-802 ★**

AM/FM stereo receiver. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (1HF) FM 1.5μV, AM 15μV.



Rotel RX454 four channel receiver



Rotel RX-802



Rotel RX-254



Rotel RX-202

S/N ratio: FM 70dB, AM 55dB. IF rejection: FM 100dB, AM 75dB. Output: 55W RMS per channel, both channels driven into 8 ohms at less than 1% THD IM distortion. S/N ratio: phono/tape 70dB/80dB. Phono overload: 130mV. Controls: bass  $\pm 10$ dB 50Hz, treble  $\pm 10$ dB 10kHz, loudness +8dB/+4dB 50Hz/10kHz, high filter 12dB/Oct 50Hz, low filter 12dB/Oct 10kHz. Audio muting -20dB at 1kHz. Residual noise: 0.5mV. Speaker impedance: 4-16 ohms. Size: 24  $\times$  5  $\frac{1}{2}$   $\times$  15in. Weight: 28.6lb. Finish: teak or rosewood. Price: £222.15 (plus VAT).

#### **RX-254 ★**

4-channel stereo receiver. Discrete 4-channel and built-in CD-4 demodulator plus SQ matrix. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (IHF) FM 2.9 $\mu$ V, AM 20 $\mu$ V. S/N ratio: FM 65dB, AM 50dB. IF rejection: FM 70dB, AM 45dB. Output: 24W RMS per channel, both channels

driven or 12W RMS all channels driven into 8 ohms at less than 1% THD. IM distortion: 0.3%. S/N ratio: phono/tape 65dB/80dB. Phono overload: 80mV. Residual noise: 0.5mV. Speaker impedance: 4-16 ohms. Controls: bass  $\pm 10$ dB 50Hz, treble  $\pm 10$ dB 10kHz, loudness +10dB/+4dB 50Hz/10kHz. Volume selector, mode, treble, and bass for separate front and back operation, 4-balance controls (one for each channel), CD-4 separation controls, twin speaker switches, tape monitor, loudness, two headphone jacks for stereo and 4-channel, rear panel CD-4 carrier level control. Size: 21  $\frac{1}{2}$   $\times$  5  $\frac{1}{2}$   $\times$  13in. Weight: 22.7lb. Price: £222.15 (plus VAT).

#### **RX-152**

AM/FM stereo receiver. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (IHF) FM 4 $\mu$ V, AM 20 $\mu$ V. S/N ratio: FM 65dB, AM 50dB. IF rejection: FM 65dB, AM 45dB. Output: 10W RMS per channel, both channels driven into 8 ohms at less than 1% THD IM distortion. S/N ratio: phono/tape 65dB/70dB. Phono overload: 80mV. Speaker impedance: 4-16 ohms. Controls: bass  $\pm 10$ dB 50Hz, treble  $\pm 10$ dB 50Hz/10kHz, loudness +10dB/+5dB 50Hz/10kHz, balance, selector, tape monitor. Two speaker switches for operating two pairs of speakers plus a simulated 4-channel switch for surround sound. Inputs: phono, tape, aux, tape monitor. Residual noise: 0.5mV. Terminals: for two pairs of loudspeakers, for balanced 300 ohm and unbalanced 75 ohm FM antenna, for external AM antenna (AM loopstick antenna built-in). AC outlet and front panel headphone jack. Size: 18  $\frac{1}{2}$   $\times$  4  $\frac{1}{2}$   $\times$  11in. Weight: 11lb. Price: £87.51 (plus VAT).

#### **RX-202 ★**

AM/FM stereo receiver. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (IHF) FM 2.9 $\mu$ V, AM 20 $\mu$ V. S/N ratio: FM 65dB, AM 50dB. IF rejection: FM 70dB, AM 45dB. Output: 15W RMS per channel, both channels driven into 8 ohms at less than 1% THD IM distortion. S/N ratio: phono/tape 65dB/78dB. Phono overload: 80mV. Speaker impedance: 4-16 ohms. Controls: bass  $\pm 10$ dB 50Hz, treble  $\pm 10$ dB 10kHz, loudness +10dB/+4dB 50Hz/10kHz, high filter -9dB 50Hz, balance. Terminals for two pairs of speakers, for balanced 300 ohm and unbalanced 75-ohm FM antenna connection (built-in AM ferrite loopstick antenna), headphone jack. Simulated 4-channel switch. Size: 18  $\frac{1}{2}$   $\times$  4  $\frac{1}{2}$   $\times$  11in. Weight: 13lb. Price: £99.54 (plus VAT).

#### **RX-402**

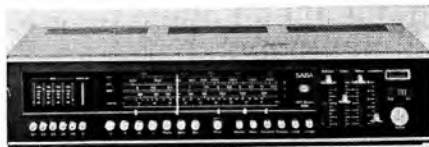
AM/FM stereo receiver. Tuning range: FM



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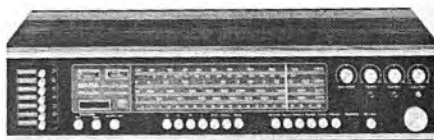
Rotel RX-602



Saba Hi-Fi Studio 8080



Saba Hi-Fi Studio 8035



Saba Freiburg Telecommander

88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (IHF) FM 2.0µV, AM 20µV. S/N ratio: FM 67dB, AM 50dB. IF rejection: FM 80dB, AM 45dB. Output: 24W RMS per channel, both channels driven into 8 ohms at less than 1% THD IM distortion. S/N ratio: phono/tape 65dB/80dB. Phono overload: 85mV. Speaker impedance: 4-16 ohms. Controls: bass ±10dB 50Hz, treble ±10dB 10kHz, loudness +8dB/+5dB 50Hz/10kHz, high filter -10dB 50Hz, balance, selector. Separate left and right control for bass and treble. Simulated 4-channel switch. Two speaker switches. FM muting. Residual noise: 0.5mV. Terminal for external AM antenna. AM ferrite loopstick antenna. Front panel headphone jacks. AC outlets. Size: 18 $\frac{3}{8}$  × 4 $\frac{1}{2}$  × 13in. Weight: 15lb. Price: £134.27 (plus VAT).

#### **RX-602 ★**

AM/FM stereo receiver. Tuning range: FM 88-108MHz, AM 550-1600kHz. Variable tuning. Sensitivity: (IHF) FM 1.8µV, AM 20µV. S/N ratio: FM 70dB, AM 50dB. IF rejection: FM 80dB, AM 50dB. Output: 40W RMS per channel, both channels driven into 8 ohms at less than 1% THD IM distortion. S/N ratio: phono/tape 65dB/80dB. Phono overload: 130mV. Speaker impedance: 4-16 ohms. Controls: bass ±10dB 50Hz, treble ±10dB 10kHz, loudness +8dB/+4dB 50Hz/10kHz, high filter -10dB 50Hz, audio muting switch, tape monitor, balance, selector. Simulated 4-channel switch. Terminals for FM antenna and AM antenna connections. AM ferrite loopstick antenna on rear of panel. Front headphone jack. AC outlets. Finish: teak or rosewood. Size: 22 $\frac{1}{2}$  × 5 $\frac{3}{8}$  × 13in. Weight: 22.7lb. Price: £173.62 (plus VAT).

#### **■ SABA**

Saba Radio & Television Ltd,  
6-12 Cornbrook Park Road,  
Manchester M15 4EE. Tel: 061-872 7661.

#### **Hi-Fi Studio 8035 ★**

AM/FM

stereo tuner/amplifier. Range: FM, LW, MW, SW. Variable tuning. Slider controls. Tuning meter. Output: 18W music power per channel. HD: <0.25% at 12W output. 62 semiconductors. Output impedance: 4-16 ohms. Output fully protected against short circuits. Headphone socket on front panel. Inputs for mag PU, crystal PU and tape recorder. Size: 23 $\frac{3}{8}$  × 5 $\frac{3}{8}$  × 11 $\frac{1}{2}$ in. Finish: light walnut or white. Price: £108 (including VAT).

#### **Hi-Fi Studio 8080 ★**

AM/FM stereo tuner/amplifier. Range: FM, LW, MW, SW. Variable tuning plus six preset FM stations. Tuning meter. FET front-end on all bands. Quiet tuning facility on FM. 54 transistors, 30 diodes, one IC. Output: 30W RMS per channel. HD: <0.1%. Socket for reverberation unit. Output protected against short circuits. Mains: 110, 130, 220, 240V AC. Size: 23 $\frac{3}{8}$  × 5 $\frac{3}{8}$  × 12 $\frac{1}{2}$ in. Finish: walnut or white. Price: £162 (including VAT).

#### **Freiburg Telecommander ★**

AM/FM stereo tuner/amplifier with ultrasonic cordless remote control. Range: LW, MW, SW, FM/VHF. Variable tuning plus seven preset stations on FM. AFC. Meter tuning indicator. 69 transistors, 36 diodes, 13 rectifiers, 8 thyristors and 5 ICs. Output: 40W RMS per channel. Inputs for mag PU, tape, aux. Connection for reverberation unit. HD: <0.1%. Output circuits protected

against short circuit. Silent tuning facility on FM. Size:  $29\frac{1}{8} \times 6\frac{3}{8} \times 13$ in. Finish: light walnut and white. Price: £279.82 (including VAT).

### ■ SHARP

Sharp Electronics (UK) Ltd,  
107 Hulme Hall Lane,  
Manchester M10 8HL. Tel: 061-205 7321.

#### SA606

Stereo AM/FM tuner /amplifier. Range: FM 88-108MHz, MW 189-560m, LW 1000-2000m, SW 16-50m. Variable tuning plus FM presets. AFC. Ratio detector. Meter tuning indicator. Usable sensitivity: FM  $5\mu\text{V}$ , AM  $100\mu\text{V}$ . Aerial input: 300 ohms balanced. Decoder included. Output: 4W RMS per channel DIN. Output impedance: 8 ohms. Mains: 110, 220, 240V AC. Finish: Cabinet PVC laminated veneer, front panel aluminium. Size:  $18\frac{3}{4} \times 13\frac{3}{4} \times 4\frac{1}{2}$ in. Price: £96.02 (plus VAT).

#### SA-507H ★

4-channel stereo tuner/amplifier. Facilities for regular matrix and SQ matrix, 4-channel decoder and discrete. Tuning range: FM 87.6-104MHz, MW 520-1620kHz. Variable tuning. Output impedance: 4 or 8 ohms. Mains: 110, 220, 240V AC 50/60Hz. Output: 9W RMS per channel at 4 ohms. I.T.L. and O.T.L. circuitry. FM stereo indicator. Size: 21.97in wide, 6.61in high, 14.13in deep. Price: £162.73 (plus VAT).

### ■ SONAB

Sonab Ltd, PO Box 4, Oldfield Road,  
Hampton TW12 2HN. Tel: 01-979 0134.

#### R7000 ★

Stereo tuner/amplifier. Range: FM/VHF. Variable tuning. Tuning indicator. Aerial input: coaxial. Stereo decoder fitted. AFC. Transistors. Output: 50W RMS per channel into 8 ohms. HD: 0.02% at 1kHz and 30W into rated load (never more than 0.1% at all levels 25Hz-25kHz). FR: 25Hz-25kHz  $\pm 0.5\text{dB}$ . Size:  $15 \times 3 \times 11$ in. Mains: 240V AC. Price: £235.79 (plus VAT).

#### R4000/2

FM stereo tuner/amplifier. Range: 87.5-104MHz. Variable tuning plus four presets. AFC. Tuning and signal strength meter. Usable sensitivity: better than  $2\mu\text{V}$  (300 ohms input) and  $1\mu\text{V}$  (75 ohms input). Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Stereo decoder fitted. Inputs: mag PU 2mV 68K, aux 100mV 100K, tape 100mV 100K. Overload capability:  $>36\text{dB}$  for low level inputs. Output: 70W RMS per channel into 4 ohms, 50W RMS per channel into 8



Sharp SA-507H



Sonab R7000



Sony STR 6036

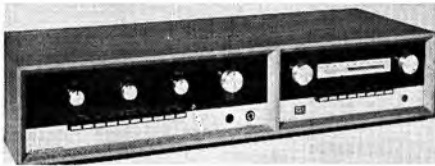
ohms. Controls: input selector, mono/stereo, loudness, high filter 12dB/octave  $-3\text{dB}$  at 8kHz, volume, bass  $\pm 12\text{dB}$  at 50Hz, treble  $\pm 8\text{dB}$  at 10kHz, balance, preset stations, AFC on/off. HD:  $<0.5\%$  20Hz-20kHz at 35W on single channel,  $<1.0\%$  at 1kHz all levels up to 35W on both channels. Output impedance: (speakers) two pairs at 4-16 ohms, tape 10K, headphones 8-2000 ohms. FR: 15Hz-25kHz  $\pm 1.5\text{dB}$ . Mains: 110, 130, 220, 240V 50-60Hz. Size:  $18\frac{3}{4} \times 9\frac{3}{4} \times 4\frac{1}{2}$ in. Finish: black. Price: £175.88 (plus VAT).

### ■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

#### STR 6036 ★

AM/FM stereo tuner/amplifier. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 15W RMS per channel, both channels operating 20Hz-20kHz into 8 ohms. Power bandwidth: 10-25,000Hz. HD: 0.8% at rated output. S/N ratio: mic phono better than 60dB, aux better than 70dB. Damping factor: better than 25 into 8 ohms. Inputs: phono 2.5mV 47K, mic 2mV 47K, all other inputs 250mV 100K. Tone controls: bass  $\pm 10\text{dB}$  at 100Hz, treble  $\pm 10\text{dB}$  at 10kHz. Size:  $434 \times 145 \times 348\text{mm}$ . Price: on application.



J.E. Sugden R21 and R48

#### STR 6046A

AM/FM stereo tuner/amplifier. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 20W RMS per channel, both channels operating into 8 ohms at 20Hz-20kHz. Power bandwidth: 10Hz-25kHz. HD: 0.8% at rated output. Inputs: phono 2.5mV 47K, mic 2mV 47K, all other inputs 250mV 100K. Tone controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 10kHz. S/N ratio: 50dB. Built-in ferrite bar antenna and external aerial terminals. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 434  $\times$  145  $\times$  348mm. Price: on application

#### STR 7055A

AM/FM stereo tuner/amplifier. Tuning range: FM 87.5MHz, AM: 530-1605kHz. Output: 40W RMS per channel, both channels operating into 8 ohms at 20Hz-20kHz. Power bandwidth: 15Hz-35kHz. HD: less than 0.2% at rated output. Inputs: phono 3mV 47K, all other inputs 250mV 50K. S/N ratio: phono 72dB, aux 1.2 90dB, tape 90dB. Damping factor: 50. Tone controls: bass  $\pm 10$ dB at 100Hz, treble  $\pm 10$ dB at 10kHz. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 440  $\times$  148  $\times$  375mm. Price: on application.

#### STR 7065A

AM/fm stereo tuner/amplifier. Tuning range: FM 87.5-108MHz, AM 530-1605kHz. Output: 50W RMS per channel, both channels operating into 8 ohms at 20Hz-20kHz. Power bandwidth: 15Hz-35kHz. HD: less than 0.2% at rated output. S/N ratio: 110dB. Inputs: phono 3mV 47K, mic 1.6mV 47K, all other inputs 250mV 50K. Aerial terminals: 300 ohms balanced, 75 ohms unbalanced. Damping factor: 50. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 440  $\times$  148  $\times$  375mm. Weight: 16.9kg. Price: on application.

#### ■ J.E. SUGDEN & CO LTD

Carr Street, Cleckheaton,  
Yorks BD19 5LA. Tel: Cleckheaton 2501.

#### R21 and R48 ★

Combination of R21 tuner and R48 amplifier in one case. Model R21. FM stereo tuner. Range: 88-104MHz. Variable and preset tuning. Ratio detector. Centre-zero tuning indicator. Sensitivity: 2 $\mu$ V for 20dB quieting. Aerial input: 75 ohms coaxial and 300 ohms

balanced. Output: 0.5V. Stereo decoder fitted. AFC. Mains: 110, 220, 230 and 240V AC. Thermometer type tuning dial. Special decoder filter to prevent spurious responses. Switchable decoder filter for low-level transmissions. Model R48. Integrated stereo amplifier. 34 transistors, 17 diodes. Inputs: tape PU 2.5mV 47K, radio 100mV 200K, mag 100mV 200K, aux 100mV 200K. Noise level: (PU input) -70dB, (other inputs) -82dB. Overload capability: (PU input) 100mV, (other inputs) infinite. Output: 40W RMS into 8 ohms. Controls: bass  $\pm 14$ dB at 40Hz, treble  $\pm 14$ dB at 10kHz, balance  $\pm 6$ dB at 180 degrees rotation, fade out at full rotation, volume, input selectors, LF filter 18dB/Oct from 70Hz, HF filter at 4, 7 or 10kHz, pushbutton selection of slope (steep 18dB/Oct, gradual 6dB/Oct), quiet button (-16dB loudness compensated), mono/stereo, left or right output. HD: <0.1%. FR: 30Hz-20kHz  $\pm 1$ dB at all output levels. Mains: 110, 120, 220, 240V 50/60Hz. Size: 16  $\times$  5 $\frac{1}{4}$   $\times$  11 $\frac{1}{4}$ in. Finish: teak with anodised aluminium panel. Special output stage. Price: (R21 and R48 as one unit) £179 (plus VAT).

#### ■ TANDBERG

Distributors: Farnell-Tandberg Ltd,  
Farnell House, 81 Kirkstall Road,  
Leeds LS3 1HR. Tel: Leeds 35111.

#### TR200MPX ★

Stereo FM tuner/amplifier. Range: 87.5-108MHz. Variable tuning plus five presets. AFC. Meter tuning indicator. Usable sensitivity: 1 $\mu$ V. Aerial input: 75 ohms coaxial. Stereo decoder fitted. Inputs: tape 250mV 30K, PU 2.3mV 47K, aux 100mV 100K. Noise level: -52dB. Output: 15W per channel into 8 ohms, 20W per channel into 4 ohms. Output impedance: 4 ohms. Tone controls: bass  $\pm 16$ dB at 50Hz, treble  $\pm 15$ dB at 10kHz. Loudness: +11dB at 50Hz. HD: 1% at rated output. FR: 20Hz-40kHz  $\pm 3$ dB. Size: 17  $\times$  3 $\frac{1}{2}$   $\times$  9 $\frac{1}{2}$ in. Speaker selector switch. Magnetic/crystal PU switch. Tape monitor switch. Headphone socket. Finish: teak or rosewood. Price: (teak or rosewood) £125 (plus VAT).

#### TR1000MPX ★

Stereo FM tuner/amplifier. Range: 87.5-108MHz. Variable tuning plus six presets. AFC. Phase locked loop discriminator. Meter tuning indicator. Usable sensitivity: 2 $\mu$ V. Aerial input: 75 ohms coaxial. Stereo decoder fitted. Inputs: mag PU 2mV 47K, tape 200mV 100K, aux (2) 200mV 100K. Noise level: -70dB. Overload capability: (PU input) 25dB, (other inputs) 20dB. Output: 50W RMS into 4



Tandberg TR-200



Tandberg Huldra 10



Tandberg TR-1000 MP X



Tandberg TR-1055

ohms, 35W RMS into 8 ohms. Controls: bass  $\pm 16$ dB at 50Hz, bass loudness +12dB at 50Hz, high filter (1) -12dB at 15kHz, high filter (2) -5dB at 15kHz, treble  $\pm 14$ dB at 10kHz, treble loudness +7dB at 7kHz, low filter -8dB at 50Hz. HD: 0.1% at 1dB below rated output power. Output impedance: 8 ohms. FR: 20Hz-20kHz  $\pm 2$ dB at 50W. Size: 17  $\times$  4 $\frac{3}{4}$   $\times$  12in. Finish: teak or rosewood cabinet with black dial and satin finish front panel. Front jack for stereo headphones. Price: (teak or rosewood) £184.50 (plus VAT).

#### TR1010MPX

AM/FM stereo tuner/amplifier. Range: FM 87.5-108MHz, MW 187-579m. Variable tuning plus six presets. AFC. Phase locked loop discriminator. Meter tuning indicator, meter signal strength indicator. Usable sensitivity: FM 1 $\mu$ V, MW 600 $\mu$ V. Aerial input: 75 ohms coaxial. Stereo decoder fitted. 57 transistors, 34 diodes, 3 FETs. Inputs: mag PU 1.8mV 47K, tape 130mV 100K, aux 130mV 100K. Noise level: -70dB. Overload capability: (PU input) 25dB (other inputs) 20dB. Output: 50W RMS into 4 ohms, 35W RMS into 8 ohms. Controls: bass  $\pm 16$ dB at 50Hz, bass loudness +12dB at 50Hz, treble  $\pm 14$ dB at 10kHz, treble loudness +7dB at 7kHz, low filter -8dB at 50Hz, high filter (1) -12dB at 15kHz, high filter (2) -5dB at 15kHz. HD: 0.1% at 1dB below rated output power. Output impedance: 4-8 ohms. FR: 20Hz-20kHz  $\pm 2$ dB at 50W. Mains: 220-240V 50-60Hz (can be rewired for 115V AC). Size: 17  $\times$  4 $\frac{3}{4}$   $\times$  12in. Finish: teak or rosewood cabinet with black dial and satin finished metal panel. Quiet tuning facility. AFC over-ride. Price: (teak or rosewood) £198.50 (plus VAT).

#### Huldra 10 MPX ★

AM/FM stereo tuner/amplifier. Range: FM 87.5-108MHz, MW 187-579m, LW 1120-2000m, SW1 30-90m, SW2 15-30m, SW3 10-15m. Variable tuning plus four presets. AFC. Meter tuning indicator. Usable sensitivity: FM 1 $\mu$ V, AM 2 $\mu$ V. Aerial input: 75 ohms coaxial. Stereo decoder fitted. Inputs: mag PU 2mV 47K, tape 200mV 100K. Noise level: -70dB. Overload capability: 25dB. Output: 35W RMS per channel. Controls: bass  $\pm 17.5$ dB at 50Hz, treble  $\pm 15$ dB at 10kHz, loudness +12dB at 50Hz. HD: 0.2% at 35W RMS. Output impedance: 4-8 ohms. FR: 20Hz-20kHz  $\pm 2$ dB. Mains: 220-240V 50-60Hz. Size: 21  $\times$  4 $\frac{3}{4}$   $\times$  12in. Finish: teak or rosewood cabinet with black dials and satin finished metal panel. Outputs for four speakers. Quiet tuning facility. Price: (teak or rosewood) £212.50 (plus VAT).

#### TR1055 ★

FM/AM stereo tuner/amplifier. Output: 55W RMS per channel, both channels driven into 8 ohms. Tuning range: FM 87.5-108MHz, AM 518-1600kHz. Variable tuning. Tone controls: treble  $\pm 15$ dB at 10kHz, bass  $\pm 16$ dB at 50Hz, loudness +7dB  $\pm$  12dB at 10kHz/50Hz. Signal/hum and noise: tape (1 & 2) 82dB 250mV. Separate bass and treble controls for each channel. Size: 17 $\frac{3}{4}$   $\times$  5  $\times$  12 $\frac{1}{4}$ in. Finish: walnut. Price: £245 (plus VAT).

#### TR1040P

Stereo FM receiver/amplifier. Pre-tuning for five stations. Output: 40W RMS per channel, both channels driven into 8 ohms. Tuning range: 87.5-108MHz FM. Treble control  $\pm 15$ dB at 10kHz, bass  $\pm 16$ dB at 50Hz. Size: 17 $\frac{1}{2}$   $\times$  5 $\frac{1}{2}$   $\times$  12 $\frac{1}{4}$ in. Price: on application.

★ Indicates entry is illustrated

## ■ TECHNICS

Technics Hi-Fi Division, Building 63,  
107-109 Whitby Road, Trading Estate,  
Slough SL1 3DR. Tel: Slough 34522.

### SA-8500X

FM/AM 4-channel/2-channel receiver with built-in fully automatic CD-4. Output: 34W RMS per channel in 4-channel mode, 85W per channel in BTL stereo. THD: 0.5%. Power bandwidth: 5Hz-40kHz -3dB all channels into 4 ohms. FR: 7Hz-70kHz -3dB. S/N ratio: phono 53dB, aux 80dB. Inputs: phono 2mV 50K, aux 180mV 30K. Tone controls: bass  $\pm 11$ dB at 50Hz, treble  $\pm 10$ dB at 10kHz. Size: 542  $\times$  155  $\times$  395mm. Weight: 16.9kg. Price: £370.32 (plus VAT).

### SA-8000X

FM/AM 4-channel/2-channel receiver with built-in CD-4 demodulator. 16W per channel in 4-channel mode, 42W per channel in BTL. THD: 0.5%. Power bandwidth: 5Hz-40kHz -3dB all channels into 4 ohms. FR: 10Hz-50kHz -3dB. S/N ratio: phono 60dB, aux 78dB. Inputs: phono 1.5mV 50K, aux 150mV 60K. Tone controls: bass  $\pm 13$ dB at 50Hz, treble  $\pm 10$ dB at 10kHz. Mains: 110-240V 50/60Hz. Size: 495  $\times$  160  $\times$  400 mm. Weight: 13.5kg. Price: £318.14 (plus VAT).

### SA-7300X

FM/AM 4-channel/2-channel receiver with built-in fully automatic CD-4. Output: 10W per channel in 4-channel mode, 24W per channel in BTL stereo. THD: 0.5%. Power bandwidth: 7Hz-20kHz -3dB all channels into 4 ohms. FR: 7Hz-20kHz -3dB. S/N ratio: phono 50dB, aux 70dB. Inputs: phono 2mV 50K, aux 180mV 30K. Tone controls: bass  $\pm 10$ dB at 50Hz, treble  $\pm 10$ dB at 10kHz. Mains: AC 110-240V 50/60Hz. Size: 502  $\times$  155  $\times$  395mm. Weight: 16.5kg. Price: on application.

### SA-6800X

FM/AM four-channel receiver. Output: 25W all channels driven into 4 ohms. THD: 0.5%. Power bandwidth: 13Hz-20kHz -3dB. FR: 20Hz-50kHz -3dB. S/N ratio: phono 60dB, aux 80dB. Inputs: phono 3mV 50K, aux 200mV 50K. Tone controls: bass 50Hz, +13dB, -14dB, treble  $\pm 10$ dB at 10kHz. Mains: 110-240V AC 50/60Hz. Size: 453  $\times$  157  $\times$  407.5mm. Weight: 15.6kg. Price: £318.14 (plus VAT).

### SA-6000X

FM/AM 4-channel/2-channel receiver. Output: 14W all channels driven into 4 ohms. THD: 0.5%. Power bandwidth: 7Hz-40kHz -3dB. FR: 10Hz-50kHz -3dB. S/N ratio: phono 60dB, aux 78dB. Inputs: phono 1.5mV 50K, aux 150mV 50K. Tone controls: bass  $\pm 13$ dB at 50Hz, treble  $\pm 10$ dB at 10kHz. Mains: 110-240V AC 50/60Hz. Size: 430  $\times$  146  $\times$  385mm. Weight: 11.1kg. Price: £227.23 (plus VAT).

### SA-5600X

FM/AM 4-channel/2-channel receiver. Output: 11W all channels driven into 4 ohms. THD: 0.5%. Power bandwidth: 10Hz-25kHz -3dB. FR: 10Hz-50kHz -3dB. S/N ratio: phono 55dB, aux 80dB. Inputs: phono 2mV 50K, aux 180mV 40K. Tone controls: bass  $\pm 10$ dB at 50Hz, treble  $\pm 10$ dB at 10kHz. Mains: 110-240V AC 50/60Hz. Size: 430  $\times$  146  $\times$  385mm. Weight: 10.9kg. Price: £199.96 (plus VAT).

### SA-5400X

FM/AM 4-channel/2-channel receiver. 8W all channels driven into 4 ohms. THD: 0.8%. Power bandwidth: 7Hz-28kHz -3dB. FR: 10Hz-50kHz -3dB. S/N ratio: phono 50dB, aux 80dB. Inputs: phono 2.5mV 50K, aux 180mV 40K. Tone controls: bass 50Hz, +12dB, -10dB treble  $\pm 10$ dB at 10kHz. Mains: 110-240V AC 50/60Hz. Size: 409  $\times$

## TELETON STEREO TUNER/AMPLIFIERS

*Listen Carefully to the Price Ticket*

*Pay for the Quality not the Name . . . .*

# Teleton

TELETON (UK) LTD Teleton House  
Waterhouse Lane, Chelmsford, Essex CM1 3DW.  
Chelmsford (0245) 62442 Telex 99338



Teleton TA3000

136 × 337mm. Weight: 8.85kg. Price: £177.23 (plus VAT).

#### SA-5200A

FM/AM stereo receiver with 4-channel matrix capability. Output: 13W per channel into 8 ohms. THD: 0.8%. Power bandwidth: 5Hz-30kHz -3dB. FR: 10Hz-50kHz -3dB. S/N ratio: phono 65dB, aux 80dB. Inputs: phono 3mV 47K. Tone controls: bass +10dB, -12dB at 50Hz, treble ±10dB at 10kHz. Mains: 110-240V AC 50/60Hz. Size: 410 × 135 × 358mm. Weight: 8kg. Price: £109.05 (plus VAT).

#### TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough. Tel: Slough 33311.

#### Hymnus 5050

FM/AM stereo receiver. Bands: 88-108MHz (FM), 145-330kHz (LW), 515-1645kHz (MW), 5.75-15.55MHz (SW). Seven presets plus manual tuning. Signal strength meter. Sensitivity: 2.4µV DIN (FM), 20µV DIN (AM). Aerial: 240 ohms. Inputs: phono 1.8mV 47K, phono (ceramic) 240mV 470K, tape 240mV 470K. Outputs: 2 × headphones, 6 × loudspeakers (4-16 ohms), tape 1.7mV. Power output: 30W per channel. THD: 0.5%. FR: 20Hz-20kHz ±5dB. Selector switches for four speakers, room 1 (four channel stereo); two speakers, room 2. Adjustable muting. Price: £179 (including VAT).

#### Opus 6060

FM/AM stereo receiver. Tuner specification as for the Hymnus. Output: 35W RMS per channel. Amplifier section. Inputs: phono (mag) 2mV 47K, phono (ceramic) 269mV 470K. Outputs: tape 1.7mV, headphones 2 × 200 ohms, 6 × speakers (4). THD: 0.5%. FR: 20Hz-20kHz ±5dB. Power output: 60W per channel. Size: 24½ × 4¼ × 12in. Price: £299 (including VAT).

#### Concerto 4040

FM/AM stereo receiver. Bands: 87.6-108MHz (FM), 520-1630kHz (MW), 5.75-

15.55MHz (SW), 145-330kHz (LW). Output: 22W RMS per channel. Five presets plus manual tuning. Signal strength meter. Sensitivity: 2.4µV DIN (FM), 8µV DIN (SW), 12µV DIN (MW), 30µV (LW). Inputs: phono (mag) 3mV 47K, phono (ceramic) 220mV 600K, tape 220mV 600K. Outputs: headphones >200 ohms, speakers 4 ohms, tape 700mV/K. Power output: 40W per channel. FR: 20Hz-20kHz. Size: 21¼ × 4¼ × 10½in. Price: £145 (including VAT).

#### TELETON

Teleton Electro (UK) Company Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW. Tel: Chelmsford 62442.

#### TFS 55

AM/FM stereo tuner/amplifier. Tuning range: FM 88-100MHz, AM 530-1600kHz. Aerial impedance: FM 75 ohms or 300 ohms, AM 75 ohms. Sensitivity: FM 3µV. Capture ratio: 3dB. Crosstalk: -30dB at 1kHz. HD: 0.7% at 10W. FR: 30Hz-20kHz ±1.5dB. Inputs: phono mag 3mV, phono xtal 100mV, aux 200mV, tape 200mV. Output: 15W per channel. Mains: 115/240V AC 50/60Hz. Size: 102 × 501 × 355mm. Price: on application.

#### TA 3000 ★

AM/FM stereo tuner/amplifier. Tuning range: FM 87.5-104MHz. AM 510-1605kHz. Aerial impedance: FM 300 ohms. Sensitivity: FM 10µV. Crosstalk: -46dB. Output: 7W per channel. HD: 0.3% at 3.5W. FR: 20Hz-20kHz ±1.5dB. Inputs: phono mag 3mV, aux 200mV, tape 250mV. Tone controls: bass ±11dB at 100Hz, treble ±11dB at 10kHz. H and N: less than 20mV. Mains: 115/240V AC 50/60Hz. Size: 120 × 417 × 310mm. Price: on application.

#### TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

#### SA-300L

Stereo tuner/amplifier. Tuning range: FM 88-100MHz, MW 530-1605kHz, LW 145-360kHz. Output: 14W per channel, both channels driven into 8 ohms at 1kHz. HD: 0.8% (at 14W output). IM distortion: 0.8%. FR: 20Hz-50kHz +1dB, -3dB. Power bandwidth: (IHF) 15Hz-25kHz. Inputs: phono 3.0mV 47K, aux 150mV 50K, tape 250mV 50K. S/N ratio: phono 65dB, tape 75dB. Tone controls: bass ±10dB at 100Hz, treble ±10dB 10kHz. Speaker impedance: 4-6ohm (A or B), 8-16 ohm (A + B). Damping factor: 20 at 8 ohms. Size: 400 × 290 × 115mm. Weight: 7.1kg. Price: on application.

★ Indicates entry is illustrated

#### SA-400

Stereo/tuner amplifier. Tuning range: FM 88-108MHz, MW 530-1605kHz. Output: 15W per channel, both channels driven into 8 ohms at 1kHz. HD: 0.8% at rated output. IM distortion: 0.8%. FR: 20Hz-40kHz -3dB. Power bandwidth: (IHF) 20Hz-40kHz. Inputs: phono 3.0mV 47K, aux 200mV 100K, tape 200mV 100K. S/N ratio: phono 65dB, aux 75dB. Speaker impedance: 4-16 ohms. Tone controls: bass  $\pm$  10dB at 100Hz, treble  $\pm$  10dB at 10kHz. Damping factor: 20 at 8 ohms. Size: 420  $\times$  285  $\times$  115mm. Weight: 6.6kg. Price: on application.

#### SA-500

Stereo/tuner amplifier. Tuning range: FM 88-108MHz, MW 530-1605kHz. Output: 35W per channel, both channels driven into 8 ohms at 1kHz. HD: 0.4% at rated output. IM distortion: 0.4%. FR: 10Hz-55kHz +1dB, -3dB. Power bandwidth: (IHF) 10Hz-40kHz. Inputs: phono 2.5mV 47K, aux 150mV 100K, tape 150mV 100K. S/N ratio: phono 65dB, aux 75dB. Speaker impedance: 4-16 ohms. Tone controls: bass  $\pm$  10dB at 100Hz, treble  $\pm$  10dB at 10kHz. Damping factor: 20 at 8 ohms. Size: 445  $\times$  381  $\times$  115mm. Weight: 9.5kg. Price: on application.

#### SA-304

4-channel stereo tuner/amplifier. Output: 10W all channels driven into 8 ohms at 1kHz. HD: 0.8% at 15W output. IM distortion: 0.809. FR: 20Hz-40kHz  $\pm$  3dB. Power bandwidth: 20Hz-30kHz. Inputs: phono 30mV 47K, aux 150mV 100K, tape 150mV 100K. S/N ratio: phono 65dB, aux 75dB. Speaker impedance: 4-16 ohms. Tone controls: bass 100kHz  $\pm$  10dB, treble 10kHz  $\pm$  10dB. Damping factor: 26 at 8 ohms. Tuning range: FM 88-108MHz, AM 530-1605kHz. Power consumption: 100W. Size: 400  $\times$  290  $\times$  115mm. Weight: 8.2kg. Price: on application.

#### SA-504

4-channel stereo tuner/amplifier. Output: 28W all channels driven into 8 ohms at 1kHz. HD: 0.4% at 35W output. IM distortion: 0.4%. FR: 10Hz-55kHz +1dB, -3dB. Power bandwidth: (IHF) 10Hz-40kHz. Inputs: phono mag 2.5mV 47K, CC 30mV 70K, aux 1, 2 (4 ch) 150mV 47K, tape 150mV 47K, main in 550mV 47K. Speaker impedance: 4-16 ohms. Tone controls: bass  $\pm$  10dB at 100Hz, treble  $\pm$  10dB at 10kHz. Damping factor: 20 at 8 ohms. Tuning range: FM 88-108MHz, AM 530-1605kHz. Power consumption: 150W. Size: 500  $\times$  380  $\times$  115mm. Weight: 13kg. Price: on application.

#### TRIO

Distributors: B.H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6441.

#### KR-2400

FM/AM stereo receiver. Bands: 88-108MHz (FM), plus AM/MW. Sensitivity: 2.5 $\mu$ V (IHF) (FM), 25 $\mu$ V (AM). Manual tuning. Aerial: 75 or 300 ohms. Inputs: phono 2.5mV 50K, aux 150mV 45K, tape play 150mV 45K. S/N: phono 70dB, aux 87dB, tape play 87dB (IHF-A curve). Output: 16W per channel into 8 ohms, 20W per channel into 4 ohms, both at 1kHz. THD: 1% at rated power into 8 ohms. Power bandwidth: 10Hz-30kHz. Size: 480  $\times$  137  $\times$  344mm. Price: £116 (plus VAT).

#### KR-3400

FM/AM stereo receiver. Bands: 77-108MHz plus AM/MW. Sensitivity: 2.5 $\mu$ V (IHF) (FM) 25 $\mu$ V (AM). Manual tuning. Aerial: 75 or 300 ohms. Inputs: phono 2.5mV 50K, aux 150mV 45K, tape play 150mV 45K. S/N: phono 70dB, aux and tape play 87dB (IHF-A curve). Output: 22W per channel into 8 ohms, 29W per channel into 4 ohms, both at 1kHz. THD: 0.8% at rated power into 8 ohms. Power bandwidth: 10Hz-30kHz. Size: 480  $\times$  137  $\times$  344mm. Price: 1140 (plus VAT).

#### KR-440

FM/AM stereo receiver. Bands: 88-108MHz plus AM/MW. Sensitivity: 2.1 $\mu$ V (IHF) (FM), 20 $\mu$ V (AM). Manual tuning. Aerial: 75 or 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, aux 150mV 45K, tape play 150mV 45K. S/N: phono 70dB aux and tape play 90dB (IHF-A curve). Output: 27W per channel into 8 ohms, 33W per channel into 4 ohms both at 1kHz. THD: 0.5% at rated power into 8 ohms. Power bandwidth: 10Hz-30kHz. Size: 48  $\times$  137  $\times$  344mm. Price: £162 (plus VAT).

#### KR-5400

FM/AM stereo receiver. Bands: 88-108MHz (FM) plus AM/MW. Sensitivity: 1.9 $\mu$ V (IHF) (FM), 18 $\mu$ V (AM). Manual tuning. Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, aux 150mV 80K, tape play A & B 150mV 80K, mic 2.5mV 50K. S/M: phono 70dB, aux and tape play 90dB, mic 60dB. (IHF-A curve). Output: 37W per channel into 8 ohms, 47W per channel into 4 ohms at 1kHz. THD: 0.5% at rated power into 8 ohms. Power bandwidth: 10Hz-30kHz. Size: 480  $\times$  151  $\times$  344mm. Price: £198 (plus VAT).

#### KR-6400

FM/AM stereo receiver. Bands: 88-108MHz (FM) plus AM/MW. Sensitivity: 1.9 $\mu$ V (IHF)

(FM), 18 $\mu$ V (AM). Manual tuning. Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, aux 150mV 80K, tape play A & B 150mV 80K, mic 2.5mV 50K. S/N: phono 70dB, aux and tape play 90dB, mic 65dB (IHF-A curve). Output: 52W per channel into 8 ohms, 65W per channel into 4 ohms at 1kHz. THD: 0.3% at rated power into 8 ohms. Power bandwidth: 10Hz-30kHz. Size: 480 × 151 × 344mm. Price: £252 (plus VAT).

**KR-7400**

AM/FM stereo receiver. Bands: 88-108MHz plus AM/MW. Sensitivity: 1.7 $\mu$ V IHF (FM), 15 $\mu$ V (AM). Manual tuning. Aerial 75 and 300 ohms. Inputs: phono (1 & 2) 2.5mV 50K, aux 150mV 80K, tape play A & B 150mV 80K, mic 2.5mV 50K. S/N: phono 70dB, aux 90dB, tape play 90dB mic 65dB (IHF-A). Output: 65W per channel into 8 ohms, 75W per channel into 4 ohms at 1kHz. THD: 0.3% at rated power into 8 ohms. Power bandwidth: 10Hz-35kHz. Size: 480 × 151 × 344mm. Price: £286 (plus VAT).

**KR-8340 Two-four receiver**

FM/AM stereo and quadraphonic receiver. Bands: 88-108MHz FM, 540-1600kHz AM. Sensitivity: 1.9 $\mu$ V IHF (FM), 25 $\mu$ V (AM). Manual tuning. Signal strength meter. Aerial: 75 or 300 ohms. Inputs: phono (1 & 2) 1.5mV 100K, mic 2mV 15K, aux (1 & 2) 150mV 50K, tape play (A & B) 150mV 50K. Outputs: tape (A & B) 150mV 100K, DIN 40mV. S/N: phono 60dB, all other inputs 75dB ref full power. Damping factor: 30 at 1kHz into 8 ohms. Output power: 27W (4 channel) into 8 ohms, 65W (2 channel) into 8 ohms. Power bandwidth: 10Hz-45kHz. Size: 21 × 6 $\frac{1}{2}$  × 14in. All regular matrix and SQ sources decoded. CD-4 demodulator plugs in on rear panel. Price: £345 (plus VAT).

**KR-6340 Two-four receiver**

FM/AM stereo and quadraphonic receiver. Bands: 88-108MHz FM, 540-1600kHz MW. Sensitivity: 2.0 $\mu$ V IHF (FM), 25 $\mu$ V (AM). Manual tuning. Signal strength meter. Aerial: 75 or 300 ohms. Inputs: phono 1.5mV 100K, aux 150mV 50K, tape play 150mV 50K. THD: 0.8% at rated power into 8 ohms. S/N: phono 60dB all others 75dB. Damping factor: 20 at 8 ohms (4 channel). Output power: 20W (4 channel) into 8 ohms or 50W (2 channel) into 8 ohms at 1kHz. Power bandwidth: 20Hz-40kHz. Size: 19 × 6 × 14in. All regular matrix and SQ sources decoded. CD-4 demodulator plugs in on rear panel. Price: £235 (plus VAT).

**YAMAHA**

Natural Sound Systems Ltd,  
Strathcona Road, North Wembley,  
London HA9 8QL. Tel: 01-904 0141.

**CR400**

FM/AM stereo receiver. Bands: 88-108MHz (FM), 550-1600kHz (MW). Sensitivity: 2.5 $\mu$ V (IHF) (FM). Auto-touch AFC (off when tuning knob touched) signal strength and tuning meters. Aerial: 75 and 300 ohms. Inputs: phono 3mV 50K, mic 3mV 50K, tape A & B 150mV 100K. S/N: phono 72dB, mic 65dB, tape 85dB. Outputs: 16W per channel into 8 ohms, 20Hz-20kHz. Damping factor: 40. THD: 0.07% at any power up to full rated power. FR: 20Hz-50kHz +0.5dB -3dB. Size: 17 $\frac{1}{2}$  × 6 $\frac{1}{4}$  × 11 $\frac{1}{2}$ in. Price: £134.80 (plus VAT).

**CR1000**

FM stereo receiver. Bands: 88-108MHz. Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 1.7 $\mu$ V (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic 3mV 50K, tape 150mV 40K. S/N: phono 80dB, mic 70dB, tape 90dB. Outputs: 70W per channel into 8 ohms, 20Hz-20kHz. Damping factor: 70. THD: <0.04% at any power up to rated output. FR: 10Hz-50kHz +0.5dB -1dB. Size: 20 × 6 $\frac{1}{4}$  × 13 $\frac{1}{2}$ in. Five gang front end, variable muting and loudness. Price: £345.04 (plus VAT).

**CR800**

FM/AM stereo receiver. Bands: 88-108MHz (FM), 550-1600kHz (MW). Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 1.7 $\mu$ V (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic 3mV 50K, tape A & B 150mV 45K. S/N: phono 75dB, mic 70dB, tape 90dB. Output: 45W per channel into 8 ohms, 20Hz-20kHz. THD: <0.06%. FR: 10Hz-50kHz +0.5dB -1dB. Size: 18 $\frac{1}{2}$  × 6 $\frac{1}{4}$  × 11 $\frac{1}{2}$ in. Price: £245.11 (plus VAT).

**CR600**

FM/AM stereo receiver. Bands: 88-108MHz (FM), 550-1600kHz (MW). Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 2.0 $\mu$ V (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic 3mV 50K, tape A & B 150mV 100K. S/N: phono 72dB, mic 70dB, tape 90dB. Output: 16W per channel into 8 ohms at 1kHz. Damping factor: 70. THD: 0.06%. FR: 10Hz-50kHz +0.5dB -1dB. Size: 18 $\frac{1}{2}$  × 6 $\frac{1}{4}$  × 11 $\frac{1}{2}$ in. Price: £194.67 (plus VAT).



# We made the new BSR McDonald Belt Drive turntables to be seen but not heard.

The BDS 90 will more than satisfy the high performance requirements of the modern audiophile.

Here are all the sophisticated features he could wish for in a belt driven turntable.

So when you take a closer look you notice the low-resonance tubular aluminium tonearm floats in a concentric gimbal style mount, carrying the calibrated stylus pressure control.

The counterbalance moves along a rod to give primary weight adjustment and an ultra-fine rotary control then gives the final micro-balance.

Then we back this up with the following impressive features:

Resilient belt drive reduces rumble to an insignificant level so you hear

nothing but the music.

Bias compensator calibrated for spherical and elliptical styli.

Viscous cueing device (silicone damped for well-controlled descent) allows the tonearm to be raised or lowered at any desired point.

Automatic tonearm lock.

Lightweight interchangeable cartridge carrier for easy stylus inspection.

Precise slider controls.

4lb. precision-machined diecast alloy turntable, is belt driven by a dynamically-balanced high torque synchronous 4 pole motor.

Mounting springs insulate the unit against vibration while playing.

BSR Limited, McDonald Division,  
Monarch Works, Powke Lane,  
Cradley Heath, West Midlands  
B64 5QH.



# GOLDRING ANNOUNCE THE Lenco L65



Just in from Switzerland, the new belt driven turntable from Lenco. The L 65.

This welcome newcomer to the Lenco range of transcription units has features you'll find positively tempting and a styling that's neat, modern and uncluttered.

The belt drive reduces wow and flutter to less than 0.12% and rumble to better than minus 57 dB.

To play the L 65, just set the selector control to the size of record and a touch of the start lever sets things moving. The arm is taken automatically over the record and gently put down on the lead-in groove.

At the end of the record, the arm lifts off and returns to the rest

position, and the motor shuts off. All, again, done automatically, leaving you free to concentrate on the music.

Both the playing weight and the bias compensator are easy and simple to adjust.

In fact, all the controls are. The speed selector (33 and 45 rpm), the record size selector and the bias compensator are slide operated. And the stop-start control is a short positive lever switch.

Everything about the L 65 promises to make it a very popular deck. But don't take our word for it just because we think it's great. See the L 65 for yourself at your hi-fi dealer or post the coupon for a leaflet all about it.

You could be one of the first in this country to have the Lenco L65.

 **Goldring**

To: Goldring Limited,  
10 Bayford Street, London E8 3SE.

Please send me the leaflet all about the latest Lenco turntable, the L 65.

Name \_\_\_\_\_

Address \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# WILL OLD AGE SLOW IT DOWN?



If we didn't build it the way we do all our turntables, maybe a little wow and flutter would creep in over the years.

But we don't see any point in impressive specifications if they're going to deteriorate with time.

So we take as much trouble putting Trio turntables together as we do choosing the parts for them. (Many of these we design and make ourselves. It's the best way of keeping an eye on the quality.)

We check at every stage of production. Taking units apart bit by bit to make sure

they were put together right.

And every so often we pick on a turntable and put it through a gruelling 40 days and 40 nights of continuous use.

It's tough. But it makes sure our turntables are too.

Please send me details of all the turntables in the Trio range

Name \_\_\_\_\_

Address \_\_\_\_\_



**TRIO**

# Record Decks

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ALBA

Alba (Radio & Television) Ltd, Bull Lane, Edmonton, London N18 1RA. Tel: 01-803 4451.

### UA210

Three-speed single player unit. It incorporates the BSR P.128R deck, which has automatic set down and switch-off facilities (with click suppressor and muting switch to obviate unwanted noise). 11in diameter diecast alloy turntable. Dynamically balanced 4-pole motor. Rumble: better than -35dB. Wow: better than 0.2%. Flutter: better than 0.06%. Viscous cueing device, silicone damped for ultra slow descent of tone arm. Fitted with high compliance stereo magnetic cartridge. Finish: satin black with brushed aluminium trims, mounted on teak veneered plinth with hinged/removable smoke-tinted dust cover. Price: on application.

### UA200A

Shelf-mounting cabinet with lift-up lid containing Garrard SP25 Mk III record deck and pick-up arm. Stereo magnetic cartridge. Diamond stylus. Cueing device. Teak finished cabinet. Supplied complete with leads and plugs. Price: on application.

## ■ AIWA

Johnsons of Hendon Ltd, 14 Priestley Way, London NW2 7TN. Tel: 01-450 8070.

### AP-2060

Automatic return belt-drive record player. 4-pole hysteresis synchronous motor. Stylus pressure indication scale attached to the high frequency static balance tone arm. Automatic return and automatic power cut system. Anti-skating device. Speeds: 33½ and 45rpm. Turntable platter: aluminium alloy die-cast, 30 cm diameter, W and F: 0.09% (WRMS).

S/N: 48dB. Tone arm. Static balance type tubular arm. Cartridge: moving magnet type. Channel separation: 20dB. Output voltage: 2.5mV (at 1kHz). Load impedance: 47-100K. Stylus pressure 2.5gm. Mains: 110-120V/220-240V AC, 50/60Hz. Power consumption 10W. Size: 480 × 355 × 187mm (with dust cover). Weight: 6.8kg. Price: on application.

## ■ AR

Acoustic Research International, High Street, Houghton Regis, Dunstable, Beds LU5 5QJ. Tel: Dunstable 603151.

### AR Universal ★

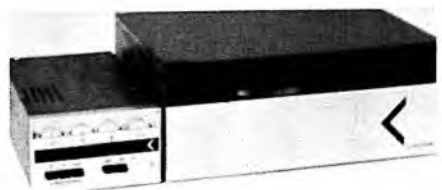
Two-speed turntable, pick-up arm, plug-in cartridge shell, plinth and transparent cover. Speeds: 33½ and 45rpm. Wow and flutter: 0.1% (measured to NAB standards). Rumble: at least 35dB below 1cm/second (measured to NAB standards). Speed accuracy: ±0.3% of absolute speed. Turntable: 12in non-magnetic. Belt drive. Miniature synchronous motor. Adjustable playing weight. Decoupled turntable isolated from plinth. Adjustable stylus pressure, with gauge supplied. Finish: walnut. Performance guaranteed to exceed NAB broadcast equipment standard for five years after purchase. Price: £46.06; (with Shure M91ED cartridge) £53.47. All prices exclude VAT.

## ■ A/R/D

Audio Research and Development Ltd, Navas House, The Maultway, Camberley, Surrey GU15 1QE. Tel: Camberley 24684.

### 2000 ★

Contemporary table-top player unit designed to match A/R/D tuner and amplifier. Fitted with Garrard SP25 Mk III. Incorporates the facility for switching the stereo output from an amplifier to 2 pairs of speakers and headphones. Lift up/off lid. Size: 12¼ × 16½ × 6¾in. Finish: stove enamel silver, solid teak sides, dark grey tinted plastic lid. Price: (cabinet only) £26 (plus VAT); (with Garrard SP25 Mk III) £45.50 (plus VAT).



A/R/D 2000

★ Indicates entry is illustrated



Ariston Audio RD11

#### ■ ARISTON AUDIO LTD

PO Box 13, Irvine, Ayrshire,  
Scotland KA12 8JL. Tel: Irvine 75211.

#### RD11 ★

Twin-speed, manual-change transcription turntable available as chassis only with plinth and cover with/without tone arm. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: below meaningful measurement. Rumble: below meaningful measurement. Turntable: 12in diameter, 9 $\frac{1}{2}$ lb, made in non-ferrous alloy with single-point bearing in PTFE bushes. Belt driven. Stainless steel chassis. Motor: 24-pole precision synchronous. Pick-up arm (when fitted) Ariston AT 1007. Choice of simulated wood-finished plinths. Price: (chassis only RD11) £59.80 (plus VAT); (chassis with plinth and cover. Pick-up board blank/cut for SME tone arm) £77.65 (plus VAT); (chassis with plinth, cover and Audio Technica 1005 arm) £110.70 (plus VAT); (chassis with plinth, cover and fitted Ariston AT 1007 tone arm) £119.90 (plus VAT). Model numbers: RD11, RD11PC, RD11PC1005 and RD11PC1007.

#### ■ BEOGRAM

Bang & Olufsen (UK) Ltd,  
Eastbrook Road, Gloucester GL4 7DE.  
Tel: Gloucester 21591.

#### Beogram 1203

Plinth-mounted motor unit with arm, cartridge and separate dust cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. Wow and flutter: < 0.15%. Rumble: 58dB (DIN). Turntable: 12in aluminium alloy with conical studs instead of disc matt. Belt drive. Two-pole asynchronous motor. B and O pick-up arm with built-in bias compensation and stylus pressure adjustment. Fully automatic operation with single master control. Price:

(teak) £75; (rosewood or white) £76. All prices include VAT.

#### Beogram 2000

Plinth-mounted motor unit with arm, SP 10A cartridge and hinged dust cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. Wow and flutter: < 0.12% (DIN). Rumble: -60dB (DIN). Turntable: 12in aluminium alloy with conical studs. Belt drive. Two-pole asynchronous motor. 110-240V AC switchable. B and O pick-up arm with built-in bias compensation. Stroboscopic disc. Fully automatic motor/arm/speed/record size action. Price: (teak) £95; (rosewood or white) £96. All prices include VAT.

#### Beogram 3000

Plinth-mounted motor unit with arm, cartridge and hinged detachable dust cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. ( $\pm 6\%$  fine adjustment). Wow and flutter: < 0.09%. Rumble: better than 60dB (DIN). Turntable: 12in grooved aluminium. Belt drive. Two-pole asynchronous motor. Mains: 110-240V AC switchable. B and O pick up arm with built-in bias compensation. Stroboscopic disc. Fully automatic motor/arm/speed/record size action. Price: (teak) £99.50; (rosewood) £100.50. All prices include VAT.

#### 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 45rpm. (with 6% fine speed adjustment). Wow and flutter: better than  $\pm 0.05\%$  DIN ( $\pm 0.025\%$  RMS). Rumble: better than 65dB (DIN B). Turntable: 12in aluminium alloy radially ribbed. Belt drive. Individual speed indicator lights. Power supply: 110, 130, 220 and 240V AC 50/60Hz. Price: (teak) £238.50; (rosewood) £239.50. All prices include VAT.

#### ■ BIC

Belmont A/V Ltd, Fircroft Way, Edenbridge,  
Kent TN8 6HA. Tel: Edenbridge 4116.

#### BIC 960

Turntable complete with arm, plinth and cover. Speeds: 33 and 45rpm. Wow: less than 0.05%. Flutter: less than 0.05%. Rumble: better than -65dB. 24-pole synchronous motor. Tubular aluminium tone arm. Price: £69 (plus VAT).

#### BIC 980

Turntable complete with arm, plinth and cover. Pitch adjustment:  $\pm 3\%$ . Wow: less than 0.03%. Flutter: less than 0.03%. Rumble: better than -65dB. 24-pole synchronous motor. Tubular aluminium tone arm. Built-in stroboscope. Price: £89 (plus VAT).



BSR 810

### ■ BLACK KNIGHT RUMBLECURE

Bank Top, Currier Lane,  
Ashton-under-Lyne, Lancs OL6 6TA.  
Tel: 061-330 2836.

Professional advice and hi-fi systems supplied.  
Specialist acoustic feedback and rumble  
systems applied. Details on request.

### ■ BSR

BSR Ltd, Monarch Works, Cradley Heath,  
Warley, Worcs B64 5QH.  
Tel: Cradley Heath 69272.

### 810 ★

Two-speed transcription motor unit fitted with pick-up arm. Single player with automatic operation. Available in chassis form or plinth mounted. Speeds: 33 $\frac{1}{3}$  and 45rpm. Pitch control providing plus or minus 3% fine speed adjustment. Wow: better than 0.1%. Flutter: better than 0.05%. Rumble: better than -55dB relative to 1kHz at 10cm/second. Weighting curve has roll-off of 12dB/Oct above and below 315Hz. Dynamically balanced, non-ferrous, 12in diecast turntable weighing 6 $\frac{1}{2}$ lb. 4-pole synchronous motor. Low-mass transcription pick-up arm with concentric gimbal mounting. Resiliently mounted counter weight. Stroboscopic disc to turntable. Rotating stub spindle. Dual-range anti-skate device, calibrated for spherical and elliptical styli. Slide-in cartridge carrier with full adjustment for setting minimum tracking error. Stylus pressure gauge. Stylus brush. Stylus pressure adjustment, calibrated 0-4gm. Tracking: down to a minimum of  $\frac{1}{2}$ gm with high-compliance cartridge. Automatic pick-up arm lock. Viscous damping cue and pause. Pushbutton operation. Muting switch. Capacity: up to six 7in, 10in or 12in records. Manual selection of record size and speed. Record repeat facility. Size: (chassis) 15 $\frac{1}{4}$  × 12 $\frac{1}{4}$  × 5in above lower edge of baseplate, 2 $\frac{3}{4}$ in below edge of baseplate. Mains: 105-125V or 210-240V AC 50/60Hz. Finish: satin black mainplate, black



BSR 710

turntable mat, brushed aluminium trim. Price: (chassis) £52.64 (plus VAT); (as above fitted with ADC K3E magnetic cartridge) £64.64 (plus VAT); (as mounted on plinth with cover) £82.40 (plus VAT).

### 710 ★

Two-speed transcription player with single-play or automatic facility. Capacity: up to six 7in, 10in or 12in diameter records. Speeds: 33 $\frac{1}{3}$  or 45rpm. Mains: 120 or 240V AC 60Hz or 50Hz. Tracking: with high compliance cartridge will track down to  $\frac{1}{2}$ gm. Rumble: better than -55dB relative to 1kHz at 10cm/second. Weighting curve has roll-off of 12dB/oct above and below 315Hz. Total wow and flutter better than 0.15%. Pushbutton operation. Low mass aluminium pick-up arm. Pivot to stylus length: 8.562in. Ballrace pick-up pivots. Resiliently mounted counterweight. Stylus pressure adjustment: 0-4gm. Bias compensation for spherical and elliptical styli. 12in diecast turntable, machine finished and weighing 5 $\frac{1}{2}$ lb. Fine speed adjustment of  $\pm 3\%$ . Viscous damped cue and pause control. Slide-in cartridge with full adjustment for setting minimum tracking error. Rotating stub spindle. Muting switch. Stroboscopic disc speed indicator. Automatic pick-up arm lock. Size: 15 $\frac{1}{4}$ in wide, 12 $\frac{1}{4}$ in deep, 5in above motor board, 2 $\frac{3}{4}$ in below motor board. Price: (McDonald 710 two-speed turntable chassis) £42.52 (plus VAT); (As above fitted with ADC K5E cartridge) £52.52 (plus VAT); (As above mounted on plinth with cover) £70.28 (plus VAT).

### MP60

Three-speed single player. Wow: 0.2% RMS. Flutter: 0.06%. Speed constant down to 16% reduction in mains volts. 11in diecast turntable. Pulley drive, 4-pole motor. Double ball-race pick-up arm. Plug-in head shell. Counter-balanced pick-up arm. Bias compensator calibrated for spherical and elliptical, styli. Vis-

★ Indicates entry is illustrated



BSR BDS80



Connoisseur BD1



BSR BDS90



Connoisseur BD2

cous damped cue control. Calibrated stylus pressure gauge. Muting switch. Price: (MP60 chassis) £17.44 (plus VAT); (As above mounted in simulated teak plinth with dust cover) £27.03 (plus VAT); (As above fitted with ADC K8 magnetic cartridge) £32.03 (plus VAT).

### HT70

Three-speed single player. Wow: 0.2% RMS. Flutter: 0.06%. Speed constant down to 16% reduction in mains voltage. Turntable: 11in diameter diecast alloy weighing approx 4½lb. Synchronous dynamically balanced 4-pole motor. Double ball-race mounted pick-up arm. Plug-in head. Counter-balanced arm. Bias compensator calibrated for spherical and elliptical styli. Viscous damped cue control. Muting switch: Calibrated stylus pressure adjustment. Rotating record stub spindle to combat drag. Price: (HT70 chassis) £23.95 (plus VAT); (As above in simulated teak plinth with dust cover) £33.59 (plus VAT); (As above fitted with ADC K7E magnetic cartridge) £41.09 (plus VAT).

### BDS80 ★

Transcription-engineered single player with resilient belt drive giving silent power transmission. Speeds: 33½ and 45rpm. Total wow and flutter: within DIN weighted specifi-

cation. Rumble: better than -55dB weighted (measured according to DIN 45 500). 11in diameter, 4lb precision machined diecast alloy turntable with integral rotating record spindle. Dynamically balanced, high torque, synchronous, 4-pole motor. Low mass, square section aluminium tone arm with counter balance adjustment and automatic lock. Anti-skate bias compensator calibrated for spherical and elliptical styli. Lightweight cartridge shell with finger lift has slide-in cartridge carrier. Calibrated stylus pressure control. Unit will accommodate crystal, ceramic or magnetic cartridge. Linear controls. Corner mounting springs. Click suppressor. Muting switch. Capacity: 7in, 10in and 12in records. Size: 286 × 334 × 81mm. Mains: 100-120V AC 60Hz or 200-240V AC 50Hz. Finish: satin black mainplate and a combination of black and silver on tone arm, turntable and control panel. Price: (McDonald BDS80 chassis) £25.20 (plus VAT); (as above fitted with ADC K7E magnetic cartridge) £31 (plus VAT); (as above fitted with ADC K7E magnetic cartridge and mounted on plinth with cover) £41 (plus VAT).

### BDS90

Transcription-engineered belt drive single play turntable. Speeds: 33½ and 45rpm. Total

wow and flutter: within DIN weighted specification. Rumble: better than -55dB weighted (measured according to DIN 45 500). Resilient belt drive giving completely silent power transmission. Dynamically-balanced, high torque, synchronous, 4-pole motor. 11in diameter, 4lb, precision-engineered diecast alloy turntable with integral rotating record spindle. Low resonance aluminium tone arm floats in a concentric gimbal style mount. Calibrated stylus pressure control 0.4gm. Primary counter balance adjustment for tonearm with second control for ultra-fine balance. Bias compensator calibrated for spherical and elliptical styli. Lightweight cartridge shell with finger lift has slide-in cartridge carrier. Unit will accommodate most crystal, ceramic or magnetic cartridges. Automatic tone arm lock. Silicone damped viscous cueing device. Slider controls. Corner mounting springs insulating unit against vibrations whilst playing. Click suppressor. Muting switch. Capacity: 7in, 10in or 12in records. Size: 286 x 334 x 91mm. Mains: 100-120V AC 60Hz or 200-240V AC 50Hz. Finish: satin black mainplate and a combination of black and silver on tone arm, turntable and control panel. Price: to be announced.

#### ■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,  
Connoisseur Works, Atlas Mill Road,  
Brighouse, Yorks HD6 1ES.  
Tel: Brighouse 2142.

#### BD1 ★

Two-speed motor unit supplied as motor only. Two fixed speeds, 33½ and 45rpm. Wow: <0.1%. Flutter: <0.1%. Rumble: -50dB measured at RIAA characteristics ref 7cm/sec at 1kHz. No change in speed for 20% variation in supply voltage. 10½in non-ferrous lathe-turned turntable. Precision ground belt drive. Unique drive arrangement eliminates transmission noise. Simple manual speed change. Low hum field. Slim line construction. Only 1½in required below mounting platform. Mains: 100-120V and 200-240V 50 or 60Hz. Price: £19.66 (including VAT).

#### BD2 ★

Integrated transcription unit. Includes a BD1 motor unit (mounted on a larger platform and fitted with pressbutton speed change) and a type SAU2 pickup arm. Hydraulic arm lift, operated from front. Anti-vibration springs. Supplied either chassis only or plinth mounted. Perspex cover. Size: 12¼ x 14 x 4½in (2in below and 2Yin above the platform). Price: (chassis model) £39.53



Dual 1229

(including VAT); (assembly mounted on plinth complete with transparent plastic cover) £49.90 (including VAT).

#### ■ DENON

Johnsons of Hendon Ltd,  
14 Priestley Way, London NW2 71N.  
Tel: 01-450 8070.

#### Model DP-3700F

Direct drive turntable. Speeds: 33½ and 45rpm. Speed control: Servo system through frequency detection. Speed selection: electrically switched. Starting time: 1.8s at 33½rpm. Wand F: <0.03% RMS. S/N: >60dB. Platter: aluminium alloy diecast, diameter 300mm. Weight: 1.1kg. Speed adjustable over ±3% range. Mains: 220, 230, 240V AC 50-60Hz. Power consumption: 14W. Fitted with pickup arm, type: static balance. Effective length: 244mm. Offset angle: 21°. Overhang: 14mm. Tracking error: within ±2°. Vertical tracking force range: 0-3gm. Applicable cartridge weight range: 4-15gm. Price: £220.64 (plus VAT).

#### Model DP-3500

As above but fitted with tone arm board to allow personal choice of arm and cartridge. Price: £182.36 (plus VAT).

#### ■ DUAL

KF Products Ltd, Ashton Road, Bredbury,  
Stockport SK6 2SP. Tel: 061-494 1441.

#### 1229 ★

Three-speed turntable in chassis form or with Shure DM 103 fitted. Manual or automatic. Four-pole magnetically-shielded Dual synchronous continuous-pole motor. Speeds: 33½, 45 and 78rpm, adjustable. Illuminated strobe for 33½ and 45rpm, adjustable for 50 or 60Hz. Light tunnel on platter with variable viewing angle. Non-magnetic 6.8lb, die-cast platter, 12in dia., dynamically-balanced. W and F: <±0.06%. Rumble to noise ratio: rumble unweighted >42dB, weighted >63dB. Tonearm: torsionally rigid, extra-long all



★ Indicates entry is illustrated



Dual 601



Dual 701

metal tonearm with four-point gimbals suspension. Skeleton type tonearm head and removable cartridge carrier. Anti-skating adjustment. Fitted with 2-channel audio cable. Both channels are muted during start, stop and change cycling. When the tonearm is on its rest, the short-circuiting is opened. Chassis is resiliently suspended over the mounting board by four coil springs which are friction-damped and isolated from vibrations or jarring of the mounting board. Natural resonant frequency of the suspension, both vertically and horizontally: approx 4.8Hz. Line voltage: 110-130, 220-240V AC, switchable. Power consumption: approx 10W. Complete module includes the Dual CK 20, CK 20 W, CK 21 or CK 21 W base and one of the Dual CH 20, CH 21 or CH 5 dust covers. Price: (with Shure DM 103 fitted) £110.67 (plus VAT); (chassis only) £95.63 (plus VAT).

#### 601 ★

Belt drive, two-speed turntable fitted with Shure V 15 Mark 3 LM cartridge, plinth and cover. Dual 8-pole synchronous motor through precision flat belt to platter base. Non-magnetic, dynamically-balanced, platter. Speeds: 33½ and 45rpm. Speed control: with illuminated stroboscope for platter speeds 33½ and 45 rpm, adjustable to 50 or 60Hz. W and F: <math>\pm 0.08\%</math>. Rumble: unweighted: >42dB, unweighted: >63dB. Tonearm: torsion-resistant tubular aluminium tonearm in self-adjusting pivot bearing. Effective length: 222mm. Cartridge holder: removable, accepting any cartridges with ½in mounting and weighted from 2-10gm (including mounting

hardware). Adjustable overhang: 5mm. Size: 420 × 147 × 365mm. Weight: approx. 7.4kg. Line voltage: 110-130V or 220-240V AC 50/60Hz. Power input: approx: 8W. Price: £133.20 (plus VAT). Versions available: CS 601 (walnut); CS 601 W (white enamel finish).

#### 701 ★

Direct drive, two-speed turntable fitted with Shure V 15 Mark 3 LM, plinth and cover. Platter: non-magnetic, dynamically-balanced, 2.9kg, 305mm dia. Speeds: 33½ and 45rpm. Automatic tonearm lowering coupled to speed change. Speed check with illuminated strobe for platter speeds of 33½ and 45 rpm, adjustable for 50 or 60Hz. Overall speed variation: ±0.03%. S/N ratio: rumble unweighted 50dB, weighted 70dB. Tonearm: torsion-resistant, extra-long tubular aluminium tonearm in four-point gimbals suspension, tonearm counter balance with two mechanical, anti resonance filters. Effective tonearm length: 222mm. Pick-up head: (cartridge holder) detachable, suitable for all pick-up cartridges with ½in mounting and a dead-weight of 2-10gm (including mounting material). Adjustable overhang: 5mm. Size: 420 × 147 × 365mm. Weight: approx: 10.9kg. Price: £201.53 (plus VAT).

#### ■ EAGLE INTERNATIONAL

Heather Park Drive, Wembley HAO 1SU.  
Tel: 01-902 8832.

#### D2005

Belt driven, two-speed record deck in plinth with cover. 4-pole synchronous motor. Rumble: -55dB. W and F: 0.18% RMS. Static balance S-type tone arm. Tracking weight: 0-3gm. Fixed mechanical torque bias. Turntable weight: 1.1kg. Size: 7¼ × 18½ × 14¼in. Finish: teak with smoked acrylic dust cover. Price: (excluding cartridge) £48 (including VAT).

#### D2006 ★

Belt driven, electronically-monitored two-speed record deck in plinth and cover. Speed control: ±2.5%. Speed stabilization: electronic (tachometer) ±10% mains variation. Rumble: -55dB. W and F: 0.18% RMS. Tone arm: static, balance, S-type. Tracking weight: 0-3gm. Fixed mechanical torque bias. Turntable weight: 1.1kg. Size: 7¼ × 18½ × 14¼in. Finish: teak with smoke acrylic dust cover. Price: (excluding cartridge) £88 (including VAT).

#### ■ EMT

Franz Vertriebsgesellschaft GmbH.  
Sole UK agents: F. W. O. Bauch Ltd,  
49 Theobald Street, Boreham Wood, Herts.  
Tel: 01-953 0091.



Eagle D2006



EMT 930ST



Fons CQ30



EMT 928

**EMT 930ST ★**

Professional transcription turntable fitted with pickup arm and equaliser amplifier, chassis construction. Speeds: 33 $\frac{1}{3}$ , 45 and 78rpm with fine speed control. W and F max: 0.07%. Rumble: referred to a peak velocity  $V = 10\text{cm/s}$  at 1kHz -58dB (weighted) (0dB = 0.775V). Speed constancy: max  $\pm 0.15\%$ . Turntable: 13in dia heavy cast non-magnetic with light plastic auxiliary turntable on top. Drive: pulley. Motor: EMT manufacture with artificially aged shaft. Pickup arm: EMT type 929. Features: stroboscope, quick start, remote start, pickup illumination, scratch filter and equalisation control on deck, headphone sockets, pickup lowering device. Price: on application.

**EMT 928 ★**

Professional transcription turntable fitted with pickup arm and equaliser amplifier. Speeds: 33 $\frac{1}{3}$ , 45 and 78rpm with  $\pm 2\%$  fine speed control. Rumble: better than -65dB weighted (to DIN 45-539). Turntable: 11 $\frac{1}{2}$ in. Belt drive. Three-phase synchronous motor fed by electronic three-phase generator. EMT 929 pickup arm. Statically and dynamically balanced in all

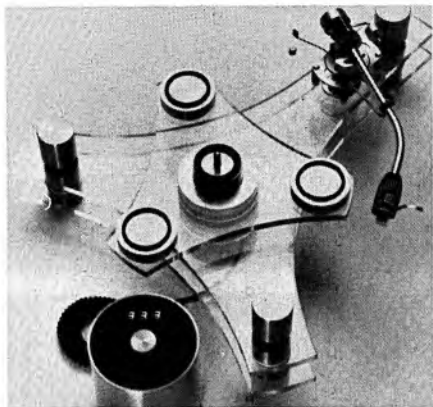
directions. Stroboscope. Quick start with muting relay. Pickup illumination. Equaliser amplifier with headphone outlet. Price: on application.

**■ FONTS**

Fergus Fons Ltd, Maybole, KA197BH  
Ayrshire, Scotland. Tel: Maybole 82424.

**CQ30 ★**

Three-speed transcription record deck. Speeds: 33 $\frac{1}{3}$ , 45, 78rpm. All adjustable individually and accurately. Platter: 12in (30cm) dia. high mass precision component. Main bearing: hyper-concentric. Rumble, wow and flutter: typically -80dB and better than 0.4%. Each unit is supplied with a stroboscope for both 50Hz and 60Hz supply frequencies. Plinth: (base) incorporates the Fons anti-feedback phase cancellation suspension system. Cover: heavy gauge smoked, with self-support hinges, and one-hand opening strip. Size: 444mm long, 349mm deep, 156mm high. Weight: (without arm) 8.6kg. Mains: 110-250V AC 50/60Hz, 9W max. Two-year guarantee. Price: on application.



Gale GT2101



Garrard 401



Garrard SP25 Mk IV



Garrard 86SB

#### ■ GALE

Gale Electronics and Design Ltd,  
39 Upper Brook Street, London W1Y 1PE.  
Tel: 01-499 9966.

#### GT2101 ★

No details available as this edition of the Year Book closed for press.

#### ■ GARRARD ENGINEERING LTD

Newcastle Street, Swindon, Wilts SN1 1DA.  
Tel: Swindon 5381.

#### Model 401 ★

Transcription motor. Three speeds: 33½, 45, 78rpm. Adjustable by eddy current brake. 6lb machined aluminium turntable with gear-cut illuminated strobe markings on rim. Statically balanced. Die-cast aluminium unit plate. Completely screened spring-mounted shaded-pole motor. Styled by Eric Marshall and finished in metallic charcoal with chrome relief. W and F: less than 0.05% RMS. Rumble almost non-existent. Mains: 110-125V and 220-250V 50 or 60Hz according to pulley fitted. Size: 13½in wide, 14½in front to rear, 2½in above and 3½in below lower edge of unit plate. Price: £36.75 (plus VAT).

#### SP25 Mk IV ★

A turntable fitted with own pickup arm, complete with base and cover, automatic. Speeds: 33½, 45 and 78rpm. W and F: typically 0.15% peak. Rumble: typically -57dB (DIN B). Speed constancy: ±0.75%. Aluminium platter. Motor: 4-pole synchronous. Slide in cartridge carrier, calibrated stylus force and bias compensation. Resiliently mounted counter-balance weight. Price: £38.14 complete with Shure 75/6/SM cartridge (including VAT).

#### Zero 100SB module

Automatic single record playing transcription turntable, base and cover. Speeds: 33½ and 45rpm. W and F: typically 0.12%. Rumble: -63dB (DIN B). Platter: diecast aluminium 11.5in diameter. Belt drive from two-step motor pulley. Motor: 4-pole synchronous, 220-240V 50Hz. Price: complete with Shure M93E cartridge £69.72 (plus VAT).

#### 86SB ★

Automatic single record playing transcription turntable fitted with own pickup arm, base and cover. Speeds: 33½ and 45rpm. W and F: typically 0.1% peak. Rumble: typically -63dB (DIN B). Speed constancy: synchronous ±0.75%. Platter: 11½in diecast zinc alloy. Belt drive. Motor: 4-pole synchronous, 220-240V, 50Hz. Tonearm. Aluminium section resiliently mounted counter balance weight. Slide in cartridge carrier. Stylus force calibrated up to 4gm. Bias compensation calibrated for

spherical and elliptical styli. Price: £55.83 complete with base, cover and Shure 75/6/SM cartridge (including VAT).

### ■ GOLDRING LTD

10 Bayford Street, Hackney,  
London E8 3SE. Tel: 01-985 1152.

#### **Goldring-Lenco GL75**

Integrated turntable and pickup arm. Four speeds, infinitely variable. Wow: <0.2%. Flutter: <0.2%. Speed change less than 1% for 13% voltage change. 12in diameter diecast zinc turntable, 8lb. Vertical pulley drive. Four-pole 15W induction motor. L75 pickup arm. Counter-balance weight adjustment, knife-edge bearing, plug-in shell. Hydraulic lowering device. Price: £45.90 (plus VAT).



Goldring-Lenco GL72P



Goldring GL78P/C



Hitachi PS33

Available on plinth as GL75/P £59.40 (plus VAT). Dust cover £5.70 (plus VAT).

#### **G101 P/C Mk II**

Two-speed motor unit on plinth with pickup arm. Speeds: 33½ and 45rpm. W and F: 0.2% (DIN). Rumble: (weighted) -60dB. Turntable: steel 10in diameter, 2½lb. Belt drive. 16-pole synchronous motor. Counter-balanced pickup arm. Removable shell. Bias compensation. Viscous damped lowering device. Price: £36.75 (plus VAT).

#### **Goldring-Lenco GL72P ★**

Turntable unit with pickup. Available in chassis form or with plinth and cover. Speeds: 30-86rpm continuously variable with 'click' stops at 16⅔, 33½, 45 and 78rpm. W and F: 0.12%. Speed variation: 0.3% for 10% change in mains voltage. Pulley drive. Four-pole motor. Viscous damped lowering device. Removable shell. PU arm type L69. Bias compensation. Price: (motor unit) £36 (plus VAT); (motor unit on plinth) £48 (plus VAT); (dust cover) £5.10 (plus VAT).

#### **Lenco GL85P/C**

Two-speed motor unit with pickup arm on plinth with cover. Speeds: 33½ and 45rpm. Electronic fine speed adjustment ±3%. W and F: (linear) ±0.16%, (weighted) ±0.08% (DIN). Rumble: (linear) -45dB, (weighted) -60dB. Turntable: 12.4in alloy. 3½lb. Belt drive. 16-pole synchronous motor. Viscous damped lowering device. Electronic switch-off and pickup raising at end of record. Counter-balanced arm. Bias compensation Removable shell. Illuminated stroboscope. Price: £105 (plus VAT).

#### **GL78P/C ★**

Four-speed turntable and pickup arm fitted in plinth with cover. Speeds: 16⅔, 33½, 45, 78rpm (continuously variable between 30-80rpm with 'click' stops). W and F: ±0.11%, (unweighted) ±0.06% (weighted to DIN 45-507). Rumble: -60dB (weighted to DIN 45-539). Speed constancy: ±0.2% for 10% change in mains voltage. Turntable: 12½in diameter, diecast zinc, 8½lb. Idler wheel drive. Motor: four-pole with conical spindle. Pickup arm: Goldring L75 with counterweight, bias adjuster and detachable head shell. Mechanical shut-off at end of record which raises arm, may be disconnected if not required. Price: £79.50 (plus VAT).

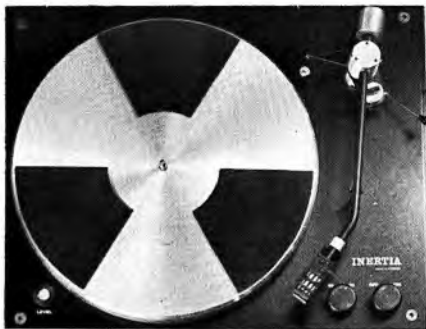
### ■ HITACHI

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

#### **PS33 ★**

Two-speed belt-drive turntable in plinth with arm and cartridge. 12in aluminium alloy turn-

★ Indicates entry is illustrated



Inertia BDT/1



Leak/Delta



JVC JL-A3 Servo-motor turntable



JVC JL-B44 DC Direct drive turntable

table. Four-pole outer rotor motor. Speeds: 33 $\frac{1}{3}$ , 45rpm. W and F: <0.1%. Plug-in headshell. Magnetic cartridge. Pw: 0.4gm. FR: 20 Hz-20kHz. Stylus: 0.7 thou diamond. Finish: walnut veneer. Size: 19 $\frac{1}{4}$  × 7 $\frac{1}{4}$  × 15 $\frac{1}{2}$ in. Price: £93 (including VAT).

#### PS77

Two-speed belt/idler drive turntable in plinth with arm. Four-pole hysteresis synchronous motor. 12 $\frac{1}{2}$ in aluminium diecast turntable. Weight of turntable: 5.6lb. Built-in strobe. Zinc diecast motor board. Speeds: 33 $\frac{1}{3}$ , 45rpm. W and F: <0.05%. Tubular arm with static balance and cueing device. Plug-in headshell. Finish: oiled walnut. Size: 22 $\frac{1}{2}$  × 11 $\frac{1}{4}$  × 17 $\frac{3}{4}$ in. Weight: 33lb. Price: £166.92 (including VAT).

#### PS12

Two-speed, belt drive auto player. 16-pole condenser phase-shift synchronous motor. S/N ratio: 50dB. Wow and flutter: less than 0.08% WRMS. Static balance type pipe arm, head shell change type. Cartridge: VM-type VFS-260. FR: 20Hz-20kHz. Output voltage: 2-4.5mV (1kHz, 50mm/sec). Stylus pressure: 3gm. Oil-damp type arm lifter, auto-return mechanism. Lateral balancer. Size: 49 × 18 × 38cm. Weight: 8kg. Price: £78 (including VAT).

#### ■ INERTIA

Mayware Ltd, 17 Heronsgate, Edgware HA8 7LD. Tel: 01-958 9421.

#### BDT/1 ★

Two-speed belt drive transcription deck fitted with low Inertia pick-up arm with bias compensator and incorporating a hydraulic lift/lower radial cueing device. The damped adjustable feet eliminate acoustic feedback and a built-in bubble level enables correct self-stabilisation of the unipivot (fluids not required). Double 24-pole synchronous motor. W and F: ±0.05%. Neoprene belt drive. Speeds: 33 $\frac{1}{3}$  and 45rpm. S/N ratio: -72dB DIN. Pick-up arm jewelled unipivot virtually frictionless <5mgm. Tracking force: 0.3gm. Detachable low mass headshell. Especially suitable for Shure V-15 Type III or Shure 75/ED2 cartridge. Tinted cover. Price: £69.50 (plus VAT).

#### ■ JVC (UK) LTD

Eldonwell Trading Estate, Staples Corner, 6-8 Priestley Way, London NW2 7AF. Tel: 01-450 2621.

#### JL-A3 ★

Turntable with plinth, cover, pickup arm and CD-4 cartridge with stereo stylus. Speeds: 33 $\frac{1}{3}$

and 45rpm. W and F: 0.08%. Rumble: -55dB. Turntable platter: 12½in diecast aluminium. Belt drive. Motor: 4-pole synchronous. No details of pickup arm. Fitted with stroboscope. Price: £115 (plus VAT).

#### JL-B44 ★

Turntable with plinth, cover and pickup arm. Speeds: 33½ and 45rpm. W and F: 0.05%. Rumble: better than -60dB. Speed constancy: adjustable ±3%. Platter: 12½in diecast aluminium. Weight: 1.6kg. Direct drive. Brushless DC servo motor. Fitted with anti-resonance damped arm and neon stroboscope. Price: £165 (plus VAT).

#### JL-A1

Two-speed, belt driven turntable. 4-pole synchronous motor. 12in diameter aluminium diecast platter. Speeds: 33½ and 45rpm. W and F: less than 0.1% RMS. S/N ratio: better than 50dB (weighted). Price: (without cartridge) £58.50 (plus VAT).

#### ■ LEAK

Rank Radio International Ltd, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

#### Leak/Delta ★

Turntable with pickup arm, plinth and cartridge. Speed: infinitely variable, 30-86rpm. W and F: 0.06% (DIN). Rumble: -60dB (DIN B). Speed constancy: 0.2% for 10% mains variation, max variation when loaded by pickup playing at 6gm, 0.3%. Motor: 4-pole constant velocity. Tonearm: counter balance weight, knife-edge bearing, stylus pressure adjustable 0.5-5gm with calibrated sliding weight. Removable pickup headshell. Fitted with Shure M75B type 2 magnetic cartridge. Size: 166 × 400 × 371mm. Price: £69.71 (plus VAT).

#### 2001 ★

Turntable with pickup arm, plinth and hinged transparent cover. Unique spherodynamic damped turntable suspension. Isolates against external shock, vibration and acoustic feedback. Speeds: 33½ and 45rpm. Speed accuracy: ±0.5%. Wow: typical 0.08%. Flutter: typical 0.02%. Rumble: typical -65dB (DIN B). Platter: 320mm diameter. Weight: 2.03kg. Motor: 10-pole synchronous, 600rpm at 50Hz. Belt drive to turntable rim. Tonearm: static balance, professional, precision engineered. Length: 323mm, effective length: 240mm. Dynamic balancing by counter-weight, adjustable stylus pressure 0-3gm, direct reading. Bias compensation. Pivot friction: 18mgm typical, lateral and vertical. Remote control, viscous damped arm raise/lower device. Plug-in headshell. Size: 494mm wide, 391mm deep, 170mm high. Price: £134.26 (plus VAT).



Leak 2001 transcription unit



Linn-Sonadek LP12

#### ■ LINN-SONDEK

Linn Products Ltd, 235 Drakemire Drive, Castlemilk, Glasgow G45 9SZ. Tel: 041-634 3860.

#### LP12 ★

Single speed (33½rpm) transcription record deck available as chassis only; with plinth and cover and also with plinth, cover and Grace G-707 arm or SME 3009 Series II arm. Standard plinth finish afromosia, various other solid timber plinths available. 12in diecast platter driven by ground flat belt from a 24-pole synchronous motor. Patented external bearing assembly for low noise and a patented steel point control bearing running in an oil bath. W and F: 0.04% RMS unweighted. Rumble: -60dB with ref. to 10cm/s at 1kHz unweighted. Price £72.90 (chassis only), £92.50 (with plinth and cover), £142.93 (with plinth, cover and arm) all including VAT.

#### ■ LUXOR

Doric Radio Ltd, Carlton House, Lower Regent Street, London SW1 4LS. Tel: 01-930 0221.

★ Indicates entry is illustrated

4221

Semi-automatic two speed turntable. 16-pole synchronous motor. Anti-skating device. Stylus pressure: 1.5-3gm. W and F: 0.05%. S/N ratio: -62dB. Belt drive. Switchable automatic stop. Single lever operation of start, stop and tonearm lift. Fitted with Shure magnetic cartridge M75MB type 2 with diamond stylus. Transparent lid. Cabinet finished in teak, walnut, rosewood and white or black lacquer. Price: on application.



Micro MR111



Micro MR-322



Micro DD-1

## ■ MICRO

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

### MR111 ★

Turntable unit fitted with arm and mounted in plinth with cover. Speeds: 33½ and 45rpm. W and F: <0.1%. Turntable: 12in diecast alloy, 2lb. Belt drive. Four-pole synchronous motor. Mains: 200-240V. Static balance tubular arm with bias compensation. Counterweight. Direct reading stylus pressure scale. Price: £56 (plus VAT).

### MR300

Turntable unit only. Speeds: 33½ and 45rpm. W and F: <0.01%. Rumble <-48dB. Turntable: 12in diecast alloy, 2½lb. Belt drive. Four-pole hysteresis motor. Pushbutton speed selection. Price: £48 (plus VAT).

### MR311

Turntable unit fitted with arm and mounted in plinth with cover. Speeds: 33½ and 45rpm. W and F: <0.06%. Turntable: 12½in double rim alloy, 3lb. Belt drive. Static balance arm. Bias adjustment. Oil-damped lift. Price: £84 (plus VAT).

### MB600

Turntable only. Speeds: 33½ and 45rpm. W and F: <0.05%. Rumble: <-52dB. Turntable: 12½in cast aluminium alloy, 3lb. Belt drive. Eight-pole hysteresis synchronous motor. 100-240V AC. Pushbutton speed selection. Price: £56 (plus VAT).

### MR-322 ★

Belt drive turntable assembly. 4-pole hysteresis synchronous outer rotor motor. Two speeds. 30cm aluminium platter weighing 1kg. Power consumption: 12W. W and F: less than 0.08%. S/N ratio: better than 48dB. Size: 459mm wide, 365mm deep, 171mm high. Total weight: 8.5kg. Static balance tone arm. Tracking error: below 1.5 degrees. Cartridge weight: 4-11gm. Tracking weight: 0-4gm. Lift/lower tone arm adjusted by slide control. Individually height adjustable shock absorbers fitted to plinth. Price: £95 (plus VAT).

### DD-1 ★

Direct drive turntable assembly. Two speeds. 30cm 1.2kg diecast aluminium turntable. Power consumption: 5.4W. W and F: less than 0.045%. S/N ratio: more than 55dB. Static balanced type tone arm. Max. tracking error: less than 1.5 degrees. Incorporates brushless direct drive motor and DC servo mechanism. Price: £111 (plus VAT).



N. Miers C129R1



N. Miers C127R



N. Miers C141R1



N. Miers 710

### ■ N. MIERS & CO LTD

28 Piercing Hill, Theydon Bois, Epping,  
Essex CM16 7LE. Tel: 037-881 2611.

#### **C129R1 ★**

Three-speed turntable unit with pick-up arm. Fitted with stereo crystal cartridge, output 280mV. Speeds: 33, 45 and 78rpm. Wow: below 0.35% RMS. Flutter: below 0.08% RMS. Price: £10.98 (plus VAT).

#### **C141R1 ★**

Three-speed turntable unit with low mass tubular tone arm. Lightweight cartridge shell with finger lift. Automatic arm lock. Cue and pause lever, bias compensator. Speeds: 33, 45 and 78rpm. Wow: below 0.2% RMS. Flutter: below 0.06% RMS. Price: £14.99 (plus VAT).

#### **C127R ★**

Three-speed mini changer with tubular tone arm 35% smaller than conventional changers. Cue/pause lever. Fitted with stereo cartridge. Output: 280mV. Price: £10.73 (plus VAT).

#### **P128R-MP60**

A single player with three speeds. Wow: <0.2% RMS. Flutter: 0.06% RMS. Features

include slide-in cartridge carrier, bias compensator, cue/pause lever, automatic pick-up arm lock, simple linear controls. Price: £15.86 (plus VAT).

#### **710 ★**

Two-speed transcription player with single or automatic play facility: Speeds: 33 and 45 rpm with  $\pm 3\%$  pitch control and 6% variable range of speed adjustments. Rumble: better than -55dB relative to 1kHz at 10cm/second. Wow: better than 0.05%. Finish: satin black mainplate with black turntable mat and brushed aluminium centre disc (with stroboscopic speed indicator). Pick-up arm in black/brushed aluminium. Diamond tuned pushbutton controls. Price: £38.66 (plus VAT).

#### **Plinth and Cover**

Plinth and Cover for standard BSR decks. Price: £9.40 (plus VAT).

### ■ NIPPON SOUND

I. D. Electronics (Europe), 7 Priory Road,  
High Wycombe, Bucks.  
Tel: High Wycombe 36783.



★ Indicates entry is illustrated



Philips GA212



Philips GA227

#### BMU 121

Two-speed diecast aluminium turntable. Speeds: 33 $\frac{1}{3}$  and 45rpm. Wow and flutter: 0.1% WRMS. S/N ratio: better than 45dB overall. 4-pole hysteresis synchronous motor. Mains: 200-240V AC. Static balanced type S-shaped tubular tone arm. Tracking error less than  $\pm 1.5$  degree. Stylus pressure: 0.4gm. Plug-in type headshell. Peak base with hinged plastic cover. Turntable supplied without cartridge. Price: £62.64 (including VAT).

#### ■ PHILIPS ELECTRICAL LTD

Century House, Shaftesbury Avenue,  
London WC2H 8AS. Tel: 01-437 7777.

#### GA212★

Integrated turntable, pickup arm and cartridge mounted on walnut veneered plinth with hinged tinted plastic lid. Speeds: 33 $\frac{1}{3}$ , 45rpm. Fine speed adjustment:  $\pm 2\%$ . W and F:  $< 0.1\%$ . Rumble:  $< 62\text{dB}$  (DIN B). Turntable: 11 $\frac{1}{2}$ in diameter steel, 2 $\frac{1}{2}$ lb. Belt drive. Motor: DC type with tachogenerator giving electronic control, obviates the need for a heavy flywheel type platter. Lightweight tubular gimbal-mounted pickup arm. Decoupled counterweight. Bias compensation. Stylus pressure adjustment. Standard  $\frac{1}{2}$ in headshell, with slide-in cartridge carrier. Electronic touch controls for speed selection, start and stop. Light beam operated

auto-stop. Viscous damped pickup arm raising and lowering device. Supplied complete with Philips GP400 cartridge. Mains: 110, 127, 220, 240V 50-60Hz. Size: 15 $\frac{1}{4}$   $\times$  6  $\times$  14 $\frac{1}{2}$ in. Price: £82.41 (including VAT).

#### GA209

Turntable complete with pick-up arm, GP412VE cartridge, plinth and transparent hinged cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. Fine control  $\pm 3\%$ . W and F: better than 0.08%. Rumble:  $-65\text{dB}$  (DIN B). Platter: 11 $\frac{1}{2}$ in steel. Weight: 2.5lb. Belt drive. DC servo controlled motor. Tone-arm: integral stylus pressure gauge. Aluminium arm construction with slide in cartridge carrier. Stroboscope, touch control for tone arm lift/lower. Fully automatic. Price: £125 (plus VAT).

#### GA227 ★

Two-speed turntable complete with arm and cartridge. Speeds: 33 $\frac{1}{3}$  and 45rpm. Motor: 24-pole synchronous. W and F: 0.2%. Rumble:  $\leq 35\text{dB}$  (DIN A),  $\leq -55\text{dB}$  (DIN B). Side-thrust compensation: adjustable both for spherical and elliptical (bi-radial) styli. Pick-up cartridge: GP 400, Super M. Pick-up lift: viscously damped. Mains: 110, 127, 220, 240V AC 50Hz only. Power consumption: 5W. Size: 360  $\times$  123  $\times$  290mm. Cabinet: polystyrene base, silver finish (friction hinged cover). Weight: 3.5kg approx. Price: £43.52 (plus VAT).

#### GA418

Two-speed turntable complete with arm and cartridge. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: 0.14%. Rumble:  $\leq -40\text{dB}$  (DIN A),  $\leq -60\text{dB}$  (DIN B). Side-thrust compensation: adjustable both for spherical and elliptical (bi-radial) styli. Pickup cartridge: GP 400, Super M. Hydraulically-damped pickup lift. Synchronous motor. Mains: 110, 127, 220, 240V AC 50Hz. Power consumption: 1.7W. Cabinet: polystyrene base, silver finish (friction hinged cover). Size: 415  $\times$  142  $\times$  355mm. Weight: 5.9kg. Price: to be advised.

#### GA 427

Turntable complete with arm and cartridge. It features a 264mm (10 $\frac{3}{8}$ in) dia. belt-driven turntable with anti-static mat, driven from a low-speed synchronous motor. The pick-up arm is complete with GP400 magnetic cartridge mounted on a slide-in carrier, and a calibrated gauge allows easy adjustment of stylus pressure. Side thrust compensation is effected by means of a tension spring below the deck, and is fully adjustable by using a calibrated rotary control on the top surface of the deck. W and F:  $\leq 0.2\%$ . Rumble:  $\leq -35\text{dB}$  (DIN A),  $\leq -55\text{dB}$  (DIN B). Stylus pressure:

# simplicity!



- \* Single Point Bearing
- \* 24 Pole Synchronous Motor
- \* Belt Drive
- \* 9lb (4.1Kg) Non-magnetic Platter
- \* Precision Engineering
- \* Stainless Steel Chassis

Simplicity itself . . . that's the Linn Sondek LP12 (Patents Pending)

Available through Authorised Stockists



# LINN SONDEK

LINN PRODUCTS LIMITED

Sondek Division, 235 Drakemire Drive, Glasgow G45 9SZ, UK  
Tel: 041-634 3860 Cables: EURODECK

# When we have everything £100 turntables have, what can we say except that ours costs £88?



D200

What can we add except that we have calibrated 'strobe' rings to help you set the turntable's revolutions exactly?

And a voltage monitor to keep them that way?

That we've a servo-assisted motor, belt driven to silence its rumble?

And that we've a lightweight 'S'-shaped arm to give accurate tracking?

Everything, in fact, that you'll find

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Except, as we said, the price tag.

## Eagle<sup>®</sup>

Please send me full details of your new 2000 series turntables.

Name \_\_\_\_\_

Address \_\_\_\_\_

Prices shown exclude VAT and cartridge. HFYT76



## Connoisseur Sound Design



Top left: The BD1 Turntable Kit.  
Right: The BD3 Transcription Unit.

Top: The SAU2 pick up arm.  
Top Right: The BD2 Turntable Assembly.

### New From Connoisseur - BD3 Transcription Unit

With a studio style rising turntable giving accurate cueing. Run up time is only a fraction of a second. Other important features include an external power source and consequently no hum field. A belt driven turntable with neon illuminated stroboscopic disc with 3 speeds, 33, 45 and 78 - all featuring variable control. The BD3 arm is lightweight and incorporates a unique method of magnetic stabilisation with an interchangeable head shell tracking cartridge down to 0.6 grams.

The unit features brushed aluminium trim and is mounted on a matched wooden plinth complete with acrylic dust cover.

### BD2 Turntable Assembly

The famous BD2 belt drive turntable features push button speed change, an SAU2 pick up arm with damped lowering device, brushed aluminium trim, and specially designed turntable mat.

It is available in chassis form, or as illustrated mounted on a slimline wooden plinth, with acrylic cover which features an easy hinged on hinged off movement.

### BD1 Turntable Kit

The BD1, well known for its excellent performance and superb quality is available in kit form, which allows greater freedom of choice for the practical enthusiast with regard to mounting, selection of arm etc. Construction is simplicity itself with no soldering required. Now it's easy to own the best.

### SAU2 Pick Up Arm

Recognised as one of today's most advanced pick up arms. Among its star features is an Auto Bias compensator, hydraulic lowering device, precision balance and an adjustable head shell which can be matched to a wide variety of decks and pick up cartridges, ideal for the demanding practical audiophile.

For further details of all Connoisseur products, the BD3 or BD2, the BD1 kit or SAU2 arm, to the still popular SCU1 cartridge and our precision stylus balance, please contact your dealer or send a stamp for brochure.

# Connoisseur

Manufactured by:-  
A. R. Sugden & Co. (Engineers) Ltd.  
Atlas Mill Road, Brighouse,  
Yorkshire, HD6 1ES.  
Telephone: Brighouse (04847) 2142  
Telegrams & Cables: Connoisseur, Brighouse.

# It breaks all records.



Wow and Flutter 0.03% WRMS. Rumble-70dB. (DIN B). Drift within 0.1% error.

If ever a turntable deserved a place in the Guinness Book of Records, it's this one.

The Technics SL1300 automatic direct-drive turntable.

Hear it along with the rest of the Technics advanced high fidelity range, at your local dealer.



**Technics**



Pioneer PL12D

2.4gm adjustable, calibrated. Speeds: 33½ and 45rpm, belt-driven. 24-pole synchronous motor. Controls: speed change, stop, PU lift/lower, stylus pressure, sidethrust compensation. Size: 390 × 338 × 127mm. Weight: 4kg. Mains: 110, 127, 220, 240V AC 50Hz, 5W. Price: £50 (plus VAT).

#### ■ PHOTAX-CONCERTONE

Photax (London) Ltd, Hampden Park, Eastbourne, Sussex.

Tel: Eastbourne 51197.

#### 2000P

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45rpm. W and F: less than 0.2% RMS. Platter: aluminium alloy diecast 300mm. Neoprene belt drive. Motor: 4-pole synchronous. Tonearm: static balanced tubular, adjustable counterweight and bias compensation. Cueing device. Optional cartridge, Photax M404C moving magnet. Price: (2000P) £71.94; (cartridge) £8. All prices exclude VAT.

#### ■ PIONEER

Distributors: Shirro (UK) Ltd, Shirro House, The Ridgeway, Iver, Bucks SLO 9JL. Tel: Iver 652222.

#### PL12D ★

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45 rpm. W and F: less than 0.1% WRMS. Rumble: -47dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 10% mains variation. Turntable: 12in aluminium alloy. Belt drive. Motor: 4-pole synchronous. Pickup arm: static balance, adjustable counterweight, adjustable bias, lateral balance weight. Fitted with overhang indicator, cueing device. Price: on application.



Pioneer PL45D

#### PL12S

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45rpm. W and F: less than 0.08% WRMS. Rumble: -47dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 10% mains variation. Platter: 12in diecast aluminium alloy, belt drive. Motor: 4-pole synchronous. Tonearm: static balance, no further details available. Fitted with electronic autostop with Hall element and cueing device. Price: on application.

#### PL15D

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45rpm. W and F: less than 0.1% WRMS. Rumble: -47dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 10% mains variation. Platter: 12in aluminium alloy, belt drive. Motor: 4-pole synchronous. Tonearm: static balanced, tubular. Automatic return function, cueing device, bias compensation. Price: on application.

#### PL45D ★

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45rpm. W and F: less than 0.1% WRMS. Rumble: -47dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 10% mains variation. Platter: 12in aluminium alloy, belt drive. Motor: 4-pole synchronous. Tonearm: static balance, tubular, adjustable counterweight. Automatic lead in, auto return, auto repeat. Two motor system. Price: on application.

#### PL51A

Turntable with pickup arm, plinth and cover. Speeds: 33½ and 45rpm with speed control ± 2%. W and F: 0.06% WRMS. Rumble: 55dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 18% mains variation. Platter: 12½in aluminium alloy. Motor: direct drive, brushless DC servo control. Tonearm: static balance, tubular, lateral balancer, adjustable counter-

★ Indicates entry is illustrated

weight, bias compensation, plug-in headshell. Fitted with stroboscope light. Anti-vibration cabinet. Price: on application.

#### **PL71 ★**

Turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: less than 0.05%. Rumble: -60dB ref. 5cm/s at 1kHz. speed constancy: 0.1% for 10% mains variation. Platter: 31cm, 1.7kg diecast aluminium. Motor: direct drive DC servo controlled. Tonearm: new static balance, tubular arm, length 224mm, adjustable height, adjustable counterweight, lateral balance, bias compensation, cueing device. Stroboscopic light. Anti-vibration cabinet. Price: on application.

#### **PL15R**

Turntable with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: less than 0.1% WRMS. Rumble: -47dB ref. 5cm/s at 1kHz. Speed constancy: 0.1% for 10% mains variation. Turntable: 12in aluminium alloy. Belt drive. Motor: 4-pole synchronous. Pickup arm. Static balance counterweight, adjustable bias, lateral balance weight. Auto return facility. Fitted with overhang indicator, cueing device. Price: on application.

#### ■ **ROTEL**

Rank Audio Visual Ltd,  
Great West Road, Brentford TW8 9HR.  
Tel: 01-568 9222.

#### **RP-1000 ★**

Belt-driven turntable with tone arm, plinth and cover. 4-pole hysteresis synchronous motor. 12in diameter aluminium diecast platter. W and F: less than 0.2% WRMS. S/N ratio: better than 45dB overall. Speeds: 33 $\frac{1}{3}$  and 45rpm. Stylus pressure: 0-4gm. Power consumption: 10W. Size: 470mm wide, 350mm deep, 200mm high. Total weight: 8kg. Price: on application.

#### **RP-3000**

Direct-drive belt driven turntable with arm, plinth and cover. Pulse-determinant AC servo motor. Speeds: 33 $\frac{1}{3}$  and 45rpm. Speed control change:  $\pm$  5%. W and F: less than 0.05% W RMS. S/N ratio: better than 60dB. Full-size aluminium alloy diecast platter (310mm) with embossed strobe markings on trim. Static balanced S-shaped tone arm, with plug-in headshell, oil-damped cueing device, direct readout stylus gauge counter-weight, anti-skating device. Mains: 100-120V 50/60Hz or 220-240V 50/60Hz. Power consumption: max. 10W. Size: 470mm wide, 350mm deep, 190mm high. Total weight: 7.7kg. Horizontal spirit level meter, 45rpm EP adaptor with overhang readout. height adjustable insulator



*Pioneer PL-71*



*Rotel RP-1000*

legs, removable free-stop hinge dust cover, low capacitance phono cords, strobe light housing. Price: on application.

#### ■ **RUSSCO ELECTRONICS**

Distributors: C. E. Hammond & Co Ltd,  
Lamb House, Church Street, Chiswick,  
London W4 2PB. Tel: 01-995 4551.

#### **Russco Studio Pro**

Professional two-speed (45 and 33 $\frac{1}{3}$ rpm) Turntable. Start-up times:  $\frac{1}{16}$ rev 33 $\frac{1}{3}$ rpm,  $\frac{1}{16}$ rev 45rpm. W and F: <0.2%. Rumble: NAB -38dB. Illuminated speed indicators and electric start — suitable for remote operation. Removable tone arm mounting plate. Neutral position for cueing — felt slip mat. Dimensions: 15 $\frac{1}{2}$  x 15 $\frac{1}{2}$  x 7 $\frac{1}{2}$ in below chassis. Weight: 20lb. 50Hz 115V synchronous motor. Price: (including shrouded 115-240V transformer) £139.50 (plus VAT).

#### **Russco Cue Master**

As Studio Pro, except: three-speed (78, 45 and 33 $\frac{1}{3}$ rpm). Start-up at 78rpm  $\frac{1}{8}$ rev. W and F: <0.3%. Rumble: NAB -36dB. No speed indicators or mtg plate. Depth below chassis:

6½in. Weight: 16lb. Price: (including transformer) £126.50 (plus VAT).

### ■ SABA

Saba Radio & Television Ltd, 6-12 Cornbrook Park Road, Manchester M15 4EE.  
Tel: 061-872 7661.

#### 735

Three-speed motor unit in plinth with pickup arm and cartridge. Speeds: 33½, 45, 78rpm. W and F: <0.15% (DIN). Rumble: <56dB (DIN). Turntable: 4lb. Autochanger operation. Four-pole synchronous motor. All-metal pickup arm. Pw: 1.6gm adjustable. Anti-skate device. Shure M71 magnetic cartridge with diamond stylus. Finish: light matt walnut or matt white, clear plastic cover. Size: 16 × 7½ × 14in. Price: £72.91 (including VAT).

#### 745

Three-speed motor unit in plinth with pickup arm and cartridge. Speeds: 33½, 45, 78rpm. W and F: <0.1% (DIN). Rumble: >60dB (DIN). Turntable: 4lb. Autochanger operation. Four-pole synchronous motor. All-metal pickup arm. Pw: 0.5gm-5.5gm adjustable. Anti-skate device. Shure M91 magnetic cartridge with diamond stylus. Finish: light matt walnut or matt white, clear plastic cover. Size: 16 × 7½ × 14in. Price: £89.83 (including VAT).

#### 780

Three-speed motor unit in plinth with pickup arm and cartridge. Speeds: 33½, 45, 78rpm. W and F: <0.06% (DIN). Rumble: >60dB (DIN). Turntable: 12in diameter, 7lb weight. Autochanger operation. Synchronous continuous pole motor. Anti-skating device. Stroboscopic markings on turntable. All-metal pickup arm. Pw: 0.2gm-5.5gm adjustable. Pickup cartridge and finish the same as for the 745. Size: 19½ × 7½ × 14in (including storage compartment for accessories). Price: £122.73 (including VAT).

### ■ SANSUI

Vernitron Ltd, Thornhill, Southampton SO9 5QF.  
Tel: Southampton 444811.

#### SR212

Semi-automatic return turntable complete with pickup arm, plinth and cover. Speeds: 33½ and 45rpm. W and F: 0.1% RMS. S/N: 45dB. Platter: aluminium alloy diecast, 300mm. Motor: 4-pole synchronous. Belt drive. Tonearm: statically balanced tubular. Length: 215mm, overhang: 100mm, bias compensation.



Sansui SR313



Sansui SR717

Cueing device. Fitted with induced magnet cartridge SC-37. Size: 442 × 166 × 352mm. Price: £61.13 (plus VAT).

#### SR313 ★

Two speed, belt-driven turntable. Four-pole synchronous motor. Wow and flutter: less than 0.6% RMS. S/N ratio: better than 50dB. Statically balanced S shaped tubular tonearm with anti-skating device. Supplied complete with dust cover and cartridge. Size: 464 × 380 × 185mm. Price: £142.86 (plus VAT).

#### SR717 ★

Two speed, direct drive turntable. Speed adjustment: ±4%. Electronically controlled 20 pole synchronous motor with direct drive. Wow and flutter: less than 0.035% RMS. S/N ratio: better than 60dB. Statically balanced tubular tonearm with anti-skating device, direct read-out stylus pressure dial. Tone arm length 235mm pivot to styli tip, overhang 16.5mm. Suitable cartridge weight: 4-18gm. Supplied with dustcover, but less cartridge. Size: 508 × 182 × 394mm. Price: £224.44 (plus VAT).



★ Indicates entry is illustrated

## ■ SANYO

Sanyo Marubeni (UK) Ltd,  
Bushey Mill Lane, Watford WD2 4UQ.  
Tel: Watford 30421.

### TP700SA ★

Transcription unit, two speeds, 33 $\frac{1}{3}$  and 45rpm. 4-pole synchronous motor. Belt driven. S bend static balance tone arm with a double counterweight for easy adjustment when changing cartridge. Die cast aluminium platter weighing 2.4lb. Fitted with magnetic cartridge and diamond stylus. Finish: teak with smoked perspex lid. Price: £85.95 (including VAT).



Sanyo TP700SA

### TP600SA ★

Transcription unit, two speeds. Lift-up smoked perspex lid. Incorporates an automatic tonearm return and shut-off. 2.4lb die-cast aluminium turntable platter. Teak finish. Fitted with magnetic cartridge and diamond stylus. Price: £65.95 (including VAT).



Sanyo TP600SA

## ■ SKANTIC

Skantic (UK) Ltd, Station Road, Edenbridge,  
Kent TN8 6EY. Tel: Edenbridge 5231.

### 42212

Semi-automatic two-speed turntable. 16-pole synchronous motor. Anti-skating device. Stylus pressure: 1.5-3gm. W and F: 0.05%. S/N ratio: -62dB. Belt drive. Switchable automatic stop. Single lever operation of start, stop and tonearm lift. Fitted with Shure M75MB type 2 magnetic cartridge with diamond stylus. Transparent lid. Cabinet finished in teak, walnut, rosewood and white or black lacquer. Price: on application.



Sonab 65S

## ■ SONAB LTD

PO Box 4, Oldfield Road,  
Hampton TW12 2HN. Tel: 01-979 0134.

### 85S

Transcription turntable unit with improved pickup arm, precision cueing device, bias compensation and cartridge mounted in plinth with transparent plastic dust cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. Wow: <0.08% (DIN). Flutter: <0.08% (DIN). Rumble: <60dB (weighted). Speed constancy: better than  $\pm 1\%$ . Turntable: 12in diameter non-magnetic, 2 $\frac{1}{2}$ lb. Belt drive. Four-pole synchronous motor. Lightweight tubular arm balanced statically and dynamically. Adjustable for stylus pressures 0.5-3.5gm. Fitted with Shure M75E cartridge with elliptical diamond stylus. Price: £76.46 (plus VAT).

### 55S

Manually-operated turntable with automatic stop. Two speeds. 16-pole synchronous

motor. Belt drive. W and F: less than  $\pm 0.08\%$ . Rumble: better than -60dB. Speed deviation: less than  $\pm 1\%$ . Anti-skating device (continuously adjustable). Cartridge: Ortofon F 15 O. Size: 41cm wide, 13cm high, 33cm deep. Weight: 8kg. Colour: black. Price: £69.91 (plus VAT).

### 65S ★

Two-speed manual turntable with an integrated tone arm. Belt-driven by a 24-pole synchronous motor. W and F: less than 0.08%. Rumble: less than -60dB. Non-magnetic, precision moulded, 12in diameter turntable. Oil damped cueing device. Cartridge shell: light weight type with standard four pin plug-in connection to tone arm and standard cartridge fitting. Size: 17 x 14 x 6in. Weight: 7kg. Price: on application.

## ■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

### PS 5011

Manually operated turntable unit with variable speed control. Drive system: idler drive. Motor: induction. W and F:  $\pm 12\%$  DIN. S/N ratio: 59dB weighted. Static balance tonearm. Anti-skating adjustment. Channel separation: 21dB at 1kHz. Load impedance: 47K. Output voltage: 4mV at 1kHz. Tracking force: 2-4gm. Stylus: conical, 0.7mil diamond. Mains: 240V AC 50Hz. Size: 446 x 162 x 361mm. Price: on application.

### PS 5520

2-speed turntable unit with belt drive. 4-pole synchronous motor. Fitted with Sony magnetic cartridge. Adjustable tracking weight and anti-skating compensation. Manual cueing on to any track with hydraulically damped cueing lever. Auto return mechanism. Finish: walnut grain. Tinted dust cover. Size: 450 x 175 x 395mm. Weight: 8.5kg. Price: on application.

### PS 5550

Servo controlled belt driven turntable. Two speed. W and F:  $\pm 0.08\%$  DIN. S/N ratio: 63dB DIN. Static balanced tonearm. Stereo induced magnetic cartridge. Channel separation: 25dB at 1kHz. Output voltage: 5mV at 1kHz. Load impedance: 50K. Stylus: conical, 0.5mil diamond. Mains: 240V AC 50Hz. Size: 470 x 136 x 383mm. Weight: 9.3kg. Price: on application.

### PS 4750

Servo controlled direct drive turntable unit. Two speed. W and F:  $\pm 0.045\%$  DIN. S/N ratio: 70dB DIN. Static balanced tonearm. Built-in illuminated stroboscope. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 477 x 175 x 420mm. Weight: 8.9kg. Price: on application.

## ■ SOUND IDEAS

216 Brampton Road, Rexleyheath, Kent.  
Tel: 01-303 9272.

Specialists in the manufacture of turntable plinths. Plinth made to house any make of turntable and arm combination. Special plinth for Garrard 401/SME/Acos lustre etc. Prices: from £22.50 (plus VAT).

## ■ TFAC

Acoustico Enterprises Ltd, Unit 7,  
Space Way, North Feltham Trading Estate,  
Feltham TW14 OTZ. Tel: 01-751 0141.



Technics SL-1300

### LAB 2000

Two-speed belt drive turntable. Platter: mechanised and balanced aluminium on acrylic with strobe disc. Motor: 20-poles (rotor); 15-poles (stator). Pitch control:  $\pm 5\%$  adjustable range. Wow: 0.04% (unweighted RMS). Flutter: 0.03% (unweighted RMS). Rumble: better than -65dB (DIN A), better than -50dB (DIN B). Supplied complete with a tinted plexiglass cover and acoustic feed back feet. Available in three different versions: LAB 2000M (marble top); LAB 2000A (acrylic); LAB 2000G (gun metal). Available either with SME or Acos GST/1 arms. Price: on application.

## ■ TECHNICS

National Panasonic (UK) Ltd,  
107/109 Whithy Road, Trading Estate,  
Slough SL1 3DR. Tel: Slough 34522.

### SI-1300 ★

Automatic, direct-drive turntable unit. 13in aluminium diecast platter. Weight: 1.75kg. Speeds: 33 $\frac{1}{3}$  and 45rpm. Motor: ultra low-speed DC brushless. Pitch control range: 10%. W and F: 0.03% RMS. Rumble: -50dB (DIN A), -70dB (DIN B). Static balanced tubular tone arm. Stylus pressure control: 0.3gm, direct reading. Power consumption: 4W. Mains: 110-240V AC 50/60Hz. Size: 453 x 139 x 366mm. Total weight: 9.4kg. Price: £143.06 (plus VAT).

### SP-10

Manual, direct drive turntable unit. Speeds: 33 $\frac{1}{3}$  and 45rpm. Motor: ultra low-speed DC brushless. Pitch control range: 4%. W and F: 0.03% RMS. Rumble: -50dB (DIN A), -70dB (DIN B). Power consumption: 5W. Mains: 110-240V AC 50/60Hz. Size: 350 x 90 x 350mm. Total weight: 9kg. Price: on application.

### SI-1100

Manual, direct drive turntable unit. Speeds:

★ Indicates entry is illustrated

33 $\frac{1}{3}$  and 45rpm. Motor: ultra low-speed DC brushless. Pitch control range: 10%. W and F: 0.03% RMS. Rumble: -50dB (DIN A), -70dB (DIN B). Static balanced tubular tone arm. Stylus pressure control: 0-5gm, direct reading. Universal 4-pin connector. Power consumption: 4W. Mains: 110-240V AC 50/60Hz. Size: 510 x 195 x 390mm. Total weight: 13kg. Price: £163.59 (plus VAT).

#### SI-1200

Manual, direct-drive turntable unit. Speeds: 33 $\frac{1}{3}$  and 45rpm. Motor: ultra-low speed DC brushless. Pitch control range: 10%. W and F: 0.03% RMS. Rumble: -50dB (DIN A), -70dB (DIN B). Static balanced tubular tone arm. Stylus pressure control: 0-4gm direct reading. Universal 4-pin connector. Power consumption: 4W. Mains: 110-240V AC 50/60Hz. Size: 453 x 180 x 366mm. Total weight: 10kg. Price: £127.23 (plus VAT).

#### SI-25R

Automatic, belt drive turntable unit. Speeds: 33 $\frac{1}{3}$  and 45rpm. Motor: 4-pole synchronous. W and F: 0.1% RMS. Rumble: -47dB. Static balanced tubular tone arm. Stylus pressure control: 1.8-2.5kg. Universal 4-pin connector. Power consumption: 14W. Mains: 100-250V AC 50/60Hz. Size: 440 x 179 x 350mm. Total weight: 7.5kg. Price: on application.



Telefunken W258 Transcription Deck



Thorens TD160C

## ■ TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough, Bucks. Tel: Slough 33311

#### W238

Turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$ , 45 and 78rpm. Fine speed adjustment  $\pm 3\%$ . W and F: better than  $\pm 0.15\%$  (DIN). Rumble: better than 58dB (DIN). Platter: zinc pressure moulded, 271mm, 2kg. Pulley drive. Motor: induction, 110-220V. Tonearm: one piece counter balanced diecast girder-type, calibrated counterweight. Fitted with Shure M75-6SM cartridge. Stroboscope, anti-static mat, changer spindle, damped cue device. Price: £89.50 (including VAT).

#### W258 ★

Record changer complete with plinth and cover. Speeds: 33 $\frac{1}{3}$ , 45 and 78rpm. Fine speed adjustment  $\pm 3\%$ . W and F: better than  $\pm 0.1\%$  (DIN). Rumble: better than 59dB (DIN). Platter: 10 $\frac{1}{2}$ in, 4 $\frac{1}{2}$ lb, diecasting. Pulley drive. Motor: induction-type, 110-220V. Tonearm: tubular with adjustable counterweight, anti-skating device separately calibrated for conical and elliptical styli. Fitted with Shure M91ME cartridge. Stroboscope, anti-static mat,



Thorens TD125 Mk 11



Toshiba SR-870

changer spindle, damped cue control, single and auto changer. Price: £119.50 (including VAT).

#### S 500

Two-speed record deck. Opto-electronic end-of-play cut-out and pick-up arm lift. Pressure diecast turntable 12in diameter, 5½lb. Fine speed adjustment ( $\pm 5\%$ ). Illuminated stroboscope on outer rim of turntable. Belt drive with tachometer governed direct-current motor. Studio transcription arm (Ortofon AS 212). Manual lift. Magnetically acting anti-skating adjustment with setting scale. Adjustable stylus pressure with counterweight. Footfall sound absorption by joint-spring-mounting of the turntable and pickup arm. Tinted cover. Casing: metal, black and silver. Size: 17 × 5½ × 14in (including cover). Price: £145 (including VAT).

#### ■ TELETON

Teleton Electro (UK) Company Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW. Tel: Chelmsford 62442.

#### RP 100

System: Garrard SP 25 Mk3. Automatic or manual play with cueing device. Motor: 4-pole induction. Arm: bias compensated counter balanced with fine stylus force. Turntable: wheel drive. W and F: less than 0.14%. Rumble: -46dB. Cartridge: NM 33 stereo moving magnet type. Mains: 115/240V AC 50Hz. Size: 165 × 375 × 330mm. Price: on application.

#### ■ THORENS

Metrosound Audio Products Ltd, Cartersfield Road, Waltham Abbey, Essex EN9 1JF. Tel: Lea Valley 712712.

#### TD125 Mk 11 ★

Transcription turntable. Three speeds: 33½, 45 and 16⅔rpm. With  $\pm 2\%$  electronic speed control. Low speed synchronous motor, belt driven. Motor is transistor governed. Neon-lit strobe. 12in non-ferrous turntable. W and F: 0.09%. Plinth and cover available, also mounting frame if cabinet mounted. Price: £90.30 (plus VAT).

#### TD125AB Mk 11

Details as for TD125 but complete with TP16 pickup arm and plinth. Price: £139.75 (plus VAT).

#### Teak Plinth

Suitable for TD125 unit. Price: £7 (plus VAT).

#### Perspex cover TX25

Suitable for TD125 unit. Price: £9.76 (plus VAT).

#### TD160C ★

Transcription turntable with integrated pickup arm. Speeds: 33½ and 45rpm. TP16 pickup arm. Pw: adjustable 0.5 to 4gm. Magnetic bias compensation device. Complete with smoke grey cover. Price: £76.86 (plus VAT).

#### TD160BC

As TD160C but without T16 tonearm. Fits models suitable for SME 3009 tone arm. Price: £63 (plus VAT).

#### TD145C

Transcription turntable with integrated TP16 tone arm. Two speeds: 33½ and 45rpm. With automatic shut and lift-off. Complete with plinth and cover. Price: £97.50 (plus VAT).

#### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

#### SR-300

Record deck fitted with arm, plinth and cover. Four-pole hysteresis motor, belt drive. Cueing and auto-return/stop facility. Price: £63.61 (plus VAT).

#### SR-870 ★

Record deck fitted with arm, plinth and cover. Belt drive. Electret condenser cartridge. Sixteen-pole hysteresis motor, 31cm aluminium diecast platter. Fitted with C401S cartridge. Price: £122.25 (including VAT).

#### SR-510C

Record deck fitted with arm, plinth and cover. Direct drive AC motor, electronic speed control through touch sensitive pads. Fitted with Toshiba C-404X electret cartridge with CD-4 stylus. Price: £199.54 (plus VAT).

#### ■ TRANSCRIPTORS LTD.

Mycott House, Station Road, Boreham Wood, Herts. Tel: 01-953 9851.

#### Skeleton Turntable ★

Triplex glass cased self-standing unit. Synchronous motor, belt drive. Speeds: 33½ and 45rpm. Suit any voltage or frequency. No fine speed adjustment. 7lb non ferrous platter floating spider platter assembly. Isodraulic damping. Fitted with the Vestigal Arm. Price: £75 (plus VAT).

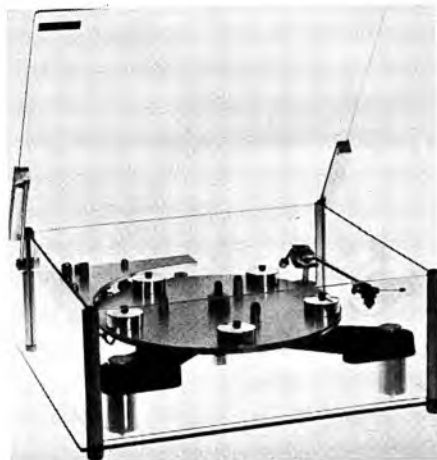
#### ■ TRIO

B. H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6411.

#### KP-2022A

Turntable with arm, plinth and cover. Speeds:

★ Indicates entry is illustrated



*Transcriptors Skeleton turntable*



*Trio KP-3022*

33 $\frac{1}{3}$  and 45rpm. W and F: less than 0.08% WRMS. S/N: better than 45dB. Platter: 300mm solid diecast aluminium alloy, polyurethane belt drive. Motor: 4-pole induction. Tonearm: static balanced tapered tubular with slide lock EIA plug-in connector and direct reading stylus pressure, 0.4gm. Usable cartridge weight: 5-10gm. Cueing device. Auto-return and auto-reject. Fitted with Type V-39 moving magnet cartridge. Price: £62 (plus VAT).

#### **KP-3022 ★**

Turntable with arm, plinth and cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: less than 0.08% WRMS. S/N: more than 48dB. Platter: 300mm, solid diecast aluminium alloy, belt drive. Motor: 4-pole synchronous. Tonearm: as fitted in KP-2022A. Supplied with moving magnet cartridge type V39. Features: auto-in, auto-cut, auto-repeat, auto-return, disc size selector, cueing device. Pilot lamp for stylus adjustment and 24-pole synchronous motor for arm drive. Price: £93 (plus VAT).

#### **KP-5022**

Turntable with arm, plinth and cover. Speeds: 33 $\frac{1}{3}$  and 45rpm. W and F: less than 0.05% WRMS. S/N: better than 58dB. Speed control range:  $\pm 3\%$  (individual control for each speed). Platter: 300mm solid diecast aluminium alloy. Motor: direct drive DC servo, 8-pole, 24 slot. Tonearm: static balanced tapered tubular, slide locked EIA plug-in connector. Direct reading stylus pressure. Fitted with moving magnet cartridge type V41. Features: as for KP-3022. Price: £150 (plus VAT).

#### ■ **WHARFEDALE**

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 2PW. Tel: 01-994 6491.

#### **Model W30**

Hydraulic arm lowering device. Adjustable arm balance. Bias compensator. Automatic stop/arm return mechanism. Three speeds. Rumble: better than -35dB. Wow: better than 0.2%. Flutter: better than 0.06%. Fitted with Shure M44.7 cartridge. Diecast aluminium turntable, 3 $\frac{1}{2}$ lb. Satin black mainplate with black turntable mat and inlaid brushed aluminium trim. Size: 168mm high, 406mm wide, 381mm deep. Price: (teak) £37.61 (plus VAT); (white) £39.50 (plus VAT).

#### ■ **WILMEX LTD**

Import Division, Crompton House, New Malden, Surrey KT3 4DE. Tel: 01-949 2545.

#### **ERA Mk.6X**

Transcription belt drive motor unit only. Complete with base and cover. One armboard blank, one armboard pre-cut for SME 3009. Two speeds: double 48-pole synchronous motor. Voltage: 240V AC 50Hz. 12in dynamically balanced platter. Wow and flutter: 0.04%. Rumble: -72dB DIN. Size: 41 x 31 x 13cm. Price: £60 (plus VAT).

# Speaker Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ RICHARD ALLAN

Richard Allan Radio Ltd, Bradford Road, Gomersal, Cleckheaton, Yorks BD19 4AZ.  
Tel: Cleckheaton 2442.

### CN54 Crossover Unit

Two-way quater section. Recommended for use with CR5 bass unit and CB4 tweeter. Crossover frequency 5kHz. Impedance: 8 or 15 ohms. Price: (twin) £2.50; (triple) £2.60. All plus VAT.

### CN104 Crossover Unit

A two-way half-section parallel network. Crossover frequency: 5kHz. Impedance: 8 or 15 ohms. Price: £3.75 (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. Impedance: 8 or 15 ohms. Price: £5.70 (plus VAT).

### CN1220 Crossover Unit

Three-way half-section. Crossover frequencies: 700Hz and 7kHz. Price: £9.45 (plus VAT).

## ■ 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. Price: on request.

See also entry in Pickup Accessories section.

## ■ CELESTION

Rola-Celestion Ltd, Ditton Works,  
Foxhall Road, Ipswich, Suffolk IP3 8JP.  
Tel: Ipswich 73131.

### CO3K crossover

Designed specially for use with Studio 12 and HF1300 Mk2 units but equally suitable for use with any efficient bass and treble combination. Air-tight terminal assembly with flange mounting. Full half-section filter network. Impedance: 8 ohms. 12dB per octave cut-off at 3kHz. Size: 3½in long, 2½in diameter of body, 3½in diameter of flange. Price: £4.47 (plus VAT).

## ■ DECCA

Decca Special Products, Ingate Place,  
Queenstown Road, London SW8 3N1.  
Tel: 01-622 6677.

### Acoustic Lens

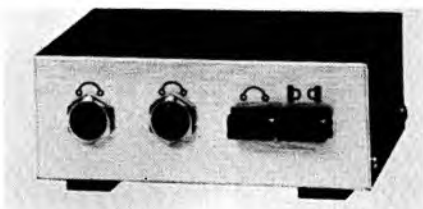
Device for obtaining optimum dispersion of the higher audio frequencies produced by the Decca Mk II ribbon speaker or the Decca DK30 ribbon speaker. Price: £3 (plus VAT).

### CO/1/8 Crossover

Crossover network specially designed for use with the DK30 ribbon speaker. Ferrite cored inductors and close tolerance capacitors. Low-pass section is constant 12dB/octave, high-pass section is variable slope multi-stage network of novel design. Price: £4.40 (plus VAT).

### CO/1000/8

Crossover network designed for use with London ribbon speaker. Mounted on printed circuit board. Close tolerance carbon polyester capacitors and inductors. Low-pass section is standard constant-impedance 6dB/octave filter, high-pass section attenuates at 12dB/octave. Crossover frequency: 1kHz. Negligible intermodulation distortion. Price: £6.30 (plus VAT).



Audio Pack Sound Selector Unit 790—front view

★ Indicates entry is illustrated

## ■ FALCON ELECTRONICS

Components Division,  
26 Station Road, Bexhill-on-Sea, Sussex.  
Tel: Bexhill 219950.

Inductors and capacitors for crossover networks, BAF wadding for inside enclosures, acoustically transparent micro-porous foam and 'L' pad attenuators.

### Inductors

Wound with self-fluxing, self-bonding wire on high permeability ferrite cores. Low values 1in long, large values 2in long. 25 standard values from 0.2mH to 10mH. Special sizes to order. Average DC resistance: 0.25mH 0.25 ohms, 1.8mH 0.8 ohms, 10mH 1.6 ohms. Air cored, high power ferrite, and special tolerances to order. Price list on request.

### Capacitors

Plastic cased, fully sealed, non-polarised electrolytics. 18 values from  $2\mu\text{F}$  to  $100\mu\text{F}$ . Size range:  $2\mu\text{F}$   $\frac{3}{8} \times \frac{1}{2}$ in,  $100\mu\text{F}$   $1\frac{1}{2} \times \frac{3}{8}$ in. Polyester: values from  $0.47\mu\text{F}$  to  $3.3\mu\text{F}$ . Price list on request.

### Resistors

Range of 5 watt and 10 watt wire wound in values from 1 ohm to 100 ohms.

### General Accessories

Input panels, plugs and sockets, matrix boards, crossover printed circuit boards, etc.

### BAF Wadding

In rolls 24in wide and 1in nominal thickness. Cut in multiples of one foot. Price: 53p per linear yard. Enclosures should be lined so that one quarter of the distance between two opposite faces is filled with wadding.

### Long fibre wool

As per the original specification of Dr Bailey for use in transmission lines, etc.

### Acoustic foam

Dark grey/black. Thickness:  $\frac{3}{8}$ in fine pore,  $\frac{3}{4}$ in medium pore,  $\frac{1}{2}$ in large pore. Prices on request. Negligible attenuation. Any size cut (charged to nearest  $\frac{1}{2}$  sq.ft above). Sheet size approximately  $7 \times 4$ ft.

### Attenuators

'L' pad 8 ohm constant impedance attenuators. Gives change in level without affecting response shape. For use with mid-range and HF units. Supplied complete with knob and recessed flange. Price list on request.

### Potentiometers

50-ohm wirewound. 2-3W rating. Suitable for attenuating tweeters in systems up to 15W. Price list on request.

### Speaker matching transformers

15W auto transformers matching 4-8-16 ohms



Howard-West Headphone control MK III



Howard-West Remote control

any way. Power response: 30Hz-20kHz. Price list on request.

### Grille fabrics

Stock range of 10 selected from Danish Silks for whom we are agents in the United Kingdom. These fabrics are of modern appearance and have excellent acoustic transparency. Used by many loudspeaker manufacturers in the U.K. and Europe. Prices and samples, please send 5p stamp. Full price list of Falcon Electronics components available on request with 5p stamp.

## ■ FANE ACOUSTICS LTD

Bradford Road, Batley, Yorks.  
Tel: Batley 476431.

Manufacturers of hi-fi and heavy-duty speaker drive units in all sizes and types. Also a range of speaker accessories and crossovers. No product information obtainable as this edition of the Year Book closed for press.

## ■ GOODMAN'S

Goodmans Loudspeakers Ltd,  
Downley Road, Havant,  
Hampshire PO9 2NL. Tel: Havant 6344.

### Loudspeaker stand type CS3

Packed in pairs. Price: £17.27 per pair (plus VAT).

### ■ HOWLAND-WEST LTD

3-5 Eden Grove, London N7 8EQ.

Tel: 01-609 0293/6.

#### Headphone control Mk III ★

For operating two sets of stereo headphones simultaneously from the same source. Independent volume controls for each ear-piece (four in all). On/off switch and jack sockets on front panel. Amplifier and speaker connections to colour coded terminals at rear. Teak finish. Size: 6 × 2½ × 3½in. Weight: 18oz. Price: £7.10 (plus VAT).

#### Headphone Doubler

A simpler version of the Headphone Control Mk III which whilst not quite so versatile will still enable two people to enjoy headphone listening. It is connected via a stretch cord to the amplifier via the headphone socket. Volume of the right and left-hand channels can be adjusted. Stereo/mono switch fitted. Price: £3.60 (plus VAT).

#### Remote Control ★

Supplied with 5m of cable. Enables volume of speakers to be controlled individually at this distance from the amplifier. Will also accept headphones which are also individually controlled. Ideal for balancing speakers from central position between speakers. Price: £6.75 (plus VAT).

### ■ KEF

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone 57258.

#### Crossover networks

DN12 (SP1004) combines B139, B110 and T27. Price: £5.50. DN13 (SP1017) combines B110 and T27. Price: £3.60. DN13 (SP1015) combines B200 and T27. Price: £4. All prices shown exclude VAT which must be added.

See Constructional Kits section for details of KEF crossover inductors, capacitors, terminals and BAF wadding.

### ■ KOSS

Tape-Music Distributors Ltd, 114 Ashley Road, St Albans, Herts AL1 5JR. Tel: St Albans 64337.

#### T10A

Chairside listening station. Comprises control box with separate volume controls for two sets of stereo headphones, plus on/off switch for speakers. Wires directly into amplifier. Seven-core flat connecting cable suitable for under-carpet installation. Tinted plastic cover. Price: £11.50 (plus VAT).

#### T3

Speaker/headphone switchbox. Incorporates jack socket for stereo headphones, connections for speakers and terminals for connection to stereo amplifier. Switch selects speakers on or off. Price: £4 (plus VAT).

#### T-5D

Remote control station suitable for running two pairs of stereo headphones. Speaker on/off switch incorporated, but headphones are always on. The volume of headphones plugged into left-hand jack individually controlled (other set of headphones controlled by volume knob on amplifier). Fitted DIN sockets for amplifier and speaker connections. Matches any amplifier with 4, 8 or 16 ohm output. Finish: black with simulated walnut top. Connecting cable seven-core colour-coded 3ft long. Size: 3½ × 3½ × 2½in. Weight: 10½oz. Price: £8.50 (plus VAT).

See Headphone and Accessories section for details of full range of Koss headphones and accessories.

### ■ MICRO

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6.

#### MSB-1

Micro shock absorber. Microsorber employs air damped high efficiency materials to eliminate acoustic feedback from speaker enclosures to record playing deck (fitted under record deck). Adjustable for height to equalise for unbalanced weight of turntable. Price: (set of four) £5.50 (plus VAT).

### ■ QAS

Quality Audio Supplies, Wollaton Road, Beeston, Nottingham NG9 2PB. Tel: Nottingham 256141.

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, record cleaner and remote control stations. All items individually blister-packed for over-the-counter or self-service sales.

#### Audio Switch

For use with two sets of stereo speakers and two sets of headphones. Pushbuttons provide any combination of speakers and phones. Headphones attenuated by 100 ohms. Connections by DIN and jack sockets. Size: 5½ × 1¼ × 2½in. Finish: brushed aluminium. Price: £6.75 (plus VAT).



★ Indicates entry is illustrated



Woollett XS1 and XS2

### De Luxe Audio Switch

Provides for two sets of headphones and two sets of stereo speakers. Pushbutton switches permit any combination to be used. Monitor socket for adjusting level of remote speakers. Level controls for left and right channels. Headphones attenuated at 100 ohms. Wirewound potentiometers handle up to 35W. Size:  $7\frac{1}{2} \times 1\frac{1}{2} \times 2\frac{3}{4}$ in. Finish: brushed aluminium. Fixing brackets provided. Price: £8.75 (plus VAT).

### Phone Switch

Designed to cater for two sets of stereo headphones and one set of speakers. Pushbutton switches provide any combination. Headphones attenuated by 100 ohms. Connections by DIN and jack sockets. Size:  $5\frac{1}{2} \times 1\frac{1}{4} \times 2\frac{3}{4}$ in. Finish: brushed aluminium. Fixing brackets included. Price: £4.75 (plus VAT).

### Output Selector

For connecting three sets of stereo speakers from one source. Suitable for retailers showrooms for comparison of speakers. Also for supplying three sets of speakers in different rooms in the home. Units can be stacked to provide additional facilities. Pushbutton switches. Size:  $5\frac{1}{2} \times 1\frac{1}{4} \times 2\frac{3}{4}$ in. Finish: brushed aluminium. Fixing brackets included. Price: £6.75 (plus VAT).

### Tape Selector

Designed to permit two tape recorders to record and play back without being disconnected from the amplifier. Size:  $5\frac{1}{2} \times 1\frac{1}{4} \times 2\frac{3}{4}$ in. Brushed aluminium finish. Price: £6.75 (plus VAT).

### ■ RADFORD

Radford Acoustics Ltd, Ashton Vale Road, Bristol BS3 2HZ. Tel: Bristol 662301.

### FN11

Three-way 17-element crossover network. Impedance: 8 ohms in four types to match various drive unit combinations. HC: 100W. FR: 25Hz-25kHz. Crossover frequencies: 500Hz and 4.2kHz. Price: £10 (plus VAT).

### ■ ROLA-CELESTION

See Celestion.

### ■ TELEFI

Rola-Celestion Ltd, Ditton Works, Foxhall Road, Ipswich, Suffolk IP3 8JP. Tel: Ipswich 73131.

Sound take-off adaptor for feeding hi-fi from TV.

### ■ WOOLLETT AUDIOSTATICS

Anerley Station Road, London SE20 8PY. Tel: 01-699 5296.

#### XS1 ★

Speaker matching transformer. Converts 16 ohms to 8 ohms, and 8 ohms to 4 ohms. Bifilar wound. Grain orientated laminations. Ratio 1:0.707 auto. FR: 16Hz-30kHz  $\pm 0.6$ dB. Price: £5.20 (plus VAT).

#### XS2 ★

Speaker isolating and matching transformer. Converts 16 ohms to 4 ohms. Bifilar wound. Grain orientated laminations. Ratio 1:1 double wound. FR: 16Hz-100kHz  $\pm 0.6$ dB. May be used to attenuate  $-6$ dB and  $-12$ dB while maintaining heavy damping on speaker and offering correct load to amplifier. Suitable for operating stereo system comprising two electrostatic high-frequency units with common bass speaker. *Note:* Not suitable for mains isolation in live chassis equipment. Price: £5.20 (plus VAT).

# Speaker Drive Units

★ Indicates entry is illustrated  
Abbreviations used in this section are given on page 27.

## ■ ADASTRA

Adastra Electronics Ltd, Unit N22,  
Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

### Peak 100

Heavy-duty full-range speaker unit. 15in nominal diameter. Fibre cone. Voice coil diameter: 2in. Voice coil material: aluminium. Impedances: 8 or 16 ohms. Gap flux: 15,000 lines. HC: 50W (peak 100W). FR: 20Hz-15kHz. Ceramic magnet. Price: £23 (including VAT).

### Hi-Ten ★

Full-range 10in loudspeaker. Voice coil dia: 1in. Impedance: 8 or 15/16 ohms. FR: 40Hz-13kHz. Bass resonance: 70Hz. Power handling: 10W. Flux density: 10,000 lines. Price: £3.75 (plus VAT).

### Top 20

Heavy duty 12in unit for electronic music, guitars, etc. Cast chassis, ceramic magnet. FR: 25Hz-13kHz. Bass resonance: 45Hz. Impedance: 8 or 15/16 ohms. Power handling: 25W (40W peak). Flux density: 12,000 lines. Voice coil dia. 1½in. Weight: 4½lb. Price: £10 (plus VAT).

### L.51/K.2006 Horn Tweeter

3in pressure-driven tweeter with 10W rating. FR: 1.5Hz-16kHz. Crossover frequency: 3kHz. Sensitivity: -104dB. Impedance: 8 or 15/16 ohms. Price: £3.40 (plus VAT).

### L.52/Foster FHT6 Horn Tweeter

Ceramic magnet horn tweeter with 20W handling capacity. FR: 5Hz-20kHz. Sensitivity: -102dB. Flux density: 10,000 lines. Impedance: 8 ohms. Price: £6.40 (plus VAT).

### L.55/K.2003 Cone Tweeter

3W, compact HF unit with foam cone. FR: 3Hz-15kHz. Crossover frequency: 3kHz. Sensitivity: -95dB. Flux density: 8,000 lines. Impedance: 8 ohms. Price: £1.90 (plus VAT).

### L.56/K.2007 Trumpet Tweeter

All metal cast horn tweeter with centre diffruser and 20W rating. FR: 2.5Hz-20kHz. Crossover frequency: 3kHz. Sensitivity: -105dB. Flux density: 12,000 lines. Impedance: 8 ohms. Price: £6.40 (plus VAT).

### L.57/K.2011 Dome Tweeter

Slimline dome tweeter for front mounting. Heavy duty ceramic magnet. 10W power. FR: 1.5Hz-20kHz. Crossover frequency: 3kHz. Sensitivity: -98dB. Flux density: 14,000 lines. Impedance: 8 ohms. Price: £5.60 (plus VAT).

## ■ RICHARD ALLAN

Richard Allan Radio Ltd, Bradford Road,  
Gomersal, Cleckheaton, Yorks BD19 4AZ.  
Tel: Cleckheaton 2442.

### CB4

4in tweeter. Paper cone. Doped cambric surround. Ceramic magnet. Voice coil 9/16in. Gap flux 8000 gauss. Total flux 12,000 maxwells. HC: in systems up to 25W. vci: 8 or 15 ohms. FR: 2kHz-17kHz. rcf: 5kHz. Price: £2.50 (plus VAT).

### DT20

20mm dome tweeter. Low mass, plastic foil dome. Ceramic magnet. Voice coil 20mm. Gap flux 12,000 gauss. Total flux 24,500 maxwells. FR: 3kHz-25kHz. HC: in systems up to 35W. vci: 8 or 15 ohms. rcf: 7kHz. Price: £5.90 (plus VAT).

### CF5

5in mid-range unit. Coated paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 8000 gauss. Total flux: 32,000 maxwells. HC: in systems up to 30W. FR: 250Hz-15kHz. vci: 8 or 15 ohms. Price: £3.95 (plus VAT).

### CB5

5in mid-range unit. Coated paper cone with



Adastra Hi-Ten

★ Indicates entry is illustrated

PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 12,000 gauss. Total flux: 48,000 maxwells. HC: in systems up to 30W. FR: 250Hz-15kHz. vci: 8 or 15 ohms. Price: £4.70 (plus VAT)

#### CR5

5in bass/mid-range unit. Paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 14,000 gauss. Total flux: 56,000 maxwells. HC: 10W. vci: 8 or 15 ohms. FR: 30Hz-8kHz. Specially designed for use in small volume infinite baffle enclosure. Price: £5.90 (plus VAT).

#### CP8

8in mid-range unit. Paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 10,000 gauss. Total flux: 40,000 maxwells. HC: 8W. vci: 8 or 15 ohms. FR: 100Hz-12kHz. Price: £3.95 (plus VAT).

#### CB8

8in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 12,000 gauss. Total flux: 48,000 maxwells. HC: 10W. vci: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £4.70 (plus VAT).

#### CB8T

8in paper cone plus tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 12,000 gauss. Total flux: 48,000 maxwells. HC: 10W. vci: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £5.10 (plus VAT).

#### CBF8

8in bass/mid-range unit. Paper cone. Moulded polyuréthane surround. Ceramic magnet. Voice coil: 1in. Gap flux: 12,000 gauss. Total flux: 48,000 maxwells. HC: 12W. vci: 8 or 15 ohms. FR: 40Hz-10kHz. Price: £5.10 (plus VAT).

#### CG8

8in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 14,000 gauss. Total flux: 56,000 maxwells. HC: 15W. vci: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £6.75 (plus VAT).

#### CG8T

8in paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 14,000 gauss. Total flux: 56,000 maxwells. HC: 15W. vci: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £7.10 (plus VAT).

#### CF8L

8in bass unit. Coated paper cone. Moulded polyurethane surround. Ceramic magnet. Resonance 25Hz. Voice coil: 1in. Gap flux: 14,000 gauss. Total flux: 56,000 maxwells. HC: 15W. vci: 8 or 15 ohms. FR: 35Hz-2.5kHz. Price: £6.75 (plus VAT).

#### CG10

10in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 14,000 gauss. Total flux: 105,000 maxwells. HC: 20W. vci: 8 or 15 ohms. FR: 35Hz-10kHz. Price: £10.25 (plus VAT).

#### CG10T

10in paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 14,000 gauss. Total flux: 105,000 maxwells. HC: 20W. vci: 8 or 15 ohms. FR: 35Hz-15kHz. Price: £10.50 (plus VAT).

#### CG12

12in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 14,000 gauss. Total flux: 105,000 maxwells. HC: 20W. vci: 8 or 15 ohms. FR: 25Hz-9kHz. Price: £11.80 (plus VAT).

#### CG12T

12in paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 14,000 gauss. Total flux: 105,000 maxwells. HC: 20W. vci: 8 or 15 ohms. FR: 25Hz-15kHz. Price: £12 (plus VAT).

#### CG12 Super

12in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 2in. Gap flux: 14,000 gauss. Total flux: 186,000 maxwells. HC: 25W. vci: 8 or 15 ohms. FR: 25Hz-5kHz. Price: £15.45 (plus VAT).

#### CG15

15in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 2in. Gap flux: 17,000 gauss. Total flux: 220,000 maxwells. HC: 25W. vci: 8 or 15 ohms. FR: 20Hz-5kHz. Price: £25.20 (plus VAT).

Richard Allan full-range speaker modules are included in Speaker Enclosure section. Twin Assembly, Triple-8 Assembly, Triple-12 Assembly and Super-12 Assembly speaker kits are in the Constructional Kits section.

#### LP8B

8in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 25mm. Flux density: 1.2 tesla. HC: 20W vci: 8 or 15 ohms. FR: 40Hz-5.5kHz. Price: £8.50 (plus VAT).

#### HP8B

8in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 38mm high temperature winding. Flux density: 1.3 tesla. HC: 45W at 60Hz. vci: 8 or 15 ohms. FR: 25Hz-4.5kHz. Price: £12.50 (plus VAT).

#### CA12

12in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 50mm high temperature winding. Flux density: 1.35 tesla. HC:

## SPEAKER DRIVE UNITS



*Baker 12in Major*



*Baker Superb Twelve*

60W. vci: 8 or 15 ohms. FR: 25Hz-1kHz. Price: £20 (plus VAT).

### ■ BAKER

Baker Reproducers Ltd, Bensham Manor Road Passage, Thornton Heath, Surrey. Tel: 01-684 1665.

#### **Regent**

Full range 12in cone speaker. Paper cone with roll surround. Voice coil: 1½in. Copper voice coil. vci: 3, 8 or 15 ohms. Gap flux: 12,000 gauss. HC: 20W. FR: 45Hz-13kHz. Price: £9.50 (plus VAT).

#### **Major ★**

Full range 12in speaker with built-in tweeter cone. 14,000 gauss magnetic gap. FR: 40Hz-14.5kHz. HC: 25W. vci: 3, 8 or 15 ohms. Cast aluminium chassis. Weight: 6lb. Price: £10.50 (plus VAT).

#### **Deluxe Mk II**

Full range 12in cone speaker. 15W. Bass resonance: 30Hz. Gap flux: 14,000 gauss. Copper voice coil: 1½in diameter. vci: 8 or 15 ohms. Paper cone with foam plastic surround. Built-in tweeter cone. FR: 25Hz-16kHz. Cast

aluminium chassis. Depth: 6in. Weight: 6lb. Price: £12 (plus VAT).

#### **Superb Twelve ★**

Full range 12in speaker with built-in tweeter cone. Foam plastic surround. Coil diameter: 1½in. vci: 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: £17 (plus VAT).

#### **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: 1½in diameter. vci: 8 or 15 ohms. FR: 25Hz-16kHz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: £16 (plus VAT).

#### **Auditorium 15**

High power 15in speaker suitable for bass unit in multi-speaker system. HC: 45W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. vci: 8 or 15 ohms. FR: 20Hz-14kHz. 2in diameter voice coil. 35W. Depth: 8in. Weight: 15lb. Price: £22 (plus VAT).

#### **Group 25**

12in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 30W vci: 3, 8 or 15 ohms. Bass resonance: 55Hz. FR: 30Hz-13kHz. Gap flux: 12,000 gauss. Voice coil: 1½in. Depth: 6in. Weight: 5lb. Price: £9.50 (plus VAT).

#### **Group 35**

12in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 40W. vci: 3, 8 or 15 ohms. Bass resonance: 55Hz. FR: 55Hz-13kHz. Gap flux: 14,000 gauss. Voice coil: 1½in. Depth: 6½in. Weight: 6lb. Price: £10.50 (plus VAT).

#### **Group 50**

15in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 70W. vci: 8 or 15 ohms. Bass resonance: 45Hz. FR: 30Hz-13kHz. Gap flux: 17,000 gauss. Voice coil: 2in. Depth: 8in. Weight: 15lb. Price: £22 (plus VAT).

#### **Group 50/12**

12in cone speaker with heavy duty suspension for electronic music, guitars, etc. vci: 8 or 15 ohms. Max. power: 50W. Bass resonance: 55Hz. Flux: 15,000 gauss. Voice coil: 1½in. Depth: 4½in. Weight: 10lb. Price: £16 (plus VAT).

### ■ COLES

Coles Engineering (Hoddesdon) Co, Pindar Road, Hoddesdon, Herts EN11 ORZ. Tel: Hoddesdon 66685.

★ Indicates entry is illustrated



Decca DK30 Ribbon



Decca London Ribbon Speaker

#### 4001G

High frequency pressure unit. Nominal cone diameter 3cm. Plastic cone, steel surround. vci: 2cm. Voice coil material: copper. Impedance: 8 and 15 ohms nominal. Flux density: 14,000 Gauss. Peak capacity: 3W RMS. FR: 6kHz-20kHz  $\pm$ 3dB. Price: £5.63 (plus VAT).

#### ■ DECCA

Decca Special Products, Ingate Place, Queenstown Road, London SW8 3NT. Tel: 01-622 6677.

#### DK30 Ribbon ★

Horn-loaded high frequency ribbon speaker. Size:  $6\frac{1}{2} \times 3\frac{1}{2} \times 2$ in. Aluminium ribbon element. Impedance: 8 ohms constant. HC: 30W maximum. FR: 2.5kHz-25kHz. rcf: 2.5kHz. Price: £15.75 (plus VAT).

#### London Ribbon ★

Horn-loaded high frequency ribbon speaker. Size:  $9\frac{1}{2} \times 4\frac{1}{2} \times 7\frac{1}{2}$ in. Aluminium ribbon element. Impedance: 8 ohms constant. HC: 30W maximum. FR: 1kHz-25kHz. Rec cross-over: 1kHz. Price: £25 (plus VAT).

#### Decca Acoustic lens

Device for obtaining optimum dispersion of higher audio frequencies produced by Decca Mk II ribbon speaker or the Decca DK30 ribbon speaker. Price: £3 (plus VAT).

#### ■ ELECTRO-VOICE

Gulton Europe Ltd, Special Products Division, The Hyde, Brighton, Sussex BN2 4JU. Tel: Brighton 66271.

#### EVM15B

Bass driver. Nominal cone diameter: 38.13cm. Paper cone. Cloth surround. Voice coil diameter: 6.5cm. Nominal impedance: 8 ohms. Nominal RMS capacity: 100W. Resonance frequency: 40Hz. Price: £74.52 (including VAT).

#### EVM15L

Bass driver. Nominal cone diameter: 38.13cm. Paper cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 8 ohms. Nominal RMS capacity: 100W. Resonance frequency: 50Hz. Price: £74.52 (including VAT).

#### EVM12L

Bass driver. Nominal cone diameter: 30.95cm. Paper cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 8 ohms. Nominal RMS capacity: 100W. Resonance frequency: 50Hz. Price: £66.42 (including VAT).

#### EMV18B

Bass driver. Nominal cone diameter: 47.72cm. Paper cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 4 ohms. Nominal RMS capacity: 100W. Resonance frequency: 40Hz. Price: £85.86 (including VAT).

#### 12TRXB

Full range integrated 3-way driver. Nominal cone diameter: 30.95cm. Paper cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 8 ohms. Peak RMS capacity: 60W. FR: 35Hz-20kHz. Price: £67.50 (including VAT).

#### SP12

Full range unit. Nominal cone diameter: 30.95cm. Paper cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 8 ohms. Peak RMS capacity: 80W. FR: 30Hz-15kHz. Price: £63.18 (including VAT).

#### SP8B

Full-range unit. Nominal cone diameter: 20.3cm. Paper cone. Cloth surround. Voice coil diameter: 5cm. Nominal impedance: 8 ohms. Peak RMS capacity: 40W. FR: 35Hz-15kHz. Price: £29.70 (including VAT).

#### 30W

Bass driver. Nominal cone diameter: 76.26cm. Polystyrene cone. Cloth surround. Voice coil diameter: 6.35cm. Nominal impedance: 8 ohms. Nominal RMS capacity: 60W. Resonance



Goodmans Twin Axiom 8



Goodmans Audiomax 12AX



Goodmans Axent 100

ance frequency: 15Hz. Recommended crossover: 100Hz. Price: £207.36 (including VAT).

#### 135

VHF tweeter. Voice coil diameter: 2.6cm. Nominal impedance: 8 ohms. FR: 3.5kHz-20kHz. Recommended crossover: 3.5kHz. Price: £23.22 (including VAT).

#### T350

VHF tweeter. Voice coil diameter: 2.6cm. Nominal impedance: 8 ohms. FR: 3.5kHz-23kHz. Recommended crossover: 3.5kHz. Price: £50.22 (including VAT).

### ■ GOODMAN'S

Goodmans Loudspeakers Ltd,  
Downley Road, Havant, Hants PO9 2NL.  
Tel: Havant 6344.

#### Twin Axiom 8 ★

8in full-range twin-cone driver. Paper cone.

Rubber surround. Voice coil: 1in diameter copper wound. Impedance: 8 or 15 ohms. Gap flux: 13,500 gauss. Total flux: 53,000 maxwells. HC: 15W (DIN). FR: 40Hz-18kHz. Price: £10.26 (plus VAT).

#### Axent 100 ★

Domed diaphragm high-frequency direct radiator with built-in filter network. Plastic cone. Voice coil: 1in diameter copper wound. Impedance: 8 ohms. HC: for use in systems rated at not more than 30W. FR: typically 2kHz-22kHz. Crossover: cut-off of 12dB/octave from 3kHz down. Price: £8.27 (plus VAT).

#### Audiom 8P

8in heavy duty. HC: 15W. Impedance: 8 or 15 ohms. Price: £6.63 (plus VAT).

#### Audiom 10P

10in heavy duty. HC: 15W. Impedance: 8 or 15 ohms. Price: £6.91 (plus VAT).

#### Audiom 12P

12in heavy duty. HC: 50W. Impedance: 8 or 15 ohms. Price: £17.14 (plus VAT).

#### Audiom 18P

18in. Voice coil diameter: 3in. vci: 8 or 15 ohms. HC: 100W. Fundamental resonance: 45Hz. Flux density: 13,500 gauss. Baffle hole diameter: 16½in. Depth: 8½in. Weight: 26lb. Recommended sealed enclosure (per speaker): 7000 cu in. Price: £46.22 (plus VAT).

#### Audiom 12P-G

12in heavy duty. HC: 50W. Impedance: 8 or 15 ohms. Price: £18.57 (plus VAT).

★ Indicates entry is illustrated

#### **Audiom 12P-D**

12in heavy duty twin-cone. HC: 50W. Impedance: 8 or 15 ohms. Price: £19.59 (plus VAT).

#### **Audiomax 12AX ★**

Bass drive unit. Nominal diameter: 12in. (312mm). Nominal impedance: 8 or 15 ohms. Nominal power handling: 100W. Resonance frequency: 55Hz. Sensitivity (96dB at 1m): 0.12W. 10cm diameter edge wound voice coil. Price: £44.20 (plus VAT).

#### **Audiomax 15AX**

Bass drive unit. Nominal diameter: 15in. (395mm). Nominal impedance: 8 or 15 ohms.



Goodmans Audiom 200



Goodmans Audiom 402

Nominal power handling: 100W. Resonance frequency: 55Hz. Sensitivity (96dB at 1m): 0.25W. 10cm diameter edge wound voice coil. Price: £49.11 (plus VAT).

#### **Hifax 750P**

High power HF horn unit. Nominal impedance: 8 or 15 ohms. Designed for systems rated at 50W. FR: 1kHz-10kHz. Recommended crossover: 2kHz. Price: £18.21 (plus VAT).

#### **Twin Axiom 10/11**

10in full range drive unit. Nominal cone diameter 250cm. Paper cone. Impedance: 8 or 15 ohms nominal. Total flux: 53,000 maxwells. Gap flux: 13,500 gauss. Nominal capacity: 40W DIN. Peak capacity: 40W DIN. FR: 50Hz-16kHz. Resonant frequency: 60Hz. Price: to be announced.

#### **Audiom 200 ★**

10in long throw bass unit recommended for use with Axent 100. Nominal cone diameter 250cm. Paper cone, rubber surround. Impedance: 8 ohms nominal. Total flux: 68,750 maxwells. Gap flux: 7,500 gauss. Peak capacity: 60W DIN. Nominal capacity: 60W DIN. FR: 30-3000Hz. Resonant frequency: 24Hz. Crossover frequency: 3000Hz. Price: £14.39 (plus VAT).

#### **Audiom 15P-C**

15in heavy duty drive unit. Paper cone. Impedance: 8 or 15 ohms nominal. Peak capacity: 75W. Resonant frequency: 60Hz. Price: to be announced.

#### **Axiom 402 ★**

12in full range twin-cone driver. Nominal cone diameter 30.5cm. Paper cone, plastic surround. Voice coil diameter: 4.5cm. Impedance: 8 and 15 ohms nominal. Total flux: 164,750 maxwells. Gap flux: 14,500 gauss. Nominal capacity: 60W DIN. FR: 40-11,000Hz. Resonant frequency: 30Hz. Price: £21.20 (plus VAT).

#### ■ **JORDAN-WATTS**

Benlow Works, Silverdale Road, Hayes UB3 3BW. Tel: 01-573 6928.

#### **Jordan-Watts Module Mk II ★**

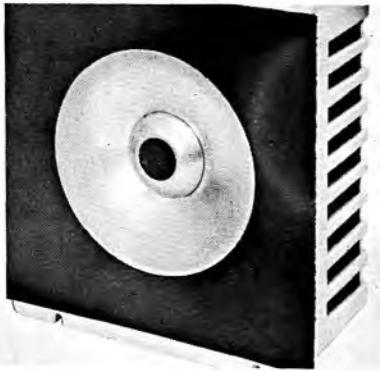
6in square frame. Aluminium diaphragm with plastic surround. Voice coil: 1½in. Ceramic magnet. vci: 4, 8 or 16 ohms. HC: 15W. FR: 25Hz-20kHz. Price: £18.04 (including VAT).

#### ■ **KEF**

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone 57258.

#### **B139 SP1044**

11.82 × 8.25in. 8lb. HC: 50W. Resonance: 23Hz. Impedance: 8 ohms. FR: 20-1000Hz. Price: £16.50 (plus VAT).



*Jordan-Watts speaker drive module*



*Peerless MT 225 HFC*



*Keith Monks Hypertone*

#### **B200 SP1014**

8½in dia × 4in. 3½lb. HC: 25W. Resonance: 25Hz. Impedance: 8 ohms. FR: 25-2300Hz. Price: £8.85 (plus VAT).

#### **B110 SP1003**

5½ dia × 3½in. 3.6lb. HC: 20W. Resonance: 30Hz. Impedance: 8 ohms. FR: 55-5000Hz. Price: £7.55 (plus VAT).

#### **T27 SP1032**

4½in dia × 1½in. 1.4lb. HC: 8W. Resonance: 900Hz. Impedance: 8 ohms. FR: 3500-40,000Hz. Price: £5.50 (plus VAT).

See also entry in Constructional Kits section and Speaker Accessories section.

#### ■ **KEITH MONKS**

Keith Monks Audio Ltd,  
26-28 Reading Road South, Fleet, near  
Aldershot, Hants. Tel: Fleet 7316

#### **Hypertone ★**

Titanium cone speaker module. 6in titanium piston with cantilever suspension. 1½in dia voice coil. Total flux: 160,000 maxwells. Mean

hemispherical power response substantially level to 15kHz. vci: 8 or 15 ohms at 400Hz. HC: 15W RMS at and above the lower system limit (dependent upon loading conditions), 30W music rating, i.e. under normal use. Price: £21.45 (plus VAT).

#### ■ **PEERLESS**

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

**All units are 8 ohms impedance**

#### **MT 20 HFC**

Cone tweeter. 51 × 51mm. HC (System Max.): 50W. FR: 3000-18,000Hz. Impedance: 8 ohms. Price: £2.74 (plus VAT).

#### **MT 225 HFC ★**

Cone tweeter. 58 × 58mm. HC (System Max.): 50W. FR: 1500-20,000 Hz. Impedance: 8 ohms. Price: £2.85 (plus VAT).

#### **MT 25 HFC**

Cone tweeter. 68 × 68mm. HC (System Max.): 50W. FR: 2000-18,000Hz. Impedance: 8 ohms. Price: £2.85 (plus VAT).

#### **DT 10 HFC**

Dome tweeter. 75 × 115mm. HC (System Max.): 50W. Cone resonance: 1000 Hz. FR: 1500-20,000Hz. Impedance: 8 ohms. Price: £8.54 (plus VAT).

#### **KO 10 DT ★**

Dome tweeter. 80 × 115mm. HC (System Max.): 50W. Cone resonance: 230 Hz. Rec. FR: 500-5000Hz. Impedance: 8 ohms. Price: £9.77 (plus VAT).



★ Indicates entry is illustrated



Peerless KO 10 DT



Peerless KO 40 MRF

#### KO 10 DT

Dome tweeter. 80 × 115mm. HC (System Max.): 50W. Cone resonance: 1000Hz. FR: 1500-20,000Hz. Impedance: 8 ohms. Price: £7.09 (plus VAT).

#### KO 40 MRF ★

Enclosed Midrange. 122 × 122 × 110mm. deep. HC (System Max.): 50W. Cone resonance: 230Hz. Rec. FR: 500-5000Hz. Impedance: 8 ohms. Price: £9.77 (plus VAT).

#### KO 65 WG

Woofers, rubber roll surround. 165mm. diam × 84mm. deep. HC: 20W. Cone resonance: 35Hz. Upper freq. limit: 4000Hz. Impedance: 8 ohms. Price: £8.14 (plus VAT).

#### L 825 WG

Woofers, rubber roll surround. 210mm. diam × 108mm. deep. HC: 50W. Cone resonance: 25Hz. Upper freq. limit: 2500 Hz. Impedance: 8 ohms. Price: £11.44 (plus VAT).

#### L 100 WG

Woofers, rubber roll surround. Impedance: 8 ohms. 250mm diam × 127mm deep. HC: 50W.

Cone resonance: 20Hz. Upper freq limit: 2500 Hz. Price: £12.23 (plus VAT).

#### ■ RADFORD

Radford, Ashton Vale Road, Bristol BS3 2HZ. Tel: Bristol 662301.

#### TD3

Dome pressure-type high frequency unit. 1in diameter. Impedance: 4 or 8 ohms. HC: up to 50W system with correct network. FR: 4kHz-20kHz. Crossover: 4.2kHz. Price: £7.50 (plus VAT).

#### MD9/OB/8

Open back mid-range unit. 3in diameter. Paper cone. Plastic surround. Copper voice coil. Impedance: 8 ohms. HC: up to 50W system with correct network. FR: 500Hz-5kHz. Crossover: 500Hz and 4.2kHz. Price: £10 (plus VAT).

#### MD9/CB/4 ohms MD0/CB/8

Closed back mid range unit with high flux density magnet. 3in diameter. Paper cone. Plastic surround. Copper voice coil. Impedance: 4 ohms. HC: up to 50W system with correct network. FR: 500Hz-5kHz. Crossover: 500Hz and 4.2kHz. Price: £10 (plus VAT).

#### BD25/8BD/25/4

Bass driver. 12in diameter. Plastic cone and surround. Copper voice coil. Impedance: 4 or 8 ohms. HC: 50W RMS. FR: 20Hz-1kHz. Crossover: 500Hz. Price: £16 (plus VAT).

#### FN11

Three-way 17 element crossover network. Impedance: 8 ohms in four types to match various drive unit combinations. HC: 100W. FR: 25Hz-25kHz. Crossover frequencies: 500Hz and 4.2kHz. Price: £10 (plus VAT).

#### ■ ROLA-CELESTION

See Celestion.

#### ■ WOOLLETT AUDIOSTATIC

Anerley Station Road, London SE20 8PY. Tel: 01-699 5296.

#### 12in Type 1

Low resonance 12in dynamic unit. Paper cone with foam surround. HC: 20W RMS. FR: 20Hz-5kHz. Special unit for use with Woollett electrostatic treble speakers. Price: £19.80 (plus VAT).

#### Type C

Constant charge push/pull electrostatic. Impedance: 16 ohms. HC: 20W RMS. FR: 1.6 kHz-20kHz. Integral crossover. Attenuator, mains polariser. Rear sealed for mounting in bass cabinet behind horizontal 9 × 6½in aperture. Price: £32.25 (plus VAT).

# ATCS

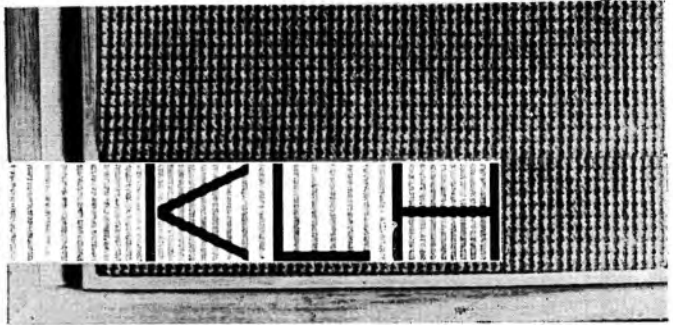
Acoustic Transducer Co. Ltd  
(Acoustic engineers)



For the  
ultimate  
high quality,  
high power  
professional  
loud-speaker  
drive units

Pier House Laundry, Strand on the Green, Chiswick,  
London W4, Great Britain, Tel: 01-995 3654.

KLH  
The new CBS recording of Schoenberg's massive "Gurre-lieder", winner of the French Grand Prix du Disque, involved musical forces of 500 singers and players of the BBC Symphony Orchestra and Chorus, conducted by Pierre Boulez. To capture the detail as well as the magnitude of such a recording, producer Paul Myers selected, as always, KLH speakers for the recording sessions. The complexities of such a task have again called for the finest assembly of men and technology. When only the best will do, KLH loudspeakers are the natural choice.



## The Natural Choice

The new CBS recording of Schoenberg's massive "Gurre-lieder", winner of the French Grand Prix du Disque, involved musical forces of 500 singers and players of the BBC Symphony Orchestra and Chorus, conducted by Pierre Boulez. To capture the detail as well as the magnitude of such a recording, producer Paul Myers selected, as always, KLH speakers for the recording sessions.

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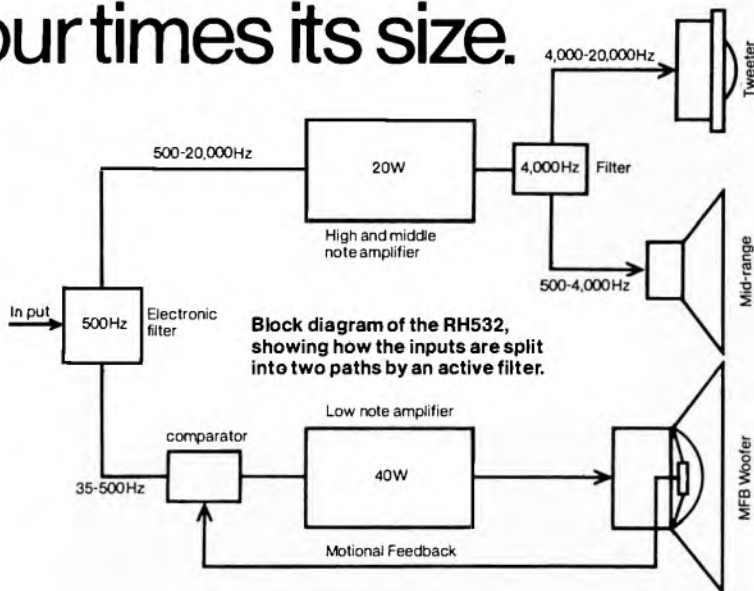
When only the best will do, KLH loudspeakers are the natural choice.

Webland International Mirabel House 117-121 Wandsworth Bridge Road London SW6



Webland  
International

# Philips invent a loudspeaker enclosure that beats others four times its size.



**Philips RH532 'Motional Feedback' enclosure. The first bookshelf speaker with true bass response. Beats bulky floor-standing speakers four times its size. And upgrades the output of your system to 60 watts RMS per enclosure.**

**Result:** Astonishingly faithful reproduction of all frequencies from 35 Hz to 20,000 Hz, with bass response in true proportion to the rest of the tonal range. Yet the enclosure measures only 15" x 11 1/4" x 8 1/2" (378 x 283 x 220 mm) - and total volume is only 15 litres.

## What is 'Motional Feedback'?



Low notes have always been a problem for loudspeakers, since large amounts of electrical power have to be translated into air pressure variations. The speaker cone can easily go wrong - especially in enclosures compact enough for domestic rooms.

Philips Motional Feedback system solves the problem - by actually making the cone correct itself.

As a ceramic sensing device on the cone vibrates, an electrical signal is generated. This is fed back and compared with the signal that made the cone vibrate in the first place. If there's any difference, corrective action is instantly taken.

In the RH 532 enclosure, you get not only a Motional Feedback woofer for virtually distortion-free bass response, but also excellent transient response from tweeter and mid-range units.

## Power amplifiers built-in

For Motional Feedback, power amplifiers have to be built into the enclosure.

So, in a separate compartment the RH532 has a 40 watt amplifier for the woofer and a 20 watt amplifier for the other two speakers. A total of 60 watts RMS per enclosure!

A separate amplifier is therefore unnecessary. All you really need is a pre-amp and control unit! And you can even link speakers together - for mono, stereo or quad in 15 different rooms!

The RH532 gives Philips a world lead in Hi-Fi sound. For full details, write to Philips Electrical Limited, Dept. SP, Century House, Shaftesbury Avenue, London WC2H 8AS.

# PHILIPS

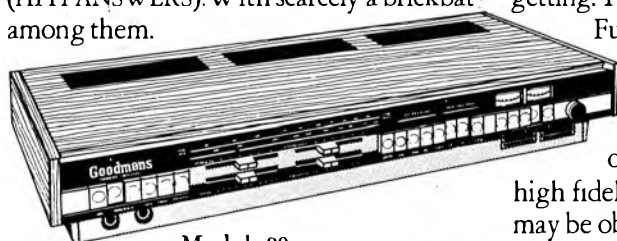
Simply years ahead.



# What a reception.

It seems every time we at Goodmans launch a new tuner amplifier model the painstaking research and engineering that goes into it is amply rewarded. To date we've heard nothing but praise.

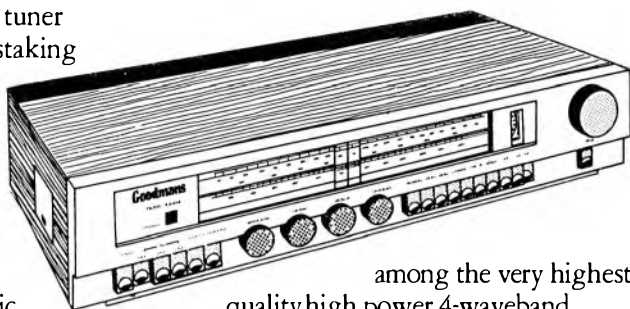
Unsolicited testimonials from not easily satisfied hi-fi enthusiasts have followed enthusiastic press reviews by Gordon J. King (HI-FI NEWS AND RECORD REVIEW) and from "Recommended Systems" (HI-FI ANSWERS). With scarcely a brickbat among them.



Module 90

The slim, functional and reliable Module 90 offers outstanding value for money—even at today's prices. The really impressive and sophisticated One Ten and latest 120 version are

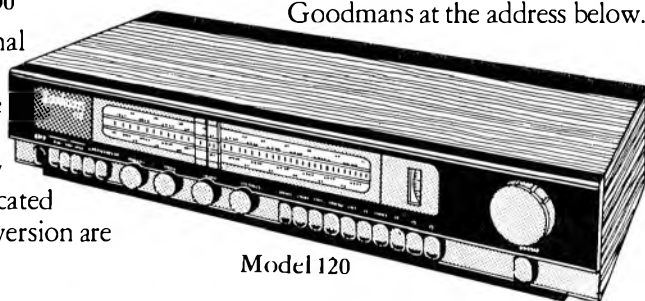
Model One Ten



among the very highest quality high power 4-waveband receivers to be found.

But don't listen to us. Listen to the reception they got...and are still getting. Then go and listen to them.

Full details of the reviews and specifications for Goodman's Module 90, Model One Ten and 120—or any of our wide range of high fidelity loudspeaker systems may be obtained by writing to Goodman's at the address below.



Model 120

## Goodmans

Goodmans Loudspeakers Ltd., Downley Road, Havant, Hants. PO9 2NL.

# Speaker Enclosures

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 27.

## ■ ACOUSTICAL MANUFACTURING

See Quad.

## ■ ADASTRA

Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU. Tel: 01-452 6288.

### L100/K.1425 Global Speakers

Infinite baffle enclosure. FR: 100Hz-20kHz  $\pm 3$ dB. vci: 8 ohms. HC: 8 ohms. Size:  $5\frac{1}{2} \times 5\frac{1}{4} \times 4\frac{1}{2}$ in. One drive unit. Finish: globe speaker available in black, white, red or green. Price: £6.60 (plus VAT).

### B2/"Sonata"

Speaker enclosure without units. Removable sub-baffle suitable for all speakers up to  $10 \times 6$ in, plus tweeter. Finish: straight grained teak with contrasting front edges and matching grille material. Size:  $16 \times 8 \times 6$ in. Price: (per pair) approximately £12.20 (plus VAT).

### B1/"La Scala"

Speaker enclosure without units. Removable sub-baffle suitable for all speakers up to  $13 \times 8$ in, plus tweeter. Finish: polished grained teak with satinwood surround, black/grey flecked Vynair grille. Size:  $14 \times 21 \times 8\frac{1}{2}$ in. Price: (each) approximately £10.50 (plus VAT).

### L.108 System 3

3 reproducer system able to handle 20W. FR: 40-20,000Hz. 8in bass woofer, 5in mid-range and  $2\frac{1}{2}$ in HF unit fitted into glass wool lined cabinet finished in oiled walnut with black Lurex shot front. Size:  $250 \times 480 \times 255$ mm. Price: £24.75 (plus VAT).

## ■ RICHARD ALLAN

Richard Allan Ltd, Bradford Road, Gomersal, Cleckheaton. West Yorkshire BD19 4AZ. Tel: Cleckheaton 2442.

## Minette series II

Infinite baffle bookshelf enclosure. 5in bass unit, 4in tweeter. FR: 50Hz-17kHz. HC: 10W. Size:  $11\frac{1}{2} \times 7 \times 6\frac{1}{2}$ in. Weight: 11lb. Price: £16.80 (plus VAT).

## Chaconne series II

Full range two-way system comprising 8in bass unit and 4in tweeter. FR: 45Hz-17kHz. HC: 12W. Size:  $20 \times 12 \times 8\frac{1}{2}$ in. Weight: 21lb. Price: £20.70 (plus VAT).

## Flamenco series II

Full range three-way system. One 8in bass driver, one 5in mid-range unit, one 4in tweeter. FR: 40Hz-17kHz. HC: 15W. Size:  $20 \times 12 \times 8\frac{1}{2}$ in. Weight: 21lb. Price: £29.90 (plus VAT).

## Pavane series II

Full range three-way system comprising 12in bass driver, 8in mid-range unit and 4in tweeter. FR: 30Hz-17kHz. HC: 20W. Size:  $27 \times 15\frac{1}{2} \times 12$ in. Weight: 39lb. Price: £42.75 (plus VAT).

## RA8

Compact enclosure designed to fit on bookshelves and room dividers. Impedance: 8 ohms. FR: 50Hz-20kHz. Crossover: 3.5kHz. Handling capacity: 20W. Finish: teak or walnut. Size:  $395 \times 266 \times 247$ mm. Price: £56 per pair (plus VAT).

## RA82

Large bookshelf speaker to give improved bass response, also suitable for floor standing. FR: 50Hz-20kHz  $\pm 3$ dB. Crossover: 3.5kHz. Handling capacity: 45W. Size:  $546 \times 278 \times 247$ mm. Price: £90 per pair (plus VAT).

## RA82L

Floor standing constricted labyrinth enclosure. Electrically the same as RA82. FR: 40Hz-20kHz  $\pm 3$ dB. Size:  $724 \times 345 \times 292$ mm. Finish: teak or walnut. Price: £110 per pair (plus VAT).

## RA828LP

Floor standing labyrinth enclosure. Crossover frequencies: 250Hz, 3.5kHz. Handling capacity: 45W. Size:  $749 \times 381 \times 292$ mm. Finish: teak or walnut. Price: to be announced.

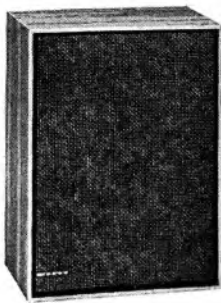
## Richard Allan Kits

See Constructional Kits section for details of Twin Assembly, Triple-8 Assembly, Triple-12 Assembly and Super-12 Assembly speaker kits.

## ■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4937.

★ Indicates entry is illustrated



Alpha HT17 Mk II



Amstrad Acoustra 2500

### HT7 Mk II

Infinite baffle enclosure with units and crossover. One 8in bass driver, one 2½in tweeter. Crossover: 3.5kHz. FR: 40Hz-18kHz. HC: 20W. Impedance: 8 ohms. Finish: teak. Size: 17½ × 11½ × 6¼in. Weight: 15lb. Price: £21 (plus VAT).

### HT16

Infinite baffle enclosure with unit, 8¼in full-range dual-cone driver. FR: 50Hz-18kHz. HC: 10W. Impedance: 4 or 8 ohms. Finish: teak. Size: 15½ × 11 × 7in. Price: £11 (plus VAT).

### HT17 Mk II ★

Infinite baffle enclosure with units and crossover. 7 × 5in bass driver, two 2½in tweeters. Crossover: 3.5kHz. FR: 60Hz-18kHz. HC: 10W. Impedance: 8 ohms. Finish: teak or walnut. Size: 13 × 10 × 4½in. Weight: 7lb. Price: £15 (plus VAT).

### HT20 Mk II

Infinite baffle enclosure with units, 8¼in bass driver, 5in mid-range unit, 2½in tweeter. Crossovers: 750Hz, 4kHz. FR: 40Hz-20kHz. HC: 20W. Impedance: 8 ohms. Finish: teak or

walnut. Size: 17½ × 11½ × 9¼in. Weight: 18lb. Price: £29 (plus VAT).

### HT30

Infinite baffle enclosure with units and crossover. One 8in bass driver, one 2½in tweeter. Crossover: 3.5kHz. FR: 50Hz-20kHz. HC: 15W. Impedance: 8 ohms. Finish: teak or walnut. Size: 14¼ × 9¾ × 5¾in. Price: £16.50 (plus VAT).

### HT50

Infinite baffle loudspeaker. Impedance: 8 ohms. Power handling 25W RMS. Two drivers. Crossover frequency: 3kHz. Size: 14¼ × 10 × 8in. Weight: 12lb. Finish: teak. Price: £18 (plus VAT).

### HT60

Infinite baffle loudspeaker. Impedance: 8 ohms. Power handling: 60W. Four drivers. Crossover frequency: 300Hz. Size: 24¼ × 14¼ × 11¼in. Finish: teak. Price: £49 (plus VAT).

## ■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road, London, E8. Tel: 01-249 5237.

### Acoustra 1500

Infinite baffle enclosure with units. One 6½in long-throw bass driver, one 3½in tweeter. Crossover: four-element unit 1.2kHz. FR: 45Hz-17kHz. HC: 15W. Impedance: 8 ohms. Size: 14½ × 10¼ × 8¾in. Weight: 15lb. Finish: teak cabinet with black front and silver trim. Special vacuum formed front panel. Price: £45.40 per pair (plus VAT).

### Acoustra 2500 ★

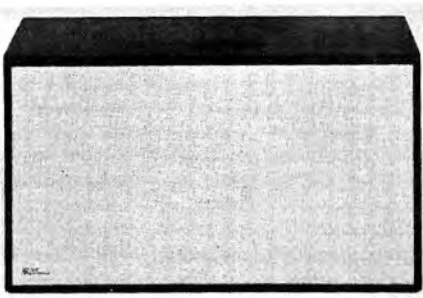
Infinite baffle enclosure with units. One 8in long-throw bass driver, one 3½in tweeter. Crossover: four-element unit 1.2kHz. FR: 35Hz-17kHz. HC: 25W. Impedance: 8 ohms. Size: 19¼ × 10¼ × 9½in. Weight: 20lb. Finish: teak cabinet with silver trim. Special front panel design. Price: £56.70 (plus VAT).

## ■ AR

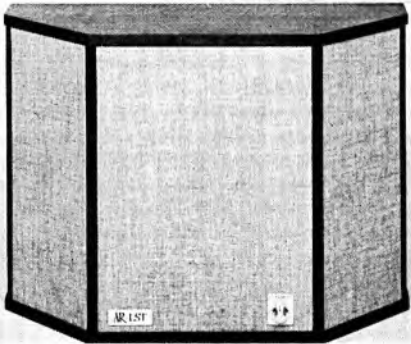
Acoustic Research International, High Street, Houghton Regis, Dunstable, Beds LU5 5QJ. Tel: Dunstable 603151.

### AR-2ax ★

Infinite baffle enclosure with units and crossover. One 10in bass driver, one 3½in mid-range unit, one ¾in tweeter. Crossovers: 1.5kHz, 5kHz. FR: 30Hz-20kHz (45Hz-20kHz ±3dB). HC: for use with amplifiers up to 100W per channel. Impedance: 8 ohms. Mid-range and treble attenuators on rear of unit. Size: 13½ × 24 × 11½in. Weight: 36½lb. Finish: teak



AR-2ax



AR-LST

or walnut. Five-year guarantee. Price: £66.50 (plus VAT).

**AR-3a/Improved**

Acoustic suspension enclosure with units and crossover. One 12in bass driver, one 1½in mid-range unit, one ¾in tweeter. Crossovers: 600Hz, 5kHz. FR: 20Hz-20kHz. HC: for use with amplifiers up to 100W per channel. Impedance: 4 ohms. Size: 14 × 25 × 11½in. Weight: 53lb. Switched compensation for room acoustics. Finish: teak or walnut. Five-year guarantee. Price: £114 (plus VAT).

**AR-4xa**

Infinite baffle enclosure with units and crossover. One 8in bass driver, one 1½in cone tweeter. Crossover: 1.5Hz. FR: 30Hz-20kHz (45Hz-20kHz±5dB). HC: for use with amplifier up to 100W per channel. Impedance: 8 ohms. Adjustment provided for treble. Size: 10 × 19 × 9in. Weight: 18½lb. Finish: teak or walnut. Five year guarantee. Price: £38.50 (plus VAT).

**AR-5 ★**

Acoustic suspension enclosure with units and crossovers. One 10in bass driver, one 1½in

hemispherical dome mid-range unit, one ¾in hemispherical dome tweeter. Crossovers: 600Hz, 5kHz. FR: 30Hz-20kHz (45Hz-20kHz -3dB). HC: for use with amplifiers up to 100W per channel. Impedance: 8 ohms. Separate adjustments on rear of cabinet for treble/mid-range drivers. Size 13½ × 24 × 11½in. Weight: 39lb. Finish: teak or walnut. Five year guarantee. Price: £86 (plus VAT).

**AR-6**

Acoustic suspension enclosure with units and crossover. One 8in bass driver, one 1½in tweeter. Crossover: 1-5kHz. FR: 25Hz-25kHz (35Hz-20kHz±5dB). HC: for use with amplifier up to 100W per channel. Impedance: 8 ohms. Treble adjustment on rear of cabinet. Size: 19½ × 12 × 7in. Finish: teak or walnut. Weight: 20lb. Five-year guarantee. Price: £45 (plus VAT).

**AR-7**

Acoustic suspension enclosure with units and crossover. One 8in bass driver, one 1½in tweeter. Crossover: 2kHz. FR: 30Hz-30kHz. HC: for use with amplifiers up to 100W per channel. Impedance: 8 ohms. Independent tweeter control. Size: 15½ × 9½ × 6½in. Weight: 11lb. Finish: teak or walnut. Five-year guarantee. Price: £30.75 (plus VAT).

**AR-LST ★**

Acoustic suspension enclosure with units and crossover. One 12in bass driver, four 1½in hemispherical dome mid-range units, four ¾in hemispherical dome tweeters. FR: choice of six energy output characteristics (spectral energy profiles) by means of a switch mounted on front of cabinet. Crossovers: 525Hz, 5kHz. Impedance: 4-16 ohms, depending on switch position. HC: details on request. Size: 27½ × 20 × 9½in. Weight: 90lb. Five-year guarantee. Price: £227 (plus VAT).

**AR-10TT**

Drive units: 12in acoustic suspension woofer, 1½in mid-range hemispherical dome, ¾in high-frequency hemispherical dome. Crossover: 525Hz and 5kHz. Impedance: 4-16 ohms nominal. Amplifier: up to 150W per channel. Fundamental driver resonance: woofer 18Hz, mid-range 400Hz, tweeter 2kHz. System resonance frequency: 42Hz. Flux density: woofer 9,800 gauss, mid-range 13,000 gauss, tweeter 18,000 gauss. Size: 356 × 636 × 279mm. Weight: 25kg. Price: £165 each (plus VAT).

**■ AUDIO SERVICES LTD**

82 East Barnet Road, New Barnet, Herts.  
Tel: 01-449 6605

**Dynastatic ASI**

Reflex enclosure with units and crossover. Two



★ Indicates entry is illustrated

6½in base units, one electrostatic mid-range and high-frequency unit. Crossover: 1kHz ½-section. FR: 35Hz-20kHz. HC: 30W. Impedance: 8 ohms. Size: 27 × 17 × 11in. Weight: 60lb. Finish: teak or walnut. Feature: arcuated electrostatic unit. Price: £65 each (plus VAT).

#### **Dynastatic AS2**

Reflex enclosure with units and crossover. Two 6½in moving coil bass units, one electrostatic mid-range high-frequency unit. Crossover: 1kHz. FR: 40Hz-20kHz. HC: 30W. Impedance: 8 ohms. Size: 26 × 15 × 11in. Weight: 45lb. Finish: teak or walnut. Price: £59 each (plus VAT).

#### **Dynastatic AS100**

Reflex enclosure with units and crossover. Three 6½in bass units, one electrostatic mid-range and high-frequency unit. Crossover: 600Hz ½-section. FR: 35Hz-20kHz. HC: 35W. Impedance: 8 ohms. Size: 33 × 17 × 11in. Weight: 75lb. Finish: teak or walnut. Feature: arcuated electrostatic unit. Price: £110 each (plus VAT).

#### ■ **BEOVOX**

Bang & Olufsen (UK) Ltd, Eastbrook Road, Gloucester GL4 7DE. Tel: Gloucester 21591.

#### **Beovox 1702**

Pressure chamber enclosure with units and crossover. One 6in bass driver, one 1in dome tweeter. Crossover: 5kHz. FR: 50Hz-20kHz. HC: 20W. Impedance: 4 ohms. Spec exceeds DIN 45 500. Size: 13¼ × 7½ × 7½in. Weight: 8½lb. Finish: teak or rosewood. Sold in matched pairs. Price: (per pair) in teak £65.90; in rosewood £68.90 (including VAT).

#### **Beovox 2702**

Pressure chamber enclosure with units and crossover. One 7in bass driver, one 1in tweeter. Crossover: 3kHz. FR: 45Hz-20kHz. HC: 25W. Impedance: 4 ohms. Spec exceeds DIN 45 500. Size: 16¼ × 8½ × 8½in. Weight: 12lb 2oz. Finish: teak, rosewood or white. Sold in matched pairs. Price: (per pair) in teak £85; (rosewood or white) £89 (including VAT).

#### **Beovox 3702**

Pressure chamber enclosure with units and crossover. One 8in bass driver, one 3.75in mid-range unit and one 1.5in tweeter. Crossover: 800Hz and 5kHz. FR: 40Hz-20kHz. HC: 40W. Impedance: 4 ohms. Spec exceeds DIN 45 500. Size: 19¼ × 9½ × 9½in. Weight: 18½lb. Finish: teak, rosewood or white. Sold in matched pairs. Price: £112 (per pair) in teak; £119 (per pair) in rosewood or white (including VAT).

#### **Beovox 3800**

Pressure chamber enclosure with units and



*Beovox P50*

crossover. One 12in bass driver, one 3.5in mid-range unit. One 1.5in tweeter. Crossover: 800Hz and 5kHz. FR: 35Hz-20kHz. HC: 50W. Impedance: 4 ohms. Spec exceeds DIN 45 500. Size: 23 × 11½ × 11½in. Finish: teak or rosewood. Sold in matched pairs. Price: (per pair) in teak £145; in rosewood £153 (including VAT).

#### **Beovox 5700 Mk II**

Enclosure incorporating passive radiator, three driver units and crossover. One 10in bass driver, one 2½in mid-range unit, one ¾in tweeter, one 10in passive radiator. Crossover: 650Hz and 6kHz. FR: 25Hz-20kHz. HC: 60W. Impedance: 4-8 ohms. Spec exceeds DIN 45 500. Size: 26 × 14¼ × 11½in. Weight: 49½lb. Sold in matched pairs. Finish: teak or rosewood. Price: (per pair) in teak £255; £265 in rosewood (including VAT).

#### **Beovox P50 ★**

Pressure chamber sound panel for wall mounting with two 5in woofers, one 3½in mid-range dome and one 1in tweeter. Crossover: 2kHz. FR: ±4dB 70Hz-20kHz. HC: 50W. Impedance: 4 ohms. Size: 13¼ × 25½ × 5½in. Finish: rosewood or white. Sold in matched pairs. Price: (per pair) £159.50 (including VAT).

#### ■ **BIC VENTURI**

Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.

#### **Formula 1**

Reflex bass enclosure with 2 units, plastic cone

and roll surround. Bass driver diameter: 20cm. Nominal capacity: 50W. FR: 50Hz-18kHz. Size: 27.5 × 25.5 × 42cm. Weight: 20lb. Price: on application.

#### Formula 2

Reflex bass enclosure with 2 units, plastic cone and cloth surround. Bass driver diameter: 20cm. Nominal capacity: 75W RMS. FR: 40Hz-20kHz. Size: 30.5 × 29 × 50cm. Weight: 34½lb. Price: on application.

#### Formula 4

Reflex bass enclosure with 2 units, plastic cone and cloth surround. Bass driver diameter: 25.4cm. Nominal capacity: 100W. FR: 35Hz-20kHz. Size: 33.5 × 33 × 63.5cm. Weight: 48lb. Price: on application.

#### Formula 6

Reflex bass enclosure with 5 units, plastic cone and cloth surround. Bass driver diameter: 27.8cm. Nominal capacity: 125W RMS. FR: 30Hz-20kHz. Size: 40 × 37.5 × 66.7cm. Weight: 64lb. Price: on application.

#### ■ BUSH NELSON

Bush Nelson Ltd, Bush House,  
6 Yattendon Road, Horley, Surrey RH6 7BS.  
Tel: Horley 5983.

#### 12/8

Pressure chamber system. One 13 × 8in bass unit, one 3in tweeter. Impedance: 8 ohms. FR: 20Hz-20kHz. Power capacity: 20W. Flux density: bass unit 11,000 gauss. HF unit 10,000 gauss. Bass resonance: 20-30Hz. Crossover frequency: 5kHz. Finish: teak. Size 23 × 12 × 11in. Price: £65 (plus VAT).

#### ■ B & W

B & W Electronics, Meadow Road,  
Worthing, Sussex BN13 1QA.  
Tel: Worthing 205611.

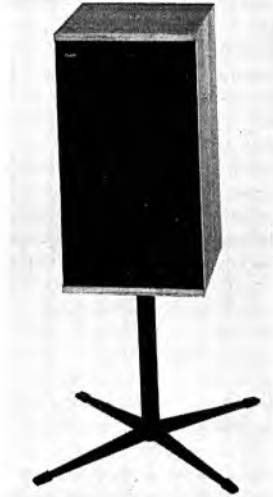
#### DM2A ★

Eight-wave acoustic line bass enclosure with units and crossover. One 8in bass driver with Bextrene cone, one HF1300 mid-HF unit, one ½in low mass plastic dome tweeter. Crossover: 3kHz. FR: 30Hz-25kHz (±4dB 60Hz-20kHz). Impedance: 8 ohms at 400Hz. Size: 14 × 25½ × 13¾in. Weight: 52lb. Finish: teak, rosewood, satin white or walnut. Every model individually pen tested and calibration certificate supplied. Price: teak, satin white or walnut £78.12 each (plus VAT); rosewood £82.14 each (plus VAT).

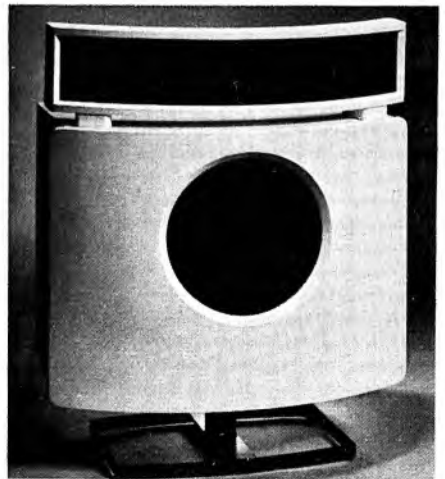
#### DM70 Improved ★

Infinite baffle and electrostatic speaker system. One nominal 13in diameter DW 13/70 Bextrene coned bass unit with 2in voice coil operating via

level-controlling transformer; one free-standing electrostatic unit. 702 electrostatic unit with 11 elements on curved frame giving wide dispersion; fully protected against voltage and current overload. HC: suitable for high quality amplifiers with outputs of 25-100W RMS. FR: 30Hz-25kHz (±4dB 60Hz-15kHz). System resonance: 40Hz. Size: 32¼ × 26¼ × 15¼in, supplied with stand. Weight: 100lb. Finish: satin white or walnut. Price: £223.19 each (plus VAT).



B & W DM2A

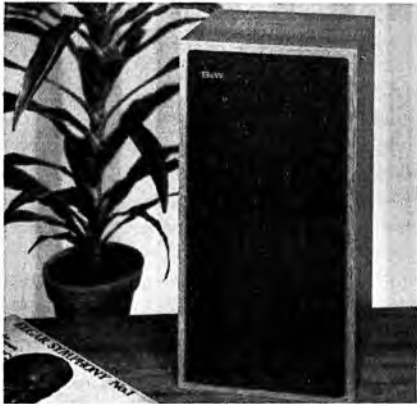


B & W DM70 Improved

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B & W DM4



B & W D5

#### DM4 ★

Three-unit monitor speaker system suitable for bookshelf or wall mounting. One DW200/4 bass/mid-range driver with Bextrene cone, one Celestion HF1300 upper mid-frequency unit. One 3/4in low-mass plastic dome tweeter. FR: 30Hz-25kHz ( $\pm 5$ dB 80Hz-20kHz). HC: 30W. Impedance: 8 ohms at 400Hz. Size: 21 × 10 × 10in. Weight: 24lb 6oz. Finish: teak, rosewood, satin white or walnut. Every model individually tested and calibration certificate supplied. Price: teak, satin white or walnut £55.68 each (plus VAT); rosewood £58.22 each (plus VAT).

#### D5 ★

Two-unit bookshelf speaker system. One

DW150/5 bass/mid-range driver with Bextrene cone, one 1in upper mid-frequency and HF unit. FR: 40Hz-25kHz ( $\pm 5$ dB 80Hz-20kHz). HC: 25W. Impedance: 8 ohms at 400Hz. Size: 18 × 9 × 7in. Weight: 14lb. Finish: teak, rosewood, satin white and walnut. Every model individually pen tested and calibration certificate supplied. Price: teak, satin white or walnut £33.70 (plus VAT); rosewood £36.20 (plus VAT).

#### ■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, Lamb House,  
Church Street, London W4 2PB.  
Tel: 01-995 4551.

#### R50

High quality transmission line enclosure with units and crossover. Bass driver in damped tapered labyrinth. HF driver in damped tapered labyrinth. Two HF pressure drivers. FR: 25Hz-25kHz. Crossover: 400Hz, 3kHz, 10kHz. HC: 25W RMS, 50W music. Impedance: 8 ohms (nominal). Size: 4½ × 17½ × 13in. Weight: 98lb. Finish: teak. Price: on application.

#### R40 II

High quality enclosure incorporating three drive units in a damped tapered labyrinth. HC: 25W, 40W music. Impedance: 8 ohms (nominal). Crossover: 400Hz, 3kHz. Size: 3¼ × 13 × 12½in. Weight: 52lb. Finish: teak. Price: on application.

#### ■ C.A.S.

City Audio Services Ltd,  
144 Lavender Hill, London SW11 5RA.  
Tel: 01-223 2496.

#### CA/15

Infinite baffle enclosure with units and crossover. One 13 × 8in bass driver, two 2½in mid-range and HF units. Crossover: half-section 8.5kHz. FR: 50Hz-14kHz. HC: 10W. Impedance: 8 ohms. Size: 18½ × 11½ × 8in. Weight: 14lb. Finish: teak. Price: £18.50 (plus VAT).

#### Super 30

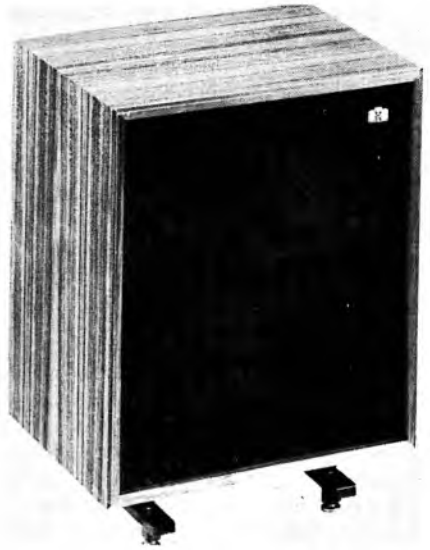
Infinite baffle enclosure with units and crossover. One 8in long-throw bass driver with rubber cone suspension, one 3½in mid-range unit, one 2in tweeter. Crossover: L/C at over 4.5kHz. FR: 40Hz-19kHz. HC: 20W. Impedance: 8 ohms. Size: 18½ × 11½ × 8in. Weight: 16lb. Finish: teak. Price: £27.25 (plus VAT).

#### D25

Infinite baffle enclosure. FR: 55Hz-14kHz. Impedance: 8 ohms. HC: 20W. Three drivers. Size: 18½ × 11½ × 8in. Weight: 28lb. Finish: teak. Price: £19.40 (plus VAT).



C A S. M60



Castle Howard



Castle Conway

**M60 ★**

ABR enclosure. FR: 35Hz-22kHz. Impedance: 8 ohms. HC: 20W. Four drivers. Dome tweeter. Size: 22 × 12 × 8in. Weight: 40lb. Finish: walnut. Price: £43.75 (plus VAT).

**CASTLE**

Castle Acoustics Ltd, Park Mill, Shortbank Road, Skipton, Yorks. Tel: Skipton 5333.

**Conway ★**

Three-speaker, three-way system for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 50W (DIN 45 500). Crossover frequencies: 800Hz and 4kHz. Low frequency cut-off: -3dB at 45Hz. Size: 25 × 14 × 14in. Finish: teak, walnut or mahogany. Price: teak £130 per pair (plus VAT); walnut

£137 per pair (plus VAT); mahogany £155 per pair (plus VAT).

**Howard ★**

Five-speaker, three-way system for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 50W (DIN 45 500). Crossover frequencies: 800Hz and 4kHz. Low-frequency cut-off: -3dB at 40Hz. Size: 26 × 19 × 15in. Finish: teak walnut or mahogany. Price: teak £165 per pair (plus VAT); walnut £175 per pair (plus VAT); mahogany £202 per pair (plus VAT).

**Richmond**

Reflex loaded, diaphragm bass and mid-range unit for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 25W (DIN 45 500). Crossover frequency: 3.5kHz. Low frequency cut-off: -3dB at 55Hz. Size: 16½ × 9 × 9½in. Weight: 18½lb. Finish: teak or walnut. Price: £62 per pair (plus VAT).

**CELEF**

Celef Audio, 130 Thirsk Road, Boreham Wood, Herts. Tel: 01-207 1150.

**Celef Professional**

Phase inverter with symmetrical flow paths. Impedance: 8 ohms. FR: 50Hz-20kHz ± 2dB. 3 drivers. Crossover frequencies: 500Hz and 4kHz. Distortion: less than 1% for 96dB SPL. Size: 27 × 13 × 15in. Weight: 65lb. Finish: teak, walnut or white. Price: on application.

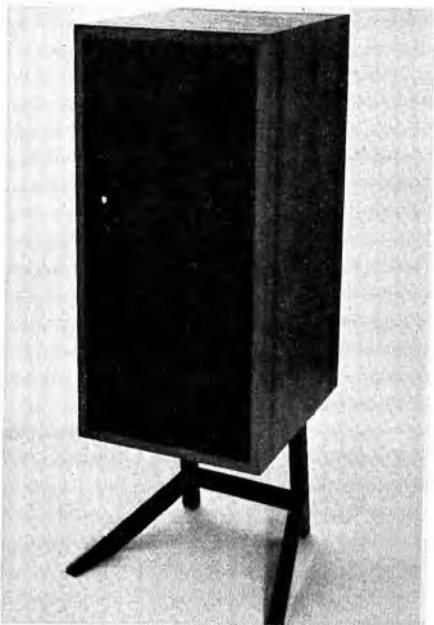
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### CelefMicro

Infinite baffle enclosure. FR: 100Hz-20kHz  $\pm 2$ dB. Impedance: 8 ohms. Power handling capacity: 50W. 2 drivers. Distortion: less than 1% for 90dB SPL. Size: 12  $\times$  6 $\frac{1}{2}$   $\times$  9 $\frac{1}{2}$ in. Weight: 11 $\frac{1}{2}$ lb. Finish: teak, walnut or white. Price: on application.

### CelefMini Professional ★

Phase inverter with symmetrical flow paths.



Celef Mini Professional



Celef Mini (left) and Celef Monitor (right)

Impedance: 8 ohms. FR: 60Hz-20kHz  $\pm 2$ dB. Power handling capacity: 80W. 3 drivers. Distortion: less than 1% for 96dB SPL. Size: 25  $\times$  12  $\times$  13in. Weight: 50lb. Finish: teak, walnut or white. Price: on application.

### CelefMini ★

Resistively loaded reflex port. One 5in bass unit. FR: 90Hz-20kHz  $\pm 2$ dB. Impedance: 8 ohms. Power handling capacity: 50W. 2 drivers. Distortion: less than 1 $\frac{1}{2}$ % for 90dB SPL. Size: 16  $\times$  9 $\frac{1}{2}$   $\times$  8in. Weight: 13lb. Finish: teak, walnut or white. Price: on application.

### CelefMonitor ★

Resistively loaded reflex port. FR: 70Hz-20kHz  $\pm 2$ dB. Impedance: 8 ohms. Power handling capacity: 60W. 2 drivers. Distortion: less than 1% for 90dB SPL. Size: 20 $\frac{1}{2}$   $\times$  11  $\times$  9 $\frac{1}{2}$ in. Weight: 24lb. Finish: teak, walnut or white. Price: on application.

## ■ CELESTION

Rola-Celestion Ltd, Ditton Works,  
Foxhall Road, Ipswich, Suffolk IP3 8JP.  
Tel: Ipswich 73131.

### Ditton 15 ★

Compact infinite baffle enclosure. FR: 30Hz-15kHz, -12dB at 40Hz. Impedance: 4-8 ohms. Maximum continuous input: 30W (DIN). SPL: 3.8W for 96dB at 1m. Crossover frequency: 2.5kHz. THD: (at 96dB) 1.1% 100Hz, 0.9% 400Hz, 0.7% 1kHz, 0.9% 4kHz, 1.7% 10kHz. Weight: 7.6kg. Finish: teak or walnut. Size: 53  $\times$  24  $\times$  23cm. Price: £88 per pair (plus VAT).

### Ditton 44 ★

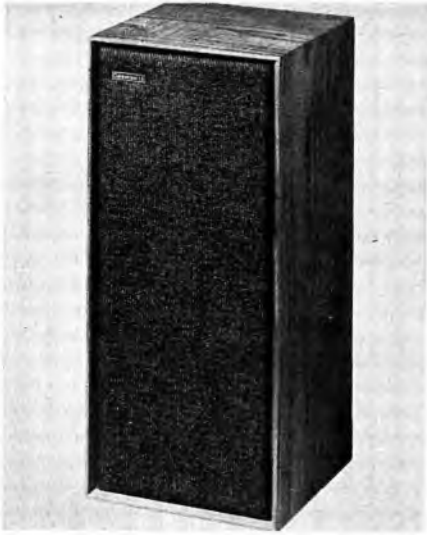
Floor-standing enclosure with units. One 12in bass driver, one 6in HF unit and HF2000 tweeter. FR: 30Hz-40kHz, -8dB at 40Hz. Impedance: 4-8 ohms. Max. continuous input: 44W (DIN). SPL: 5.5W for 96dB at 1m. Crossover frequencies: 500Hz and 5kHz. THD: (at 96dB) 0.8% 100Hz, 0.8% 400Hz, 0.8% 1kHz, 1.4% 4kHz, 1.1% 10kHz, 0.9% 15kHz. Weight: 20.4kg. Finish: teak or walnut. Size: 76  $\times$  37  $\times$  25cm. Price: £146 per pair (plus VAT).

### Ditton 25

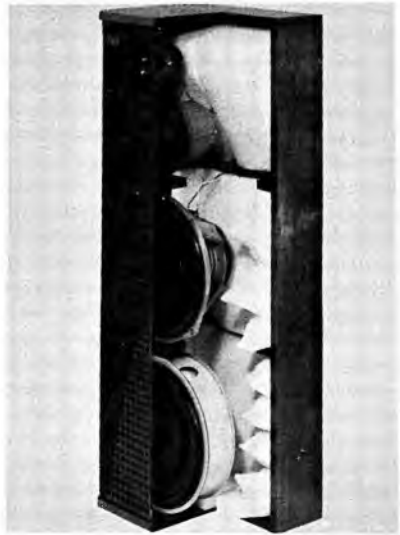
FR: 20Hz-40kHz, -6dB at 40Hz. Impedance: 4-8 ohms. Max. continuous input: 60W (DIN). SPL: 7W for 96dB at 1m. Crossover frequencies: 2kHz and 9kHz. THD: (at 96dB) 0.8% 100Hz, 0.7% 400Hz, 0.7% 1kHz, 1.0% 4kHz, 0.8% 10kHz, 0.9% 15kHz. Weight: 19kg. Finish: teak or walnut. Size: 81  $\times$  36  $\times$  28cm. Price: £176 per pair (plus VAT).

### Ditton 66 ★

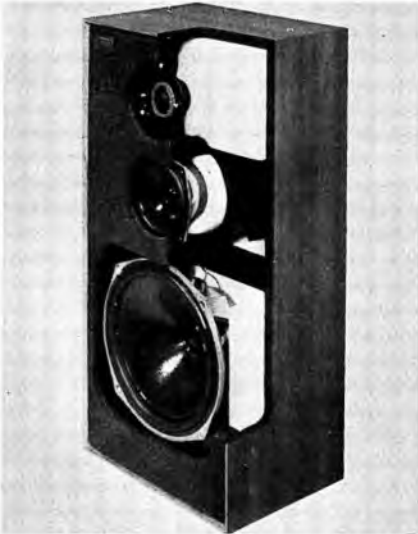
FR: 16Hz-40kHz, -4dB at 40Hz. Impedance: 4-8 ohms. Max. continuous input: 80W (DIN).



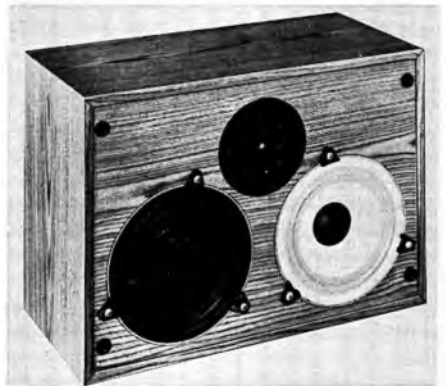
*Celestion Ditton 15*



*Celestion Ditton 66*



*Celestion Ditton 44*



*Celestion UL6*

SPL: 10W for 96dB at 1m. Crossover frequencies: 500Hz and 5kHz. THD: (at 96dB) 0.6% 100Hz; 0.6% 400Hz; 0.7% 1kHz; 0.7% 4kHz; 0.9% 10kHz; 1.1% 15kHz. Weight: 30kg. Finish: teak or walnut. Size: 100 × 38 × 29cm. Price: £226 per pair (plus VAT).

**Ditton 11**

New model. Provisional information only. Dimensions: 24 × 35 × 25cm. FR: 70Hz-25kHz. Max. continuous input: 20W (DIN). Further details and price to be announced.

**Ditton 22**

New model. Provisional information only. FR: 30Hz-25kHz. Max. continuous input: 30W (DIN). Further details and price to be announced.

**Ditton 55**

New model. Provisional information only. Dimensions: 80 × 35 × 30cm. FR: 25Hz-25kHz. Max. continuous input: 70W (DIN). Further details and price to be announced.

**Ditton 33**

No details available as this edition of the Year Book closed for press.

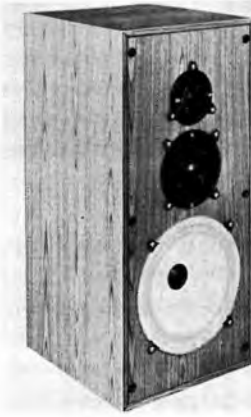
**UL6 ★**

Speaker enclosure with units. One pressure

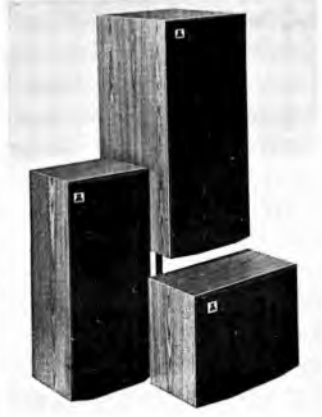
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Celestion UL8



Celestion UL10



Celestion UL6, UL8, UL10

dome tweeter HD1000, one 152mm dia. mid-bass unit, one 152mm dia. ABR. Power handling: 20W continuous RMS sine wave (40W peak). Sensitivity: 15.4V RMS pink noise input for 96dB at 1m. Crossover frequency: 2.5kHz. Frequency: 35Hz-28kHz. Response:  $\pm 3.5$ dB 80Hz-20kHz. Weight: 10.1kg. Size: 292mm high, 412mm wide, 222mm deep. Price: £86 per pair (plus VAT).

#### UL8 ★

Speaker enclosure with units. One pressure-dome tweeter HD1000, one 205mm dia. mid-bass unit, one 205mm dia. ABR. Power handling: 25W continuous RMS sine wave (50W peak). Sensitivity: 12V RMS pink noise input for 96dB at 1m. Crossover frequency: 2kHz. Frequency: 30Hz-28kHz. Response:  $\pm 3$ dB 70Hz-20kHz. Weight: 12.5kg. Size: 584mm high, 280mm wide, 235mm deep. Price: £108 per pair (plus VAT).

#### UL10 ★

Speaker enclosure with units. One HF2000 super tweeter, one MD700 pressure-dome mid-range unit, one 254mm bass drive unit. Power handling: 50W continuous RMS sine wave (100W peak). Sensitivity: 15.2V RMS pink noise input for 96dB at 1m. Crossover frequencies: 700Hz and 5kHz. Frequency: 20Hz-40kHz. Response:  $\pm 2$ dB 40Hz-20kHz. Weight: 23.5kg. Size: 673mm high, 317mm wide, 380mm deep. Price: £160 per pair (plus VAT).

#### ■ CERWIN VEGA

Cerwin Vega (UK), 281 Balmoral Drive, Hayes. Tel: 01-573 1566.

#### Model 24

Speaker enclosure with units and crossover. Maximum input power: 40W RMS (80W peak). FR: 38Hz-20kHz  $\pm 4$ dB. Dynamic range: 65dB. Crossover frequency: 2.5kHz. Dispersion: 100 degrees. Impedance: 4-8 ohms. Size: 12  $\times$  14  $\frac{1}{2}$   $\times$  25in. Finish: oiled walnut. Price: £79 each (plus VAT).

#### Model 26

Speaker enclosure with units and crossover. Maximum power input: 60W RMS (120W peak). FR: 38Hz-20kHz  $\pm 4$ dB. Dynamic range: 69dB. Crossover frequency: 2.5kHz. Dispersion: 100 degrees. Impedance: 4-8 ohms. Size: 12  $\times$  14  $\frac{1}{2}$   $\times$  25in. Finish: oiled walnut. Others special. Price: £88 each (plus VAT).

#### Model 211

Speaker enclosure with units and crossover. Maximum power input: 100W RMS (200W peak). FR: 32Hz-20kHz  $\pm 3.5$ dB. Dynamic range: 72dB. Crossover frequency: 2.5kHz. Dispersion: 100 degrees. Impedance: 4-8 ohms. Size: 15  $\frac{1}{2}$   $\times$  15  $\times$  26in. Finish: oiled walnut, other special. Price: £120 each (plus VAT).

#### Model 211R

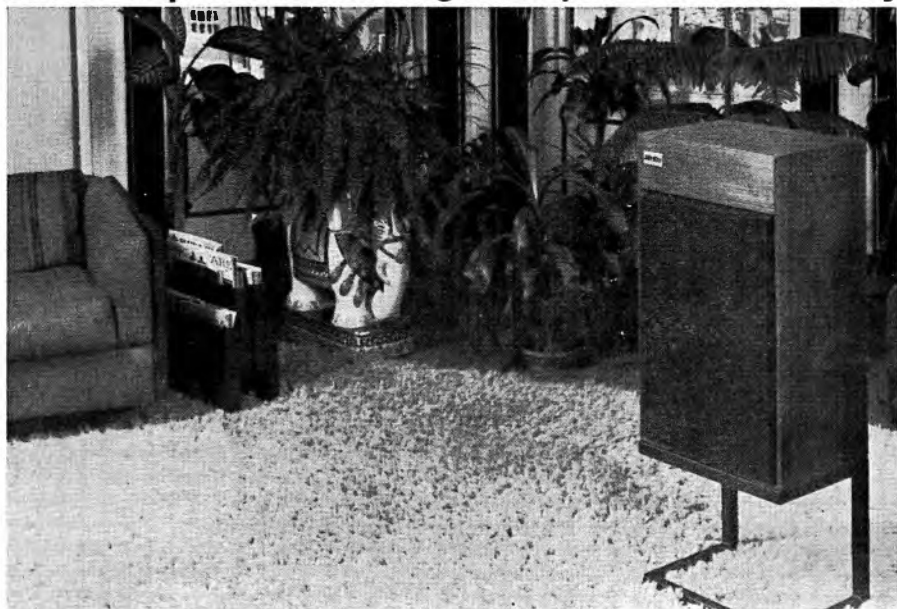
Speaker enclosure with units and crossover. Maximum power input: 100W RMS (200W peak). FR: 32Hz-20kHz  $\pm 3.5$ dB. Dynamic range: 76dB. Crossover frequencies: 1.5kHz and 3kHz. Dispersion: 100 degrees. Impedance: 4-8 ohms. Size: 15  $\frac{1}{2}$   $\times$  15  $\times$  26in. Finish: oiled walnut. Price: £185 each (plus VAT).

#### Model 217R

Speaker enclosure with units and crossover. Maximum power input: 150W RMS (300W peak). FR: 30Hz-20kHz  $\pm 3.5$ dB. Dynamic

# The AR-10 $\pi$

## A new standard of musical accuracy and an unprecedented degree of placement flexibility



### Musical accuracy

The new AR-10 $\pi$  is the most accurate musical reproducer that Acoustic Research has ever built for use in the home. It has been designed to deliver uniform flat energy response in most listening rooms. This means that the musical balance of the input signal will be accurately transmitted to the listener, and listeners in virtually all listening positions will hear the performance in the same way. A new tweeter and crossover network make this new standard of accuracy possible.

### Speaker placement

Speaker placement in the listening room is of critical importance to the musical balance of the system. That's why most speaker manufacturers give explicit instructions on exactly where

their speakers must be placed for best results. The AR-10 $\pi$  however has been designed for maximum flexibility in this respect. It can operate in almost any location in your room with no sacrifice in accuracy.

The AR-10 $\pi$  can be positioned against a wall, in a corner, or even in the middle of the room. Simply resetting a single switch will ensure the right amount of bass energy for any position – something that is not possible with conventional loudspeaker designs or equalization techniques.

Acoustic Research has prepared a comprehensive description of the AR-10 $\pi$  speaker system. You can get a free copy by sending us the coupon below.



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Please send me a complete description of the AR-10 $\pi$

Name \_\_\_\_\_

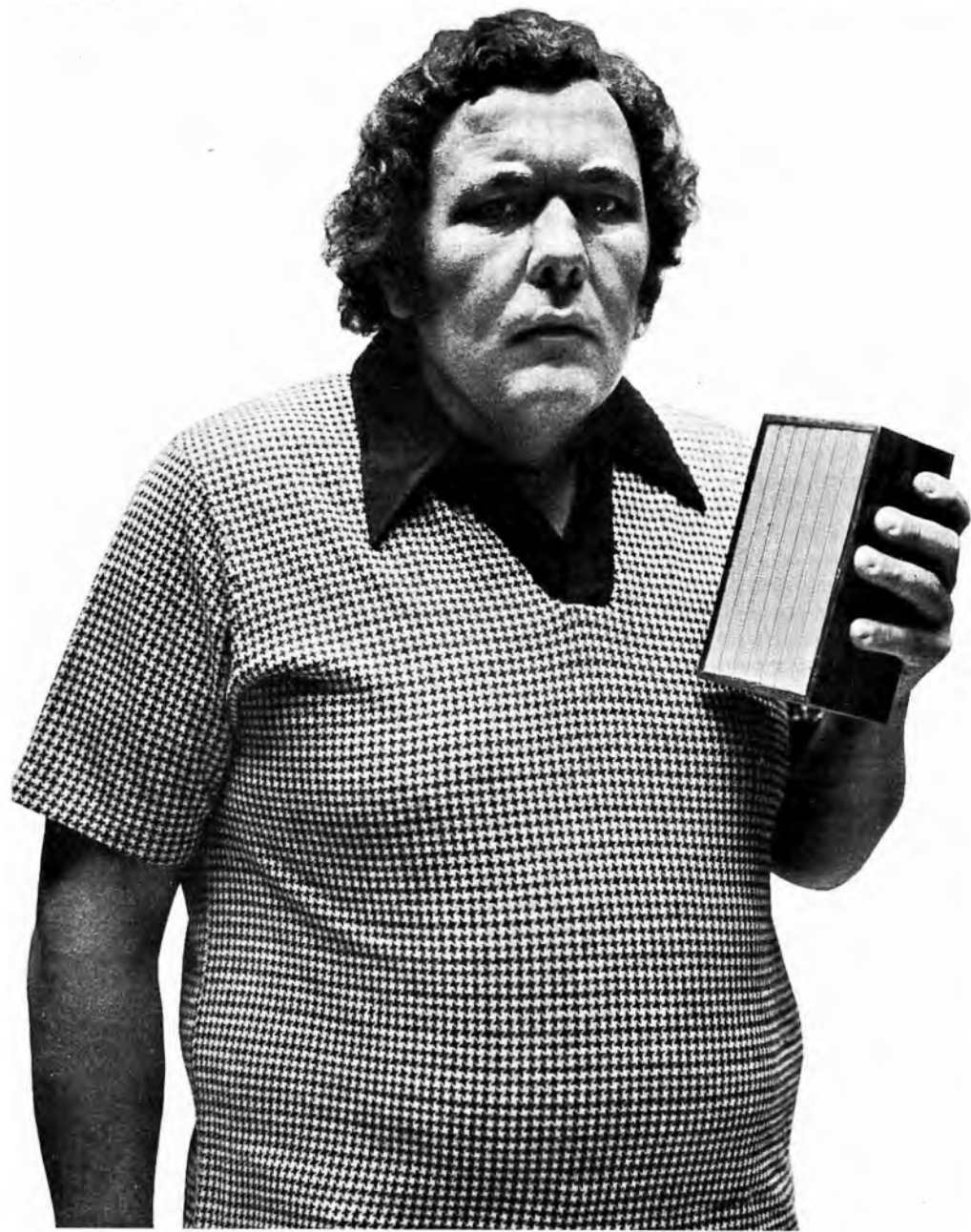
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**Acoustic Research International**  
High Street, Houghton Regis, Bedfordshire  
Telephone: Dunstable (0582) 603151  
Telex: ARUK,INT 825467



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# budget needn't your speakers.

Up till now you've probably always thought you'd have to compromise when buying your speakers.

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For you, we introduce Eagle's new range of speakers, part of their new 2000 series.

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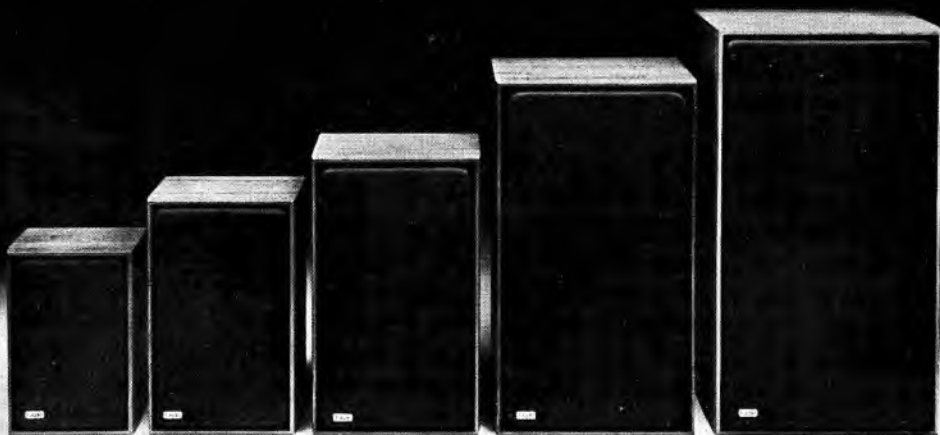
Especially when you won't have to look far to find the **Eagle** money either.

Please send me full details of your new 2000 series.

Name \_\_\_\_\_

Address \_\_\_\_\_

Eagle International, Precision Centre, Heather Park Drive,  
Wembley HA0 1SU. Telephone 01-902 8832. HFY576



S 2002 Power handling 10 watts RMS per channel. 300x200x150 mm £42. S 2003 Power handling 15 watts RMS per channel. 380x235x180 mm £56.  
S 2004 Power handling 20 watts RMS per channel. 450x265x210 mm £68. S 2005 Power handling 25 watts RMS per channel. 575x320x260 mm £118.  
S 2006 Power handling 35 watts RMS per channel. 660x360x300 mm £158. All prices are for a pair of speakers and exclude VAT.

# Celestion Dittons ... for the perfectionist

Buy a really good pair of speakers and you've got yourself a better hi-fi system... buy a pair of Celestion Dittons and you've got one of the best!

Whether you already own, or are thinking of buying either a 'package' hi-fi system or are selecting your own individual units, a pair of good speakers will pay dividends in terms of sound quality.

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**Celestion**



Rola Celestion Limited, Ditton Works,  
Foxhall Road, Ipswich, Suffolk IP3 8JP  
Telephone: Ipswich (0473) 73131  
Cables: Voicecoil Ipswich  
Telex: 98365

range: 78dB. Crossover frequencies: 1.5kHz and 3kHz. Dispersion: 100 degrees. Impedance: 4-8 ohms. Size: 17 × 20 × 27½in. Finish: oiled walnut. Price: £240 each (plus VAT).

### ■ CLARK SPEAKERS

122 Hull Road, Anlaby, North Humberside HU10 6UV. Tel: Hull 656706.

#### IB-22

Speaker enclosure with units and crossover. One KEF B139 bass, Peerless KO 40 mid-range, Peerless KO10DT tweeter. FR: 40Hz-25kHz. Rec. input: 40W RMS. Crossover frequency: 400Hz and 3.5kHz. Impedance: 8 ohms. Size: 22½ × 13 × 11in. Price: on application.

#### AI-31L

Speaker enclosure with units and crossover. One KEF B200 bass, Peerless KO 40 mid-range, Peerless KO10DT tweeter. FR: 25Hz-25kHz. Rec. input: 25W RMS. Crossover frequencies: 400Hz and 3.5kHz. Impedance: 8 ohms. Size: 31 × 18 × 15in. Price: on application.

#### AI-31H

Speaker enclosure with units and crossover. One KEF B139, Peerless KO 40 mid-range, Peerless KO10DT tweeter. FR: 30Hz-25kHz. Rec. input: 50W RMS. Crossover frequencies: 400Hz and 3.5kHz. Impedance: 8 ohms. Size: 31 × 18 × 15in. Price: on application.

#### AI-35

Speaker enclosure with units and crossover. One KEF B139 bass, Peerless KO 40 midrange, R.A. DT20 or T27 tweeter, STC 400IG squawker tweeter. Impedance: 8 ohms. FR: 20Hz-30kHz. Crossover frequencies: 400Hz, 3.5kHz and 13kHz. Rec. input: 60W RMS. Size: 35 × 18 × 15in. Price: on application.

### ■ CLR

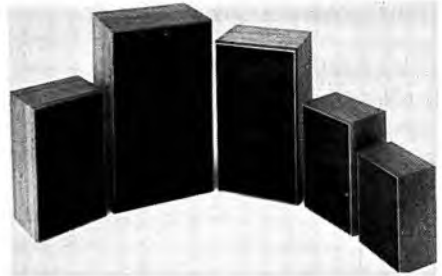
Colne Loudspeaker Research, 51 Lion Road, Twickenham, Greater London. Tel: 01-891 1837.

#### CLR Cirrus

A full range electrostatic system, operating in the doublet fashion. Polar distribution is approximately 70° horizontal and 20° vertical. FR: 40Hz-19kHz. Power supply: 220, 250V AC 50-60Hz or 110 AC to order. Nominal impedance: 12 ohms. Size: 35½ × 27 × 9½in. Weight: 50lb. Finish: teak, walnut, rosewood. Price: £112 (plus VAT).

#### CLR Chaparral

Monitor quality system utilising a damped tapered labyrinth enclosure with four drive



*Eagle 2000 Series Speaker Range*

units. Crossover frequencies: 375Hz, 3kHz, 10kHz. Impedance: 8 ohms. FR: 25Hz-25kHz. Size: 36 × 13½ × 18in. plus 3in plinth. Finish: teak, walnut, rosewood. Price: £120 (plus VAT).

### ■ CROWN

Crown Radio Co Ltd, Russell Gardens, Wickford, Essex SS11 8RT. Tel: Wickford 63414.

#### CSP-12

Infinite baffle enclosure with unit. One 13¼ × 8¼in bass driver with integral HF unit. Size: 7¼ × 17½ × 9¼in. Finish: walnut cabinet with black grille. Price: (per pair) £31.86 (plus VAT).

#### CSP-13

Infinite baffle enclosure with unit. One 13¼ × 8¼in bass driver with two integral HF units. Impedance: 8 ohms. Size: 10½ × 21 × 9in. Finish: walnut cabinet with black grille. Price: (per pair) £48.66 (plus VAT).

### ■ EAGLE

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

#### S2002 ★

Infinite baffle enclosure. FR: 50Hz-17.5kHz. Impedance: 8 ohms. HC: 10W. One 8in bass unit, one 2in tweeter. Crossover: 5kHz. Size: 11¼ × 8 × 5¼in. Finish: teak with hardwood lipping. Price: £42 per pair (plus VAT).

#### S2003 ★

Infinite baffle enclosure. FR: 45Hz-17.5kHz. Impedance: 8 ohms. HC: 15W. One 8in bass unit, one 2½in tweeter. Crossover: 5kHz. Size: 15 × 9¼ × 7¼in. Finish: teak with hardwood lipping. Price: £56 per pair (plus VAT).

#### S2004 ★

Infinite baffle enclosure. FR: 35Hz-19kHz. Impedance: 8 ohms. HC: 20W. One 8in bass unit, one 2½in mid-range, one 2in tweeter. Crossover: 1.5kHz and 5kHz. Size: 21¼ ×

★ Indicates entry is illustrated

10½ × 8½in. Finish: teak with hardwood lipping.  
Price: £34 each (plus VAT).

#### S2005 ★

Infinite baffle enclosure. FR: 30Hz-20kHz.  
Impedance: 8 ohms. HC: 25W. One 10in bass  
unit, one 5in mid-range, one 2½in tweeter.  
Crossover: 1.5kHz and 5kHz. Size: 20½ ×  
12½ × 10½in. Finish: teak with hardwood lip-  
ping. Price: £59 each (plus VAT).

#### S2006 ★

Bass reflex enclosure. FR: 20Hz-20kHz.  
Impedance: 8 ohms. HC: 35W. One 12in bass  
unit, one 5in mid-range, one 2½in tweeter. Cros-  
s-over: 1.5kHz and 5kHz. Size: 25¾ ×  
14¾ × 11¾in. Finish: teak with hardwood lip-  
ping. Price: £79 each (plus VAT).

#### ■ ECHONICA

Ambionic Sound Reproducers Ltd,  
Omial House, North Circular Road,  
London NW10 7UF. Tel: 01-965 8787.

#### Echonica

Speaker system which has the appearance of an  
interior picture panel. vci: 8 ohms. FR: 40Hz-  
12kHz. Nominal input: 10W. Size: 690 ×  
490 × 30mm. Weight: 3.4kg. Price: £23.50 each  
(plus VAT).

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C. Williamson, "Lavenir", Carlyle Cres.,  
BUCKHAVEN, Fife. Tel. 3400

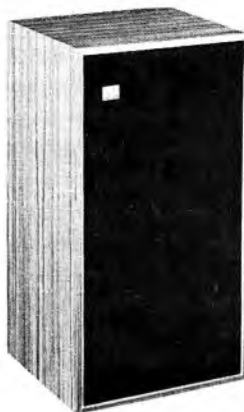
For consultants in London and Derby,  
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Edwardus LS 300

#### ■ EDWARDUS

J.R. Edwards Electronics Ltd,  
783 Romford Road, Manor Park,  
London, E12. Tel: 01-553 4349.

#### LS 150

Power handling capacity: 20W. FR: 45Hz-  
20kHz. Units: Goodmans 8in long-throw bass  
unit, Goodmans 3¾in mid-range treble unit.  
Impedance: 8 ohms. Cabinet size: 14 ×  
10 × 8½in. Price: £32.30 per pair (including  
VAT).

#### LS 200

Power handling capacity: 20W. FR: 35Hz-  
20kHz. Units: Goodmans 8in long-throw bass  
unit, Goodmans 3¾in mid-range treble unit.  
Impedance: 8 ohms. Cabinet size: 19 ×  
10 × 9½in. Price: £46.20 per pair (including  
VAT).

#### LS 300 ★

Power handling capacity: 30W. FR: 30Hz-  
20kHz. Units: Goodmans 10in long-throw bass  
unit, Goodmans 3¾in mid-range treble unit.  
Impedance: 8 ohms. Cabinet size: 22 ×  
12 × 10½in. Price: £71.50 per pair (including  
VAT).

#### ■ ELECTRO-VOICE

Gulton Europe Ltd, Special Products  
Division, The Hyde, Brighton BN2 4JU.  
Tel: Brighton 66271.

#### Interface A

Full-range loudspeaker system with equaliser.  
Fitted with one 10in bass unit and two tweeters.  
Impedance: 8 ohms nominal. FR: 32Hz-18kHz  
±3dB. Size: 55.9 × 35.6 × 19.8cm. Price: £248  
per pair (plus VAT).

**Sentry III**

Full range loudspeaker with 10in bass unit. Impedance: 8 ohms nominal. FR: 40Hz-18kHz  $\pm 3$ dB. Size: 87.6  $\times$  72.4  $\times$  52.1cm. Price: £415 each (plus VAT).

**EMPEROR**

MMG Associates, 19 St Andrews Road, Malvern, Worcs.

**Emperor 101**

Infinite baffle type enclosure. 13  $\times$  8in elliptical driver with coaxially mounted high frequency unit. Crossover: 5kHz choke-capacitor network. FR: 50Hz-16kHz. HC: 20W. vci: 8 ohms. Adjustable high frequency balance. Finish: teak effect in Melamine plastic, with other finishes to order. Size: 31  $\times$  17  $\times$  9in. Weight: 39½lb. Price: £33 (plus VAT).

**Emperor 102**

As Emperor 101 but vci is 16 ohms. Price: £40 (including VAT).

**Emperor Mk III**

FR: 50Hz-18kHz. HC: 25W. vci 8 or 16 ohms. Finish: teak, mahogany or to order. Size: 35  $\times$  17  $\times$  19in. Weight: 42lb. Price: £65 (including VAT).

**Emperor Studio Monitor**

Full specification and prices of the Emperor Studio Monitor systems available on request.

**Emperor Custom Series**

Speaker systems manufactured to customer's own design and specifications. Full details of service on request.

**ESS**

Regent Acoustics, Carrington House, 130 Regent Street, London W1R 6BR. Tel: 01-437 1997.

**AMT 1**

Two-way floor-standing system. Low frequencies are reproduced by 10in woofer mounted in a resistive ported enclosure. High frequencies are reproduced by the ESS Heil air-motion transformer mid-range/tweeter positioned for unhindered radiation. Crossover frequency: 700Hz. FR: 45Hz-24kHz  $\pm 2.5$ dB. Power requirements: 20W RMS minimum. Input impedance: 4 ohms minimum. Size: 31  $\times$  14½  $\times$  14½in. Finish: walnut veneer. Price: £189.82 (plus VAT).

**AMT 1 Tower**

Two-way floor-standing column. Upper frequencies are carried by the ESS Heil air-motion transformer mid-range/tweeter. Lower frequencies are reproduced by a high excursion 10in woofer mounted in a resistively loaded tuned transmission line. Crossover frequency:

700Hz. FR: 35Hz-24kHz  $\pm 2.5$ dB. Power requirements: 20W RMS minimum. Input impedance: 4 ohms minimum. Size: 43½  $\times$  14½  $\times$  17½in. Finish: walnut veneer. Price: £222.23 (plus VAT).

**AMT 3**

Three-way, four driver, floor-standing system using two high acceleration 10in woofers, one 6in transition driver and ESS Heil air-motion transformer mid-range/tweeter. Crossover frequencies: 250Hz and 700Hz. FR: 40Hz-24kHz  $\pm 2$ dB. Power requirements: 20W RMS minimum. Input impedance: 4 ohms minimum. Size: 39¼  $\times$  15½  $\times$  15½in. Finish: walnut veneer. Price: £254.64 (plus VAT).

**AMT 4**

Two-way, floor-standing system utilizing a 10in, foam surround, air suspension woofer and 'dual magnetic plate' ESS Heil air-motion transformer mid-range/tweeter. Crossover frequency: 1kHz. FR: 45Hz-24kHz  $\pm 3$ dB. Power requirements: 20W RMS minimum. Input impedance: 4 ohms minimum. Size: 27  $\times$  15½  $\times$  12½in. Finish: walnut veneer. Price: £152.78 (plus VAT).

**AMT 5**

Two-way bookshelf system utilizing a 12in foam surround, air suspension woofer and 3in ESS Heil air-motion transformer tweeter. Crossover frequency: 1.5kHz. FR: 45Hz-24kHz  $\pm 3.5$ dB. Power requirements: 15W RMS minimum. Input impedance: 4 ohms minimum. Size: 24  $\times$  14½  $\times$  12½in. Finish: walnut veneer. Price: £111.11 (plus VAT).

**AMT 6**

Two-way, six driver floor-standing system. Low frequencies are reproduced by two 12in woofers mounted in a damped infinite baffle. High frequencies are reproduced by an ESS High/SPL Heil air-motion transformer array consisting of four dual magnetic plate transformers fitted with Teflon diaphragms and angled for maximum dispersion in all planes. Crossover frequency: 800Hz. FR: 35Hz-24kHz  $\pm 3$ dB. Power requirements: 50W RMS minimum. Input impedance: 6 ohms minimum. Size: 47½  $\times$  24½  $\times$  18½in. Finish: walnut veneer. Price: £416.68 (plus VAT).

**FERROGRAPH**

The Ferrograph Company Ltd, Auriema House, 442 Bath Road, Cippenham, Slough SL1 6BB. Tel: Burnham 62511

**Model S1 ★**

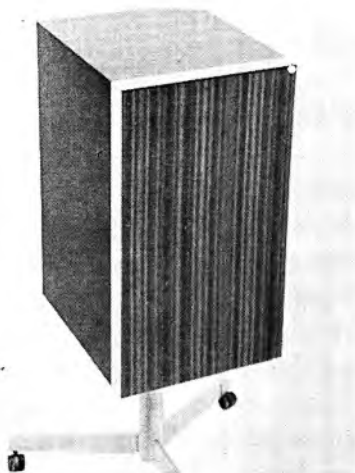
Reflex system enclosure with units and crossover. One LF driver, one mid-range unit and one tweeter. 18-element steep-cutting crossover network. Impedance: 8 ohms

★ Indicates entry is illustrated

nominal. HC: 25W RMS. FR: 45Hz-20kHz  $\pm 3$ dB. Crossover 400Hz, 3.5kHz. Size: (cabinet) 25in high, 14in wide, 17½in deep; (stand) 14½in high. Weight: (cabinet) 56lb, (stand) 6lb. Finish: simulated walnut with aluminium trim, white surround and folk weave fabric grille. Connections via recessed press terminals in rear. Price: £114 (plus VAT).

#### ■ GOODMAN'S

Goodmans Loudspeakers Ltd, Downley Road, Havant, Hampshire PO9 2NL. Tel: Havant 6344.

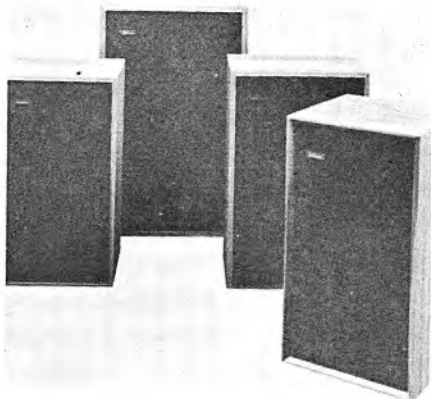


#### Havant SL ★

Reflex enclosure with units and crossover. One 8in bass driver, one 3¾in mid-range unit, one 1in dome tweeter. Crossovers: 2kHz and 8kHz. Interior volume: 18 litres. FR: 45Hz-22kHz (DIN 45:500). HC: 20W (DIN). Impedance: 8 ohms. Finish: teak, walnut or white. Size: 19 × 10½ × 9¾in. Weight: 18¾lb. DIN connector with cable. Price: £32.77 (plus VAT).

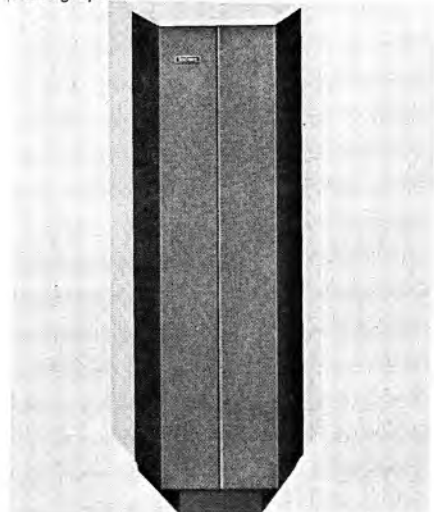
#### Mezzo SL ★

Reflex enclosure with units and crossover. One 10in bass driver, one 1½in dome tweeter. Cros-

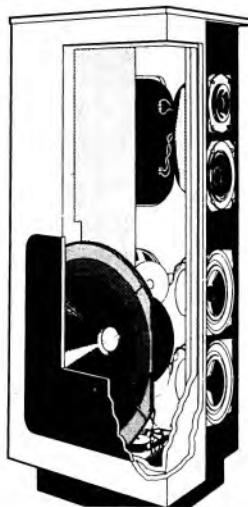


Goodmans Havant SL, Magnum SL, Mezzo SL and Minister SL

#### Ferrograph SI



Goodmans Dimension 8



Goodmans Dimension 8 (cut-away)

cover: 2kHz. FR: 40Hz-22kHz. HC: 60W (DIN). Impedance: 4-8 ohms. Size: 24½ × 15 × 11½in. Finish: teak or walnut. Price: £48.57 (plus VAT).

#### Magnum SL ★

Infinite baffle enclosure with units and crossover. One 12in bass driver, 4in back-loaded mid-range unit, 1in dome tweeter. Crossover: 2kHz and 6kHz. FR: 35Hz-22kHz. HC: 60W (DIN). Impedance: 4-8 ohms. Size: 24½ × 15 × 11½in. Finish: teak or walnut. Price: £61.09 (plus VAT).

#### Minister SL ★

Bookshelf enclosure with units and crossover. 8in bass driver with plastic coated diaphragm, dome type tweeter. HC: 20W (DIN). Impedance: 4-8 ohms. FR: 45Hz-22kHz. Finish: teak or walnut. Size: 19 × 10½ × 9½in. Supplied in matched pairs. Price: £26.54 (plus VAT).

#### Dimension-8 ★

Mass-loaded reflex enclosure with units and crossover. One slave radiator, four 5in bass drivers, two 4in mid-range units, two 1in dome tweeters. Crossovers: 80Hz, 800Hz, 4kHz. FR: 30Hz-22kHz (DIN 45:500). HC: 60W. Minimum amplifier power: 10W. Interior volume: 40 litres. Impedance: 4 ohms. Finish: teak, walnut or white. Size: 30½ × 14 × 12½in. Weight: 44lb. Price: (teak or walnut) £85.66 (plus VAT); (white) £93.13 (plus VAT).

#### Achromat 400 ★

Infinite baffle producing optimum performance when mounted on separate stand (CS3). FR: (DIN) 40Hz-22kHz. Impedance: 8 ohms. Size: 26 × 11½ × 13in. Weight: 36lb. Three drivers. Crossovers: 900Hz and 3.5kHz. Sensitivity for 96dB: 12W. Teak, walnut or white finish. Price: £79.47 (plus VAT).

#### Achromat 100 ★

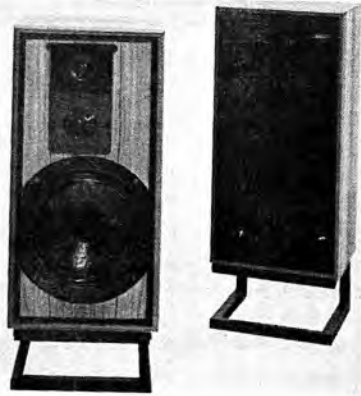
Infinite baffle enclosure with two drive units and crossover. Long throw 175cm bass, HF dome 38mm. Impedance: 8 ohms (nominal). Nominal capacity: 50W DIN. FR: 58-22,000Hz ±5dB. Sensitivity: 12W for 96dB at 1m. Dividing frequency: 3kHz. Size: 350 × 212 × 233mm. Weight: 6kg. Price: to be announced.

#### ■ GRIFFIN

H. K. Griffin & Co (Electronics),  
Siddons Factory Estate, Howard Street,  
West Bromwich, Staffs.  
Tel: 021-556 0559/0752.

#### Type 15C

Reflex enclosure. Units: KEF B110, STC 4001. Crossover: 5.4kHz. FR: 55Hz-18kHz (±4dB). Sensitivity: 10W pink noise for 96dB. HC: 20W. Impedance: 8 ohms. Cylindrical shape 11½in.



Goodmans Achromat 400 on CS3 stand

diameter. Finish: brown leatherette. Price: £66.91 (including VAT).

#### Type 15

Cabinet version of 15C. Sensitivity: 8W pink noise for 96dB. FR: 48Hz-18kHz (±4dB). HC: 20W. Size: 14½ × 8 × 8in. Price: on application.

#### Type 25

Reflex enclosure. Units: 8in bass unit. Crossover: 1.8kHz and 5.8kHz. FR: 35Hz-22kHz (±4dB). Sensitivity: 10W pink noise for 96dB. HC: 30W. Impedance: 8 ohms. Size: 18½ × 10½ × 9½in. Weight: 23lb. Finish: teak, walnut, white or black. Price: (teak/black) £115.56; (walnut/white) £124.02. Both prices include VAT.

#### Type 27

Twin-port reflex, mirror matched. Units as for Type 25 except for KEF B200. Crossover: 1.8kHz and 6.2kHz. FR: 30Hz-25kHz ±3dB. Sensitivity: 10W pink noise for 96dB. HC: 35W. Impedance: 8 ohms. Size: 24 × 12 × 10in plus stand. Weight: 36lb. Finish: teak or walnut. Price: (teak) £160.32 (including VAT); (walnut) £170.40 (including VAT). Stand extra.

#### Type 85

Tandem line system (Patented). Units: STC 4001IG, 65RMS bass, 50RMS middle, 40RMS treble. FR: 100Hz-20kHz ±1.5dB, 20Hz -6dB. Size: 31½ × 13 × 12in. Stand: 12in high. Weight: 110lb. Finish: teak. Price: (per pair) £569.76 (including VAT).

#### ■ HACKER

Hacker Radio Ltd, Norreys Drive,  
Cox Green, Maidenhead, Berks SL6 4BP.  
Tel: Maidenhead 22261.



**LS250 ★**

Infinite baffle enclosure. FR: 100Hz-17kHz  $\pm 3$ dB. Impedance: 8 ohms. HC: 20W DIN. Double drive units. Crossover frequency: 2.8kHz. Res. frequency: 96Hz. Finish: teak. Size:  $14\frac{1}{2} \times 10 \times 7\frac{1}{8}$ in. Sold only in matched pairs. Price: per pair £47 (plus VAT).

**LS550**

Infinite baffle enclosure. FR: 85Hz-17kHz  $\pm 3$ dB. Impedance: 8 ohms. HC: 30W DIN. Double drive units. Crossover frequency: 2.5kHz. Res. frequency: 85Hz. Size:  $16\frac{1}{2} \times 10\frac{1}{8} \times 8\frac{1}{2}$ in. Sold only in matched pairs. Price: per pair £58 (plus VAT).

**LS1100 ★**

Infinite baffle enclosure. FR: 78Hz-17kHz  $\pm 3$ dB. Impedance: 8 ohms. HC: 60W DIN. Triple drive units, including pressurised mid-range speakers. Crossover frequencies: 1.7kHz and 4.7kHz. Res. frequency: 55Hz. Size:  $20\frac{1}{4} \times 13\frac{1}{8} \times 11\frac{1}{4}$ b1Win. Finish: teak. Price: £39 each (plus VAT).

**LS1300**

Infinite baffle enclosure. FR: 38Hz-21kHz  $\pm 2$ dB. Impedance: 8 ohms. HC: 20W DIN. Three drivers including dome tweeter and pressurised mid-range speaker. Crossover frequencies: 550Hz and 3.5kHz. Res. frequency: 48Hz. Size:  $24\frac{1}{2} \times 15\frac{1}{8} \times 12$ in. Finish: teak. Price: £63 each (plus VAT).

■ **HEATHKIT**

See Constructional Kits Section.

■ **HELME**

Helme Audio Products Ltd, Summerbridge, Harrogate, Yorks HG3 4DR.  
Tel: Darley 279.

High fidelity speaker systems finished in teak. Many also available in kit form (see Constructional Kits). Impedance: 8 ohms.

**Firecrest**

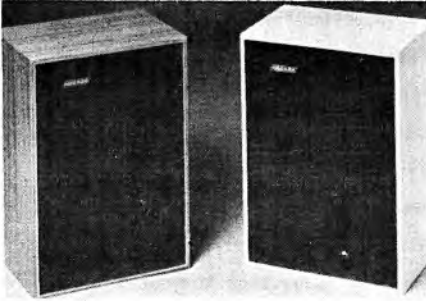
Houses 6 $\frac{1}{2}$ in bass driver with two 2in tweeters. Crossover: 2.4kHz. FR: 45Hz-22kHz. HC: 20W. Dimensions:  $14 \times 9 \times 7\frac{1}{2}$ in. Price: £48.80 per pair (plus VAT).

**Swallow**

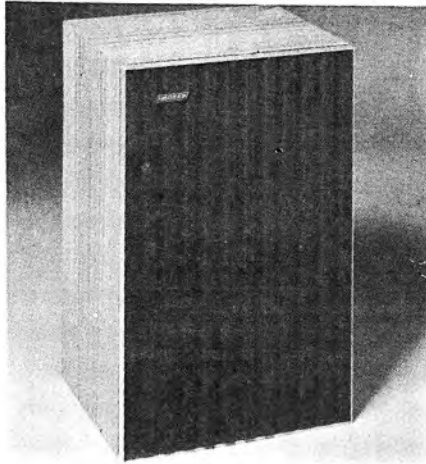
Houses an 8in bass unit and two 2 $\frac{1}{2}$ in tweeters. Crossover: 2.5kHz. HC: 50W. FR: 35Hz-22kHz. Dimensions:  $20 \times 11 \times 9$ in. Price: £67.80 per pair (plus VAT).

**Helme XLS-25**

Houses 8in bass driver and 3in tweeter. Crossover: 4kHz. HC: 25W (DIN). FR: 45Hz-40kHz. Size:  $22\frac{1}{2} \times 12\frac{1}{2} \times 10$ in. Speaker drive units and crossover also offered as a kit under reference XLK-25HE. Prices: (XLS-25)



Hacker LS250



Hacker LS1100

£69.50 per pair (plus VAT); (XLK-25HE) £25.46 per pair (plus VAT).

#### Helme XLS-30

Houses 8in bass driver with plastic coated cone and 4in tweeter. Crossover: 5.5kHz. HC: 30W (DIN). FR: 50Hz-18kHz. Size: 20 × 11 × 9in. Price: £53 per pair (plus VAT). Also available as kit under reference XLK-30 at £14.77 per pair (plus VAT).

#### Helme XLS-50

Houses 13 × 8in bass driver with plastic coated cone and 3in tweeter. Crossover: 6kHz. HC: 50W (DIN). FR: 30Hz-40kHz. Size: 22½ × 12½ × 10in. Speaker drive units and crossover also offered as a kit under reference XLK-50. Prices: (XLS-50) £92.40 per pair (plus VAT); (XLK-50) £49.07 per pair (plus VAT).

#### Helme XLS-25 Deluxe

Houses 8in bass mid-range with plastic coated cone plus 3in aluminium coned tweeter. Crossover: 4kHz. HC: 25W (DIN). FR: 40Hz-40kHz. Size: 22½ × 12½ × 10in. Prices:

£71.70 per pair (plus VAT). Speaker kit only type XLK-25 Deluxe £27.73 per pair (plus VAT).

#### Helme XLS-22

Houses 8in bass mid-range with plastic coated cone and 4in cone tweeter. Crossover: 5.5kHz. HC: 2W (DIN). FR: 40Hz-18kHz. Size: 22½ × 12½ × 10in. Prices: £59.50 per pair (plus VAT). Speaker kit only type XLK-30 Super £16.62 per pair (plus VAT).

#### HITACHI

Hitachi Sales (UK) Ltd. Hitachi House, Station Road, Hayes UB3 4DR. Tel: 01-848 8787.

#### SS 52

Acoustic suspension two-way speaker system with units and crossover. One 8in woofer, one 2½in cone tweeter. FR: 65Hz-20kHz -8dB (45Hz-20kHz-15dB). Crossover frequency: 4.5kHz. Impedance: 8 ohms. Maximum input power: 25W music. Sound pressure level: 92dB. Size: 30.6 × 53.6 × 24cm. Weight: 6.5kg. Cabinet finish: simulated teak. Price: £49 per pair (including VAT).

#### HS 220T

Air suspension type speaker system with units and crossover. One 8in bass driver, one 2½in tweeter. FR: 60Hz-20kHz -8dB (40Hz-20kHz -15dB). Crossover frequency: 4kHz. Impedance: 8 ohms. Maximum input power: 20W music, 8W RMS. Output sound pressure level: 90dB. Size: 28 × 48.5 × 25cm. Weight: 7kg. Cabinet finish: simulated teak. Price: £54 per pair (including VAT).

#### HS 320

Reflex enclosure with units and crossover. One 8in bass driver, one horn-type tweeter. Crossover frequency: 4kHz. FR: 50Hz-20kHz 8dB (35Hz-20kHz-15dB). Impedance: 8 ohms. Maximum input power: 20W music, 8W RMS. Output sound pressure level: 90dB. Size: 32 × 58 × 25cm. Weight: 11kg. Cabinet finish: walnut open-pore veneer. Price: £39 each (including VAT).

#### HS 420

Reflex enclosure with units and crossover. One 9½in bass driver, one 5in mid-range unit, one horn-type tweeter. Crossover frequency: 2kHz, 8kHz. Impedance: 8 ohms. FR: 45Hz-20kHz -8dB (30Hz-20kHz -15dB). Maximum input power: 40W music, 15W RMS. Output sound pressure level: 91dB. Size: 37 × 67.5 × 25cm. Weight: 15kg. Cabinet finish: simulated teak. Price: £58 each (including VAT).

#### HS350

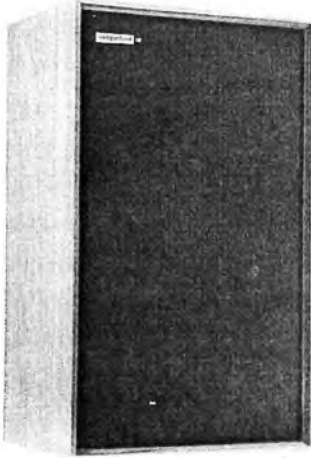
Ducted port two-way speaker system with units

★ Indicates entry is illustrated

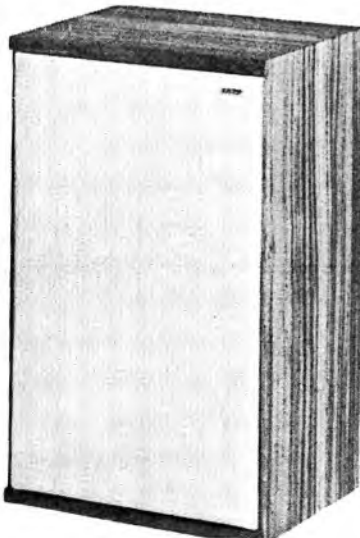
and crossover. One 8in bass driver, one tweeter. Crossover frequency: 3.5kHz. Impedance: 8 ohms. FR: 40Hz-20kHz. Maximum input: 50W music, 20W RMS. Output sound pressure level: 90dB. Size: 36.5 × 59.3 × 25cm. Weight: 15kg. Cabinet finish: walnut open-pore veneer finish. Price: £78 each (including VAT).

#### HS 500

Reflex enclosure with units and crossover. One 8in super bass driver, one 8in bass driver, one 5in mid-range unit, one horn type tweeter. Crossover frequency: 3kHz. Distortion: less



Howland-West Budgetline 12



Imhofs IM 100

than 2.7% at 10W output. FR: 25Hz-20kHz. Input impedance: 8 ohms. Rated input: 60W music, 20W RMS. Sensitivity crossover: 94dB. Acoustic control high level: ±4dB (2 dB step). Size: 36 × 61 × 34.7cm. Weight: 21.8kg. Cabinet finish: oiled walnut. Price: £137 each (including VAT).

#### HS 1400WA

Acoustic super-woofer three-way speaker system with units and crossover. One 8in super bass driver, one 8in bass driver, one 5in mid-range unit, one horn type tweeter. Crossover frequency: 100Hz, 4kHz. FR: 35Hz-20kHz -8dB. Impedance: 8 ohms. Maximum input power: 20W music. Sound pressure level: 90dB. Level control: high range ±3dB. Size: 43.8 × 115.7 × 37cm. Weight: 34kg. Cabinet finish: walnut open-pore veneer finish with removable grey saran front cover. Price: £127 each (including VAT).

#### ■ HOWLAND-WEST

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6.

#### Budgetline 12 ★

Infinite baffle enclosure with units. One 12in bass driver, one 3 $\frac{3}{4}$ in coaxially mounted tweeter. Crossover: 5kHz. FR: 40Hz-18kHz. HC: 20W RMS. Impedance: 8 ohms. Size: 20 × 12 × 8 $\frac{1}{2}$ in. Finish: teak. Price: £20 (plus VAT).

#### ■ IMHOFS

Imhofs (retail) Ltd, 112-116 New Oxford Street, London WC1A 1HJ. Tel: 01-636 7878.

#### IM.100 ★

Infinite baffle enclosure with units. 13 × 8in bass driver, 1 $\frac{1}{2}$ in treble unit. Crossover: 1kHz. FR: 50Hz-20kHz. HC: 25W. Impedance: 8 ohms. Finish: teak veneer with forest green grille. Size: 11 $\frac{3}{4}$  × 19 × 7 $\frac{1}{2}$ in. Weight: 15lb. Price: £31.42 (including VAT).

#### ■ INFINITY

Soundingham Ltd, 171 Uxbridge Road, London. W12. Tel: 01-749 3662.

#### Transmission line column

FR: 35Hz-28kHz ±4dB. Crossover frequencies: 500Hz (mechanical), 2kHz and 8kHz. Impedance: 6 ohms nominal. Max. amplifier power: 200W per channel programme. Min. amplifier power: 20W RMS per channel. Size: 41in high, 11in wide, 11in deep. Price: on application.

#### POS 11

FR: 43Hz-19kHz ±3.5dB. Two drivers. 10in woofer and one 2in tweeter. Crossover frequency: 1.6kHz. Impedance: 8 ohms nominal. Size: 25in high, 13in wide, 11 $\frac{3}{4}$ in deep. Price: on application.



*Isonphon-Werke Isonetta*



*Isonphon-Werke Luna 2000*

#### 1001A

FR: 33Hz-21kHz  $\pm 4.5$ dB. Crossover frequency: 1.3kHz (acoustic). Impedance: 8 ohms nominal. Size: 25in high, 14½ wide, 12in deep. Price: on application.

#### 2000AXT

FR: 30Hz-21kHz  $\pm 3.5$ dB. Crossover frequencies: 500Hz and 5kHz. Impedance: 8 ohms nominal. Size: 27½ × 20 × 14in. Price: on application.

#### Monitor

FR: 26Hz-32kHz  $\pm 4$ dB, 33Hz-21kHz  $\pm 2$ dB. Crossover frequencies: 500Hz and 5kHz. Impedance: 8 ohms nominal. Min. amplifier power: 35W RMS per channel. Size: 38in high, 14in wide, 13in deep. Price: on application.

### ■ ISOPHON-WERKE

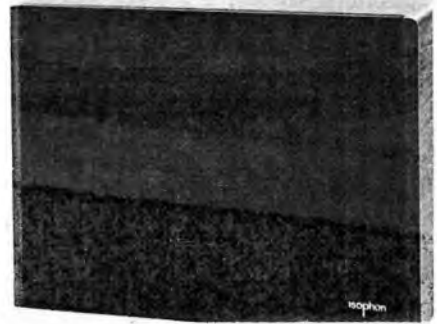
Hayden Laboratories Ltd, Hayden House, 17 Chesham Road, Amersham, Bucks. HP6 5AG. Tel: Amersham 5511.

#### Isonetta ★

Spherical enclosure with unit. One full-range 2½in unit. FR: 200Hz-20kHz. HC: 5W. Impedance: 5 ohms. Size: 3½in diameter. Weight: 12oz. Finish: white, black, red, orange. Scratch resistant finish. Price: £8.50 (plus VAT).

#### HFB 100

Spherical enclosure housing high-frequency unit. Designed for use with other speaker systems. One 3½in tweeter unit. FR: 3kHz-20kHz. For use with up to 50W systems. Impedance: 8 ohms. Size: 3½in diameter. Weight: 1¼lb. Finish: white or black with white base. Price: £12.55 (plus VAT).



*Isonphon-Werke HSB5001*

#### KSB1801

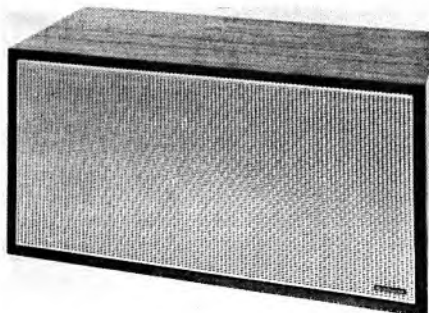
Bookshelf enclosure with units and crossover. One 5½in bass driver, one 3½in tweeter. FR: 48Hz-20kHz. HC: 10W. Impedance: 5 ohms. Size: 6¾ × 9¾ × 7¾in. Weight: 7lb. Finish: walnut. Price: £18.80 (plus VAT).

#### Luna 2000 ★

Spherical enclosure housing six high-frequency units. Six 2½ × 2½in tweeters. FR: 2kHz-20kHz. HC: with systems up to 100W. Impedance: 6 ohms. Size: 6½in diameter. Weight: 4lb. Finish: white with black metal grille. Works with TMB4501 as part of speaker system. Each half of drum can be rotated for optimum results. Price: £45.50 (plus VAT).

#### Prominent 2002

Speaker enclosure with units and crossover. 12in bass driver, 8in mid-range unit and two tweeters. FR: 25Hz to over 20kHz. HC: 70W.



Isophon-Werke HSB6001

Impedance: 8 ohms. Size: 15 × 19½ × 16½in. Weight: 60lb. Finish: walnut or matt black. Price: £220 (plus VAT).

**HSB5001 ★**

Speaker enclosure with units and crossover. One 8in bass driver, one 4in mid-range unit, one dome tweeter. FR: 35Hz to over 20kHz. HC: 30W. Impedance: 8 ohms. Size: 18¾ × 13¼ × 8¾in. Weight: 23lb. Finish: walnut or white with black metal grille. Price: (walnut) £67 (plus VAT); (white) £69 (plus VAT).

**FSB5002**

Speaker enclosure with units and crossover. One 8in bass driver, one 4in mid-range unit, one dome tweeter. FR: 45Hz to over 20kHz. HC: 30W. Impedance: 8 ohms. Size: 18¾ × 13¼ × 5¾in. Weight: 19lb. Finish: walnut or white with black metal grille. Price: (walnut) £65 (plus VAT); (white) £66.50 (plus VAT).

**HSB6001 ★**

Speaker enclosure with units and crossover. Three 5½in bass drivers, one 7 × 5in mid-range unit. FR: 35Hz-20kHz. HC: 40W. Impedance: 8 ohms. Size: 20¾ × 9⅞ × 9in. Weight: 24lb. Finish: walnut or white lacquer, with metal grille. Price: (walnut) £65 (plus VAT); (white) £67 (plus VAT).

**HSB7501**

Speaker enclosure with units and crossover. One 12in bass driver, one 7 × 5in mid-range unit, two 2½in tweeters. FR: 25Hz to over 20kHz. HC: 50W. Impedance: 8 ohms. Size: 26¾ × 13¾ × 10¾in. Weight: 41lb. Finish: walnut with metal front grille. Price: £103 (plus VAT).

**HSB9001**

Speaker enclosure with units and crossover. 12in bass driver, 8in mid-range unit and two tweeters. FR: 25Hz to over 20kHz. HC: to 70W. Impedance: 8 ohms. Size: 26¼ ×

17 × 12in. Weight: 54lb. Finish: walnut. Price: £157 (plus VAT).

**HSB3504**

Speaker enclosure with units and crossover. One 6½in bass driver, one dome tweeter. FR: 48Hz to over 20kHz. HC: 20W. Impedance: 8 ohms. Size: 16½ × 8½ × 8¾in. Weight: 12lb. Finish: walnut with black metal grille. Price: £47 (plus VAT).

**TMB4501**

Speaker enclosure with bass driver. One 9½in bass driver unit. FR: 35Hz-2kHz. HC: 30W. Impedance: 5 ohms. Size: 18¾ × 13¼ × 8¾in. Weight: 23lb. Finish: white with black metal grille. Works in conjunction with Luna 2000 as part of a complete system. Price: £64 (plus VAT).

**FSB4502**

Speaker enclosure with units and crossover. One 9½in bass driver, one 7 × 5in mid-range unit. FR: 40Hz-20kHz. HC: 30W. Impedance: 8 ohms. Size: 21⅞ × 12⅞ × 5¾in. Weight: 21lb. Finish: walnut with metal grille. Price: £63 (plus VAT).

■ **ITT**

ITT Consumer Products (UK) Ltd, Maidstone Road, Sidcup, Kent DA 14 5HT. Tel: 01-300 7733.

**KS 662 ★**

4in round unit, in simulated wood bookshelf-type cabinet with slots running vertically down front. Handles 6W. Available in teak or rosewood finish. Price: £12.18 (plus VAT).

**KS 661 ★**

4in round unit, 4 or 16 ohms, 12W handling capacity, in teak-grain appearance cabinet 382mm high. Impedance change-over switch incorporated. Price: £22.83 (plus VAT).

**KS 665 ★**

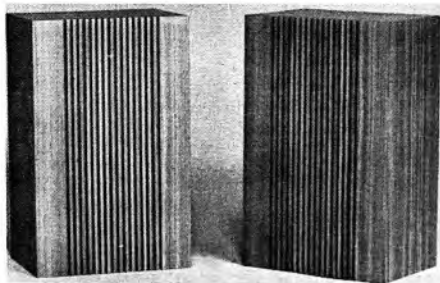
Teakgrain appearance cabinets, 456mm high house 6½in bass unit and a treble speaker, for which a separate control is fitted. Of 8 ohms impedance, the KS 665 handles 15W. Price: £34.74 (plus VAT).

**KS 666 ★**

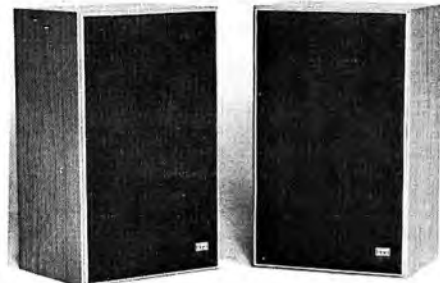
A three-unit combination, this latest addition to the ITT speaker range, with modern thin-edge-front styling, has an impedance of 4 ohms and handles 18W. The teak-appearance cabinet is 698mm high and accommodates a 6½in bass unit, another for mid-range measuring 6 × 4in, and a 3¾in tweeter. Price: £62.86 (plus VAT).

■ **JAMO**

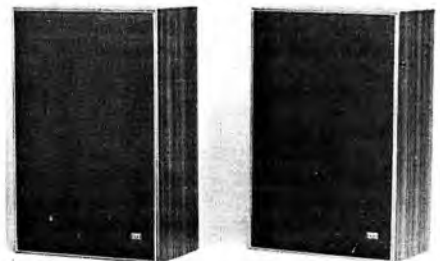
Jamo Audio Ltd, Rock House, 3 Grenfell Road, Maidenhead, Berks.



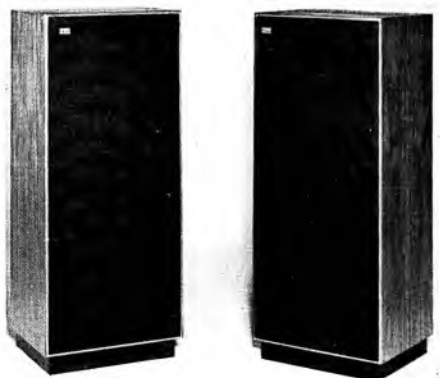
*ITT KS 662 Speakers*



*ITT KS 661 Speakers*



*ITT KS 665 Speakers*



*ITT KS 666 Speakers*

**Jamo 10**

Full-range speaker enclosure. Impedance: 8 ohms. Nominal capacity: 10W. Peak capacity: 15W. FR: 60Hz-18kHz. Size: 38 × 22 × 20cm. Price: on application.

**Jamo 15**

Fitted with 5.7cm high-frequency unit and 17cm woofer. Impedance: 8 ohms. Nominal capacity: 15W. Peak capacity: 25W. FR: 50Hz-20kHz. Crossover frequency: 4kHz. Size: 47 × 23 × 20cm. Price: on application.

**Jamo 25**

Fitted with 5.7cm tweeter and 17 × 28cm woofer. Impedance: 8 ohms. Nominal capacity: 25W. Peak capacity: 50W. FR: 35Hz-20kHz. Crossover frequency: 4kHz. Size: 50 × 24 × 20cm. Price: on application.

**Jamo 35**

Fitted with 2.5cm dome tweeter and 21cm woofer. Impedance: 8 ohms. Nominal capacity: 35W. Peak capacity: 60W. FR: 35Hz-20kHz. Crossover frequency: 1.5kHz. Size: 50 × 24 × 20cm. Price: on application.

**Jamo 50**

Fitted with 26cm woofer, 13cm mid-range unit and 2.5cm tweeter dome. Impedance: 8 ohms. Nominal capacity: 50W. Peak capacity: 80W. FR: 30Hz-20kHz. Crossover frequencies: 750Hz and 4.5kHz. Size: 55 × 30 × 24cm. Price: on application.

**Jamo 70**

Fitted with 2 × 21cm woofer units, 13cm mid-range unit and 2.5cm tweeter dome. Impedance: 8 ohms. Nominal capacity: 70W. Peak capacity: 130W. FR: 30Hz-20kHz. Crossover frequencies: 750Hz and 4.5kHz. Size: 55 × 30 × 24cm. Price: on application.

■ **JBL**

Feldon Audio Ltd, 126 Great Portland Street, London W1N 5PH. Tel: 01-580 4314.

**JBL Decade L16**

Two-way system with 8in bass driver and a 1.4in high-frequency direct radiator. Crossover: 2500Hz. Power capacity: 35W. Size: 27 × 49 × 26in. Weight: 28lb. Finish: natural oak enclosure with brown grilles. Price: £79 each (plus VAT).

**JBL Decade L26**

Two-way system with 10in low-frequency driver and 1.4in direct radiator. Crossover: 2000Hz. Power capacity: 35W. Size: 32 × 61 × 34in. Weight: 42lb. Finish: natural oak enclosure with grilles in blue, brown or orange. Price: £99 each (plus VAT).

★ Indicates entry is illustrated

### **JBL Decade L36**

Same components as L26 plus a 5in mid-range transducer. Crossovers: 1500 and 6000Hz. Power capacity: 50W. Size: 34 × 61 × 35in. Weight: 42lb. Finish: natural oak enclosure with grille in blue, brown or orange. Price: £139 each (plus VAT).

### **JBL Aquarius 4**

Phase connected omni-directional loudspeaker especially suitable for quadraphonic systems. One 8in wide-range transducer, mounted horizontally and directed into a 360° radial diffraction slot, and a 2in high-frequency tweeter. Crossover: 6000Hz. Power capacity: 35W. Size: 102 × 25 × 25in. Weight: 57lb. Finish: oiled walnut or satin white. Price: £139 each (plus VAT).

### **JBL Aquarius Q**

Three-way speaker system. Comprises 10in bass driver, 5in mid-range transducer and a 1.4in high-frequency direct radiator. Crossover: 1000 and 8000Hz. Power capacity: 50W. Size: 111 × 31 × 31in. Weight: 71lb. Finish: columns available in either walnut or satin white with grilles in blue or brown plus smoked glass tops. Price: £397 each (plus VAT).

### **JBL Century L100 ★**

Acoustically identical to JBL's professional Control Monitor 4311 and is composed of a 12in bass driver, 5in mid-range transducer and a 1.4in direct radiator. Crossovers: 1500 and 6000Hz. Weight: 55lb. Size: 36 × 60 × 35in. Finish: walnut enclosure with a sculptured foam grille in ultra blue, burnt orange or chocolate brown. Price: £195 each (plus VAT).

### **JBL Jubal L65 ★**

One new 12in long-excursion bass driver, one 5in mid-range transducer, one high-efficiency, ultra-high frequency horn ring radiator capable of reproducing signals up to 21kHz. Crossovers: 1000 and 6500Hz. Power capacity: 75W. Size: 61 × 44 × 33in. Weight: 67lb. Finish: walnut enclosure with smoked glass top and dimensional grilles in midnight blue, earth brown and rust red. Price: £258 each (plus VAT).

### **JBL Studio Master L200 ★**

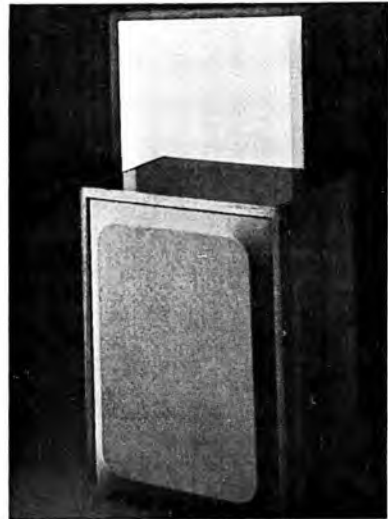
One 15in bass driver matched to a powerful high-frequency horn-loaded compression driver with acoustic lens. This speaker system is acoustically identical to JBL's Studio Monitor 4325. Crossover: 1200Hz. Power capacity: 100W. Size: 83 × 61 × 54in. Weight: 139lb. Finish: oiled walnut enclosure with sculptured grille in raven black, aegean blue or burgundy red. Price: £434 each (plus VAT).

### **JBL L45 Flair**

Floor or bookshelf loudspeaker, the enclosure



*JBL Century L100*



*JBL Jubal L65*



*JBL Sovereign*

being available with a variety of optional systems. Standard system includes a 15in low-frequency driver, a 5in mid-range transducer and a 1.4in direct radiator. Crossovers: 1200 and 7500Hz. Power capacity: 75W. Size: (without base) 55 × 75 × 45in. Weight: 108lb. Finish: walnut enclosure with charcoal brown grille bordered by sculptured foam. Additional stands available for either vertical or horizontal positioning. Price: £306 each (plus VAT).

### **JBL Olympus**

Floor-standing enclosure housing either S7R (or 15in low-frequency loudspeaker, 15in passive radiator and high-frequency compression driver) or S8R systems (similar 15in low-frequency but incorporating a more massive compression driver plus an ultra-high frequency ringradiator). Crossovers: S7R 500Hz, S8R 500 and 7000Hz. Power capacity: S7R 100W, S8R 125W. Size: 67 × 102 × 51in. Weight: plus S7R 163lb, plus S8R 180lb. Finish: grille is a delicate hand-carved wooden fretwork. Price: plus S7R £549 (plus VAT); plus S8R £693 (plus VAT).

### **JBL Sovereign ★**

Floor-standing enclosure with details the same as JBL Olympus. Size: 67 × 98 × 50in. Weight: plus S7R 176lb, plus S8R 183lb. Finish: country or golden oak and fabric finish. Price: plus S7R £549 (plus VAT); plus S8R £693 (plus VAT).

### **JBL Paragon**

The Paragon is a complete stereo loudspeaker system in one specially designed enclosure. It utilises a unique suspension principle to create an exceptionally wide stereo sound stage. There are 2 15in low-frequency loudspeakers, two massive high-frequency compression drivers with 2 specially engineered elliptical horns, 2 ultra high-frequency radiators plus 4 matched dividing networks. Crossovers: 500 and 7000Hz. Power capacity: 125W. Size: 90 × 61 × 263in. Weight: 695lb. Finish: oiled walnut. Price: £1995 each (plus VAT).

### ■ **JENSON**

Distributed by: B.H. Morris & Co (Radio) Ltd, Trio House, The Hyde, London NW9 6JP. Tel: 01-205 6441.

#### **Model 1**

8-inch, two element, full-range speaker. FR: 40Hz-18kHz. Power rating: 30W. Amplifier requirement: minimum 10W per channel. Impedance: 8 ohms. Crossover frequency: 6kHz. Dispersion: 120°. Size: 14½ × 10 × 8½in. Weight: 14lb. Mounting: horizontal or upright. Finish: teak or walnut. Five-year guarantee. Price: £24 each (plus VAT).

#### **Model 2**

Two-way system with 8in woofer and 3Rin direct radiating tweeter enclosed in tuned isolation chamber. High-frequency balance control. Four-layer woofer coil. FR: 38Hz-20kHz. Power rating: 35W. Amplifier requirement: minimum 10W per channel. Impedance: 8 ohms. Crossover frequency: 1.2kHz. Dispersion: 150°. System resonance: 70Hz. Size: 18½ × 11 × 8½in. Weight: 22lb. Mounting: horizontal or upright. Finish: teak or walnut. Five-year guarantee. Price: £39 each (plus VAT).

#### **Model 3**

Two-way system with 10in woofer, 3½in direct radiating tweeter and rear panel high-frequency control. Four-layer woofer coil. Tweeter enclosed in tuned isolation chamber. FR: 36Hz-20kHz. Power rating: 40W. Amplifier requirement: minimum 10W per channel. Impedance: 8 ohms. Crossover frequency: 800Hz. Dispersion: 150°. System resonance: 65Hz. Size: 22½ × 12½ × 10½in. Weight: 31lb. Mounting: horizontal or upright. Finish: teak or walnut. Five-year guarantee. Price: £59 each (plus VAT).

### ■ **JMR**

Monitor Sound Equipment Ltd, PO Box 28, Eastleigh, Hants SO5 5XD. Tel: Chandler's Ford 68492.

#### **JMR 101**

Infinite baffle enclosure. 2 drive units. Crossover frequency: 4.8kHz. Impedance: 8 ohms. Power handling: 10-20W. Size: 15 × 9½ × 8½in. Finish: satin walnut/black grille. Price: £80 per pair (plus VAT).

#### **JMR 107**

Infinite baffle enclosure with coupled cavities. 3 drive units. Crossover frequencies: 600Hz and 3.6kHz. Impedance: 8 ohms. Power handling: 10-25W. Size: 18½ × 11½ × 10½in. Finish: satin walnut/black grille. Price: £126.36 per pair (plus VAT).

#### **JMR 120**

Infinite baffle enclosure with coupled cavities and displaced planes. 3 drive units. Crossover frequencies: 1kHz and 5kHz. Impedance: 4 ohms. Power handling: 15-40W. Size: 22 × 13½ × 11½in. Finish: satin walnut/black grille. Price: £180 per pair (plus VAT).

#### **JMR 130**

Infinite baffle enclosure with coupled cavities and displaced planes. 3 drive units. Crossover frequencies: 850Hz and 3kHz. Impedance: 4 ohms. Power handling: 20-60W. Size: 25½ × 14½ × 12½in. Finish: satin walnut/black grille. Price: £230 per pair (plus VAT).



**JMR 2004**

Infinite baffle enclosure with coupled cavities and displaced planes. 4 drive units. Crossover frequencies: 900Hz and 3kHz. Impedance: 4 ohms. Power handling: 20-50W. Size: 15¼ × 25¼ × 14½in. Finish: satin walnut/black grille. Mounted on chrome stand. Price: £390 per pair (plus VAT).

**JMR 2008**

Infinite baffle enclosure with coupled cavities and displaced planes plus rear radiation. Eight transducers. 8 drive units. Crossover frequencies: 900Hz, 3kHz and 4.6kHz. Impedance: 4 ohms. Power handling: 25-60W. Size: 16¼ × 29¼ × 17½in. Finish: white/black grille. Mounted on chrome stand. Price: £530 per pair (plus VAT).

■ **JORDAN**

E.J. Jordan, 22 Hyde Green, Marlow-on-Thames, Bucks SL7 1QL. Tel: Marlow 3787.

**Co-Planar Crystal Suite ★**

Complete stereophonic ensemble of loudspeakers which utilize the formation of coordinated plane-wave radiation from left and right channels to provide wall-to-wall sound distribution. The basic system comprises two Co-planar radiators housed in figured glass for shelf or wall mounting each having dimensions of 12 × 10 × 6in, together with a combined channel bass radiator to handle the extreme bass. HC: 50W. Can be extended to surround sound or quadraphonic applications. Price: £250 (including VAT).

■ **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. FR: 30Hz-22kHz. HC: 15W. Finish: teak. Price: £48.60 (including VAT).

**Jodrell**

Reflex enclosure. Twin Jordan-Watts module. Treble control fitted. FR: 40Hz-22kHz. HC: 30W. Finish: teak. Weight: 56lb. Price: £69.99 (including VAT).

**Jumbo**

Infinite baffle. Power handling 15W. Forward facing. Shelf or wall mounting. Incorporates one Jordan-Watts modular unit. FR: 70Hz-20kHz. Size: 16½ × 8 × 3½in. Weight: 13lb. Finish: teak. Price: £29.81 (including VAT).

**Janet**

Infinite baffle. One full-range Jordan-Watts



*Jordan-Watts Juno*

module. FR: 70Hz-20kHz. HC: 15W. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair. Size: 12 × 8 × 6Rin. Weight: 13lb. Price: £29.81 (including VAT).

**Juno ★**

Reflex enclosure. Power handling 15W. Forward facing. Incorporates one Jordan-Watts modular unit. FR: 40Hz-20kHz. Size: 24½ × 12½ × 6½in. Weight: 27lb. Price: £39.85 (including VAT).

**Juliet**

Reflex cabinet. One full-range Jordan-Watts module. FR: 40Hz-20kHz. HC: 15W. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair. Size: 16 × 10 × 9in. Weight: 28lb. Price: £39.85 (including VAT).

**Jupiter**

Reflex enclosure. Power handling 30W. Forward facing. Incorporates two Jordan-Watts modular units and HF unit. FR: 20Hz-20kHz. Size: 34 × 15 × 10½in. Weight: 70lb. Price: £89.10 (including VAT).

**Jupiter TLS/ABR**

Transmission line speaker system. HC: 30W. Forward-facing. Incorporates two Jordan-Watts modular units. Treble control incorporated. Enclosure lined with sheet lead. FR: 30Hz-22kHz. Size: 34½ × 15 × 10½in. Weight: 80lb. Price: £106.92 (including VAT).

**Flagon**

Ceramic infinite baffle loudspeaker. 65Hz-20kHz. HC: 15W. Exclusive decorative pottery enclosure. Size: 14½in diameter. Weight: 20lb. Price: £44.71 (including VAT).

**Jericho**

Reflex enclosure. Power handling capacity:



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If music has meaning for you, then come to E.M.G. . . . for records to satisfy discriminating tastes, for equipment to satisfy critical ears, for helpful publications on selecting records (*The E.M.G. Monthly Letter*, price £3.00 for 12 months post free, has a reputation second to none for the excellence and impartiality of its comment). The equipment showroom is well stocked, spacious, quiet and always interesting, the record shop a treasure house of fine music, and service is never less than helpful to the technical and non-technical alike.

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Telephone 01-734 4311      Nearest Underground: Tottenham Ct. Rd.

# Cerwin-Vega FOR THE ORIGINAL SOUND



## SYSTEM SPECIFICATIONS

	24	26	211
<b>MAXIMUM POWER INPUT</b>	40 watts RMS 80 watts peak	60 watts RMS 120 watts peak	100 watts RMS 200 watts peak
<b>EFFECTIVE FREQUENCY RANGE</b>	30-25,000Hz	30-25,000Hz	25-25,000Hz
<b>FLAT FREQUENCY RANGE</b>	38-20,000Hz ± 4dB	38-20,000Hz ± 4dB	32-20,000Hz ± 3½dB
<b>ONE WATT SENSITIVITY*</b> (measured at 1 meter on axis)	94dB	96dB	98dB
<b>MAXIMUM SOUND LEVEL*</b> (at 1 meter at rated power)	109dB	113dB	117dB

### INSIDE:

- 1) **BASS YOU CAN FEEL.** Cerwin-Vega woofers combine high efficiency and high power handling ability for more low-distortion output below 50 Hz and quicker transient attack than sluggish acoustic suspension units.
- 2) **CRISP, ACCURATE HIGHS.** Our exclusive dhorn tweeters feature extremely high flux densities and low mass diaphragms. The result — superior transient response and flat evenly dispersed output to beyond 20 kHz.
- 3) **CONTROLLABLE IMAGING.** A reflective mid-hi horn in the 211R and 217R adds spatial dimension and presence, eliminates "holes" due to poor room acoustics.
- 4) **UNIQUE "INFRASONIC" TUNING.** Basic enclosure resonance of 5-10 Hz eliminates response peaks and "boom" from the audible range.

### OUTSIDE:

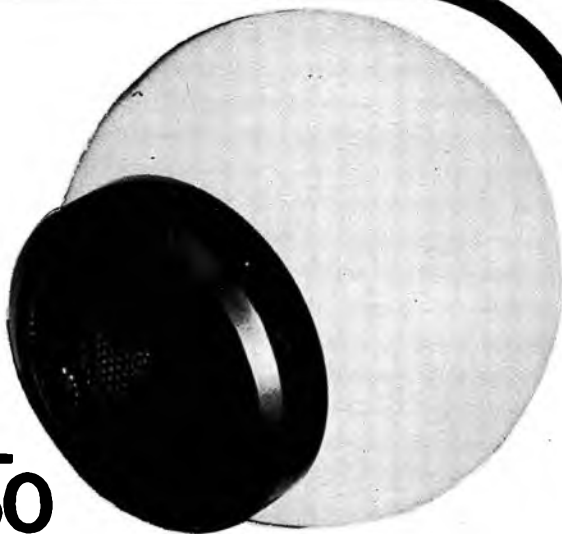
- 1) **RUGGED COMPONENTS.** Extra heavy frames and specially treated cones and voice coils maintain flawless performance under demanding use.
- 2) **QUALITY CABINETS.** All cabinets are premium hardwood on hi-density ¾" particle board, with solid inlays and hand rubbed natural oil finishes for lasting beauty and easy maintenance.
- 3) **EASY COMPONENT ACCESS.** Snap-on grille (except 24) and removable cabinet back allow field-replacement of all components.
- 4) **ADJUSTABLE BALANCE.** Rotary crossover controls allow precise tailoring of high frequency balance to suit any room and any music. (fixed crossover on 24)

**CERWIN-VEGA. (U.K.). 281 BALMORAL DRIVE  
HAYES MIDLX 01-573-1566  
Trade Enquiries Invited**



# ea

## HI-BALL 750



### LOOKS DOWN ON SPEAKERS TEN TIMES ITS SIZE

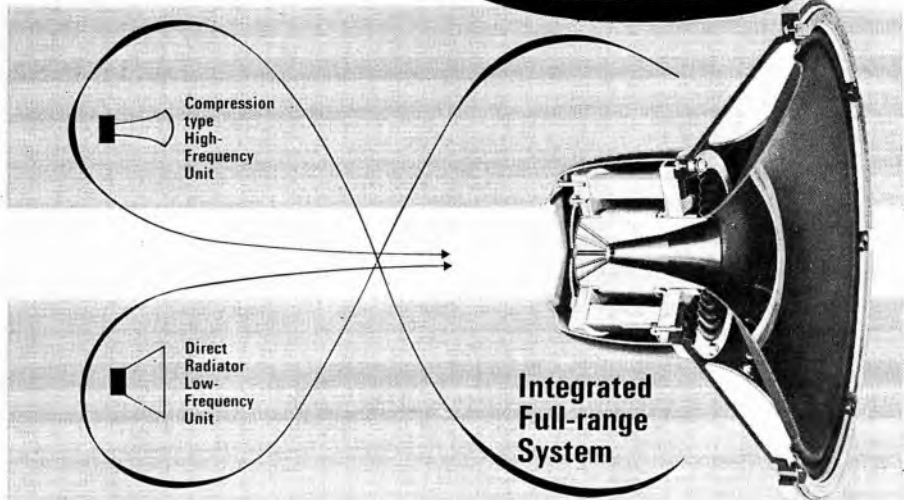
Tucked away near the ceiling, Hi-Balls take up no floor space, look good, yet produce sounds which you would expect only from speakers ten times their size - and five times their price....

- will handle the output of a 35W RMS amplifier
- available in white, black, purple, orange and red with matt black rim
- 8 $\Omega$  impedance
- £36 per pair (+VAT)
- packed in pairs in handy 'carry-home' carton

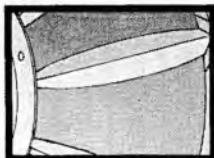
Unit 5A Pier House, Strand-on-the-Green, Chiswick, London W.4.  
Tel: 01-995 3654

**Executive Audio Limited**

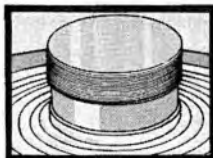
# THE *New* TANNOY



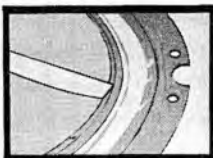
The Monitor H.P.D. represents a further outstanding improvement of a loudspeaker system which has become regarded as a quality standard over the last 25 years by Recording Studios throughout the world. There is a very good chance that your favourite records and tapes were monitored on Tannoy Dual Concentric loudspeakers, and to select these superbly engineered, individually hand-assembled speakers for your music system assures you of the same professional performance.



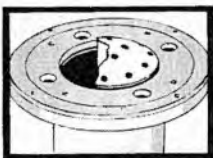
**The Girdacoustic Cone** improves frequency and transient response, gives much increased power handling capacity and greater mechanical stability.



**The High Temperature Voice Coil** assures absolute climatic stability and great mechanical strength together with much improved power handling capacity.

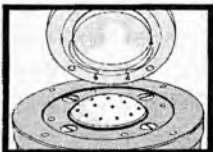


**The Tanoplas Surround** gives low bass resonance with excellent mechanical stability and freedom from edge reflections.

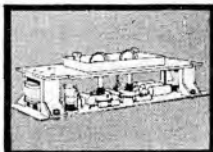


**Patented Magnetic Shunt** combined with specially treated and selected steel gives maximum magnet flux in the unique Tannoy twin gap system - improves sensitivity and damping.

	260 mm	310 mm	410 mm
Power Handling Capacity*	50W	60W	85W
Frequency Response	27-20,000 HZ	25-20,000 HZ	23-20,000 HZ
Intermodulation Products	less than 2%	less than 2%	less than 2%
Impedance via Crossover network	8 ohms (5 ohms min.)	8 ohms (5 ohms min.)	8 ohms (5 ohms min.)



**Unique High Frequency Unit** with separate diaphragm and voice coil coupled to the horn by a permanent phase-matching system.



**High Power Crossover Unit** with solid dielectric condensers throughout. Combined with treble and roll-off controls.

\*INTEGRATED PROGRAMME MATERIAL

*Designed to sound better - naturally...*



NORWOOD RD. WEST NORWOOD SE27 9AB Tel: 01-670 1131 Telex: 949755

50W. Forward facing. Incorporates two Jordan-Watts modular units and 13 × 9in extra bass driver. FR: 40Hz-20kHz. Size: 30 × 13½ × 7½in. Weight: 56lb. Price: £88 (including VAT).

#### ■ KEF

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone 57258.

#### Coda ★

Two-way miniature shelf enclosure. One B110 5in bass unit, one T27 1in tweeter. Crossover: 3.5kHz. FR: 50Hz-40kHz. HC: 20W. Impedance: 8 ohms. Size: 13 × 9 × 5½in. Weight: 10½lb. Finish: teak, walnut or white with brown or grey grille cloth. Price: £23.50 (plus VAT).

#### Cantor

Two-way shelf or wall-mounting enclosure. One B200 8in bass unit, one T27 1in tweeter. Crossover: 3.5kHz. FR: 45Hz-40kHz. HC: 25W. Impedance: 8 ohms. Size: 18½ × 4½ × 11in. Weight: 13½lb. Finish: teak, walnut or white with brown or grey grille cloth. Price: £27.50 (plus VAT).

#### Chorale

Compact model in choice of walnut, teak or white. Size: 18½ × 11 × 8½in. B200 and T27 units. HC: 25W. FR: 35Hz-40kHz. Impedance: 8 ohms. Price: £36 (plus VAT).

#### Cadenza

Reflex design in walnut, teak or white with brown or grey grille cloth. Size: 24 × 14 × 12in. B200, BD139 and T27 units. HC: 30W. FR: 30Hz-40kHz. Impedance: 8 ohms. Price: £52.50 (plus VAT).

#### ■ KEESONIC

Keesonic Audio Sales Ltd, Halldore Hill, Cookham, Maidenhead, Berks. Tel: Bourne End 22726.

#### Keesonic KBS

Bass reflex enclosure. FR: 50Hz-20kHz ±4dB. Impedance: 4-8 ohms (nominal). HC: 30W. Three drive units. Size: 33 × 21 × 21cm. Finish: teak or walnut. Price: £43 (plus VAT).

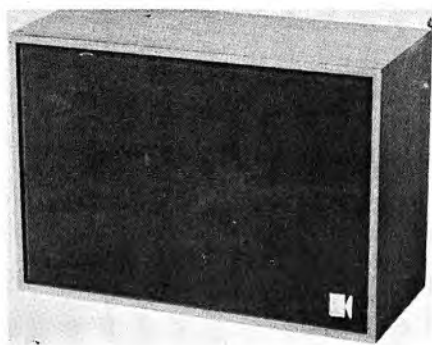
#### Keesonic KRF

Bass reflex enclosure. FR: 50Hz-20kHz ±3dB. Impedance: 8 ohms (nominal). Handling capacity: 45W. Three drive units. Size: 61 × 28 × 31cm. Finish: teak or walnut. Price: £72.50 (plus VAT).

Keesonic KTL and KSTM speaker enclosures to be introduced later this year. No details available as this edition of the Year Book closed for press.

#### Concerto

Reflex design in walnut or teak. Size:



KEF Coda

28 × 17 × 12in. B139, B110 and T27 units. HC: 50W. FR: 25Hz-40kHz. Impedance: 8 ohms. Price: £66 (plus VAT).

See also Constructional Kits section for Kef-kits.

#### Model 104

Three-way speaker system employing synthetic, laminated diaphragms for all three units. 320 × 210mm bass radiator is acoustically coupled to a 200mm bass driver at frequencies below 45Hz. T27 tweeter extends the range beyond 30kHz. A 6-element filter constructed with close tolerance components accurately controls balance and divides the input signal at 3kHz. High frequency attenuation remains less than 1dB up to 20kHz. Impedance: 8 ohms (nominal). Rated max. power: 50W programme. FR: ±2dB 50Hz-20kHz. ±5dB 35Hz-35kHz, -10dB at 30Hz. Acoustic contour control: 3 positions ±2dB centred on 1.5kHz. Harmonic distortion: <1% THD 100-30,000Hz. Sensitivity: 12.5W for 96dB at 1m into 8 ohms nominal. Amplifier requirements: 15-50W into 8 ohms. Finish: walnut, teak, white. Price: on application.

#### ■ KF PRODUCTS LTD

Ashton Road, Bredbury, Stockport, Cheshire SK6 2SP. Tel: 061-494 1441.

Specialist manufacturer of high quality loudspeakers. No details available as this edition of the Year Book closed for press.

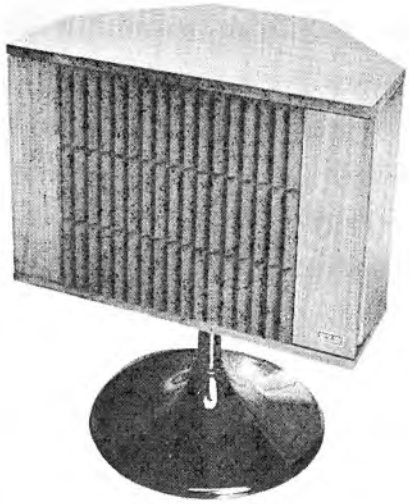
#### ■ KLH

Distributed by: Webland International Ltd, PO Box 826, London W2 2UF. Tel: 01-402 9809/9410.

★ Indicates entry is illustrated



KLH 38



KLH Model 28



KLH 5



KLH Marlboro 101

**KLH 31**

Two drive units with acoustic suspension loading for 8in bass driver. 1½in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.75kHz. Amplifier requirements: minimum 10W RMS per channel. Power handling: short duration peaks 100W. Size: 17½ × 11 × 8¼in. Finish: oiled walnut. Price: £64.35 per pair (plus VAT).

**KLH 32**

Two-way system incorporating 8in bass driver and 1½in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.75kHz. Amplifier requirements: minimum 10W RMS per channel. Power handling: short duration peaks 100W. Size: 19¾ × 10¾ × 7¼in. Weight: 17lb. Finish: oiled walnut. Price: £78.70 per pair (plus VAT).

**KLH 38 ★**

Two-way system incorporating 10in bass driver and 10in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.8kHz. Amplifier requirements: 12 to 15W RMS per channel minimum. Power handling: 150W short duration peaks. Size: 21¼ × 12¼ × 8½in. Finish: oiled walnut. Weight: 23lb. Price: £106.48 per pair (plus VAT).

**KLH 17**

Two-way system incorporating 10in bass driver and 1½in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.5kHz. Amplifier requirements: 12W RMS per channel minimum. Power handling: 100W short duration peaks. Size: 23¼ × 11¼ × 9in. Finish: oiled walnut. Weight: 24lb. Price: £119.91 per pair (plus VAT).

**KLH 33**

Two-way system incorporating 10in bass driver and direct radiating HF unit. Impedance: 8 ohms nominal. Amplifier requirements: 10W RMS per channel minimum. Crossover frequency: 1.5kHz. Power handling: 100W short duration peaks. Size:  $23\frac{3}{8} \times 12\frac{3}{4} \times 10\frac{5}{16}$ in. Finish: oiled walnut. Weight: 25lb. Price: £156.94 per pair (plus VAT).

**KLH 23**

Two-way system incorporating 12in bass driver and 1 $\frac{1}{2}$ in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.5kHz. Amplifier requirements: 18W RMS per channel minimum. Power handling: 150W short duration peaks. Size:  $12\frac{1}{2} \times 14\frac{1}{2} \times 11\frac{1}{2}$ in. Finish: oiled walnut. Weight: 39 $\frac{1}{2}$ lb. Price: £168.52 per pair (plus VAT).

**KLH 6**

Two-way system incorporating 12in bass driver and 1 $\frac{1}{2}$ in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequency: 1.5kHz. Amplifier requirements: 15W RMS per channel minimum. Power handling: 120W short duration peaks. Size:  $23\frac{1}{2} \times 12\frac{3}{8} \times 11\frac{1}{2}$ in. Finish: oiled walnut. Weight: 34lb. Price: £194.44 per pair (plus VAT).

**KLH 5 ★**

Three-way system incorporating four drive units; 12in bass driver, two high-efficiency mid-range units, 1 $\frac{1}{2}$ in direct radiating HF unit. Impedance: 8 ohms nominal. Crossover frequencies: 600Hz and 3kHz. Amplifier requirements: 25W RMS per channel minimum. Power handling: 150W short duration peaks. Size:  $26 \times 13\frac{3}{4} \times 11\frac{1}{2}$ in. Finish: oiled walnut. Weight: 44lb. Price: £273.15 per pair (plus VAT).

**KLH 28 ★**

Two-way omni-directional radiating system incorporating 3 × 10in bass drivers, and 3 × 2in HF units. FR: 35Hz-18kHz. Impedance: 8 ohms nominal. Crossover frequency: 1.5kHz. Amplifier requirements: 30W per channel minimum. Power handling: 400W RMS short duration peaks. Size:  $18\frac{1}{2} \times 28\frac{1}{2} \times 16\frac{1}{2}$ in. Weight: 94lb. Finish: oiled walnut. Price: £458.33 per pair (plus VAT).

**KLH 9**

Full range electrostatic loudspeaker system. Impedance: 16 ohms nominal. Amplifier requirements: 40W RMS per channel minimum. Weight: approx. 100lb. Finish: oatmeal grille with walnut frame. Price: £1995 per pair (plus VAT).

**KLH Marlboro 101 ★**

Two-way system incorporating 8in bass unit

and 2in HF unit. Impedance: 8 ohms nominal. Amplifier requirements: 8W RMS per channel minimum. Power handling: 75W short duration peaks. Crossover frequency: 1.6kHz. Size:  $21\frac{1}{4} \times 12 \times 7\frac{1}{4}$ in. Weight: 20lb. Finish: walnut. Price: £87.96 per pair (plus VAT).

**KLH Marlboro 102**

Two-way system incorporating 8in bass unit and 2 × 2in HF units. Impedance: 8 ohms nominal. Amplifier requirements: 10W RMS per channel minimum. Power handling: 75W short duration peaks. Crossover frequency: 16kHz. Size:  $24\frac{1}{2} \times 12\frac{1}{2} \times 9\frac{3}{8}$ in. Weight: 29lb. Finish: walnut. Price: £119.91 per pair (plus VAT).

**KLH Marlboro 103**

Three-way system incorporating 10in bass unit, 1 $\frac{1}{2}$ in HF unit and 5in mid-range unit. Crossover frequencies: 500Hz and 4kHz. Amplifier requirements: 15W RMS per channel minimum. Power handling: 100W short duration peaks. Size:  $26\frac{3}{8} \times 14\frac{1}{2} \times 11\frac{1}{2}$ in. Weight: 47lb. Finish: walnut. Price: £203.70 per pair (plus VAT).

**■ KLINGER**

Klinger Controls Ltd, Spencer Court,  
7 Chalcot Road, London NW1 8LU.  
Tel: 01-586 2922.

**S42**

Infinite baffle enclosure with units and crossover. One long-throw 6 $\frac{1}{2}$ in bass driver with rubber surround, one 3 $\frac{1}{2}$ in mid-range unit, one 2 $\frac{1}{2}$ in tweeter. Crossover frequency: 5kHz (L/C). FR: 40Hz-18kHz. HC: 12W. Impedance: 8 ohms. Size:  $17\frac{1}{2} \times 10 \times 8$ in. Weight: 11lb. Finish: teak cabinet with gold/black woven grille. Price: £20 each (plus VAT).

**S50 Mk II**

Infinite baffle enclosure with units and crossover. One 8in long-throw bass driver with rubber surround, two 3 $\frac{1}{2}$ in. solid-back tweeters. Crossover frequency: 5kHz (L/C). FR: 40Hz-18kHz. HC: 15W. Impedance: 8 ohms. Size:  $18 \times 13 \times 7$ in. Weight: 14lb. Finish: teak cabinet with brown basket weave grille and silver trim. Price: £22.50 each (plus VAT).

**S90**

Infinite baffle enclosure with units and crossover. One 12in long-throw bass driver, one 5in mid-range unit, one 2 $\frac{1}{2}$ in tweeter. Crossover frequency: 1kHz and 5kHz. Output level adjustment for mid-range and tweeter units. FR: 40Hz-20kHz. HC: 50W. Impedance: 8 ohms. Size:  $24 \times 13\frac{1}{2} \times 10$ in. Finish: teak cabinet with brown basket weave front grille and silver trim. Price: £111 per pair (plus VAT).



★ Indicates entry is illustrated

### S36

Sealed enclosure. Speakers: 8in × 5in bass/mid-range with tweeter cone. Power handling capacity: 6W. FR: 55Hz-12kHz. Size: 13 × 7 × 8in. Finish: teak veneer with gold/brown woven front. Price: £10 each (plus VAT).

### S43

Bass reflex enclosure. Speakers: 8in bass/mid-range unit and 3½in tweeter. Power handling capacity: 12W. FR: 55Hz-18kHz. Size: 17½ × 10 × 8½in. Finish: teak veneer with gold/brown woven front. Price: £16 each (plus VAT).

### S43F

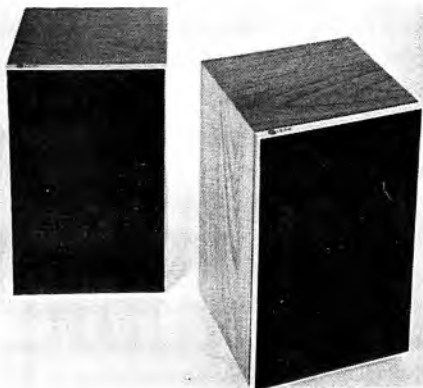
Bass reflex enclosure. Speakers: 8in bass/mid-range unit and 3½in tweeter. Power handling capacity: 12W. FR: 55Hz-18kHz. Size: 17½ × 10 × 8½in. Finish: teak veneer with black sculptured foam front. Price: £16 each (plus VAT).

## LEAK

Rank Radio International Ltd, PO Box 596,  
Power Road, Chiswick, London W4 5PW.  
Tel: 01-994 6491.

### 2020 ★

Acoustic suspension enclosure. FR: 55Hz-

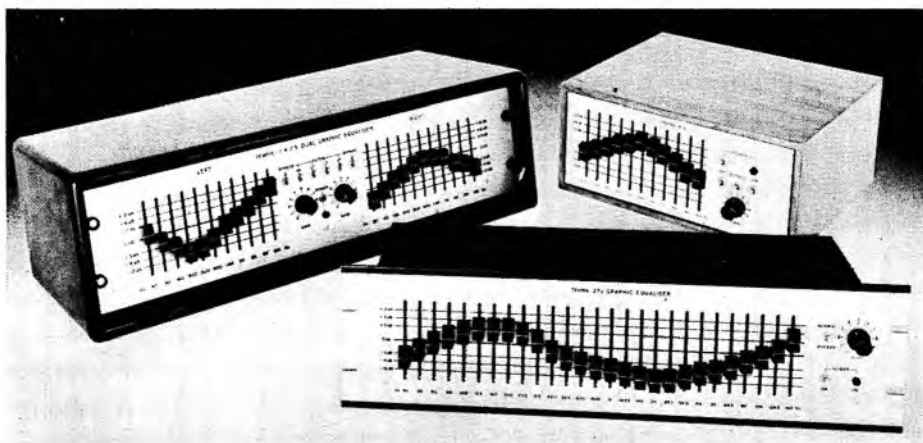


Leak 2020

20kHz ±3dB. Voice coil impedance: 6 ohms nominal. HC: 25W (DIN). Size: 15¼ × 9⅞ × 9in. Weight: 15lb. Two drive units. Crossover: 3.5kHz. Finish: teak. Price: £57.74 per pair (plus VAT).

### 2030 ★

Reflex enclosure. FR: 50Hz-20kHz ±3dB. Voice coil impedance: 6 ohms nominal. HC: 35W (DIN). Size: 19⅞ × 11 × 10in. Weight:



## Klark-Teknik Graphic Equalisers for the Hi-Fi Professional.



Send for our leaflet and address of  
your nearest stockist to: Klark-Teknik Ltd  
Summerfield, Kidderminster DY11 7RE. Tel. 0562 64027

24½lb. Three drive units. Crossover: 700Hz and 3.5kHz. Finish: teak. Price: £77.77 per pair (plus VAT).

#### 2060 ★

Acoustic suspension enclosure. FR: 45Hz-20kHz  $\pm$ 3dB. Voice coil impedance: 6 ohms nominal. HC: 50W (DIN). Size: 25½ × 15 × 12½in. Weight: 5lb. Three drive units. Crossover: 600Hz and 3.5kHz. Finish: teak. Price: £67.17 each (plus VAT).

#### 2075 ★

Transmission absorber. FR: 35Hz-20kHz  $\pm$ 3dB. Voice coil impedance: 6 ohms nominal. HC: 100W (DIN). Size: 50 × 19½ × 15in. Weight: 112lb. Four drive units. Crossover: 450Hz, 2kHz and 5kHz. Finish: teak. Price: £128.44 each (plus VAT).

#### ■ LINN-ISOBARIK

Linn Products Ltd, 235 Drakemire Drive, Castlemilk, Glasgow G45 9SZ. Tel: 041-634 3860.

#### DMS ★

Infinite baffle enclosure with units and crossover. HC: 100W. Impedance: 4 ohms nominal. Size: 15 × 16 × 30in. Suitable for amplifiers delivering over 60W per channel into 4 ohms, and up to 100-250W per channel. FR: 20Hz-20kHz  $\pm$ 1.5dB. Employs new bass generator concept (Patent pending). Weight: (approx) 100lb. Price: (per pair) £550 (including VAT).

#### ■ LUX

Howland-West Ltd, 3-5 Eden Grove, London N7 8EQ. Tel: 01-609 0293/6.

#### LX77

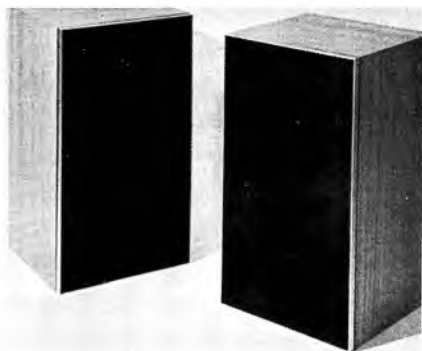
Infinite baffle enclosure with units and crossover. One free-edge 12in bass driver, one 1.6in dome HF unit, one 1.3in tweeter. Crossover: 700Hz, 8kHz (12dB/octave). HC: 60W. Impedance: 8 ohms. FR: 30Hz-22kHz. Size: 26¼ × 15¾ × 12¼in. Weight: 50lb. Finish: rosewood. Level controls for mid-range and HF units. Price: £82 (plus VAT).

#### ■ MAGNAT

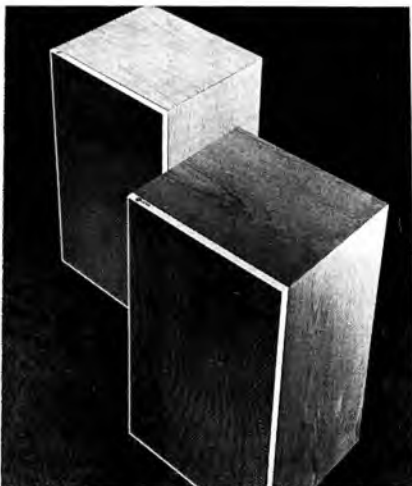
Magnat Sound Systems Ltd, Unit D, St John's Industrial Estate, Penn, Bucks. Tel: Penn 4615.

#### Turbo

Frequency range: 30Hz-22kHz. Crossover frequencies: 390Hz and 3.9kHz. Amplifier frequency response: 20Hz-22kHz  $\pm$ 1dB. Input impedance: 22K (low level) 500mV, 1K (high level) 2.8V/8mW. Amplifier distortion: 0.05%. Drive units: two 8in, one 2in dome, one 1in dome. Size: 26 × 62 × 30cm. Weight: 18kg.



Leak 2030

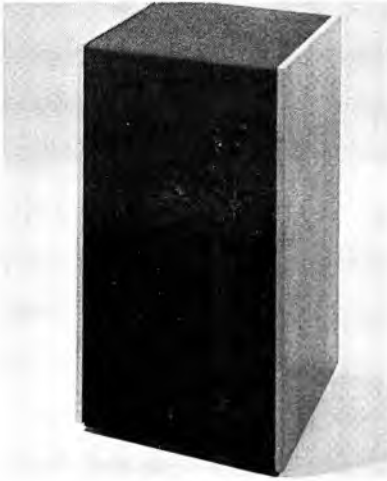


Leak 2060



Leak 2075

★ Indicates entry is illustrated



*Linn-Isobarik DMS*



*Magnat Bull*



*Magnat Super Bull*

Cabinet finishes: black, white or woodgrain.  
Price: £180 each (plus VAT).

**Bull ★**

Frequency range: 35Hz-22kHz. Crossover frequencies: 850Hz and 5.5kHz. Power handling capacity: 60W. Nominal impedance: 4 ohms. Drive units: one 8in, one 2in dome, one 1in dome. Size: 26 × 42 × 24cm. Weight: 9kg. Cabinet finishes: black, white or woodgrain. Price: £58.50 each (plus VAT).

**Super Bull ★**

Frequency range: 30Hz-22kHz. Crossover frequencies: 900Hz and 5.5kHz. Power handling capacity: 100W. Nominal impedance: 4 to 8 ohms. Drive units: two 8in, one 2in dome, one 1in dome. Size: 26 × 59 × 28cm. Weight: 12kg. Cabinet finishes: black, white or woodgrain. Price: £87.93 each (plus VAT).

**Bull Borg**

Frequency range: 35Hz-22kHz. Crossover frequencies: 950Hz and 6kHz. Power handling capacity: 50W. Nominal impedance: 4 ohms. Drive units: one 8in, one 3½in, one 1in dome. Size: 28 × 38.5 × 22cm. Weight: 9.5kg. Cabinet finishes: black, white or woodgrain. Price: £50.40 each (plus VAT).

**502 ★**

Frequency range: 33Hz-22kHz. Crossover frequencies: 900Hz and 5.5kHz. Power handling capacity: 90W. Nominal impedance: 4 to 8 ohms. Drive units: two 8in, one 3½in, one 1in dome. Size: 26 × 59 × 28cm. Weight: 12kg. Cabinet finishes: black, white or woodgrain. Price: £69.84 each (plus VAT).

**Twin ★**

Frequency range: 39Hz-22kHz. Crossover frequency: 1.8kHz. Power handling capacity: 45W. Nominal impedance: 4 ohms. Drive units: one 8in, one 1in dome. Size: 28 × 38.5 × 22cm. Weight: 9kg. Cabinet finishes: black, white or woodgrain. Price: £43.83 each (plus VAT).

■ **MARANTZ**

Pyser Ltd, Fircroft Way, Edenbridge, Kent.  
Tel: Edenbridge 4111.

**4G Acoustic Foam Grille**

Enclosure with units and crossover. One 8½in bass driver, one ¾in tweeter. L/C crossover. FR: 60Hz-15kHz ±5dB. HC: 40W music. Impedance: 8 ohms. Size: 11¼ × 19¼ × 8½in. Weight: 20lb. Finish: oiled walnut. Price: £38 (plus VAT).

**5G Acoustic Foam Grille**

Enclosure with units and crossover. One 8in



Magnat 502



Magnat Twin

bass driver, one 3½in tweeter. L/C crossover (12dB/octave from 2kHz). FR: 50Hz-15kHz  $\pm$ 3dB. Impedance: 8 ohms. Three-position high-frequency level selector switch. HC: 40W music. Size: 12 x 23 x 9½in. Finish: oiled walnut. Price: £48 (plus VAT).

#### 7G Acoustic Foam Grille

Enclosure with units and crossover. One 10in bass driver, one 2in dome tweeter. L/C crossover (12dB/octave from 3kHz). FR: 40Hz-18kHz  $\pm$ 5dB. HC: 100W music. Impedance: 8 ohms. Size: 14½ x 25½ x 11½in. Three-position high-frequency level selector switch. Finish: oiled walnut. Price: £68 (plus VAT).

#### 7G Acoustic Foam Grille

Enclosure with units and crossover. One 12in bass driver, one 3½in mid-range unit, one 1½in tweeter. L/C three-way crossover. FR: 40Hz-20kHz  $\pm$ 5dB. HC: 100W music. Impedance: 8 ohms. Controls: three-position high-frequency level selector switch, three-position mid-range level selector switch. Foam grille. Size: 14½ x 25½ x 11½in. Weight: 45lb. Finish: oiled walnut. Price: £88 (plus VAT).

#### ■ MARSDEN HALL.

Marsden Hall International Ltd, High March, Long March Industrial Estate, Daventry, Northants. Tel: Daventry, 4011.

#### Annexe XI. 10

Rating: 10W RMS. 152.4mm dia. rubber roll surround bass unit, 76.2mm dia. cone tweeter. FR: 40-20,000Hz. Finish: teak or walnut. Dimensions: 406 x 241 x 203mm. Impedance: 8 ohms. Price: on application.

#### Annexe XI. 15

Bookshelf loudspeaker. Rating: 15W RMS. 203.2mm dia. rubber roll surround bass unit, 76.2mm dia. cone tweeter. FR: 40-20,000Hz. Finish: teak or walnut. Dimensions: 432 x 280 x 203mm. Impedance: 8 ohms. Price: on application.

#### Annexe XI. 20

Bookshelf or free-standing loudspeaker. Rating: 20W RMS. 203.2mm dia. rubber roll surround bass unit, 50.8-76.2mm dia. cone tweeters. FR: 40-20,000Hz. Finish: teak or walnut. Dimensions: 533 x 304 x 254mm. Impedance: 8 ohms. Price: on application.

#### Annexe XI. 30

Bookshelf or free-standing loudspeaker. Rating: 30W RMS. 254mm rubber roll surround bass unit, 101.6mm rubber roll surround fully-enclosed mid-range unit, 25.4mm dome tweeter, 10-element crossover network. Finish: teak or walnut. Dimensions: 635 x 356 x 280mm. FR: 30Hz-20kHz. Impedance: 8 ohms. Price: on application.

#### Symphony 4522

Rating: 50W RMS. Incorporates a 300mm bass unit, 102mm dia. mid-range and 25mm soft-dome pressure unit, 9-component crossover network mounted on the internal cross brace. FR: 30-20,000Hz. Impedance: 8 ohms. Dimensions: 800mm high, 367mm wide, 290mm deep mounted on plinth measuring 51 x 319 x 230mm. Sealed back and front baffles. Finish: dark American walnut or natural teak. Price: on application.

#### Symphony 3522

Rating: 35W RMS. Incorporates a 250mm dia. bass unit coupled to a 102mm mid-range and a 25mm soft dome pressure unit via a 9-component crossover network. Crossover is mounted on a lateral brace. Sealed back and front baffles. Inside cabinet is filled with acoustic damping material. FR: 30-20,000Hz. Impedance: 8 ohms. Dimensions: 763mm high, 305mm wide, 279mm deep mounted on plinth measuring 51 x 255 x 215mm. Finish: dark American walnut or natural teak. Price: on application.

★ Indicates entry is illustrated

■ **MILLIBANK**

Millbank Electronics Group Ltd, Bellbrook Estate, Uckfield, Sussex TN22 1PS. Tel: Uckfield 4166.

**MLS 1000**

Heavy duty infinite baffle speaker enclosure with units and crossover. One 18in bass driver, four horn-loaded pressure units. Crossover: (electrical) 800Hz. FR: 30Hz to above 12kHz. Designed for high quality high level music reproduction. HC: 150W (from built-in amplifier). Impedance: 10K input to amplifier. Size: 42 × 21½ × 36in. Weight: 180lb. Finish: vynide-covered wood cabinet, satin chrome

speaker grille, matt black anodised aluminium HF unit housing. Preset controls for HF and LF units. Particularly suitable for discotheques. Price: £460.33 (plus VAT).

■ **MONITOR AUDIO**

347 Cherry Hinton Road, Cambridge CB1 4DJ. Tel: Cambridge 42898.

**MA 1 ★**

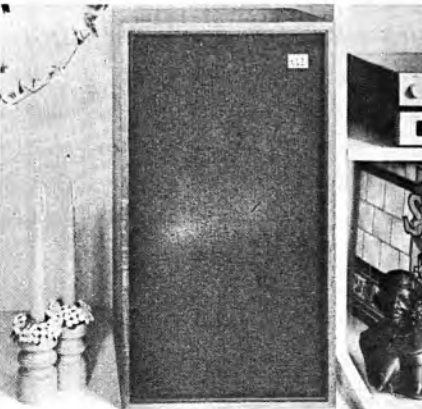
Reflex enclosure with units and crossover. One 13 × 9in reinforced polystyrene wedge bass driver, one 7in plastic cone mid-range, one soft dome 1in tweeter. Crossover frequencies:



Monitor Audio MA3



Monitor Audio-Model MA1



Monitor Audio-Model MA5



Monitor Audio MA7

## SPEAKER ENCLOSURES

400Hz and 2.9kHz. FR: 45Hz-19kHz  $\pm$ 3.5dB. HC: 60W programme. Min. power: 20W. Impedance: 8 ohms. Size: 30  $\times$  13.5  $\times$  15in. Weight: 60lb. Stand: 10in high, steel frame with castors. Price: £101.40 (plus VAT). Stand extra.

### MA 3 ★

Reflex enclosure with units and crossover. One 13.5  $\times$  9.2in bass driver, one 7in plastic cone mid-range driver, one damped mylar dome 1in tweeter. Crossover frequencies: 400Hz and 3kHz. FR: 45Hz-20kHz  $\pm$ 3dB. HC: 100W programme. Impedance: 8 ohms. Size: 27 $\frac{1}{2}$   $\times$  13 $\frac{1}{4}$   $\times$  12 $\frac{1}{2}$ in. Highly damped enclosure with above average translation efficiency. Price: £134 each (plus VAT). Stand available.

### MA 4

FR: 50Hz-18kHz  $\pm$ 3dB. Impedance: 8 ohms (nominal). Sensitivity: 12W for 96dB at 1m. HC: 60W programme. Size: 23.5  $\times$  12.5  $\times$  11in. Weight: 32lb. Price: £77.74 each (plus VAT). Stand available.

### MA 5 ★

Infinite baffle enclosure with units and crossover. One plastic cone bass/mid-range driver 8in in diameter, one soft-dome tweeter 1in. Crossover: 2.9kHz. FR: 55Hz-19kHz  $\pm$ 3dB. HC: 40W programme. Min. power: 15W. Impedance: 8 ohms. Size: 22  $\times$  12  $\times$  10in. Weight: 26lb. Price: £51.32 each (plus VAT). Stand available.

### MA 7 ★

Compact reflex enclosure with units and crossover. One 6.5in bass driver, one mylar dome 1in dome tweeter. Crossover: 3kHz. FR: 70Hz-20kHz  $\pm$ 4dB, (overall) 40Hz-22kHz. HC: 25W programme. Min. power: 8W. Impedance: 8 ohms. Size: 16  $\times$  9  $\times$  8in. Weight: 15lb. Price: £30.80 each (plus VAT).

## ■ KEITH MONKS

Keith Monks (Audio) Ltd, 26-28 Reading Road South, Fleet, near Aldershot, Hants.  
Tel: Fleet 7316/3566.

### Elf De Luxe

Bookshelf reflex enclosure with three units. Built-in filter system, 6 $\frac{1}{2}$ in bass driver, two 3in tweeters. HC: 20W. FR: 40Hz-16kHz. Impedance: 8 ohms. Finish: teak, walnut, rosewood, white or laurel. Price: £28.70 (plus VAT).

### Super Elf ★

Bookshelf enclosure with units and crossover. One 8in long-throw bass driver, two 3in high response tweeters. FR: 40Hz-18kHz. Impedance: 8 ohms. HC: 25W RMS. Size: 17 $\frac{1}{2}$   $\times$  11  $\times$  8 $\frac{1}{2}$ in. Finish: teak, walnut or rosewood. Price: £43.30 (plus VAT).



Monitor Audio MA4



Keith Monks Super Elf



Keith Monks Pixie

★ Indicates entry is illustrated



Keith Monks Elf Major



Mordaunt-Short MS 235



Mordaunt-Short MS079



Mordaunt-Short MS 400

### Pixie ★

Bookshelf, infinite baffle enclosure with one 6½in bass driver, one 3in tweeter. HC: 15W. Finish: teak or walnut. Price: £17.60 (plus VAT).

### Elf Minor

Bookshelf bass reflex enclosure with 8in special treated bass unit, 4in damped mid-range, 3in dome tweeter. HC: 40W. Finish: teak, walnut or rosewood. Impedance: 8 ohms. Price: £55.06 (plus VAT).

### Elf Major ★

Floor standing, bass reflex enclosure with 8in special treated bass unit, 4in damped mid-range, 3in dome tweeter. HC: 50W. Impedance: 8 ohms. Finish: teak, walnut or rosewood. Price: £77.10 (plus VAT).

### ■ MORDAUNT-SHORT

Mordaunt-Short Ltd, The Causeway, Petersfield, Hants GU31 4JT.  
Tel: Petersfield 4631.

#### MS 079 ★

Infinite baffle enclosure. 2 drive units. FR: 45Hz-4.5kHz. HC: 25W continuous programme. Impedance: 8 ohms. Size: 400 × 241 × 203mm. Weight: 6.4kg. Finish: teak, walnut, rosewood veneer, white or special finishes to order. Price: teak or walnut £70 per pair (plus VAT); white or rosewood £78 per pair (plus VAT).

#### MS 235 ★

Infinite baffle enclosure. 3 drive units. FR: 40Hz-25kHz. Crossover frequencies: 3.5kHz and 12kHz. HC: 30W continuous programme.

Impedance: 8 ohms. Size: 533 × 330 × 229mm. Weight: 11.3kg. Finish: teak, walnut, rosewood veneer, white or special finishes to order. Price: teak or walnut £120 per pair (plus VAT); white or rosewood £132 per pair (plus VAT).

#### MS 400 ★

Infinite baffle enclosure. 3 drive units. FR: 35Hz-25kHz. Crossover frequencies: 2.25kHz and 12kHz. HC: 35W continuous programme. Impedance: 8 ohms. Size: 686 × 381 × 229mm with 44mm plinth. Weight: 17.7kg. Finish: teak, walnut, rosewood veneer, white or special finishes to order. Price: teak or walnut £145 per pair (plus VAT); rosewood or white £161 per pair (plus VAT).

#### MS 737 ★

Infinite baffle enclosure. 3 drive units. FR: 25Hz-25kHz. Crossover frequency: 3.5kHz. HC: 45W continuous programme. Impedance: 8 ohms. Size: 838 × 432 × 305mm with 44mm plinth. Weight: 28.1kg. Finish: teak, walnut, rosewood veneer, white or special finishes to order. Price: teak or walnut £222 per pair (plus VAT); rosewood or white £244 per pair (plus VAT).

#### MS Carnival ★

Infinite baffle enclosure. 2 drive units. FR: 50Hz-18kHz. HC: 18W continuous programme. Impedance: 8 ohms. Size: 400 × 241 × 145mm. Weight: 5.3kg. Finish: teak, walnut, rosewood veneer or white. Rear of cabinet inset with glass-plates enabling horizontal or vertical wall mounting. Price: £45 per pair (plus VAT).

#### MS Festival

Infinite baffle enclosure. 2 drive units. FR: 45Hz-18kHz. HC: 20W continuous programme. Impedance: 8 ohms. Size: 454 × 279 × 185mm. Weight: 7kg. Finish: teak, walnut, rosewood veneer or white. Rear of cabinet inset with glass-plates enabling horizontal or vertical wall mounting. Price: £54 per pair (plus VAT).

#### ■ OMAL

Ambionic Sound Reproducers Ltd,  
Omal House, North Circular Road,  
London NW10 7UF. Tel: 01-965 8787.

#### Omal Ambionic TL6 Monitor ★

Variable transmission line monitor speaker system with adjustable damping, resonance and polar response. Fitted with one bass driver, two mid-range and two treble units. FR: 20Hz-50kHz. Power handling: 50W DIN. Amplifier requirement: minimum 20W RMS per channel. Distortion: less than 1%. Impedance: 8 ohms nominal. Crossover frequencies: 400Hz and

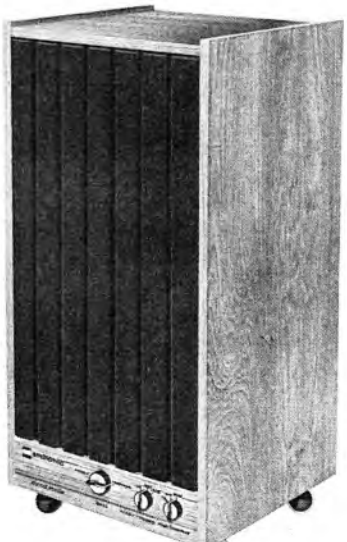
5kHz. Controls: bass, mid-range and treble. Size: 870 × 420 × 420mm including castors. Weight: 31kg. Price: on application.

#### ■ PEAL

Peal Sound Equipment Ltd, 57 Albert Street,  
Rugby, Warwicks, CV21 2SG.  
Tel: Rugby 71419.



MS 737



Omal Ambionic TL6 Monitor



★ Indicates entry is illustrated

### Musicmaster 1

Reflex enclosure. Power: 50W RMS. Units: two 320mm dual concentric. Impedance: 16 ohms (nominal). Size: 800 × 450 × 350mm. Price: on application.

### Musicmaster 2

Tuned reflex enclosure. Power: 100W RMS. Units: one 380mm bass, one mid/treble horn. Impedance: 16 ohms (nominal). Crossover frequency: 75Hz (12dB/Oct). Size: 1,000 × 600 × 450mm. Price: on application.

### ■ PHILIPS

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS. Tel: 01-437 7777.

#### RH456

Loudspeaker enclosure with units and crossover. HC: 40W. 8in woofer, 2in dome squawker, 1in dome tweeter. Impedance: 4 ohms. Crossover frequencies: 700Hz and 3kHz. FR: 35-20,000Hz. Resonance frequency: 55Hz. Size: 355 × 475 × 225mm. Price: to be advised.

#### RH457

Loudspeaker enclosure with units and crossover. HC: 50W. 8in woofer, 8in radiating cone, 2in dome squawker, 1in dome tweeter. Impedance: 4 ohms. Crossover frequencies: 700Hz and 3kHz. FR: 30-20,000Hz. Resonance frequency: 22 and 55Hz. Size: 422 × 555 × 225mm. Price: to be advised.

#### RH453

Loudspeaker enclosure with units and crossover. HC: 35W. 8in woofer, 1in tweeter. Impedance: 4 ohms. Crossover frequency: 1.5kHz. FR: 45-20,000Hz. Resonance frequency: 85Hz. Size: 285 × 380 × 210mm. Price: to be advised.

#### RH541

Motional feedback loudspeaker enclosure. 7in woofer, 1in dome tweeter. FR: 35-20,000Hz. Amplifier output: 30W. HD: <1% at 30W. Power bandwidth: 14-50,000Hz. Crossover frequency: 1.4kHz. Input sensitivity: 1V at 10K, for connection of pre-amplifiers: 7.5V at 100 ohms, for connection of low power amplifiers, 19V at 100 ohms, for connection of high power amplifiers. 19 transistors, 14 diodes. 5-pin DIN sockets. Pilot lamp. Mains: 110, 127, 220 and 240V AC 50/60Hz. Size: 229 × 294 × 173mm. Price: to be advised.

#### RH544

Motional feedback loudspeaker enclosure. 8in woofer, 2in dome squawker, 1in dome tweeter. Amplifier output: 60W. Crossover frequencies:

electronic crossover at 500Hz and passive crossover at 3kHz. Input sensitivity: 1-22V at 100K (continuously variable). 25 transistors, 16 diodes. 5-pin DIN sockets. Mains: 110, 127, 220 and 240V AC 50/60Hz. Power consumption: 150W max. Size: 287 × 387 × 216mm. Price: to be advised.

### ■ PHOTAX

Photax (London) Ltd, Eastbourne, Sussex. Tel: Eastbourne 51197.

#### 1000S

Bass reflex enclosure. FR: 35Hz-21kHz. vci: 8 ohms. HC: 15W. Size: 11 $\frac{3}{4}$  × 20 $\frac{1}{4}$  × 9 $\frac{3}{4}$ in. Weight: 24.2lb. Three drive units, 8in, 5in, 3in. Crossover frequencies: 1kHz and 5kHz. Price: £39.96 each (plus VAT).

#### 2000S

Infinite baffle enclosure. FR: 30Hz-21kHz. vci: 8 ohms. HC: 17W. Size: 13 $\frac{3}{4}$  × 22 $\frac{3}{4}$  × 11 $\frac{3}{4}$ in. Weight: 33lb. Two drive units, 10in and 1in dome. Crossover frequency: 2.5Hz. Price: £54 each (plus VAT).

#### 3000S

Infinite baffle enclosure. FR: 27Hz-21kHz. vci: 8 ohms. HC: 22W. Size: 15 × 22 $\frac{3}{4}$  × 11 $\frac{3}{4}$ in. Weight: 41.8lb. Three drive units: 12in, 5 $\frac{1}{2}$ in and 1in dome tweeter. Crossover frequencies: 700Hz and 5kHz. Price: £67.89 each (plus VAT).

### ■ PIONEER

Distributors: Shriro (UK) Ltd, Shriro House, The Ridgeway, Iver, Bucks SLO 9JL. Tel: Iver 652227/7.

#### CS-R100

Bass reflex enclosure. FR: 50Hz-20kHz ±3dB. vci: 8 ohms. HC: 20W RMS. Size: 18 $\frac{1}{2}$  × 10 $\frac{3}{4}$  × 8 $\frac{1}{2}$ in. Weight: 11.1lb. Two drive units. Crossover: 5kHz. Resonant frequency: 87Hz. Distortion: 5% at 1kHz. Sensitivity: 1W for 92dB at 1m ±1.5dB. Finish: walnut. Price: on application.

#### CS-R300

Bass reflex enclosure. FR: 45Hz-20kHz ±3dB. vci: 8 ohms. HC: 40W. Size: 22 × 13 × 10in. Weight: 26.7lb. Two drive units. Crossover: 4.2kHz. Resonant frequency: 81Hz. Distortion: 3.5%. Sensitivity: 1W for 92dB at 1m ±1.5dB. Finish: walnut. Price: on application.

#### CS-R500

Bass reflex enclosure. FR: 35Hz-20kHz ±3dB. vci: 8 ohms. HC: 60W. Size: 24 × 13 × 12in. Weight: 38.9lb. Three drive units. Crossover: 650Hz and 6kHz. Resonant frequency: 65Hz. Distortion: 3%. Sensitivity: 1W for 91dB at 1m ±1.5dB. Finish: walnut. Price: on application.



# Quality speaks for itself

Monitor Audio is a young company and has established a reputation within a short space of time —

Why?

Because we take pains to ensure that the customers

get what they pay for —

Good sound quality.

All five models have been acclaimed by critics as of the highest standard.



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# spendor

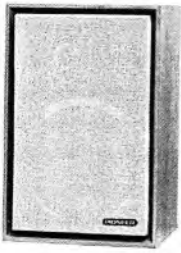


The Spondor BCIII monitor illustrated above is an extension and refinement of the BCI and BCII. The BCI is widely acknowledged as setting a new standard in loudspeaker design. Spondor loudspeakers are used extensively by recording studios and broadcasting organisations throughout the United Kingdom.

## Spondor Audio Systems Limited

Station Road Industrial Estate, Hailsham, Sussex, England.

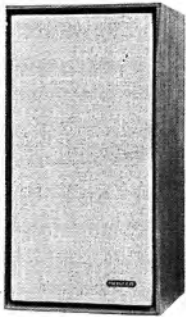
Telephone: Hailsham 843474



Pioneer CS-E220



Pioneer CS-E 220



Pioneer CS-E 530



Pioneer CS-E 420



**CS-R700**

Bass reflex enclosure. FR: 35Hz-20kHz. vci: 8 ohms. HC: 75W. Size: 26 × 14 × 13½in. Weight: 50.1lb. Three drive units. Crossovers: 700Hz and 14kHz. Distortion: 5%. Sensitivity: 1W for 91dB at 1m ±1.5dB. Finish: walnut. Price: on application.

**CS-E220 ★**

Air suspension. FR: 50Hz-20kHz. vci: 4-8 ohms. HC: 20W. Size: 17 × 9 × 8in. Weight: 13.4lb. Two drive units. Crossover: 2.75kHz. Resonant frequency: 90Hz. Distortion: 3% at 1kHz. Sensitivity: 1W for 86dB at 1m. Finish: walnut. Price: on application.

**CS-E320 ★**

Air suspension. FR: 50Hz-20kHz. vci: 4-8 ohms. HC: 30W. Size: 17 × 9 × 8in. Weight: 19.13lb. Two drive units. Crossover: 1.85kHz. Resonant frequency: 73Hz. Distortion: 3% at 1kHz. Sensitivity: 1W for 86dB at 1m. Finish: walnut. Price: on application.

**CS-E420 ★**

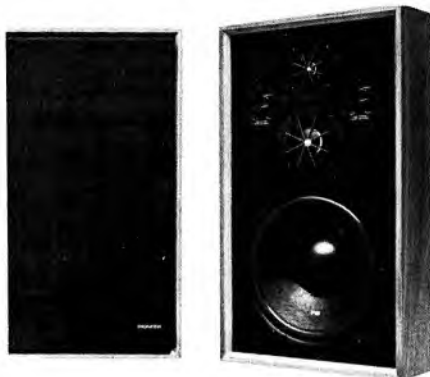
Air suspension. FR: 35Hz-20kHz. vci: 4-8 ohms. HC: 40W. Size: 19 × 10½ × 9in. Weight: 26.7lb. Two drive units. Crossover: 1.6kHz. Resonant frequency: 60Hz. Distortion: 2% at 1kHz. Sensitivity: 1W for 87dB at 1m. Finish: walnut. Price: on application.

**CS-E530 ★**

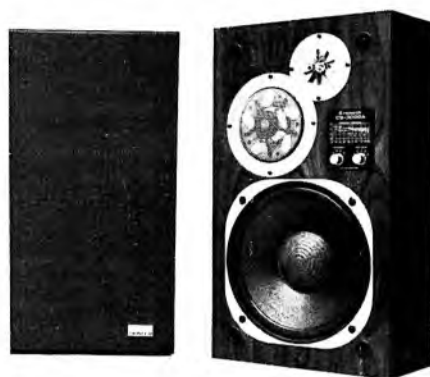
Infinite baffle. FR: 35Hz-20kHz. vci: 8 ohms. Size: 22 × 13 × 11in. Weight: 36.6lb. Three drive units. Crossover: 800Hz. Resonant frequency: 53Hz. Distortion: 2% at 1kHz. Sensitivity: 1W for 88dB at 1m. Finish: walnut. Price: on application.

**CS-E730**

Infinite baffle. FR: 35Hz-20kHz. vci: 8 ohms. HC: 60W. Size: 26 × 14 × 12in. Weight: 47.6lb. Three drive units. Crossover: 650Hz and 5kHz. Resonant frequency: 53Hz. Distortion: 2%. Sensitivity: 1W for 91dB at 1m. Finish: walnut. Price: on application.



Pioneer CS-E 830



Pioneer CS 3000 A

**CS-E830 ★**

Infinite baffle. FR: 35Hz-20kHz. vci: 8 ohms. HC: 75W. Size: 26 × 14 × 12in. Weight: 48.8lb. Three drive units. Crossover: 750Hz and 5.6kHz. Resonant frequency: 55Hz. Distortion: 5% at 1kHz. Sensitivity: 1W for 90.5dB at 1m. Finish: walnut. Price: on application.

**CS-3000A ★**

Infinite baffle. FR: 30Hz-20kHz. vci: 8 ohms. HC: 100W. Size: 26 × 14 × 12in. Weight: 33kg. Three drive units. Crossovers: 620Hz and 4kHz. Resonant frequency: 45Hz. Distortion: 1% at 1kHz. Sensitivity: 1W for 89dB at 1m. Finish: walnut. Price: on application.

**CS-T8**

Infinite baffle enclosure. FR: 30Hz-20kHz. Sensitivity: 1W for 90.5dB at 1m. Maximum input power: 80W. Impedance: 8 ohms. 3 drive units. Crossover frequencies: 700Hz and 4kHz. Size: 14<sup>3</sup>/<sub>16</sub> × 24<sup>3</sup>/<sub>16</sub> × 13in. Finish: rosewood. Price: on application.

**CS-F51**

Bass reflex enclosure. FR: 35Hz-20kHz. Sensitivity: 1W for 90dB at 1m. Maximum input power: 50W. Impedance: 8 ohms. 2 drive units. Crossover: 2.2kHz. Size: 13<sup>3</sup>/<sub>16</sub> × 22<sup>1</sup>/<sub>16</sub> × 10<sup>13</sup>/<sub>32</sub>in. Finish: walnut. Price: on application.

**CS-313**

Bass reflex enclosure. FR: 50Hz-20kHz. Sensitivity: 1W for 93dB at 1m. Maximum input power: 20W. Impedance: 8 ohms. 2 drive units. Crossover frequency: 5kHz. Size: 270 × 500 × 230mm. Finish: walnut. Price: on application.

■ **QUAD**

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

**Quad Electrostatic ★**

Full range doublet covering 45Hz-18kHz. Attenuation outside band asymptotic to 18dB/8ve. Total integrated radiation at max output equivalent to 95 phons in rooms of up to 5000 cu ft with average reverberation. Dispersion approx 70° horizontal, 15° vertical. Imp: 30-15 ohms, 40Hz to 8kHz, falling above 8kHz. Designed for use with standard Quad 303 Amplifier. Suitable for AC supplies 100-120 or 200-250V 50-60Hz. Free-standing unit requires no enclosure or cabinet. Weight: 35lb. Price: £120 (plus VAT).

■ **QUASAR**

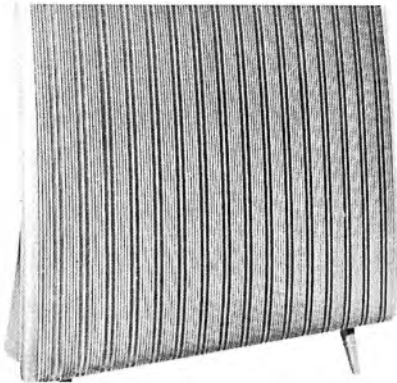
Quasar Division, Precision Centre,  
Heather Park Drive, Wembley HA0 1SU.  
Tel: 01-902 8832.

**QSI Studio ★**

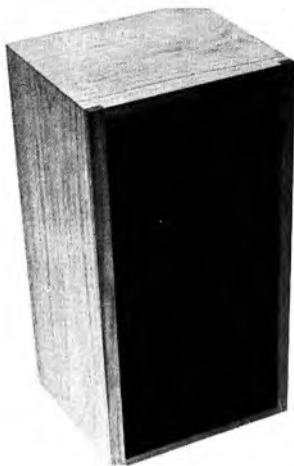
Ported enclosure. FR: 45Hz-20kHz ±3dB. vci: 8 ohms nominal. HC: 50W. Size: 26 × 15½ × 11½in. Weight: 44lb. Four drive units. Crossover frequencies: 600Hz, 4.5kHz and 18kHz. Resonant frequency: 60Hz. Distortion: 0.16% at 1kHz. Doppler distortion: 0.007%, 85dB at 1m (measured with simultaneous frequencies of 100Hz and 3kHz). Efficiency: 0.55%. Sensitivity: 3.1W for 95dB at 1m. Finish: teak with solid afrormosia trim. Price: £84 (plus VAT).

**QS2 Monitor**

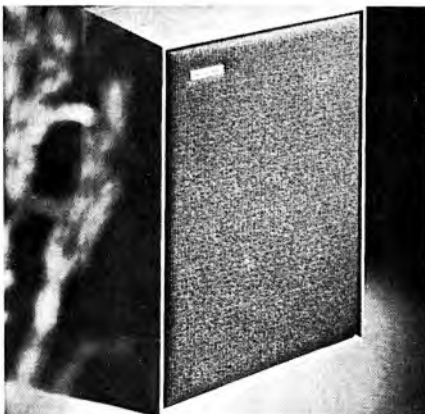
Ported enclosure. FR: 55Hz-18kHz ±3dB. vci: 8 ohms nominal. HC: 50W. Size: 24½ × 13 × 11½in. Weight: 40lb. Three drive units. Crossover frequencies: 600Hz and 4.5kHz. Resonant frequency: 64Hz. Distortion: 0.16% at 1kHz. Doppler distortion: 0.007%, 85dB at 1m. Efficiency: 0.55%. Sensitivity: 3.1W for 95dB at 1m. Finish: teak with solid afrormosia trim. Price: £68 (plus VAT).



*Quad Electrostatic*



*Quasar QSI Studio*



*Rogers Ravensbourne Compact*

### QS3 Compact Monitor

Infinite baffle enclosure. FR: 60Hz-16kHz  $\pm 3$ dB. vci: 8 ohms nominal. HC: 30W. Size:  $23\frac{1}{2} \times 12 \times 8\frac{1}{2}$ in. Weight: 26lb. Three drive units. Crossover frequencies: 600Hz and 4.5kHz. Resonant frequency: 64Hz. Distortion: 0.16% at 1kHz. Doppler distortion: 0.013%. 85dB at 1m. Efficiency: 0.55%. Sensitivity: 3.1W for 95dB at 1m. Finish: teak with solid afrormosia trim. Price: £54 (plus VAT).

### ■ ROGERS

Rogers Developments (Electronics) Ltd,  
4-14 Barmston Road, London SE6 3BN.  
Tel: 01-698 7424/4340.

### Ravensbourne Compact ★

Complete system including units. One 8in bass driver, one 2½in tweeter. Crossover: 2.75kHz at 18dB per octave. FR: 40Hz-20kHz. HC: 35W music rating. Impedance: 8-16 ohms. Size:  $19 \times 13 \times 8\frac{1}{2}$ in. Weight: 17½lb. Finish: teak standard, other finishes, including rosewood and walnut, available to order at extra cost. Price: per pair £62 (plus VAT).

### BBC Studio Monitor

Three-way system based on a design by the BBC research department and produced under licence. Conforms to BBC specification LS3/6, but with the addition of a third unit. Three drive units comprise bass driver, mid-range unit and tweeter. Bass and tweeter unit efficiencies are matched by low-loss auto transformer with 1dB tapings. Sophisticated crossover using 5 per cent tolerance inductors and low loss capacitors. FR: 40Hz-25kHz  $\pm 3$ dB. HC: 25W (makers recommend amplifier having output of at least 20W, but caution is necessary with equipment over 40W output as overheating of the speech coil may occur). Impedance: 15 ohms standard, 8 ohms and 25 ohms made to order. Size:  $12 \times 25 \times 12$ in deep. Height with stand: 37in. Finish: teak. Price: (Standard Model — LS3/6, two drive units) £80 (plus VAT); (Special Model, three drive units) £90 (plus VAT); Tripod stand £9 (plus VAT).

### Series III Wafer

Infinite baffle enclosure. FR: 40Hz-20kHz. vci: 8 ohms. HC: 15W speech and music. Size:  $18 \times 12\frac{1}{4} \times 2\frac{1}{2}$ in. Weight: 10½lb. Two drive units. Crossover: 3kHz. Finish: teak with Declon grille. Price: £24 (plus VAT).

### BBC Monitor LS3/6 Standard

Reflex enclosure. FR: 40Hz-14kHz  $\pm 3$ dB. vci: 15 ohms. HC: 25W speech and music. Size:  $12 \times 12 \times 25$ in. Weight: 34lb. Two drive units. Made under licence from the BBC. Finish: teak. Price: £80 (plus VAT).

★ Indicates entry is illustrated

**BBC Monitor LS3/6 Special ★**

Reflex enclosure. FR: 40Hz-20kHz  $\pm 3$ dB. vci: 15 ohms. HC: 25W speech and music. Size: 12  $\times$  12  $\times$  25in. Weight: 34lb. Three drive units. Finish: teak. Made under licence from the BBC. Price: £90 (plus VAT).

**BBC Monitor LS3/5A ★**

Infinite baffle enclosure. FR: 80Hz-20kHz  $\pm 3$ dB. vci: 8 ohms. Size: 7 $\frac{1}{4}$   $\times$  6 $\frac{1}{2}$   $\times$  11 $\frac{3}{4}$ in. Weight: 9 $\frac{1}{2}$ lb. Two drive units. Crossover: 3kHz. Finish: teak. Made under licence from the BBC. Price: (per pair) £119 (plus VAT).

**NOTE:** Distribution of the Rogers BBC Monitor speaker system is through a very limited number of selected audio retailers. Full list of appointed retailers available from the manufacturers.

■ **ROLA-CELESTION**

See Celestion.

■ **SABA**

Saba Radio & Television Ltd, 6-12 Cornbrook Park Road, Manchester M15 4EE. Tel: 061-872 7661.

**FL15G**

Speaker enclosure with units. One bass driver, one HF unit. FR: 50Hz-20kHz. Size: 15 $\frac{3}{4}$   $\times$  9 $\frac{3}{4}$   $\times$  3 $\frac{1}{2}$ in. Finish: light walnut or white. Price: £27.89 (including VAT).

**15G**

Speaker enclosure with units. One bass driver, one HF unit. FR: 45Hz-20kHz. Size: 15 $\frac{3}{4}$   $\times$  8 $\frac{3}{4}$   $\times$  8 $\frac{3}{4}$ in. Finish: fabric with wood grille. Price: £27.89 (including VAT).

**FL40G**

Speaker enclosure with units. Two bass drivers, one HF unit. FR: 40Hz-20kHz. Size: 20 $\frac{1}{2}$   $\times$  12 $\frac{3}{4}$   $\times$  4 $\frac{1}{4}$ in. Price: £45.17 (including VAT).

**40G**

Speaker enclosure with units. Two bass drivers, one tweeter. FR: 35Hz-22.5kHz. Size: 19 $\frac{1}{2}$   $\times$  11  $\times$  9 $\frac{1}{4}$ in. Price: £45.17 (including VAT).

**FL60G**

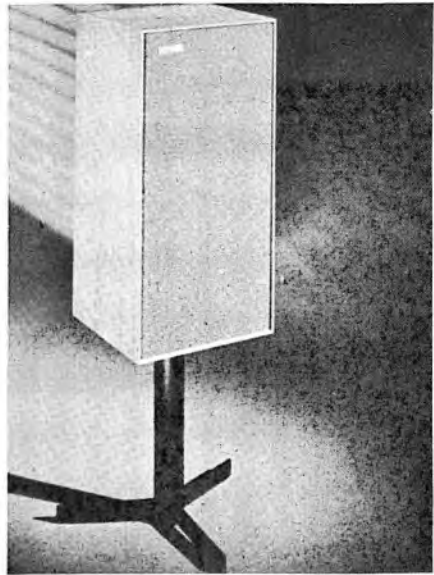
Speaker enclosure with units. One bass driver, one mid-range unit, two tweeters. FR: 30Hz-22.5kHz. Size: 23  $\times$  14 $\frac{1}{4}$   $\times$  4 $\frac{3}{4}$ in. Price: £64.76 (including VAT).

**60G**

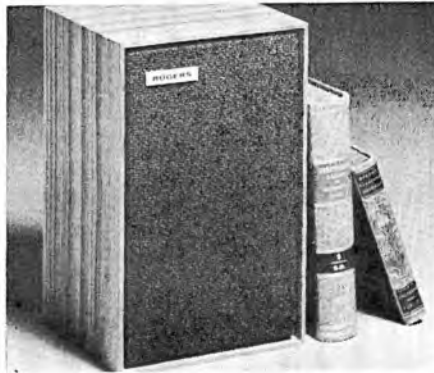
Speaker enclosure with units. One bass driver, one mid-range unit, two tweeters. FR: 25Hz-25kHz. Size: 22 $\frac{1}{2}$   $\times$  12 $\frac{1}{2}$   $\times$  10 $\frac{1}{4}$ in. Price: £64.76 (including VAT).

**Box 45**

Speaker enclosure with units. One bass driver,



Rogers BBC Monitor LS3/6 Special



Rogers BBC Monitor LS3/5A

one mid-range unit, one tweeter. FR: 30Hz-20kHz. HC: 45W. Price: £43.35 (including VAT).

■ **SALORA**

Luxitone, 38 Jamestown Road, London NW1 7EJ. Tel: 01-267 4939/4930.

**KS 202**

Sealed enclosure loudspeaker. 2 drive units. FR: 140Hz-20kHz. Maximum power: 10W RMS. Impedance: 4 ohms. DIN cable: 10m. Size: 120  $\times$  170  $\times$  180mm. Weight: 1.8kg. Price: on application.

**KS 208**

Sealed enclosure loudspeaker. 2 drive units. FR: 60Hz-20kHz. Maximum power: 30W RMS. Impedance: 4 ohms. DIN-cable: 5m. Size: 238 × 347 × 210mm. Weight: 6kg. Price: on application.

**KS 225**

Sealed enclosure loudspeaker. 3 drive units. FR: 25Hz-20kHz. Maximum power: 50W RMS. Impedance: 4 ohms. DIN-cable: 5m. Size: 305 × 505 × 305mm. Weight: 15kg. Price: on application.

**■ SANYO**

Sanyo Marubeni (UK) Ltd,  
Sanyo House, Bushey Mill Lane, Watford,  
Herts WD2 4UQ. Tel: Watford 30421.

**RW15**

Price: £21.95 each (including VAT).

**RW30**

Price: £28.95 each (including VAT).

**RW40**

Price: £46.95 each (including VAT).

No further details available at time of going to press.

**■ SCAN SOUND**

Howland-West Ltd, 3-5 Eden Grove,  
London N7 8EQ. Tel: 01-609 0293/6.

**H-10**

FR: 45Hz-20kHz. Power rating: 20W. Sensitivity: 90dB/1W/1m. Impedance: 4-8 ohms. Size: 440mm high, 275mm wide, 170mm deep. Weight: 7kg. Price: on application.

**H-20**

FR: 40Hz-20kHz. Power rating: 35W. Sensitivity: 91dB/1W/1m. Impedance: 4-8 ohms. Size: 515mm high, 320mm wide, 220mm deep. Weight: 9kg. Price: on application.

**HP-30**

FR: 35Hz-20kHz. Power rating: 40W. Sensitivity: 91dB/1W/1m. Impedance: 4-8 ohms. Size: 550mm high, 340mm wide, 250mm deep. Weight: 11kg. Price: on application.

**■ SCOTT**

Photax (London) Ltd, Hampden Park,  
Eastbourne, Sussex. Tel: Eastbourne 51197.

**S17N**

Price: £39.17 (including VAT).

**S42N**

Price: £49.22 (including VAT).

**S15N**

Price: £65.12 (including VAT).

**S52N**

Price: £66.56 (including VAT).

**S11C**

Price: £70.86 (including VAT).

**S61N**

Price: £83.79 (including VAT).

No further details available at time of going to press.

**■ SENNHEISER**

Distributed by Hayden Laboratories Ltd,  
Hayden House, 17 Chesham Road,  
Amersham, Bucks HP6 5AG.  
Tel: Amersham 5511.

**VKL 304-1**

Infinite baffle enclosure. FR: 40Hz-16kHz. Size: 24 × 40 × 65cm. Weight: 22kg. Finish: walnut. Contains a 30W amplifier with 50K input impedance. Price: on application.

**VKL 304-4**

Infinite baffle enclosure. FR: 40Hz-16kHz. Size: 24 × 40 × 65cm. Weight: 22kg. Finish: light grey Hornitex. Contains a 30W amplifier with 50K input impedance. Price: on application.

**■ SIEMENS**

Siemens Ltd, Great West House,  
Great West Road, Brentford.  
Tel: 01-568 8281.

**RL602**

Speaker enclosure using four drivers rated for 60W. No further details available as this edition of the Year Book closed for press. Price: £126 (including VAT).

**■ SINCLAIR**

Sinclair Radionics Ltd, London Road,  
St Ives, Hunts PE17 4HJ.  
Tel: St Ives 64646.

**Q16**

Slim shelf-mounting enclosure with unit. High compliance full-range driver with aluminium speech coil and ceramic magnet. 11,000 gauss. HC: 14W. Impedance: 8 ohms. FR: 60Hz-16kHz. Infinite baffle construction. Size: 10½ × 10½ × 4½in. Finish: natural solid teak surround with black cellular foam front. Price: £8.95 (plus VAT).

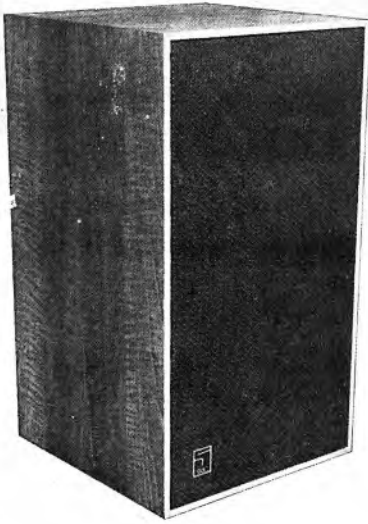
**■ SMC**

Monitor Distribution Co Ltd, 76 Bedford  
Road, Kempston, Beds MK42 8BB.  
Tel: Bedford 854133.

**AL12**

Acoustic labyrinth system, 8in bass unit and 4in





SMC Saturn

tweeter. FR: 45Hz-40kHz (DIN 45: 500). HC: 30W. into 8 ohms. Efficiency 20W pink noise for 96dB at 1 metre. Size: 23½ × 11½ × 11½in. Finish: teak. Pedestal stand S12 or trolley T12 available. Price: (per pair) AL12 £101.85, S12 £14.66, T12 £21.21. (all prices excluding VAT).

#### AL22

Acoustic labyrinth system, 8in bass unit and ¾in tweeter. FR: 35Hz-40kHz (DIN 45: 500). HC: 30W. into 8 ohms. Efficiency 20W pink noise for 96dB at 1 metre. Size: 32½ × 13½ × 13½in. Finish: teak, supplied on plinth for floor standing. Price: (per pair) £131.45 (plus VA 1).

#### AL30

Acoustic labyrinth system, bass unit and two HF units. FR: 3Hz-40kHz (DIN 45: 500). HC: 40W. into 8 ohms. Efficiency 20W pink noise for 96dB at 1 metre. Size: 35½ × 14½ × 13½in. Finish: teak Formica. Price: (per pair) £173.80 (plus VA 1). Other finishes available to order.

#### Saturn

Drive units: 8in Bextrene cone PVC roll surround LF unit and 1in doped fabric dome HF unit. FR: 55Hz-20kHz ±4dB (40Hz-25kHz DIN). Power rating: 25W DIN. Impedance: 8 ohms. Sensitivity: 96dB for 12W for 96dB at 1m. Crossover frequency: 3kHz. Size: 255 × 465 × 240mm. Weight: 8kg. Price: £69 per pair (plus VAT).

#### ■ SONAB

Sonab Ltd, PO Box 4, Oldfield Road, Hampton TW12 2HN. Tel: 01-979 0134.

#### OA-6 Monitor

Enclosure with six units and built-in bass amplifier. Units: 8½in bass driver, 8½in mid-range unit, four 2in tweeters. Bass speaker driven by 26W RMS built-in amplifier. Adjustable environmental controls on mid-range and bass frequencies. Distortion: 0.1%. Crossover: 200Hz and 2.7kHz. FR: 26Hz-18kHz (DIN). HC: 50W (DIN). Impedance: about 7 ohms. Size: 9½ × 17 × 27in. Weight: 44lb. Finish: rosewood, walnut, teak, oak, deal or white. Price: £416.67 per pair (plus VAT).

#### OA-14

Bass reflex enclosure. FR: 29Hz-15kHz ±3dB. vci: 8 ohms. HC: 40W (DIN). Size: 23 × 57 × 42cm. Weight: 11.5kg. Five drive units; one SC163 bass and midrange; 50W 5cm treble units. Sensitivity: input for 0.022 acoustic watts (DIN) × W. Finish: teak, oak, walnut, rosewood, white and black lacquer. Price: (per pair) £148.06 (plus VAT). Delivered as stereo pairs.

#### OA-12

Bass reflex enclosure. FR: 42Hz-15kHz ±3dB. vci: 8 ohms. HC: 40W (DIN). Size: 20 × 46 × 34cm. Weight: 7kg. Three drive units; one SC165 bass and midrange; two 5cm treble units. Finish: teak, oak, walnut, rosewood, white and black lacquer. Price: (per pair) £119.91 (plus VAT). Delivered as stereo pairs.

#### OD-11

Bass reflector enclosure. FR: 52Hz-15kHz ±4dB. Impedance: 8 ohms. HC: 40W (DIN). Size: 26 × 26 × 26cm. Weight: 6kg. Two drive units; one SC165 bass and mid-range; one 5cm treble unit. Sensitivity: input for 0.022 acoustic watts (DIN) 8W. Finish: as other units. Price: £92.55 per pair. Delivered as stereo matched pairs.

#### ■ SOUND STUDIO

The Sound Studio Ltd, London House, Mayfield, Sussex. Tel: Mayfield 3419/2495.

#### Rondo

Omni-directional loudspeaker system of original design. Two-way system with upwards facing units. Cabinet consists of plastic cylinder 10in diameter, 15in high. FR: approximately 40Hz-18kHz. Available in white, red, green or yellow. Price: £55 per pair (including VAT).

#### ■ SPENDOR

Spendor Audio Systems Ltd, Unit 12, Station Road, Industrial Estate, Hailsham, Sussex. Tel: Hailsham 843474.



Spendor BC111

**BCI**

Reflex enclosure with units and crossover. One 8in plastic cone bass driver, one Celestion HF1300 mid-range unit, one STC 4001G tweeter. Crossover: 3kHz and 13kHz. FR: 45Hz-25kHz ( $\pm 3\text{dB}$  60Hz-14kHz). HC: 40W peak programme. Impedance: 8 ohms. Main driver based on BBC design with resin-bonded voice coil. Size: 25 x 11½ x 12in. Weight: 31lb. Finish: teak standard (rosewood, walnut or white to order). Price: from £87 (plus VAT). Trolley optional extra.

**BCII**

Reflex enclosure with units and crossover. One 8in plastic cone bass driver, one Celestion HF1300 mid-range unit, one STC 4001G tweeter. Crossover: 3kHz, 13kHz. FR: 45Hz-25kHz (60Hz-14kHz  $\pm 3\text{dB}$ ). HC: 50W peak programme. Impedance: 8 ohms. Bass driver developed by Spendor with 1½in diameter resin-bonded voice coil. Size: 25 x 11½ x 12in. Weight: 33lb. Finish: teak standard (rosewood, walnut or white to order). Price: from £93.30 (plus VAT). Trolley optional extra.

**BCIII ★**

Reflex enclosure with units and crossover. One Spendor 12in bass driver, one 8in mid-frequency unit, one Celestion HF1300 HF unit, one Celestion HF2000 tweeter. Crossover: 700Hz, 3kHz and 13kHz. FR: 30Hz-20kHz (50Hz-14kHz  $\pm 2\text{dB}$ ). HC: 70W peak programme. Impedance: 8 ohms nominal. Size: 31½ x 15½ x 15½in. Weight: 75lb. Finish: teak (white, walnut, rosewood to order). Price: £180.40 (plus VAT). Trolley optional extra.

Spendor speakers also supplied with 20W or

50W power amplifier built-in (Models BCIA and BCIIA). Amplifier inputs balanced or unbalanced. Designed for professional market. Prices and specifications on request.

**■ STEEPLETONE**

Steepletone Products Ltd,  
Station Approach, Bicester, Oxon OX6 7DP.  
Tel: Bicester 42031.

**S36**

Price: £19.57 per pair (plus VAT).

**S43**

Price: £27.24 per pair (plus VAT).

**S50**

Price: £45.09 per pair (plus VAT).

No further details available at time of going to press.

**■ STEPHEN SPEAKERS**

Wilmslow Audio, Swan Works, Bank Square,  
Wilmslow. Tel: Wilmslow 29599.

**Type W1**

Ready-assembled cabinet suitable for the following:

Richard Allan Twin Assembly  
Helme XLK25, XLK50, XLK30  
Goodmans DIN 20

Wharfedale Linton 2 Kit

Richard Allan Triple 8

Wharfedale Glendale 3 Kit

Kef B139/T15, Kef B200/T27

Goodmans Twinaxiom 10

Peerless 3-15

Size: 20 x 12 x 9in. Finish: Chipboard finished in Decamel (like Formica) in white or teak. Price: on application.

**Type W2**

Ready-assembled cabinet suitable for the following:

Wharfedale Dovedale 3 Kit

Richard Allan Triple

Richard Allan Super Triple

Goodmans Audiom 100/Axent 100

All Baker 12in Hi-Fi types

Kef B139, B110/T27

Size: 27 x 16 x 12in. Finish: Chipboard finished in Decamel (like Formica) in white or teak. Price: on application.

**Type 80**

Ready-assembled cabinet suitable for the following:

Fane Mode One

Wharfedale Linton 2 Kit

Goodmans DIN 20

Eagle FR8

Helme XLK25, XLK50, XLK30

Richard Allan Twinkit

★ Indicates entry is illustrated

Goodmans Twinaxiom 8  
Fane 801 + tweeter, 801T, 803T, 807T  
Peerless 3-15  
Size: 19¼ × 10¼ × 9in. Finish: teak. Price: on application.

**Type N12**  
Ready-assembled cabinets suitable for the following:

Richard Allan Triple  
Richard Allan Super Triple  
Wharfedale Dovedale 3  
Goodmans Axiom 100/Axent 100  
All Baker 12in Hi-Fi types  
Kef B139/T15  
Size: 24 × 14 × 12in. Finish: teak. Price: on application.

**Type 38**  
Ready-assembled cabinet suitable for the following:

EMI 150, 450, 350, 92390FN  
Fane 138/10 LRT  
Size: 19¼ × 10¼ × 9in. Finish: teak. Price: on application.

## ■ STEREO RANGE

Howland-West Ltd, 3-5 Eden Grove,  
London N7 8EQ. Tel: 01-609 0293/6.

**S-02**  
FR: 65Hz-15kHz. Power rating: 10W. Sensitivity: 92dB/1W/1m. Impedance: 4-8 ohms. Size: 340mm high, 210mm wide, 130mm deep. Weight: 2.5kg. Price: on application.

**S-12**  
FR: 60Hz-20kHz. Power rating: 12W. Sensitivity: 92dB/1W/1m. Impedance: 4-8 ohms. Size: 440mm high, 275mm wide, 170mm deep. Weight: 5.5kg. Price: on application.

**S-22**  
FR: 45Hz-20kHz. Power rating: 20W. Sensitivity: 92dB/1W/1m. Impedance: 4-8 ohms. Size: 515mm high, 320mm wide, 220mm deep. Weight: 9kg. Price: on application.

## ■ STUDIOCRAFT

Bose (UK) Ltd, Milton Regis, Sittingbourne,  
Kent. Tel: Sittingbourne 75341.

**Model 110**  
Infinite baffle enclosure. vci: 8 ohms. HC: 40W. Size: 14 × 9 × 7½in. Two drive units. Crossover frequency: 2.2kHz. Price: £59.80 per pair (plus VAT).

**Model 220**  
Infinite baffle enclosure. vci: 8 ohms. HC: 50W. Size: 20 × 12 × 8in. Two drive units. Cross-

over frequency: 1.9kHz. Price: £85 per pair (plus VAT).

**Model 330**  
Infinite baffle enclosure. vci: 8 ohms. HC: 60W. Size: 21½ × 13½ × 9in. Three drive units. Crossover frequency: 1.8kHz. Price: £110 per pair (plus VAT).

**Model 440**  
Acoustic suspension speaker. vci: 4 ohms. HC: 100W. Size: 25½ × 15½ × 11½in. Three drive units. Crossover frequency: 1.8kHz. Finish: walnut grain vinyl veneer. Price: £156 per pair (plus VAT).

## ■ TANNOY

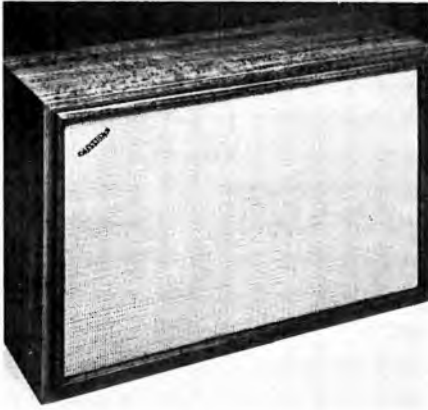
Tannoy Products Ltd, Norwood Road,  
West Norwood, London SE27 9AB.  
Tel: 01-670 1131.

**Mansfield ★**  
Infinite baffle enclosure accommodating either the HPD 315 or HPD 385 monitor units. Of very rigid construction, the interior surfaces are treated with generous amounts of acoustically selected foam. Finish: golden teak or mid-walnut veneers finished with matt melamine lacquer. An acoustically transparent grille cloth is used and the cabinet is finished with a plinth to avoid damage to the cabinet finish. Size: 33 × 21 × 12½in. Price: (HPD 385) £121 (plus VAT); (HPD 315) £102.30 (plus VAT).

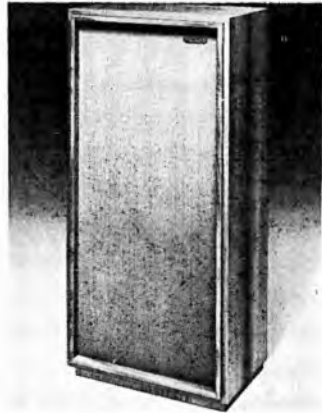
**Amesbury ★**  
Designed to accommodate the HPD 385 monitor unit. The cabinet has a ducted port, and is of very rigid construction with generous internal damping. Finished in golden teak or mid-walnut veneers finished in matt melamine lacquer. Size: 42 × 23½ × 15in. Price: £144.10 (plus VAT).

**Chevening ★**  
Ducted port enclosure which incorporates the monitor 295 high performance dual concentric. Suitable for floor or shelf mounting. The interior is acoustically treated and ported to give the best bass performance, and the unit is front mounted for smooth extended treble. Available in teak or mid-walnut veneers finished in matt melamine. Size: 15 × 23 × 10¼in. Price: £87.45 (plus VAT).

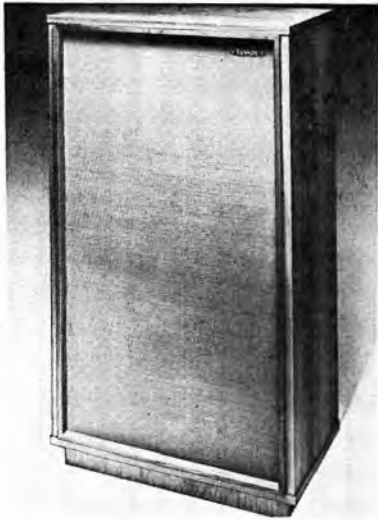
**Chatsworth ★**  
Infinite baffle enclosure which incorporates the monitor 315 high performance dual concentric. HC: 60AW. Interior of cabinet is acoustically treated to give damped bass response and extended treble. Available in golden teak or mid-walnut veneers finished in matt melamine lacquer. Size: 33 × 15½ × 10¼in. Price: £95.70 (plus VAT).



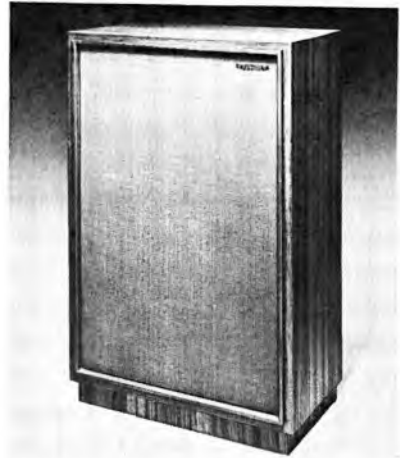
*Tannoy Chevening*



*Tannoy Amesbury*



*Tannoy Chatsworth*



*Tannoy Mansfield*

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough. Tel: Slough 33311.

**TL41**

FR: 44Hz-20kHz. HC: 15W; 30W music power. Size: 10½ × 6½ × 8in. Two drive units; 5in woofer, 3 × 5in mid-range and tweeter. Price: (per pair) £49 (including VAT).

**TL400**

FR: 44Hz-20kHz. HC: 20W; 30W music power. Two drive units; 6½in woofer, 3 × 5in mid-range and tweeter. Finish: light matt walnut softline. Price: (per pair) £64 (including VAT).

**TL500**

FR: 40Hz-20kHz. HC: 35W; 50W music power. Size: 14 × 10½ × 7in. Two drive units: 8in woofer, 1 7/12in tweeter. Crossover: 2kHz. Finish: light matt walnut anthracite. Price: (per pair) £99.50 (including VAT).

**TL600**

FR: 40Hz-20kHz. HC: 35W; 50W music power. Size: 18 × 12½ × 5in. Three drive units: 8in woofer, 4½in mid-range, 1in tweeter. Crossovers: 800Hz and 1500Hz. Finish: light matt walnut softline. Price: (per pair) £129 (including VAT).

★ Indicates entry is illustrated

#### **TL700**

FR: 30Hz-20kHz. HC: 45W; 60W music power. Size: 18 × 13 × 9½in. Three drive units: 8in woofer, 4½in mid-range, 1½in tweeter. Crossovers: 600Hz and 3kHz. Finish: light matt walnut softline. Price: (per pair) £138 (including VAT).

#### **TL800**

4-way performance standard speaker with 4 loudspeaker systems including 2 spherical loudspeakers. Rated capacity: 60W. Max capacity: 100W. FR: 25Hz-20kHz. Crossover frequencies: 500Hz, 900Hz and 6kHz. One 9½in woofer, one 5in medium-level loudspeaker, one 1½in diameter medium-level loudspeaker, one 1½in diameter spherical tweeter. Size: 16½ × 12 × 23in. Finish: light matt walnut with genuine veneer or pearl-white finish. Stand included. Price: £126 each (including VAT).

#### **■ TOSHIBA**

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

#### **SS-200**

Two-way infinite baffle system. 2 drive units. FR: 50Hz-20kHz. HC: 15W. Impedance: 8 ohms. Size: 250 × 495 × 195mm. Price: £49.08 per pair (plus VAT).

#### **SS-350**

Three-way pressure balance system. 3 drive units. FR: 35Hz-20kHz. HC: 20W. Impedance: 8 ohms. Size: 320 × 560 × 270mm. Price: £129.18 per pair (plus VAT).

#### **SS-415**

Three-way pressure balance system. 3 drive units. FR: 25Hz-20kHz. HC: 25W. Impedance: 8 ohms. Size: 320 × 540 × 310mm. Price: £174.46 per pair (plus VAT).

#### **SS-510**

Three-way pressure balance system. 3 drive units. FR: 20Hz-20kHz. HC: 25W. Impedance: 8 ohms. Size: 345 × 590 × 325mm. Price: £212.54 per pair (plus VAT).

#### **■ VOXSON**

DSC (Audio Products) Ltd, Colwyn Bay, North Wales LL28 5HD. Tel: Colwyn Bay 49275.

#### **B311**

FR: 45Hz-18kHz. Maximum input power: 60W. Impedance: 8 ohms. Size: 665 × 382 × 302mm. Weight: 15kg. Price: £65.66 each (plus VAT). Speaker housing units: left (Cat. no. 1096) £88.26 (plus VAT); right (Cat. no. 1097) £88.26 (plus VAT).

#### **■ WHARFEDALE**

Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

#### **Denton 2 XP ★**

Acoustic suspension enclosure with units and crossover. One 8in bass, one 2in mid-range/treble. Power handling capacity: 25W DIN. FR: 65Hz-20kHz DIN. Crossover type: 12dB/Oct. Crossover frequency: 1.4kHz. Impedance: 6 ohms nominal. Sensitivity: 6W for 96dB SPL. Size: 355 × 246 × 222mm. Finish: teak, walnut or white. Price: £49.50 per pair (including VAT).

#### **Linton 3 XP ★**

Acoustic suspension enclosure with units and crossover. One 8in bass, one 4in mid-range unit, one 1in treble. Power handling capacity: 30W DIN. FR: 50Hz-20kHz DIN. Crossover type: 12dB/Oct. Crossover frequencies: 1kHz and 4kHz. Sensitivity: 8W for 96dB SPL. Impedance: 6 ohms nominal. Size: 476 × 264 × 240mm. Finish: teak, walnut or white. Price: £68.85 per pair (including VAT).

#### **Glendale 3 XP ★**

Acoustic suspension enclosure with units and crossover. One 10in bass, one 4in mid-range unit, one 1in treble. Power handling capacity: 40W DIN. FR: 40Hz-20kHz DIN. Crossover type: 12dB/Oct. Crossover frequencies: 800Hz and 4kHz. Sensitivity: 10W for 96dB SPL at 1m. Impedance: 6 ohms nominal. Size: 565 × 305 × 265mm. Finish: teak, walnut or white. Price: £92.45 per pair (including VAT).

#### **Denton 1**

Acoustic suspension enclosure. One drive unit. FR: 70Hz-22kHz ±3dB. Impedance: 6 ohms nominal. HC: 18W (DIN). Sensitivity: 6W for 96dB SPL at 1m. Size: 330 × 240 × 185mm. Finish: white. Price: on application.

#### **Dovedale 3**

Acoustic suspension enclosure. Houses one 12in bass unit, one 5in mid-range and one 1in treble unit. FR: 40Hz-20kHz (DIN). Impedance: 6 ohms nominal. HC: 50W (DIN). Crossover frequencies: 600Hz and 5kHz. Sensitivity: 20W for 96dB SPL at 1m. Size: 610 × 356 × 305mm. Finish: teak. Price: £64.25 each (including VAT).

#### **Kingsdale 3**

Acoustic suspension enclosure. Houses one 15in bass unit, one 5in mid-range and one 1in treble unit. FR: 40Hz-20kHz (DIN). Impedance: 6 ohms nominal. HC: 60W (DIN). Crossover frequencies: 700Hz and 3kHz. Sensitivity: 16W for 96dB SPL at 1m. Size: 620 × 440 × 350mm. Finish: teak. Price:



Wharfedale Denton 2XP



Wharfedale XP range. Denton 2XP (top),  
Glendale 3XP (left), Linton 3XP (right)



Wharfedale Linton 3XP



Wharfedale Glendale 3XP

£86.54 each (including VAT).

For Wharfedale speaker kits see Constructional Kits.

■ **WOOLLETT AUDIOSTATICS**

Anerley Station Road, London SE20 8PY.  
Tel: 01-699 5296.

**Claremont 11**

Electrostatic mid-range and HF system. Constant charge push-pull electrostatic unit. Crossover 1.6kHz -6dB/Octave. FR: 1.6kHz-

20kHz. HC: 20W. Impedance: 16 ohms. Cabinet contains mains polarising unit, crossover, phase corrector for transistor amplifiers, depolarising circuit, pre-set treble attenuator (12dB range). Mains: 200-250V (100-125V to order). Finish: veneered wood, with Vynair. Size: 11½ × 8½ × 8½in. Weight: 4lb 12oz. Price: £39.60 (plus VAT).

**Leven**

Similar specification to Claremont 11 but in bow-fronted cabinet 10 × 8½ × 8½in. Price: £26.90 (plus VAT).

★ Indicates entry is illustrated



Yamaha NS-645



Yamaha NS-670

## ■ WORDEN

Worden Audio Developments Ltd,  
54 Chepstow Road, London, W2.  
Tel: 01-229 4996.

### Panosona Reproducer

Double horn with diffusing chamber. Corner reproducer, designed for near plane-wave distribution from single speaker unit. Available in three versions: Model A size 54in high, 24in wide, 14½in to corner. FR with Lowther PM6 Mk1 or PM720Hz to over 18kHz. Model B size 48in high, 21½in wide, 12½in to corner. FR with Lowther PM6 or PM6 Mk1 30Hz to over 18kHz. Model C size 27in high, 24in wide, 13in to corner. FR: with Lowther PM6 or PM6 Mk1 40Hz to over 18kHz. Prices: Model A (speaker enclosure only) £100; Model B (enclosure only) £88; Model C (enclosure only) £68.

### Panosona Bookshelf Speaker

Designed in accordance with the principles of the Panosona Corner Reproducers. Size:

16 × 9 × 9½in. Standard finish: teak. Other finishes to order. Contrasting Tygan or Vynair front covering. Price: £45 complete, including full range drive unit.

## ■ YAMAHA

Natural Sound Systems Ltd, Strathcona Road,  
Wembley HA9 8QL. Tel: 01-904 0141.

### NS-410

Two-way speaker system. One 8in bass/mid-range driver, one 2in horn tweeter. Paper cone. Impedance: 8 ohms. HC: 10W. FR: 45Hz-18kHz. Price: £53.57 (plus VAT).

### NS-625 ★

Speaker enclosure with 2 units, crossover and level control for tweeter. One 8in bass driver, one 1½in tweeter. Impedance: 4 ohms nominal. HC: 40W. FR: 45Hz-20kHz. Crossover frequency: 2kHz. Res. frequency: 50Hz. Operating power: 10W. Size: 11 × 10 × 19½in. Weight: 25.5lb. Price: £89.95 per pair (plus VAT).

### NS-645

Speaker enclosure with 2 units, crossover and level control for tweeter. One 10in bass driver, one 1½in tweeter. Impedance: 4 ohms nominal. HC: 50W. FR: 45Hz-20kHz. Crossover frequency: 2kHz. Res. frequency: 45Hz. Operating power: 6.3W. Size: 11½ × 10½ × 21½in. Weight: 32.1lb. Price: £119.95 per pair (plus VAT).

### NS-670 ★

Speaker enclosure with 3 units, crossover and level control for tweeter and mid-range. One 10in bass driver, one 1½in soft-dome mid-range unit, one 1½in tweeter. Impedance: 8 ohms nominal. HC: 50W. FR: 40Hz-20kHz. Crossover frequencies: 800Hz and 6kHz. Res. frequency: 45Hz. Operating power: 6.3W. Size: 12½ × 10½ × 22½in. Weight: 42lb. Price: £179.95 per pair (plus VAT).

### NS-690

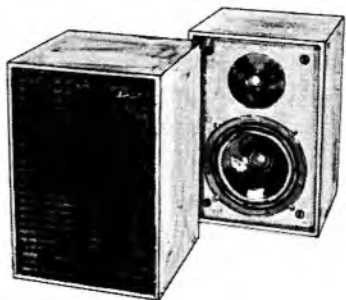
Speaker enclosure with 3 units, crossover and level control for tweeter and mid-range. One 12in bass driver, one 2in mid-range unit, one 1½in tweeter. Impedance: 8 ohms nominal. HC: 60W. FR: 35Hz-20kHz. Crossover frequencies: 800Hz and 6kHz. Res. frequency: 40Hz. Operating power: 4W. Size: 13½ × 11½ × 24½in. Weight: 48lb. Price: £219.95 per pair (plus VAT).

# Richard Allan

introduce a new generation in loudspeaker design

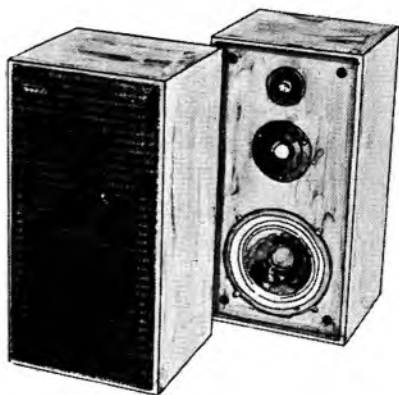
## The RAB range

Each enclosure is designed to fit a specific purpose, thus covering the whole range of domestic and professional requirements. To meet the exacting demands three new transducers have been evolved. DT20X—Diaphragm Tweeter 3kHz-20kHz  $\pm$  2.5dB. LPB—Long throw 25mm dia. normal voice coil, treated Bextrene cone unit, fr = 40Hz, fh 3dB = 5.5kHz, 20watts r.m.s. over full frequency range 30mins. HPBB—Extra long throw 38mm dia. high temperature voice coil (made by a unique process), treated Bextrene cone unit, fr less than 25Hz, fh 3dB = 4.5kHz, 45watts r.m.s. over fully frequency range 30mins.



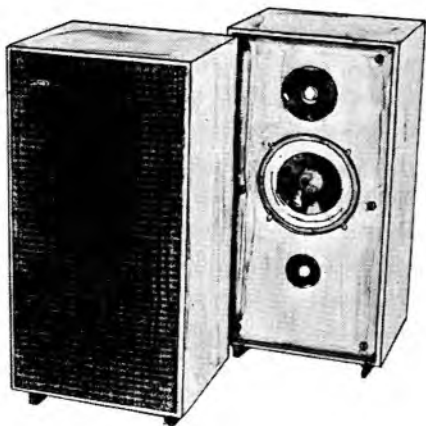
**RAB8: DR20X - LP8B - Infinite Baffle**

Crossover 5 Element. HP Filter 18dB/octave.  
LP Filter 12dB/octave. Power handling capacity:  
30watts programme 20watts r.m.s.  
(Dimensions) 395 x 266 x 250mm.



**RA82: DT20X - HP8B - Infinite Baffle**

Crossover + level adjusting network 14 Elements.  
HP Filter 24dB/octave. LP Filter 18dB/octave.  
Power handling capacity: 70watts programme  
45watts r.m.s.  
(Dimensions) 545 x 280 x 250mm.



**RA82L: DT20X - HP8B - Labyrinth**

Crossover + level adjusting network 14 Elements.  
HP Filter 24dB/octave. LP Filter 18dB/octave  
Power handling capacity: 70watts programme  
45watts r.m.s.

For full details of our RAB range, refer to editorial, or write to:

**Richard Allan Radio Ltd., Bradford Road, Gomersal, Cleckheaton BD19 4AZ,  
Yorkshire, England**

Telephone: Cleckheaton 2442/3

Cables: Acoustics, Bradford



# Surround Sound

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ BANG & OLUFSEN

Bang & Olufsen (UK) Ltd,  
Eastbrook Road, Gloucester GL4 7DE.  
Tel: Gloucester 21591.

### Ambio Control Unit

Ambiophonic adaptor for use with most conventional amplifiers to facilitate the use of two side loudspeakers in conjunction with main stereo loudspeakers. Enables greatly enhanced reproduction to be obtained from stereo programme sources. Features 6kHz filter switch to limit ambiophonic signals above this frequency. Size:  $1.4 \times 1.9 \times 4.3$ in. Price: £9.50 (including VAT).

## ■ GRAMPIAN REPRODUCERS LTD

Hanworth Trading Estate,  
Feltham TW13 6EJ. Tel: 01-894 9141.

### 666 Ambiophonic unit

Enables from one to four speakers to be fed with amplified and delayed signal from main amplifier output. Delay device comprises two transducers and parallel springs as used in Grampian reverberation unit. Volume of delayed signal controlled by listener. Twin high-impedance line-bridging connections. Output:  $2\frac{1}{2}$ W into 5 ohms and 600 ohms. Mains: 200-250V AC. Size:  $18 \times 4\frac{1}{2} \times 5\frac{1}{2}$ in. Weight: 7lb. Price: on application.

## ■ HACKER

Hacker Radio Ltd, Norreys Drive,  
Cox Green, Maidenhead, Berks SL6 4BP.  
Tel: Maidenhead 22261.

### Ambiophonic Unit Model QC1

The QC1 is designed to re-create the all-round sound reality as far as possible from stereophonic. As the input to the unit is taken from the existing loudspeaker outlets on the amplifier, no additional amplification is required. Power handling: 12W. Sensitivity: (rear channel) -8dB max. FR: (quad) 20Hz-20kHz  $\pm 1$ dB, (stereo) 20Hz-5kHz

$\pm 1$ dB, -3dB at 7kHz. Size: 81mm high, 190mm wide, 60mm deep. Weight: 510gm. Price: on application.

## ■ HITACHI

Hitachi Sales (UK) Ltd, Hitachi House,  
Station Road, Hayes UB3 4DR.  
Tel: 01-848 8787.

### IMA 40

Quad adaptor. FR: 20Hz-20kHz. Output: 12W RMS per channel into 4 ohms, or 10W RMS per channel into 8 ohms. Distortion: 1% at rated output. Features: SQ matrix, joy stick 4-channel balance control, speaker selector A, B. Volume, 4-channel tape monitor, 2-channel tape monitor, headphones jack, discrete 4-channel input. Size:  $17\frac{1}{4} \times 5\frac{3}{8} \times 15\frac{3}{8}$ in. Weight: 17.6lb. Price: £98 (including VAT).

## ■ HOWLAND-WEST

Howland-West Ltd, 3-5 Eden Grove,  
London N7 8EQ. Tel: 01-609 0293/6.

### Four-channel adaptor

Dematrixing system to provide four-channel ambience effects from both existing stereo and the new four-channel recordings. Connects to amplifier speaker outlet terminals. Suitable for any unit utilising common speaker earth connections. Price: on application.

## ■ MARANTZ

Pyser Ltd, Fircroft Way, Edenbridge,  
Kent TN8 6HA. Tel: Edenbridge 4111.

### Model 2440

Four-channel 'Quadradial' adaptor/amplifier. Synthesises four-channel sound from any stereo source, decodes any matrix encoded record or FM broadcast and has provision for future quadrophonic developments. Inputs: matrix, tape front, tape rear, aux. Output: 20W per channel (four) 20Hz-20kHz. Controls: treble  $\pm 12$ dB at 15kHz, bass  $\pm 14$ dB at 50Hz, variable dimension, mode. HD: 0.18% 20Hz-20kHz. Output impedance: 8 ohms. FR: 15Hz-80kHz impedance: 8 ohms. FR: 15Hz-80kHz  $\pm 2$ dB, 20Hz-20kHz  $\pm 0.5$ dB at 1W output. Mains: 110, 120, 220, 240V AC. Size:  $16\frac{3}{8} \times 5 \times 14$ in. Finish: simulated walnut metal chassis with gold-anodised front panel. Price: £180 (plus VAT).

### 4000

Four channel pre-amplifier adaptor. High level input sensitivity and impedance: 180mV 100K. Tone controls: bass at 50Hz  $\pm 10$ dB, treble at 15kHz  $\pm 10$ dB. Output level and impedance: (front) 180mV (rear) 2.1V. FR: 20Hz-20kHz  $\pm 5$ dB. Finish: metal chassis with optional walnut cabinet (model WC2). Price: (without

## SURROUND SOUND



Sansui QRX 3500



Sanyo DCX 2000K

cabinet) £154 (plus VAT); (cabinet only) £22 (plus VAT).

### ■ SANSUI

Vernitron Ltd, Thornhill,  
Southampton SO9 5QF.  
Tel: Southampton 444811.

#### QRX 3000

AM/FM 4-channel de-coder tuner/amplifier. Output: 8W all channels driven into 8 ohms THD: less than 0.5% at rated output. De-codes QS and SQ material, also incorporates QS synthesiser. Facility for input of discrete 4-channel material. Sensitivity: phono 2.5mV, aux 150mV, tape monitor 150mV. FM sensitivity: 2.5mV. Controls: bass, treble, balance left to right, balance front to rear, volume, de-coder function, input selector and tuning. Push switches, power on/off, high and low filter, loudness, tape monitor, 2-channel, 4-channel 1 and 4-channel 2, FM muting off. Size: 140 × 313mm. Price: £265.47 (plus VAT).

#### QRX 3500 ★

AM/FM 4-channel de-coder tuner/amplifier. Output: 22W all channels driven into 8 ohms. THD: less than 0.5% at rated output. De-codes QS and SQ material, also incorporates QS synthesiser. Facility for input of discrete 4-channel material. Sensitivity: phono 2.5mV, aux 150mV, tape monitor 150mV. FM sensitivity: 2.2mV. Controls: front bass treble and balance, rear bass treble and balance, front rear balance, volume, de-coder function, input selector. Push switches power on/off, low and

high filters, loudness, two channel tape monitor, 2 × 4-channel tape monitor, muting. Size: 181 × 526 × 350mm. Price: £350.07 (plus VAT).

#### QRX 7500

AM/FM comprehensive 4-channel de-coder tuner/amplifier. Output: 25W all channels driven into 8 ohms. THD: less than 0.3% at rated output. Will synthesise 2 to 4 channel, will de-code QS, SQ and CD4 material. 4 VU meters indicate de-coder output. Facilities for phono (2), 1 2-channel tape deck and 2 4-channel tape decks. FM sensitivity: 1.9mV. Controls: front bass and treble, rear bass and treble, speaker switch, A B A + B. Balance controls for front main and rear, volume, de-coder function, input selector, CD4 adjustment. Push switches power on/off, front high and low filters, rear low and high filters, loudness, 2-channel tape monitor, 4 channel tape monitor 1, 4-channel tape monitor 2 and FM muting. Size: 594 × 203 × 370mm. Price: £509.57 (plus VAT).

### ■ SANYO

Sanyo Marubeni (UK) Ltd, Sanyo House,  
Bushey Mill Lane, Watford, Herts.  
Tel: Watford 30421.

#### DCX 2000K ★

A stereo receiver combining a pre-main amplifier and tuner in one compact unit. Incorporated speaker matrix. Advanced hybrid ICs and OTL circuitry in the amp section plus ICs, FET and ceramic filters on the tuner side, giving distortion-less sound with high sensitivity and selectivity. Loudness, tape monitor, stereo/mono mode and audio muting pushbuttons. Separate mic volume control for professional sound blending. Output: 15W RMS per channel. Includes an IC-equipped double-balanced demodulator. Price: £113.95 (including VAT).

### ■ TRIO

B. & H. Morris, Trio House, The Hyde,  
London NW9 6JP. Tel: 01-205 5244.

#### KCD 2

Plug in CD 4 demodulator suitable for use with Trio two four receivers (except the KR 5340). Unit plugs into slot at rear of receiver. Power supplied from receiver, 24V DC. FR: 20Hz-16kHz. Phono input level: 1.2-5mV at 11Hz and 1-7mV. Channel separation: front-rear better than 25dB at 1kHz, left-right better than 50dB at 1kHz. Controls: left and right front/rear separation. Left and right carrier level controls. Supplied with 7in CD 4 test record. Price: £42.50 (plus VAT).

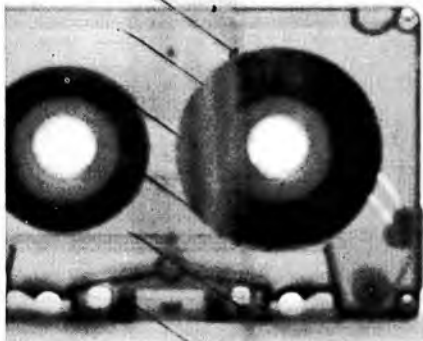
**I**magine... a cassette so precisely engineered... a tape with such sensitivity and virtually no inherent noise that you could actually record the delicate sound of a single pin dropping...

Imagine XHE... the consummate cassette. Unequaled performance for the truly discriminating audiophile to whom fine sound recording is an art

Extra high energy XHE shatters conventional industry standards for maximum output level and dynamic range.



Available in 45, 60, 90 and 120 minute time lengths.



Its exclusive Magnalinc oxide tape formulation provides superior signal-to-noise ratio and full spectrum frequency response... everything you'll need to capture and faithfully reproduce the true-to-life essence, motion, and feeling of sound. And yet that's not enough. Because even the most perfect recording is worthless if the cassette fails and jams.

XHE is built with special mechanics that make it jamproof. And, because XHE's exclusive Paraflo guides reduce tape tension and drag, heavy duty leaders are no longer required. XHE starts instantly—no guessing, no fumbling, no chance of losing precious seconds of your recordings.

We could continue to list specifications, but you're not buying specifications, you're buying performance. And so to you we proudly offer XHE... the ultimate performance cassette.

From Audio Magnetics Corporation, the world's largest manufacturer of compact cassettes.

## You can even hear a pin drop.

Distributed in the U.K. by:

Audio Magnetics Incorporated (U.K.) Ltd., 32 Eveline Road, Mitcham, Surrey CR4 3LE

# Tape Accessories/ Components

★ Indicates entry is illustrated

Abbreviations used in this section are given on Page 27.

## ■ ADASTRA

Adastra Electronics Ltd, Unit N22,  
Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

### Imp-Verta

Matches low impedance tape heads, PU cartridges and microphones into high impedance amplifier inputs. Solid state printed circuit device using silicon transistor. Automatically switched 9V internal battery. Negligible drain. Conversion factor approximately 20 (depending on load). Virtually no hum or signal loss. Metal case, finished black crackle. Size: 5 × 1½ × 1½in. Price: £3.45 (plus VAT).

### Tape Editing Kit

See entry under Sychrotape.

### R101 Cassette Carrying Case

30 cassette version of above with double opening front and individual moulded tray holders. Size: 14½ × 3½ × 9in. Price: £3.15 (plus VAT).

### R51

Tape splicer. Self-contained with instant cut and trim action. Sping-loaded arms secure tape to padded cutting block. Price: £1.65 (plus VAT).

### R52

Tape head defluxer. AC mains. For removing residual magnetism from tape heads, capstan, guides and other parts of recorders. Hand-shaped moulded body with 1½in probe. 3ft mains lead. 200-250V. Price: £2.10 (plus VAT).

### R100 Cassette Carrying Case Mk II

Designed to hold 15 compact cassettes in rigid drop-front case. Finished in padded simulated leathercloth. Snap-fast closing. Slotted compartment and moulded handle. Finish: red, tan or black. Size: 14½ × 4½ × 3½in. Price: £2.32 (plus VAT).

### R.54

De-luxe tape head demagnetizer. Operates from AC mains 220-240V. Removes residual magnetism from recording heads, etc. Features extra long probe for access to difficult parts. Complete with 1m lead. Heavy duty 'Torpedo' shaped body. Overall length: 6½in. Price: £2.40 (plus VAT).

### R.105 Casseten-Bar

Rotating storage unit which houses 20 cased or 32 uncased cassettes in spillage-proof compartments. Units can be stacked on each other and are made of high gloss finished mouldings in black/white or black/orange combinations. Price: £4.95 (plus VAT).

### R.110/R.111 Stako-Tape

Vertical and horizontal interlocking storage system in two versions: (R.110) holding 10 cassettes; (R.111) containing 8 8-track cartridges. Moulded cabinets in orange, white or black. Can be wall-mounted or used free-standing. Price: (R.110) 79p (plus VAT); (R.111) 89p (plus VAT).

### R.120/R.121

Two wood storage cabinets designed to take 32 compact cassettes (R.120), or 24 8-track cartridges (R.121). Both models feature lift-off/hinged smoked cover, moulded compartment tray and rubber protective feet. Finish: (R.120) rosewood, teak or white; (R.121) teak. Price: (R.120) £7.50 (plus VAT); (R.121) £8.25 (plus VAT).

## ■ ALPHA

Distributors: Highgate Acoustics,  
38 Jamestown Road, London NW1 7EJ.  
Tel: 01-267 4937.

### DB6

Noise reducing unit for use between any tape recorder or tape deck and main hi-fi amplifier. Phono and DIN sockets inputs and outputs. Inputs: two line inputs (>20K) with level control. Input sensitivity: 30mV for Dolby level (0 VU). Slider type level controls. Two VU meters. Outputs: 580mV for 0 VU at 1K impedance. HD: <0.5% at Dolby level at any frequency 20Hz-20kHz. Noise reduction: 8dB at 2kHz, 10dB at 5kHz. With noise reduction switched out the unit becomes a unity gain amplifier. MPX 19kHz filter, response <1dB down at 15kHz, >30dB down at 19kHz and >20dB down at 38kHz. Mains: 117, 220, 230, 250V AC. Price: £48 (plus VAT).

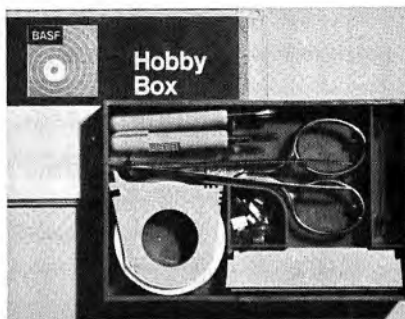
## ■ AVEL-LINDBERG

Avel-Lindberg Ltd, Arisdale Avenue,  
South Ockendon, Essex RM15 5TD.  
Tel: South Ockendon 3444.

★ Indicates entry is illustrated

### MP3 DC/AC inverters

A range of four DC to AC electronic inverters. Suitable for operating tape recorders and other similar equipment from DC supplies. Input voltages: 20-30V DC, 41-60V DC, 100-125V DC, 200-250V DC. Output: 217-227V 50Hz for first two models, 215-225V 50Hz AC for second two models. Efficiency: greater than 70%. Output frequency 50Hz sine wave  $\pm 1\%$ . No moving parts. Electrically and mechanically robust. Protected against overload, short circuit and incorrect polarity. Full details and prices on request.



BASF Cassette Hobby Box

### ■ BASF

BASF United Kingdom Ltd, Audio/Video Tapes Division, PO Box 473, Knightsbridge House, 197 Knightsbridge, London SW7 1SA. Tel: 01-584 5080.

#### Technical Look Spools

Standard sizes: 2½in 16p; 3in 22p; 3½in 25p; 4in 29p; 4½in 29p; 5in 33p; 5½in 39p; 7in 40p; 8½in 79p; 8½in £1.15; 10in £1.78; 10½in £2.01.

#### Metal Spools

7in £2.30; 8½in £3.34; 10½in £4.

#### Profi NAB adaptor

Price £4.14.

#### Leader Tape

Green, red or white; Plastic centre spools; 984ft £3.44; 80ft £1.04.

#### Leader Tape Set

Containing red and green leader tapes, 25 strips of metalized foil and spare spool labels. Price £1.52.

#### Splicing Tape

¼in × 8ft £1.62; ½in × 8ft £2.53; ¾ × 32ft £1.66.

#### Splicing Set

Plastic box with bonding groove and 33ft of ½in splicing tape. Price 72p.

#### Metalized foil

¼in × 80ft. Price £2.60.

#### Plastic Clips

Box of 10; Price 50p.

#### Hobby Box (reel-to-reel) ★

Contains splicer, marking pencil, 33ft splicing tape, 80ft each of red, white and green leader tapes, 50 pieces of metalized foil, 25 spool labels, 3 tape clips. Price £3.95.

#### Hobby Box (Cassette) ★

Contains splicing block, scissors, tweezers, Philips screwdriver, flat-blade screwdriver, 5m splicing tape dispenser, 10m leader tape, 3 clips, pressure springs and screws. Price: £4.14.

#### BR Reel-to-reel Cleaning Tape

Price £1.88.

#### CR Cleaning Cassette

Price £1.88.

#### Cassette Library Box

Price 45p.

#### Hinged lid plastic Boxes

For 5½in reels £0.73; For 7in reels £0.96.

#### Head alignment Tape

Price: £2.99.

All prices quoted exclude VAT.

### ■ BIB

Bib Hi-Fi Accessories Ltd, PO Box 78, Hemel Hempstead, Herts HP2 4RH. Tel: Hemel Hempstead 61291.

#### Ref. J. Compact tape and cleaning kit

Price: 85p (including VAT)

#### Ref: 65. Cassette storage rack

Holds 30 cassettes in their library cases. Finished in simulated teak. Price: £5.18 (including VAT).

#### Ref: 78. Cassette fast hand winder

Very simple and easy to use, it winds a C90 cassette in 60 seconds. Saves batteries. Price: £1.30 (including VAT).

#### Ref: 86. Cassette cabinet

Holds 30 cassettes in their containers. Fitted with a smoked coloured hinged acrylic lid. Finish: simulated teak. Fitted with protective rubber feet. Price: £7.13 (including VAT).

#### Ref: 51. Cassette case kit

Contains: head cleaner, cassette salvage and re-record kit, editing and joining kit. Price: £4 (including VAT).

#### Ref: 31. Cassette head cleaner

Price: 7p (including VAT).

**Ref: 73. Cassette rotary rack**

Holds 40 cassettes in their containers. Price: £4.26 (including VAT).

**26A Cassette Tape Recorder Care Kit**

Contains: ½in splicer, splicing tape, tape piercer, 9 cassette labels, 3 tape winders, 2 tape cutters, polishing cloth and head cassette cleaner. Price: £2.24 (plus VAT).

**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: £2.20 (plus VAT).

**58 8-Track Test Cartridge**

Includes practical tests for channel identification, balance control, speaker phasing, wow and flutter and cleaning tape heads. Also includes high quality music. Price: £2.30 (plus VAT).

**31 Cassette Head Cleaner**

Special cleaning tape incorporated in cassette for cleaning tape heads in one operation. Suitable for all cassette machines. Price: 58p (plus VAT).

**34 Cassette Case**

High quality black padded PVC case, with carrying handle. For 12 cassettes. Price: £1.60 (plus VAT).

**D/2 Flex Tidiés**

Shortens without cutting inter-unit cables, speaker leads and mains flex. Price: (pack of 5) 2p (plus VAT).

**20 Recording Tape Splicer**

For use with ¼ tape. Fitted with clamps for holding tape for diagonal or both splices. Price: £1.30 (plus VAT).

**24 ½in Cassette Editing and Joining Kit**

Complete kit to enable cassette tapes to be edited and joined. Price: £1.80 (including VAT).

**Ref: 83. Cassette title and container labels**

Contains 20 body cassette labels and 10 library container edge labels. Price: 39p per pack (including VAT).

**29A Salvage Cassette**

Enables damaged tape to be transferred to new cassette. The tape may be joined with Bib splicer model 30 or Bib kits (Ref: 24, 26A or 51). Nine replacement title labels are included. Price: 42p (plus VAT).

**■ B J IMPORTS**

66 Woodcock Hill, Kenton, Harrow HA3 0JF. Tel: 01-907 6667.

**Stereo stamps**

Small rubber stamp enabling tape recording enthusiasts who record in stereo to label their tapes making them easily identifiable. Price: 40p including postage.

**■ BRADMATIc LTD**

338 Aldridge Road, Streetly, Sutton Coldfield B74 2DT. Tel: 021-353 3171.

Magnetic recording heads manufactured to order. Enquiries welcomed and full details of service offered provided on request.

**■ CROWN MERTON**

Hancock, Corfield & Waller Ltd, Station Road, Merton Abbey, London SW19 2NJ. Tel: 01-542 1012.

**Cassbar Ref. 5066**

Modern plastic, revolving cassette storage unit. Holds 21 cassettes designed for multiple stacking. Price: £5.40 (including VAT).

**Keyboard Cassette 5067**

Modern plastic cassette storage unit. Holds 10 cassettes, special add and stack feature to form library system. Price: on application.

**Cassette 24 5056**

Compact brass plated wire cassette holder. Holds 24 cassettes. Also available for 36 cassettes. Price: £2.01 and £2.91 respectively. Both prices include VAT.

**■ EAGLE**

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

**TD.79 Tape Head Demagnetiser**

250V mains operation. Price: £2.50 (including VAT).

**TD 80**

Cartridge head demagnetizer. 210V operation, suitable for 8-track players and recorders. Price: £2.50 (including VAT).

**TD 83**

Cassette head demagnetizer. 240V AC operation, suitable for compact cassette recorders and players. Price: £2.80 (including VAT).

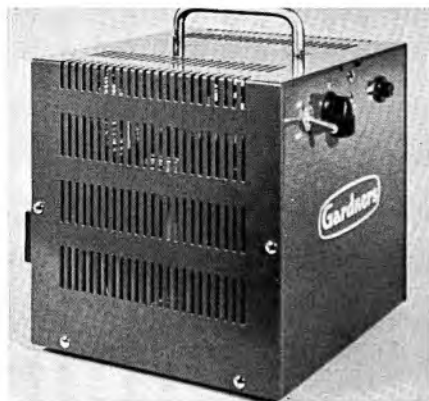
**■ FERROGRAPH**

Ferrograph Co Ltd, Auriema House, 442 Bath Road, Cippenham, Slough SL1 6BB. Tel: Burnham 62511.

**Defluxer**

For depolarising heads, capstans and guides. Ensures maximum signal/noise ratio. Prevents hiss and protects tapes from cumulative background noise. Price: £5 (plus VAT).

★ Indicates entry is illustrated



*Gardners 107 inverter*



*Grampian G7 matching unit*

#### Carrying case for Series 7 recorders

Waterproof canvas case with zip fastener. Price: £7.56 (plus VAT).

#### Plugs

JPS-401 screened plug with aluminium body and cable clamp. Price: 40p (plus VAT).

#### Endless loop cassette

Permits Ferrograph to be operated continuously on an endless loop of 8 min duration at 7½i/s. Price: £10 (plus VAT).

#### Ferrotape spools

Aluminium, anodised grey. Prices: 7in £1 (plus VAT); 8½in £1.10 (plus VAT).

#### ■ GARDNERS TRANSFORMERS LTD

Christchurch, Dorset BH23 3PN.  
Tel: Christchurch 2284.

#### DC/AC Inverters 107 (A, B and D) ★

Provide 240V AC squarewave output from DC input. Output: 300VA and 400VA (107D) at 220-240V nominal. Frequency: 50Hz ±1Hz. Efficiency: >80% at full load. Input: (107A) 11-15V DC; (107B) 22-30V DC; (107D) 22-30V

DC. Size: 9½ × 8¼ × 8½in. Weight: 28½lb. Full specification sheet on request. Price: 107A and B £67 (plus VAT), 107D £85 (plus VAT).

#### ■ GRAMPIAN REPRODUCERS LTD

Hanworth Trading Estate,  
Hampton Road West, Feltham TW13 6EJ.  
Tel: 01-894 9141.

#### Grampian G.7 ★

Matching units, consisting of double-wound transformer in a Mu-metal case with jack socket on the primary and a screened lead on the secondary. Dimensions: 3¾ × 1¼in diameter. Versions available for matching 15/30 ohms, 600 ohms and 50,000 ohms or greater. Price: on application.

#### Grampian Parabolic Reflector

Diameter 24in, depth 5in. Gain: 14dB over range of 500Hz-5kHz. To take Grampian DP4 and DP6 mics. Weight: 4½lb. Price: on application.

#### Grampian Reverberation Unit

Self-contained portable unit, transistorised and operated from internal dry batteries. Independent input channels, low level and high level. Output: 1V, 600 ohms. Size (including detachable lid): 17½ × 5¼ × 6¼in. Weight: 12lb. Price: on application. Mains unit available.

#### ■ LEEVERS-RICH

Leevers-Rich Equipment Ltd,  
319 Trinity Road, Wandsworth,  
London SW18 3SL. Tel: 01-874 9054.

#### Leeraser LR70, LR71 ★

Bulk tape demagnetisers. Model LR70 for tapes up to 8½in diameter. Price: £40 (plus VAT). Model LR71 for tapes up to 11¼in diameter. Price: £60 (plus VAT).

#### ■ LENNARD DEVELOPMENTS LTD

206 Chase Side, Enfield EN2 0OQ.  
Tel: 01-363 8238.

#### Dry-splice

Pre-cut adhesive tape for splicing and mending without the aid of a splicing block. Envelopes of 24. Price: 21p (plus VAT).

#### Playfair antistatic cleaning fluid

30cc polythene bottle. Price: 24p (plus VAT).

#### Playfair cassette cleaners

48p (plus VAT).

#### Playfair cassette carrying cases

£1.95 (plus VAT).

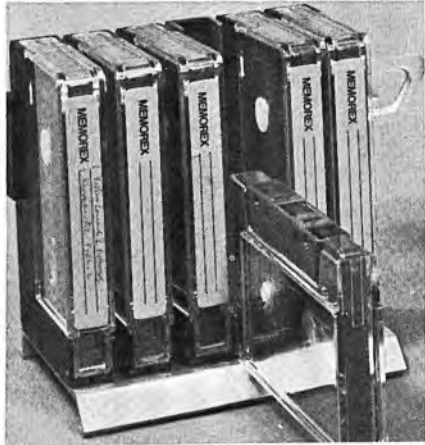
#### Cassette bars (20/32)

Revolving type. £4.75 (plus VAT).



Leevers-Rich LR71

Leevers-Rich LR70



Memorex library holder

**Playfair Tape (cassette) library cases**  
Pack of three. 30p (plus VAT).

■ **LYRICHORDS**

N. Miers & Co Ltd, 28 Piercing Hill,  
Theydon Bois, near Epping,  
Essex CM16 7LE. Tel: 037-881 2611.

**Tape Accessories**

8-track cartridge demonstration and test tape £2.30 (plus VAT); 8-track cartridge tape head cleaner 88p (plus VAT); tape head cleaning kit for reel-to-reel and cassette recorders 60p (plus VAT); 1/4in cassette splicing and editing kit £1.64 (plus VAT); cassette salvage kit 46p (plus VAT); universal modification kit £1.50 (plus VAT).

■ **MEMOREX**

Memorex (UK) Ltd, Hoechst House,  
50 Salisbury Road, Hounslow West,  
Greater London. Tel: 01-570 7716.

**Cassette cleaner**

Price: 57p (including VAT).

**Cartridge cleaner**

Price: 90p (including VAT).

**Cassette Library Holder ★**

Without cases. Price: 75p (including VAT).

**Cassette Library Holder ★**

Complete with cases. Price: £1.95 (including VAT).

**Audio Training Cassette kits**

Available in boxes of 50 in C30, C45, C60, C90 and C120 sizes. Further details and prices on application.

■ **METRO SOUND**

Metrosound Audio Products Ltd, Audio Works, Cartersfield Road, Waltham Abbey, Essex EN9 1JF. Tel: Lea Valley 712712.

**M.4 Klentzape kit**

Patented head cleaner. Kit comprises ribbed cleaning tape, two special spools and bottle of Klentzape fluid. Price: 88p (plus VAT).

**M.17 Metro-Splicing Block**

Professional precision metal splicing block for 1/4in tape, supplied with non-magnetic cutter blade. Price: £1 (plus VAT).

**M.18 Leader tapes**

Choice of six colours, approximately 40ft of leader tape, wound on to plastic mini-spool. Price: 33p (plus VAT).

**M.19 Stop foil**

Metallic tape for actuating electronic auto stop mechanisms for tape recorders. Approximately 15ft on mini-spool. Price: 33p (plus VAT).

**M.20 Jointing tape**

1/4in wide, approximately 12ft on mini-spool. Price: 33p (plus VAT).

**M.24 Lubricating Kit**

Suitable for tape recorders and mechanical moving parts. Comprises small bottle of each of R.O.B. and R.O.G. oil and container of Starfax. Price: 44p (plus VAT).

**M.32 Cassette Head Cleaner**

Same size as Philips Compact Cassette. Non-abrasive. Cleans and polishes record and erase heads. For all recorders and tape players using Philips type cassettes. Price: 50p (plus VAT).

**M.30 Accessory Pack**

For radio and audio retailers. Wire display rack with assortment of Metrosound accessories in packs. Full details and prices on request.



★ Indicates entry is illustrated

**M.33.C60 Blank Cassette**

Price: 60p (plus VAT).

**M.34 Ioniser fluid**

Price: 28p (plus VAT).

**M.39 Cartridge Head Cleaner**

Designed for cleaning heads on eight-track cartridge tape players and recorders. Price: £1.10 (plus VAT).

**M.46 Test Cassette and Sampler**

Compact cassette containing directions for cassette tape recorder maintenance and setting up procedure. Includes test music and recorded stereo works. Price: £2.20 (plus VAT).

**M.69 Cassette Edit Kit**

Presented in permanent storage case containing professional machined splicing block, roll leader tape, roll splicing tape and two splicing cutters. Price: on application.

**M.71 Cassette Deck Care Kit**

Presented in special purpose permanent storage case containing cassette head cleaner, cassette head cleaning spatula with brush and velvet polisher, cassette head cleaning fluid, multi-purpose duster and spare spatula velvets. Price: on application.

■ **MUSONIC**

Musonic Ltd, 34-38 Verulam Road,  
St Albans, Herts AL3 4DF.  
Tel: St Albans 50611.

**MT5**

Cassette cleaner in library box. Price: 60p (plus VAT).

**MT6**

Cartridge head cleaner. Price: 89p (plus VAT).

**MT7**

Cartridge head and capstan cleaner. Price: £1.29 (plus VAT).

**MT8 Case set**

Case for 16 cassettes. Price: £1.74 (plus VAT).

**MT9 Cartabout**

Case for 15 cartridges. Price: £2.13 (plus VAT).

**MT10**

Cassette library for 30 cassettes. Price: £2.87 (plus VAT).

**MT11**

Cassette library for 15 cassettes. Price: £2.06 (plus VAT).

**MT12**

Add 'N' stac for 8 cassettes. Price: 69p (plus VAT).

**MT13**

Add 'N' stac for 6 cartridges. Price: 81p (plus VAT).

**MT14**

Cassette carousel for 32 cassettes. Price: £7.28 (plus VAT).

**MT15**

Cartridge carousel for 24 cartridges. Price: £7.28 (plus VAT).

**MT16**

Empty cassette library box. Price: 12p (plus VAT).

**MT17**

Cartridge library for 24 cartridges. Price: £3.32 (plus VAT).

**MT18**

Cassette cleaner without library box. Price: 53p (plus VAT).

■ **OSMABET LTD**

46 Kenilworth Road, Edgware HA8 8YG.  
Tel: 01-958 9314.

**'Instant' Bulk Tape Eraser and Recording Head Demagnetizer**

Operates from AC mains to provide rapid and complete erasure of tapes and cassettes prior to making quality recordings. Weight: 18oz. Price: £3.75 (plus VAT).

■ **QAS**

Quality Audio Supplies, Wollaton Road,  
Beeston, Nottingham NG9 2PB.  
Tel: Nottingham 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 and remote control stations. 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.

See Pickup Accessories and Speaker Accessories Sections for details of other QAS equipment.

■ **ROSS ELECTRONICS**

Ross Marks Ltd, 32 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: 42p (plus VAT).

**Cassette Carry Case** ★

Tough, attractive PVC construction with carrying handle and fastening clip. Holds 12 cassettes in library cases. Packs flat for storage. Colour red. Price: £1.41 (plus VAT).



Ross Cassette Carry Case



Ross RE527K Tape Head Demagnetiser



Ross RE-528K

**8-Track Cartridge Carry Case**

Similar to above. Holds 10 cartridges. Price: £1.50 (plus VAT).

**RE527K Tape Head Demagnetizer ★**

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: £1.97 (plus VAT).

**RE528K ★**

Construction and operation similar to RE-527K but equipped with specially shaped pole piece designed to reach into cassette recorder head without dismantling case parts. Price: £2.35 (plus VAT).

■ **SONY**

Sony (UK) Ltd, Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

**Tapes and Spools**

**C60CR** Chromium dioxide cassette tape 60min. Price: £1.53; **C60K** Cassette tape 60min. auto sensor. Price: 69p; **C60HF** Low noise cassette tape 60min. auto sensor. Price: £1.02; **C60FeCr** Ferri chrome cassette tape 60min. Price: £1.71; **C90CR** Chromium dioxide cassette tape 90min. Price: £2.08; **C90K** Cassette tape 90min. auto sensor. Price: 97p; **C90HF** Low noise cassette tape 90min. auto sensor. Price: £1.34; **C120K** Cassette tape 120min. auto sensor. Price: £1.26; **C120HF** Low noise cassette tape 120min. auto sensor. Price: £1.57; **SLH72-370BL** Super low-noise high output tape 370m. Price: £3.10; **SLH7-550BL** Super low-noise high output tape 550m. Price: £4.40; **SLH7-740BD** Super low-noise high output tape 740m. Price: £6.71; **SLH11-740B** Low noise 740m. 10½in NAB spool. Price: £7.36; **SLH11-110BL** Low noise 1100m. 10½in NAB spool. Price: £8.56; **R3-A** Empty spool 3½in. Price: 19p; Order quantities in units of 1 dozen. **R5-A** Empty spool 5in. Price: 36p; **R6-A** Empty spool 5½in. Price: 55p; **R7-A** Empty spool 7in. Price: 59p; **R11-A** Empty 10½in NAB spool. Price: £3.60; **RAD1** 10½in NAB reel adaptor. Price: £3.86; **RE3** Endless cassette size 90m. Price: £2.64; **RE4** Endless cassette size 46m. Price: £1.25; **TF3** Spool clip 3½in. Price: 19p; **TF5** Spool clip 5in. Price: 19p; **TF7** Spool clip 7in. Price: 19p.

**Cassette Accessories**

**BE7** Cassette eraser. Price: £9.21; **CE3** High z earpiece. Price: 69p; **DP-2A** Dust cover for TC280. Price: £3.06; **DP7** Dust cover for TC160/TC161SD/TC165. Price: £3.06; **DP11** Dust cover for CF610/620. Price: £3.66; **DP15** Dust cover for TC134SD. Price: £3.06; **DP16** Dustcover for TC377. Price: £7.18; **DP19** Dust cover for TC131SD. Price: £3.06; **DP20** Dust cover for TC755/756-2. Price: £9.49; **DP21** Dust cover for TC458. Price: £8.56; **DP24** Dust cover for TC138SD. Price: £6.14; **DP25** Dust cover for TC177SD. Price: £11.81; **DP27** Dust cover for TC645. Price: £8.56; **FS6** Footswitch. Price: £3.19; **FS7** Footswitch for TC96L. Price: £17.55; **HE2** Tape head demagnetiser. Price: £8.10; **KB1** Case extension strap. Price: 54p; **LC-28** Carrying case for TC152SD. Price: £13.19; **LC-29** Carrying case for TC153SD. Price: £13.19; **LC-1110** Carrying case for CF310L. Price: £4.35; **LC-1600** Carrying case for CF320. Price: £4.91; **LC-1700** Carrying case for CF420L. Price: £5.56; **LC-2100A** Carrying case for TC146A. Price: £4.58; **ME26** 8 ohms

★ Indicates entry is illustrated

stethoscope headset stereo. Price: £2.27; **RM15** Remote control switch. Price: £2.27; **SB300** Switchbox. Price: £18.33; **TB2** Car mounting bracket for TC124CS. Price: £8.15; **TP5** Telephone pick-up (standard jack). Price: £1.81; **TP5S** Telephone pick-up (mini-jack). Price: £1.81.

#### Connector leads and adaptor plugs

**EC 5A** 5m ext. lead standard jack. Price: £2.55; **EC 5R** 5m. ext. lead mini jack/switch. Price: £3.47; **EC 10A** 10m. ext. lead standard jack. Price: £4.12; **EC 25A** 25m. ext. lead standard jack. Price: £7.18; **EC 5M** 5m. ext. lead mini jack. Price: £2.55; **EC 10M** 10m. ext. lead mini jack. Price: £4.12; **EC 25M** 25m ext. lead mini jack. Price: £7.18; **PC 1** Adaptor standard jack mini. Price: 71p; **PC 2** Adaptor mini jack standard. Price: 71p; **PC 5** Adaptor mini jack/phono. Price: 71p; **PC 6** Attenuator o/p from earphone socket. Price: 71p; **RC 2** Lead 5 pin DIN termination. Price: £1.62; **RK 34** 3m. lead mini jack/termination. Price: 88p; **RK 36** 1m. lead mini jack/croc clips. Price: 55p; **RK 46** 1m. lead phono/croc clips. Price: 55p; **RK 50** 1m. lead phono/mini jack. Price: 55p; **RK 55** 2m. lead standard jack/croc clips. Price: 69p; **RK 56** 1m. stereo lead phono termination. Price: 64p; **RK 64A** 1m. lead (attenuated) mini jack termination. Price: 88p; **RK 66** 1m. magnetic phono connector lead mini jack/phono plug. Price: £1.34; **RK 69** 1.2m lead mini jack termination. Price: 88p; **RK 74** 1.5m. stereo lead 2 phono plugs each end. Price: 64p; **RK 76** 3m. lead phono plug to mini jack. Price: 88p; **RK 77/83** 5m. lead phono plug termination. Price: £1.34; **RK 80** Sound on sound lead. Price: £1.10; **RK 81** Stereo jack to 2 phono plugs lead. Price: £2.27; **RK 98** 5m. speaker ext. lead phono plug/phono socket. Price: £2.27.

All prices exclude VAT.

#### ■ SYNCHROTAPE

Sole Distributors: Aadastra Electronics Ltd,  
Unit N22, Cricklewood Trading Estate,  
Claremont Road, London NW2 1TU.  
Tel: 01-452 6288.

#### Synchrotape Editing Kit

Instant cut and trim splicer, four reels coloured leader tape, one reel metallic stop foil, one reel adhesive tape, six coloured rape-securing clips and 28 self-adhesive titling labels. Presented in see-through crush-proof carton. Complete with 12-page instruction and information booklet. Price: £2.85 (plus VAT).

#### ■ VALRADIO LTD

Browells Lane, Feltham TW13 7EN.  
Tel: 01-890 4837/4242,

Service Agents: Vibro Supply, 57 Fortress  
Road, London, NW5. Tel: 01-485 5165.

#### DC converters

Designed for operating tape recorders, video recorders and similar mains equipment from ship's supply or car battery. Input voltage from 12V to 220V DC. Output from 30W to 1000W AC. Prices from £21.

#### Transverter C12/30S

Input 12V DC. Output 50Hz  $\pm$   $\frac{1}{2}$ Hz sine wave at 30W. Suitable for positive or negative earthed input. Built-in switch and socket. Supplied complete with input lead. Size: 8 x 6 x 6in. Weight: 8lb. Price: approximately £32.

#### Transverter D12/120S

Input 12V DC. Output: 115-230V 50Hz  $\pm$   $\frac{1}{2}$ Hz sine wave at 120W. Price: approximately £71.

#### Transverter D12/200S

Input 12V DC. Output: 115-230V 50Hz  $\pm$   $\frac{1}{2}$ Hz sine wave at 200W. Price: approximately £103.

#### Transverter D12/400S

Input 12V DC nominal. Output 115-230V 50Hz  $\pm$   $\frac{1}{2}$ Hz sine wave at 400W. Price: approximately £206.

#### Frequency changer

AC-DC. Suitable for records, films, television programme special effects. Price: (200W) from about £82.

# WIRELESS WORLD ANNUAL 1976

Same format as Wireless World. Second edition. Contains constructional articles. How to . . . articles, Surveys, General articles and a Reference section. Available from leading bookshops at £1.00 or direct from publishers if difficult to obtain.

General Sales Department  
IPC Business Press Ltd  
Room 11, Dorset House,  
Stamford Street, London SE1 9LU



## Cut out this ad and get a FREE Tape Care Catalogue

It costs a lot to build up a good collection of tapes, tapes you care about. So they deserve to be looked after in the best possible way.

Precision Tapes genuine accessories do just that. Whether you carry your sounds with you - in the car or out and about, or whether you keep them near your home equipment, there is something in the Precision accessories that will help you maintain the best quality from your tapes.

NAME \_\_\_\_\_

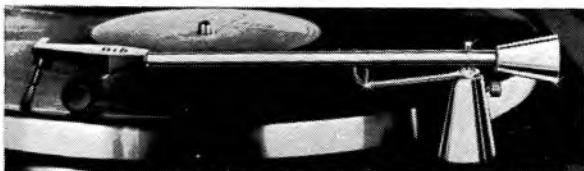
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For a free catalogue, please send the coupon to:  
Marketing Dept.HFY/75, Precision Tapes  
Limited, Precision House, 11 Denmark  
Street, London WC2H 8NR.

# Bib®

# Over 80 items for Hi-Fi, Record and Tape Care



▲ Model 2000



▲ Model 42



▲ Model 45

## Model 45 AUTO-CHANGER GROOV-KLEEN

Finished in chrome - fits most units with flat top cartridge housings. Adaptor available for Zero 100. Velvet and stylus cleaning brush included.  
Pat App No 1361732  
Reg Des No 958457

£1-06

## Record Care

### GROOV-KLEEN automatic record cleaners

ALL GROOV-KLEENS remove and collect dust whilst records are played. Improve reproduction and reduce record and stylus wear. Quick and simple to fit.

**Model 2000** This has it all - efficiency, styling and chrome finish. Complete with stylus brush, plus spare velvet roller, self adhesive base pad and tracking brush. Des Reg App No 957842  
**£2-94**

**Model 42** Finished in chrome, bright anodised aluminium and shiny black.  
**£1-99**

### STYLUS AND TURNTABLE CLEANING KIT

Contains stylus cleaning brush, absorbent cleaning cloth, bottle of approved, non-flammable, anti-static cleaner and stylus inspection mirror, in PVC wallet.

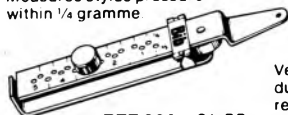
REF 70

83p



### STYLUS BALANCE

Precision built. Calibrated. Measures stylus pressure within 1/4 gramme.



REF 32A £1-55



### RECORD DUST-OFF-WITH COVER

Velvet pad gently collects and removes dust from delicate grooves. Reduces record and stylus wear. Can be used dry or moist.

REF 71 71p

## Cassette Care

### CASSETTE FAST TAPE WINDER

Very simple and easy to use. The BIB cassette fast winder enables you to wind tape in one cassette whilst you are listening to another cassette. If you have a battery recorder, always use the Fast Winder to save the high battery consumption when fast winding. It winds a C 90 cassette in 60 seconds - faster than most recorders. Patent Pending.



REF 78 £1-30

### CASSETTE HEAD CLEANER

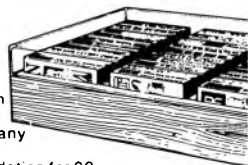
For all cassette machines. Removes oxide and dirt from heads. Packed in plastic "library" case. REF 31 73p



■ Please write for fully illustrated catalogue showing our comprehensive range of Hi-Fi Accessories.

### CASSETTE CABINET

This elegant unit with hinged acrylic tinted cover complements any equipment. Provides individual accommodation for 30 cassettes. Attractive teak finish base fitted with protective feet. Dimensions 15" long by 10" wide by 4" high, approx.



REF 86 £7.13

### Other lines include:

Cassette Tape Editing & Joining Kit

Ref.

24

Price

£1-94

Hi-Fi Stereo Test Cassette

53

£2-38

### Tape Care

Tape Head Cleaning Kit

J

£0-85p

■ All prices shown are recommended retail, including VAT.

## Bib Hi-Fi Accessories Limited

P.O. Box 78, Hemel Hempstead, Herts. HP2 4RH. Telephone: 61291.

# Tape Amplifiers and Mixer Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ ADASTRA

Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Clarendon Road, London NW2 1TU. Tel: 01-452 6288.

### M103/B2004

Transistorised stereo/mono microphone mixer. Power supply: 9V. Two stereo channels (with independent gain controls) or four mono channels. Input jack sockets, output phono sockets. Mono/stereo mode switch. On/off switch. Input impedance: 100K. Max input signal: 1V. Gain: 3dB. Free-standing case. Price: £9 (plus VAT).

### M101/B2005

Transistorised mono microphone mixer. Power supply: 9V. Four channels with individual gain controls. Input jack sockets, output phono sockets. Input impedance: 100K. Max input signal: 1V. Gain: 3dB. Free-standing case. Price: £5.25 (plus VAT).

### M104/B2006

Six-channel stereo mixer/preamplifier. Enables multiple combinations of high and low impedance microphones, pickup cartridges and other signal sources to be controlled by slider type gain controls. Low-noise transistorised circuit. Special RIAA 50K socket. Power supply: internal battery. Weight: 3½lb. Price: £33.75 (plus VAT).

## ■ AUDIO DEVELOPMENTS

Hall Lane, Walsall Wood, Staffs WS9 9AU. Tel: Brownhills 5351.

### AD031

Portable mixer, lightweight, battery-powered. Contains mixers, output amplifiers and monitor facilities. All outputs are electronically balanced with a maximum output capability of +24dB. Extender socket allows extension of basic system to increase number of input channels or to add to other facilities. Size: 420mm wide, 335mm high and 127mm deep. Weight: 10kg. Price: on application.

## ■ BRENNEL ENGINEERING CO LTD

231-235 Liverpool Road, London N1 1LY. Tel: 01-607 8271.

### Hi-Fi Tape Link ★

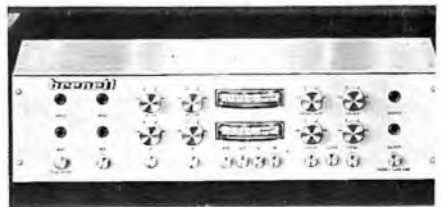
Stereo tape preamplifier and oscillator unit. Connects between tape deck and hi fi system. Twin transistorised recording amplifiers, bias/erase oscillator, twin transistorised playback amplifiers. Designed for use with three-headed stereo tape deck (i.e. separate erase, record and playback heads), ¼-track or ½-track. Mono and stereo recording facilities provided. Monitoring. Immediate comparison of recorded and original signal. Individual gain controls for each amplifier. Frequency correction for four tape speeds. Inputs: mic 200µV 200 ohms, aux 8mV 50K, aux 8mV 50K. Cross-fade mixing between inputs. Two illuminated level meters. Output: 1.4V (2V at 2% distortion level). FR: (when used with specified heads) 7½i/s 40Hz-20kHz ± 3dB, 3¾i/s 50Hz-14kHz ± 3dB, 1½i/s 60Hz-7kHz (± 3dB), 15i/s 40Hz-22kHz ± 3dB. S/N: 56dB. Size: (tape link) 15 × 7 × 4½in; (power unit) 5½ × 5¾ × 4½in. Weight: (tape link) 9lb; (power unit) 5lb. Price: (complete with PU) £88.50 (plus VAT).

## ■ EAGLE

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

### MP12 ★

Six-channel stereo/mono mixer and preamplifier. Studio type slider controls. Mic inputs can be individually switched between high and low



Brennell Tape Link



Eagle MP12

★ Indicates entry is illustrated

impedance. Inputs: four microphone 1mV 600 ohms or 2mV 50K, two pickup 3.5mV at 47K RIAA. S/N: better than 50dB. Output: (switched stereo/mono) two 250mV. Low profile desk console. Size: 10 × 7 × 1½in. Price: £34 (plus VAT).

#### FF1

Transistorised five-channel mono mixer. Slider type controls. Microphone inputs: 0.5mV at 600 ohms, switchable for 4mV 50K. Aux input: 180mV 100K. Two outputs: (low) 200mV 50K-500K, (high) 2V 50K-500K. Controls: on/off switch, slider control for each input, overall master gain control. Power: two PP3 batteries. Size: 10 × 7 × 1½in. Monitoring facilities included. Price: £29.50 (plus VAT).

#### FF10 ★

Stereo seven-channel mixer/preamplifier. Inputs: mic 3mV 50K, stereo PU (1) 3mV 47K, stereo PU (2) 3mV 47K, stereo tape 100mV 100K. Output: two 250mV 50K (switchable stereo/mono). Controls: master gain, mic gain, PU (1) gain, PU (2) gain, tape gain, on/off, stereo/mono mode switch. Power supply: internal 9V battery. Size: 9½ × 7 × 1½in (sloping down to 1½in). Finish: black and silver trim. Price: £34 (plus VAT).

#### FF32

Tape mixer unit. Inputs: phono. stereo 3mV 47K (× 2), mic 3mV 50K, stereo tape 100mV 100K. Outputs: 2 stereo outputs 250mV 50K. Pre-fade headphone monitor. Controls: master volume, tape level, phono 1 level, phono 2 level, mic level, prefade monitor switch, stereo/mono switch, on/off switch. Power: 9V DC (2 × PP3). Size: 9½ × 7½ × 1½in (sloping to 1¼in). Price: £36 (plus VAT).

#### ■ H/H ELECTRONIC

Industrial Site, Cambridge Road, Milton, Cambridge CB4 4AZ.  
Tel: Cambridge 65945.

#### MA100S

High quality mixer/amplifier. Inputs: 10 inputs (five mono channels) all 50mV 68K also aux input 500mV 100K. Controls: bass +17dB -12dB at 30Hz, treble +17dB -30dB at 10kHz, volume on each input, master volume, master presence +12dB at 1.5kHz. Output: 100W continuous into 7.5 ohms. 130W continuous into 4 ohms. Peak power output: 180W. FR: (power) 20Hz-20kHz ±0.5dB. HD: (mixer and power amplifier) <0.2% 20Hz-20kHz (typically <0.05% at 1kHz at 100W). Open circuit and short circuit protection. Mains: 115, 210, 220, 230, 240V 50-60Hz. Finish: electro-luminescent front panel. Size: 26½ × 4½ × 11½in. Weight: approximately 24½lb. Price: £128.89 (plus VAT).



Eagle FF10



H/H Electronic MA100

#### MA100 ★

High quality mixer/amplifier with same specification and dimensions as the MA100S, but with the addition of reverb facilities. Price: £149.81 (plus VAT).

#### H/H console

Chromium plated steel tubular stand designed to accommodate up to four mixer/amplifiers. Is also useful as means of carrying amplifiers and mixers. Full details on request. Price: £25 (plus VAT).

#### ■ MILLBANK

Millbank Electronics Group Ltd,  
Bellbrook Estate, Uckfield,  
Sussex TN22 1PS. Tel: Uckfield 4166.

#### MEX 6 Mk II

Six-way mains operated mono mixer. 11 transistors. Range of plug-in modules to suit all standard signal sources, also tone and alarm circuits, etc. Output: Nominal 0.77V 10K (0dB). Tape record output before or after tone controls. Controls: six independent gain controls, bass ±12dB at 60Hz, treble ±12dB at 12kHz. Indicator light integral with on/off switch. Peak reading level meter. Mains: 220, 250V 50-60Hz. Size: 19 × 3½ × 8in. Price: £92.42 (plus VAT).

#### Disco III ★

Four-way stereo mains-operated mixer. 52 transistors and 16 diodes. Inputs: mag PU 5mV 68K, ceramic PU 90mV 1M, mic (1) 100µV at 200 ohms, mic (2) 3mV at 30K, tape 55mV 47K. Output: 0.775V 5K (0dB) each channel. Preset gain and tone controls on gram and tape inputs. Controls: treble ±12dB at 12kHz, bass ±12dB at

80Hz, crossfade between PU (1) and PU (2). Mains indicator lamp in on/off switch. Two peak reading VU meters. Full monitoring facilities. Size: 13 × 8 × 6½in. Mains: 220-250V 50-60Hz. Price: £193.57 (plus VAT).

**MCC Mk III XLR**

Mono or stereo 10-way mixer. Range of input modules to suit all signal sources, also signal and alarm inputs available. Outputs: 0.775V 0dBm each channel, 50 ohms 2V monitoring output. Controls: two master linear faders, independent gain controls, bass ±12dB at 100Hz, treble ±12dB at 12kHz. Pre-fade listen switches under input faders. Mains indicator lamp in on/off switch. Meters: PPM, standard or peak-reading level meters. Mains: 220-250V 50-60Hz. Full monitoring facilities. Size: 19 × 5¾ × 8½in. Price: £234.18 (plus VAT).

**Musicmaster III ★**

Mono or stereo nine-way mixer. Range of input modules to suit all signal sources. Nine inputs. Impedance and sensitivity of each input: mic and aux (1-6) 200 ohms 200µV or 50K 10mV; RIAA disc (7) 68K 3.5mV; tape (8) 100K 50mV; priority mic (9) 200 ohms 200µV. Six outlets. Load impedance and voltage of each outlet: programme (left) 3K/0.775V/150mV; programme output (right) 3K/0.775V/150mV; fold-back 3K/0.775V/150mV; remote output (stereo) 10K/0.775V/150mV; tape output 10K/250mV; echo-send 10K/1V. Controls: pan-pot, echo-send, treble, middle, bass, gain plus five push-buttons per channel. Mains indicator lamp in on/off switch. Two peak reading VU meters. Monitoring facilities. Mains: 120 or 240V AC. Size: 610 × 510 × 205mm. Price: £483.25 (including VAT).

**■ SENNHEISER ELECTRONIC**

Distributors: Hayden Laboratories Ltd, Hayden House, 17 Chesham Road, Amersham, Bucks HP6 5AG. Tel: Amersham 5511.

Audio equipment showroom service department and despatch department: 6 Bendall Mews, Bell Street, London, NW1.

**M101 ★**

Battery operated portable mixer. Inputs: four microphone inputs switchable for 200 ohm dynamic and 12V powered capacitor (MKH series of Sennheiser mics). Output: unbalanced +6dB at 60 ohms. Pre-fade listening using ML101 mixer monitoring unit. PPM. Slider-type faders. Separate bass and treble controls switchable to one channel or to mixed output. Treble control: ±12dB at 15kHz, bass control +10dB - 14dB at 40 Hz. Power supply: two 9V Ever-Ready cells type 276 or equivalent, or 18V from other equipment. Price: on application.

**■ SONY**

Sony (UK) Ltd, Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

**MX10K/MX600M**

Three-input mono mixer. Inputs: mic (3) 10K or 600 ohms. One outlet. Output impedance:



*Disco III*



*Millbank Musicmaster III*



*Sennheiser M101*





Uher A124



Vortexion 50/70

(MX10K) 13.5K, (MX600M) 300 ohms. Three level controls. Passive system. Size:  $9\frac{1}{2} \times 2\frac{1}{2} \times 4$  in. Price: £8.25 (plus VAT).

#### MX12M

Mono/stereo mixer with six inputs. Inputs: mics (3) 0.195mV 600 ohms, aux (3) 61.5mV 100K. DIN connector 0.775V 10K. Two outlets plus headphone socket. Outlets: (high) 245mV 100K, (low) 0.775mV 10K. Controls: power on/off, battery check, six level controls, selector, attenuate on/off. Two VU meters. Power: six HP11 batteries or 12V DC source. Size:  $15\frac{3}{8} \times 7\frac{1}{8} \times 7$  in. Monitoring facilities by 8-ohm phones. Price: £49.50 (plus VAT).

#### MX6S

Six-input stereo mixer. Inputs: mic (3) 0.775mV low Z, aux 0.245mV high Z. Two outlets. Outlets: 0.245mV low Z. Six-level controls plus channel selector. Passive system. Size:  $13\frac{7}{8} \times 2\frac{7}{8} \times 4\frac{1}{8}$  in. Price: £12.10 (plus VAT).

#### TEKNIK

Clark-Teknik Ltd, Summerfield, Kidderminster DY11 7RE. Tel: Kidderminster 64027.

#### Graphic Equalisers

The range covers three standard models with two miniature versions available to order. An equaliser by-pass switch and an input level control are standard on all models. The three units can be supplied in free-standing teak cases, heavy duty cases or as rack mounting units. Built in an aluminium case. The front panel is engraved and satin anodised. Further details and prices on request.

#### UHER

Uher (UK) Ltd, 15 Broomhills Estate, Braintree, Essex CM7 7RQ. Tel: Braintree 23192.

#### A124 ★

Portable mixer unit for five channels: two stereo plus one mono or five mono channels. Inputs available for 200 ohms microphone, radio or pickup. Outputs: one 40mV nominal, one 500mV nominal. FR: 20Hz-20kHz. Slider faders with directional control, muting switches and 1kHz generator. Powered by PP3 battery or Z131 mains unit. Price: £74 (plus VAT).

#### UNIMIXER

Soundex Ltd, 18 Blenheim Road, London W4 1ES. Tel: 01-995 1661.

#### Studio 4 and Studio 6

Mixers for studio or portable use. Studio 4 has four channels, Studio 6 has six. Outputs: Four in two groups. Inputs per channel for 25.60 ohms floating mic, 150-600 ohms floating mic, line 1.5M ohms unbalanced, high sensitivity, 50K and 150-300 ohms capacitor mic, phantom working. Specifications and prices on application.

#### VORTEXION

257-263 The Broadway, Wimbledon, London SW19 1SF. Tel: 01-542 2814/6242.

#### 50/70 ★

All-silicon transistor amplifier with built-in four-channel mixer. Amplifier circuit similar to 100W model described in Amplifier Section. Mixer portion arranged for three 30-60 ohms balanced line inputs and one high impedance input. Separate bass and treble controls. Balanced line 100V output. Sensitivity: 100µV on low impedance inputs, 100mV 100K on high impedance input. 15-ohm output model available. Size:  $14 \times 11\frac{1}{2} \times 4\frac{1}{2}$  in. Weight: 22lb. Price: £105.87 (including VAT).

#### 50/70 plus 5-way mixer

Similar specification to 50/70 with four-channel mixer, but with additional bass-cut controls on three low impedance inputs. Inputs: three 100µV 30-60 ohms balanced, 100mV 10M, 100mV 100K. Size:  $14 \times 11\frac{1}{2} \times 2\frac{1}{2}$  in. Weight: 22lb. Price: £113.13 (including VAT).

#### FET mixers and PPMs

Various types of mixers available. Three-, four-, six- and eight-channel with peak programme meter. Four-, six-, eight- and ten-way mixers. Twin three-, four- and five-channel stereo. Twin four- and five-channel stereo with two PPMs. Price: on application.

# Tape Decks and Recorders

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 27.

## ■ AKAI

Rank Radio International Ltd,  
PO Box 596, Power Road, Chiswick,  
London W4 5PW. Tel: 01-994 6491.

### 1722L

Stereo tape recorder. Tape speed:  $7\frac{1}{2}$  and  $3\frac{3}{4}$ i/s. W and F:  $7\frac{1}{2}$ i/s less than 0.14% RMS,  $3\frac{3}{4}$ i/s less than 0.18% RMS. FR: 30Hz-21kHz  $\pm$ 3dB at  $7\frac{1}{2}$ i/s, 40Hz-15kHz  $\pm$ 3dB at  $3\frac{3}{4}$ i/s. Distortion: less than 2%. Output power: 10W total music power at 8 ohms. S/N ratio: better than 50dB. Erase ratio: better than 70dB. Crosstalk: better than 45dB (stereo). Bias frequency: 63kHz. Heads: erase, record/playback. Motor: 2-speed induction motor. Mains: 100-240V AC 50/60Hz. Size: 359  $\times$  366  $\times$  249mm. Weight: 14kg. Price: on application.

### 4000DB

Stereo tape deck. Tape speeds:  $7\frac{1}{2}$  and  $3\frac{3}{4}$ i/s. W and F: less than 0.15% at  $7\frac{1}{2}$ i/s, less than 0.2% at  $3\frac{3}{4}$ i/s. FR: 30Hz-23kHz  $\pm$ 3dB at  $7\frac{1}{2}$ i/s, 30Hz-16kHz at  $3\frac{3}{4}$ i/s. Distortion: less than 1.0%. S/N ratio: better than 55dB (with Dolby process 60dB at 5kHz). Erase ratio: better than 70dB. Crosstalk: better than 40dB (stereo). Bias frequency: 105kHz. Heads: one micron gap recording head, one micron gap playback head, erase head. Motor: 4-pole induction motor. Fast forward/rewind time: 120/150 sec using a 1200ft tape at 60/50Hz. Mains: 100-240V AC 50/60Hz. Size: 406  $\times$  325  $\times$  196mm. Weight: 12.0kg. Price: on application.

### GX-600DB

Stereo tape deck. Tape speed:  $7\frac{1}{2}$  and  $3\frac{3}{4}$ i/s. W and F:  $7\frac{1}{2}$ i/s less than 0.07% RMS,  $3\frac{3}{4}$ i/s less than 0.10% RMS. FR: 30Hz-23kHz  $\pm$ 3dB at  $7\frac{1}{2}$ i/s, 30Hz-19kHz  $\pm$ 3dB at  $3\frac{3}{4}$ i/s. Distortion: less than 0.7% at  $7\frac{1}{2}$ i/s. S/N ratio: better than 56dB. Erase ratio: better than 70dB. Crosstalk: better than 40dB (stereo). Bias frequency: 150kHz. Three

heads. Motors: one hysteresis synchronous capstan motor, two eddy-current outer-rotor motors. Fast forward and rewind time: 120 sec. Mains: 110-240V AC 50/60Hz. Power consumption: 130W 50Hz, 100W 60Hz. Size: 443  $\times$  475  $\times$  228mm. Weight: (GX-600D) 22.0kg; (GX-600DB) 22.3kg. Prices: on application.

### GX-400D

Stereo tape deck. Tape speeds: 15i/s,  $7\frac{1}{2}$ i/s and  $3\frac{3}{4}$ i/s. W and F: less than 0.035% RMS at 15i/s. Distortion: less than 1%. S/N: better than 58dB. Bias frequency: 160kHz. Crosstalk: 45dB. Size: 457  $\times$  589  $\times$  258mm. Weight: 30.5kg. Price: on application.

## ■ AMCRON

Macinnes Laboratories Ltd, Macinnes House, Carlton Park Industrial Estate, Saxmundham, Suffolk IP17 2NL.  
Tel: Saxmundham 2262/2615.

### 800 Series ★

Stereo tape deck,  $\frac{1}{4}$ - or  $\frac{1}{2}$ -track. Three-speed 15i/s or  $1\frac{1}{2}$ i/s optional. Max reel 10 $\frac{1}{2}$ in. W and F: 15i/s 0.06%;  $7\frac{1}{2}$ i/s 0.09%;  $3\frac{3}{4}$ i/s 0.18% (RMS). H and N: 15i/s -60dB;  $7\frac{1}{2}$ i/s -60dB;  $3\frac{3}{4}$ i/s -55dB (below peak level). FR ( $\pm$ 2dB): 15i/s 30Hz-30kHz;  $7\frac{1}{2}$ i/s 30Hz-25kHz;  $3\frac{3}{4}$ i/s 30Hz-15kHz. Replay char: CCIR. VU meter. Rewind time: 58 seconds for 2400ft, 38 seconds for 1200ft. Inputs: 2 mixable inputs per channel, mic or line. Sensitivity: 45mV for 0 level (line), 0.4mV for 0 level (mic); impedance 100K, balanced or unbalanced 600 ohms, or 50/200 ohms. Output: 600 ohms. Three motors, magnetic brakes, logic circuitry for tape handling, all tape commands can be remote. A-B monitoring, source and tape mixing, echo, individual bias adjustment and metering. Size: 17 $\frac{1}{2}$   $\times$  19  $\times$  8in. Weight: 50lb. Price: £700 to £2,300.



Amcron 800 Series

★ Indicates entry is illustrated

### ■ AMPEX

Amplex GB Ltd. Acre Road, Reading.  
Berks RG2 0QR. Tel: Reading 85200.

#### MM-1100

Full specifications and prices on request.

#### AG-440C

Full specifications and prices on request.

### ■ BIAS ELECTRONICS LTD

572 Kingston Road, London SW20 8DR.  
Tel: 01-540 8808.

#### BE1000M/RR/C ★

Professional tape deck with preamplifiers. Mains operated. Mono. Full-track recording and play-back. Speeds:  $7\frac{1}{2}$  and 15i/s. Max spool: 11 $\frac{1}{4}$ in. W and F: ( $7\frac{1}{2}$ i/s) <0.08% RMS, (15i/s) <0.06% RMS. H and N: ( $7\frac{1}{2}$ i/s) -58dB, (15i/s) -60dB. FR: ( $7\frac{1}{2}$ i/s) 40Hz-16kHz  $\pm$ 2dB, (15i/s) 40Hz-18kHz  $\pm$ 2dB. Replay char: switchable NAB/CCIR. Variable speed spooling. Rewind time: <100 seconds for 2400ft. VU meter extra. Clock type tape indicator (driven by tape) calibrated in minutes and tenths. Inputs: line -20dB -0dB 10K floating (bridging). Output: 0dB 600 ohms (max +20dB). Motors: two Papst ROT, one Papst HSK2. Size: 20 x 14 $\frac{1}{2}$  x 10 $\frac{1}{2}$ in. Weight: 56lb. Price: on application.

#### BE1000S/RR/C ★

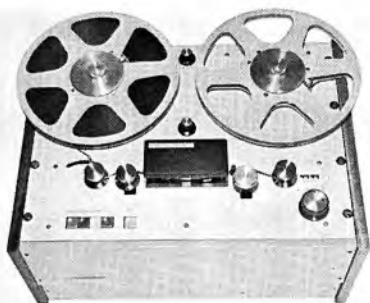
Professional tape deck with preamplifiers. Mains operated. Stereo.  $\frac{1}{2}$ -track recording and play-back. Speeds:  $7\frac{1}{2}$  and 15i/s. Max. spool: 11 $\frac{1}{4}$ in. Wow and flutter: ( $7\frac{1}{2}$ i/s) <0.08%. (15i/s) <0.06%. Hum and noise: ( $7\frac{1}{2}$ i/s) -56dB, (15i/s) -58dB. FR: ( $7\frac{1}{2}$ i/s) 30Hz-16kHz  $\pm$ 2dB, (15i/s) 30Hz-18kHz  $\pm$ 2dB. Replay char: switchable NAB/CCIR. Variable speed spooling. Rewind time: 100 seconds for 2400ft. VU meters or PPMS extra. Clock type tape position indicator (driven by tape) calibrated in minutes and tenths. Inputs: (two) line in -20dB -0dB at 10K bridging. Output: 0dB 600 ohms (max  $\pm$ 20dB at 600 ohms). Motors: two Papst motors ROT, one Papst motor HSK. Size: 20 x 14 $\frac{1}{2}$  x 10in. Weight: 56lb. Price: on application.

### ■ BRENNEL ENGINEERING CO LTD

231-235 Liverpool Road, London N1 1LY.  
Tel: 01-607 8271.

#### Mk 6 Stereo Unit

Stereo tape deck with preamplifiers. Twin 2/2 or quarter 2/4 track system. Speeds: 15,  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ , 1 $\frac{1}{4}$ i/s. Max spool: 8 $\frac{1}{2}$ in. (10 $\frac{1}{2}$ in NAB reel version available). W and F: 15i/s 0.05%,  $7\frac{1}{2}$ i/s 0.08%,  $3\frac{3}{4}$ i/s 0.1%, 1 $\frac{1}{4}$ i/s 0.12%. S/N: 56dB below 2% distortion levels of recording. FR: 15i/s 40Hz-22kHz  $\pm$ 3dB,  $7\frac{1}{2}$ i/s 40Hz-20kHz  $\pm$ 3dB,  $3\frac{3}{4}$ i/s



Bias Electronics BE 1000M/RR/C



Bias Electronics BE 1000S/RR/C

50Hz-14kHz  $\pm$ 3dB, 1 $\frac{1}{4}$ i/s 60Hz-7kHz  $\pm$ 3dB. Two illuminated edge-scale meters. Rewind time: less than 60 seconds for 1200ft. Inputs: mic 200 $\mu$ V 200-600 ohms, aux (1) 8mV 50K, aux (2) 8mV 50K. Output: two at 1.4V from tape recorded to 0dB meter level. Two output jack sockets on front panel, two phono sockets on rear. Horizontal or vertical operation. Three motors (all outer rotor). Three heads. Pause control (lockable). Four-digit tape indicator. Auto-stop. A/B switching A/B balance. Mains: 115, 210, 240V AC 50Hz. Size: 17 $\frac{1}{2}$  x 16 $\frac{1}{2}$  x 8in. Weight 33lb. Price: £185 (plus VAT). Industrial version with 10 $\frac{1}{2}$ in. NAB reels available. Prices: on application.

#### Mk 6 Type M

Mains mono recorder.  $\frac{1}{2}$ -track (full-track version available). Speeds: 15,  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ , 1 $\frac{1}{4}$ i/s. Max spool: 8 $\frac{1}{2}$ in (10 $\frac{1}{2}$ in NAB version available). W and F: 1 $\frac{1}{4}$ i/s 0.12%,  $3\frac{3}{4}$ i/s 0.1%,  $7\frac{1}{2}$ i/s 0.08%, 15i/s 0.05%. H and N: 1 $\frac{1}{4}$ i/s 50dB,  $3\frac{3}{4}$ i/s 54dB,  $7\frac{1}{2}$ i/s

56dB, 15i/s 56dB. FR: 1*1*/<sub>i</sub>s 60Hz-8kHz, 3*3*/<sub>i</sub>s 50Hz-15kHz, 7*7*/<sub>i</sub>s 40Hz-20kHz, 15i/s 40Hz-22kHz, all  $\pm 3$ dB. Replay char: CCIR. Rewind time: under 60 sec for 1200ft. Illuminated edge-scale VU meter. Inputs: mic 0.1mV 200-250 ohms, aux 5mV 250K, PU mag 4mV 47K, PU ceramic 160mV 1.5 megohms. Outlets: external amplifier 200mV into 10K, external speaker 15W into 8 ohms or 8W into 15 ohms. Speaker: 7  $\times$  5in. Output: 15W RMS into 8 ohms, 8W into 15 ohms. Transistorised. Own deck. Horizontal or vertical operation. Three motors (Papst outer rotor). Pause control. Straight-through amplifier. Monitoring. Input mixing. Accepts pickups direct. A/B switching. Size: 16 $\frac{1}{2}$   $\times$  7  $\times$  18in. Weight: 35lb. Mains: 110, 210, 240V AC. Price: £150 (plus VAT).

#### Multi-channel recorders

A new range of master recorders for sound recording studios and industrial and scientific applications. Series A, full-track on  $\frac{1}{2}$ in tape; Series B, half-track on  $\frac{1}{2}$ in tape; Series C, four-track on  $\frac{1}{2}$ in tape; Series D, four-track on 1in tape; Series E, eight-track on 1in tape; Series F, 16- and 24-track on 2in tape. Each series comprises four basic self-contained units; (1) tape transport, (2) record/play amplifier (one per channel), (3) master oscillator unit, (4) power supply unit, (5) optional remote control unit for all deck functions. Suitable for 19in rack mounting. Consoles available. Full specifications and prices on request.

#### ■ DOKORDER

Acoustico Enterprises Ltd, Unit 7,  
Space Waye, North Feltham Trading Estate,  
Feltham TW14 OTZ. Tel: 01-751 0141.

#### 7100

Mains operated two-speed stereo tape deck. Speeds: 9.5cm/s, 19cm/s. W and F: 9.5cm/s 0.12% RMS (DIN), 19cm/s 0.08% RMS (DIN). Two heads. FR: 9.5cm/s 30Hz-13kHz  $\pm 3$ dB, 19cm/s 30Hz-23kHz  $\pm 3$ dB. Hysteresis motor. Max. spool capacity: 7in. Rewind time: 120 sec for 1800ft. Size: 16 $\frac{1}{2}$   $\times$  17 $\frac{1}{4}$   $\times$  6 $\frac{1}{2}$ in. Weight: 40lb. Price: on application.

#### 7140

Mains operated quadraphonic tape deck. Two speeds: 9.5cm/s, 19cm/s. W and F: 9.5cm/s 0.12% RMS (DIN), 19cm/s 0.08% RMS (DIN). Three heads. FR: 9.5cm/s 30Hz-13kHz  $\pm 3$ dB, 19cm/s 30Hz-23kHz  $\pm 3$ dB. Hysteresis motor. Max. spool capacity: 7in. Rewind time: 120 sec for 1800ft. Size: 452  $\times$  430  $\times$  172mm. Weight: 40.7lb. Price: on application.

#### 8140

Mains operated quadraphonic tape deck. Two speeds: 9.5cm/s, 19cm/s. W and F: 9.5cm/s

0.10% RMS (DIN), 19cm/s 0.07% RMS (DIN). Three heads. FR: 9.5cm/s 30Hz-13kHz  $\pm 3$ dB, 19cm/s 30Hz-23kHz. Hysteresis motor. Rewind time: 120 sec for 1800ft. Pause control. Size: 16 $\frac{1}{2}$   $\times$  17 $\frac{1}{4}$   $\times$  6 $\frac{1}{2}$ in. Weight: 40.7lb. Price: on application.

#### 9200

Mains operated two speed stereo tape deck. Speeds: 9.5cm/s, 19cm/s. W and F: 9.5cm/s 0.09% RMS (DIN), 19cm/s 0.06% RMS (DIN). Six heads. FR: 9.5cm/s 30Hz-14kHz  $\pm 3$ dB, 19cm/s 30Hz-24kHz. Hysteresis motor. Max. spool capacity: 7in. Rewind time: 120 sec for 1800ft. Size: 17 $\frac{1}{4}$   $\times$  20  $\times$  15 $\frac{1}{2}$ in. Weight: 55lb. Price: on application.

#### 1120

Mains operated two speed stereo tape deck. Speeds: 9.5cm/s, 19cm/s. W and F: 9.5cm/s 0.10% RMS (DIN), 19cm/s 0.06% RMS (DIN). Three heads. FR: 9.5cm/s 40Hz-12kHz  $\pm 3$ dB, 19cm/s 30Hz-22kHz  $\pm 3$ dB. Hysteresis motor. Max. spool capacity: 10 $\frac{1}{2}$ in. Rewind time: 100 sec for 2500ft. Pause control. Size: 16 $\frac{1}{2}$   $\times$  12 $\frac{1}{2}$   $\times$  6 $\frac{1}{2}$ in. Weight: 55lb. Price: on application.

#### 1140

Mains operated quadraphonic two speed tape deck. Speeds: 19cm/sec, 38cm/s, W and F: 19cm/s 0.06% RMS (DIN), 38cm/s 0.04% RMS (DIN). Three heads. FR: 19cm/s 30Hz-20kHz  $\pm 3$ dB, 38cm/s 30Hz-23kHz  $\pm 3$ dB. Hysteresis motor. Max spool capacity: 10 $\frac{1}{2}$ in. Rewind time: 100sec for 2500ft. Size: 17 $\frac{1}{4}$   $\times$  20  $\times$  15 $\frac{1}{2}$ in. Price: on application.

#### ■ FERROGRAPH

The Ferrograph Company Ltd, Auriema  
House, 442 Bath Road, Cippenham,  
Slough SL1 6BB. Tel: Burnham 62511.

#### Ferrograph 713

Semi-professional mains mono recorder.  $\frac{1}{2}$ -track. Speeds: 7 $\frac{1}{2}$ , 3 $\frac{3}{4}$ , 1 $\frac{1}{4}$ i/s. Max spool 8 $\frac{1}{2}$ in. W and F: 7 $\frac{1}{2}$ i/s 0.08%, 3 $\frac{3}{4}$ i/s 0.15%, 1 $\frac{1}{4}$ i/s 0.2%. H and N: 7 $\frac{1}{2}$ i/s better than 55dB. FR: 7 $\frac{1}{2}$ i/s 30Hz-17kHz  $\pm 2$ dB, 3 $\frac{3}{4}$ i/s 40Hz-14kHz  $\pm 3$ dB, 1 $\frac{1}{4}$ i/s 50Hz-7kHz  $\pm 3$ dB. Replay char: DIN. VU meter. Rewind time less than one minute for 1200ft. Inputs: mic 300 $\mu$ V to 15mV at 250-2000 ohms, line 50mV to 10V at 2M. Outlets: 600 ohms, 300mV 10K, 8-16 ohms 10W. Output: 10W RMS. One 6  $\times$  4in speaker. Transistorised. Three motors (synchronous hysteresis capstan motor and shaded pole spool motors). Pause. Four-digit belt driven tape indicator. Straight-through amplifier. Monitoring. Input mixing. Vertical or horizontal operation. Single knob control. Fast wind continuously variable in either direction. Remote start/stop of tape,

★ Indicates entry is illustrated

also time-switch operation. Removable head block. Straight line tape loading. Automatic stop. Reel retainers. Retractable carrying handle. A-B comparison switch. Separate bass and treble controls with cut or lift. Meter indicates signal level on record and playback. Meter switchable to indicate bias. Bias continuously adjustable. Supplied in two styles. Suffix P: portable wood case leathercloth covered; Suffix W: wooden case, natural wood finish. Mains: 200-250V 50Hz; (Suffix A) 117V 60Hz. Price: £225 (including VAT).

#### **Ferrograph 713H**

Similar specifications to 713 except tape speeds 15, 7½, 3½i/s. FR at 15i/s: 30Hz-20kHz ±2dB. Price: £225 (including VAT).

#### **7502**

½-track stereo tape unit with preamps only. Speeds (cm/sec): 19, 9½, 4½. Max spool size: 10½in. W and F: 0.08% (19), 0.15% (9½), 0.20% (4½). S/N ratio: better than 60dB (CCIF weighted). FR: 30Hz-17kHz ±2dB (19), 40Hz-14kHz ±3dB (9½), 40Hz-14kHz ±3dB (4½). Replay char: DIN. Rewind time: variable up to 1¼min for 360m tape. Level indicator: VU. Inputs: mic 300µV-15mV 10K, line 50µV-10V/2M ohms. Outputs: line 2V/600 ohms, low level 300mV 10K, low level adjustable up to 300mV 10K. Motors: one synchronous and two constant torque. Three leads, PB multiplay, AB comparison, adjustable tape tensioning. Mains: 200-250V or 117V (suffix A). Size: 20¼ × 17½ × 10in. Weight: 55lb. Price: £294 (including VAT).

#### **7502D**

Same specifications as 7502 but includes Dolby 'B'. Price: £352 (including VAT).

#### **7522**

Same specifications as 7502 but with power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £326 (including VAT).

#### **7522D**

Same specification as 7502 but includes Dolby 'B' and power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £384 (including VAT).

#### **7504**

½-track stereo tape unit with preamps only. Specification same as 7502. Price: £294 (including VAT).

#### **7504D**

½-track stereo tape unit with preamps only. Specification same as 7502 but with Dolby 'B'. Price: £352 (including VAT).

#### **7524**

½-track stereo tape unit with power amps. Same

specification as 7502. Output up to 10W per channel into 8-12 ohms. Speaker size: 7 × 4in. Price: £326 (including VAT).

#### **7524D**

½-track stereo tape unit with Dolby 'B' and power amps. Same specification as 7502. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £384 (including VAT).

#### **7502H**

½-track, high speed stereo tape unit, with preamp only. Speeds (cm/sec): 38, 19, 9½. Max spool size: 10½in. W and F: 0.08% (38), 0.10% (19), 0.15% (9½). S/N ratio: better than 60dB (CCIF weighted). FR: 30Hz-20kHz ±2dB (38), 30Hz-17kHz ±2dB (19), 40Hz-14kHz ±3dB (9½). Replay char: DIN. Rewind time: Variable up to 1¼ min for 360m tape. Level indicator: VU. Inputs: mic 300µV-15mV 10K, line 50µV-10V/2M ohms. Outputs: line 2V/600 ohms, low level 300mV 10K, low level adjustable up to 300mV 10K. Motors: one synchronous and two constant torque. Mains: 200-250V AC or 117 (suffix A). Three leads, PB multiplay, AB comparison, adjustable tape tensioning. Size: 20¼ × 17½ × 10in. Weight: 55lb. Price: £294 (including VAT).

#### **7502DH**

Same specification as 7502H, but includes Dolby 'B'. Price: £352 (including VAT).

#### **7522H**

Same specifications as 7502H but with power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £326 (including VAT).

#### **7522DH**

Same specifications as 7502H but with power amps and Dolby 'B'. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £384 (including VAT).

#### **7504H**

½-track, high speed stereo tape unit with preamps only. Same specifications as 7502H. Price: £294 (including VAT).

#### **7504DH**

½-track, high speed stereo tape unit with Dolby 'B' and preamps. Same specifications as 7502H. Price: £352 (including VAT).

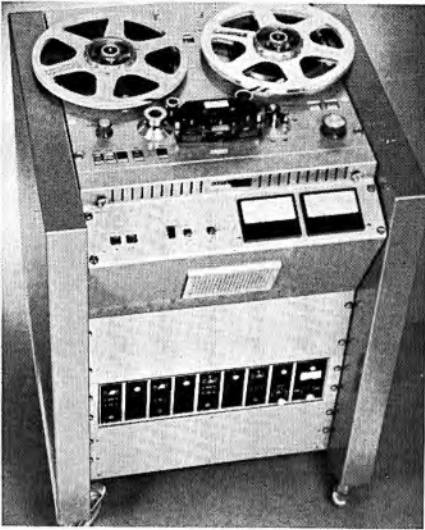
#### **7524H**

½-track, high speed stereo tape unit with power amps. Same specification as 7502H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £326 (including VAT).

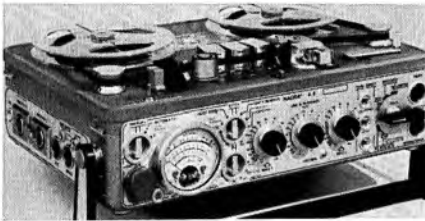
#### **7524DH**

½-track, high speed stereo tape unit with Dolby 'B' and power amps. Same specification as

## TAPE DECKS AND RECORDERS



Leevers-Rich E200



Nagra Model 4.2

7502H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £384 (including VAT).

### ■ GRUNDIG

Grundig (Great Britain) Ltd,  
Hi-Fi Division, Newlands Park,  
Sydenham, London SE26 5NQ.  
Tel: 01-659 2468.

#### TK745

½-track stereo tape recorder. Speeds (cm/sec): 19, 9½, 4½. Max spool size: 7in. W and F: 0.07% (19), 0.12% (9½), 0.2% (4½). S/N ratio: >54dB (19), >52dB (9½), >750dB (4½). FR: 40Hz-18kHz (19), 40Hz-15kHz (9½), 40Hz-8kHz (4½). Level indication: VU. Inputs: mic 1mV 100K, radio diode 3mV 30K, phono 100mV/1M ohms. Outputs: line 800mV 20K, speakers 7W/4 ohms, phones 2V/100 ohms. Facilities for syn-

chronous, multiplay and echo recordings. Automatic or manual recording level control. Mains: 110-240V. Size: 17 × 14 × 16½in. Weight: 27½lb. Price: on application.

### ■ LEEVERS-RICH

Leevers-Rich Equipment Ltd,  
319 Trinity Road, Wandsworth,  
London SW18 3SL. Tel: 01-874 9054.

#### Model E200 ★

Speeds: 15i/s, 3¾, 7½i/s or 15/30i/s to special order. Max spool 11¼in. Three motors. Full-track, twin-track or stereo. FR: 40Hz-18kHz. Noise: full track -62dB, twin track -58dB. W and F: better than 0.1% at all speeds. VU level meter. PPM to special order. Fully transistorised amplifiers. Modular construction throughout. Price: from £1,080 (plus VAT).

### ■ NAGRA

Distributed by: Hayden Laboratories Ltd,  
Hayden House, 17 Chesham Road,  
Amersham, Bucks HP6 5AG.  
Tel: Amersham 5511.

Audio equipment showroom, service department and despatch department: 6 Bendall Mews, London, NW1.

#### Model 4.2 ★

Professional battery-operated portable tape recorder. Speeds: 15i/s, 7½i/s, 3¾i/s. Size: 12½ × 8¾ × 4¼in. Weight: (excluding batteries) 11½lb. 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. Electromagnetic indication of speed stability, battery level and tape jamming. W and F: 15i/s 0.05%, 7½i/s 0.07%, 3¾i/s 0.15%. Overall speed stability: better than 0.05%. Temperature range -55deg C to +77deg C. FR: 15i/s 30Hz-20kHz ±2dB, 7½i/s 30Hz-15kHz ±2dB, 3¾i/s 30Hz-10kHz ±2dB. Rewind time: 600ft/min. Details and prices of various models as follows.

#### Model 4.2L

Full-track mono version with piloton. Inputs from two mics and line. Line output: 4.4V 600 ohms. S/N ratio: -67 to -70dB depending on speed and tape. Visual piloton indicator. Piloton input level 0.5-25V. Price: £1320 (plus VAT).

★ Indicates entry is illustrated



Nagra Miniature SN

#### Model 4.2LSP

As Model 4.2L but excluding pilotton facility. Price: £1260 (plus VAT).

#### Model IV-SL

$\frac{1}{2}$ -track model with pilotton. Preamplifiers switchable to suit all types of microphone. Output: 1V 600 ohms. Special Nagramaster recording position. Coaxial PPM with two needles to indicate record level and groove cutting depth. S/N ratio: -65dB to -72dB depending on speed and tape. Frequency modulated pilotton channel to permit pilotton and cue speech recording. Pilotton level 2V. Price: £1645 (plus VAT).

#### Model IV-S

As Model IV-SL but excluding pilotton facility. Price: £1053 (plus VAT).

Special models for industrial sound level recording available.

#### Miniature Nagra SN ★

Full-track battery-operated professional stereo recorder. Speeds: (model SNN-2)  $3\frac{3}{4}$ ,  $1\frac{1}{2}$ /s; (model SNS-2)  $1\frac{1}{8}$ ,  $1\frac{1}{16}$ /s. Spool capacity: 154m standard tape, 308m 12.5 micron tape. W and F:  $3\frac{3}{4}$ /s  $\pm 0.1\%$ ,  $1\frac{1}{2}$ /s  $\pm 0.15\%$  (both to DIN 45507). S/N ratio:  $3\frac{3}{4}$ /s 60dB (ASA 'A' with tape);  $1\frac{1}{2}$ /s 55dB (ASA 'A' with tape). FR: 80Hz-15kHz  $\pm 2$ dB. Replay char: CC1R. Rewind time: (hand winding) 60 sec. Meter level indicator. Inputs: microphone, current input from 200 ohms or greater ( $3\mu$ A RMS, max level  $100\mu$ A RMS). Alternative line input for normal modulation level from 100 ohms source -160mV RMS. Outputs: line 600mV across 1K, headphones. One DC series commutator motor. Own deck. Compression indicator and battery check meter. Remote control start/stop. Pilotton version available. Size:  $5\frac{1}{2} \times 4 \times 1\frac{1}{4}$ in. approximately. Weight: 1.3lb. (including batteries and tape). Supply: two manganese cells (Mallory Mn1500 or equivalent). Price: £747 (plus VAT).

#### ■ PHILIPS

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS. Tel: 01-437 7777.

#### N4511

Mains operated stereo  $\frac{1}{2}$ -track tape deck. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{2}$ /s. Max. spool: 7in. W and F: (DIN 45 500)  $7\frac{1}{2}$ /s 0.15%,  $3\frac{3}{4}$ /s 0.2%,  $1\frac{1}{2}$ /s 0.35%. Noise:  $7\frac{1}{2}$ /s -50dB,  $3\frac{3}{4}$ /s -50dB  $1\frac{1}{2}$ /s -48dB. Hum:  $7\frac{1}{2}$ /s (all speeds) -45dB. FR:  $7\frac{1}{2}$ /s 40Hz-25kHz (DIN)  $3\frac{3}{4}$ /s 40Hz-15kHz  $\pm 3$ dB,  $1\frac{1}{2}$ /s 60Hz-8kHz  $\pm 3$ dB. Replay char: DIN. Rewind time: 180 seconds for 1800ft. Two level meters. Four-digit tape position indicator with PB reset. Inputs: mic 0.15mV 2K, radio 100mV 100K, line 2mV 20K, PU 1.5mV 47K. Outputs: line 1V 50K, headphones 3V 400-600 ohms, monitor 1V 50K. Three DC motors. Fitted with long life heads. Own deck. Size:  $20\frac{1}{4} \times 15 \times 7\frac{1}{2}$ in. Weight: 24lb. Pause control. Monitoring on record. Input mixing. Parallel track replay. Solenoid controlled operation. Full remote control operation using Philips unit N6719. Price: £249 (including VAT).

#### ■ PIONEER

Shriro (UK) Ltd, Shriro House, The Ridgeway, Iver, Bucks SLO 9JL. Tel: Iver 652222.

#### RT 1050

Open reel professional tape deck. Drive system: 3 motor. Tape heads: interchangeable plug-in assemblies. Speeds: 15 and  $7\frac{1}{2}$ /s. Reel size: 10in. Fast wind: 110 secs ( $10\frac{1}{2}$ in). W and F: less than 0.04% WRMS. S/N ratio: better than 57dB. FR: 30-22,000Hz  $\pm 3$ dB. Stereo separation: better than 53dB. Erasing coefficient: better than 60dB. Bias frequency: 125kHz. Inputs: mic 0.25-80mV 20K, line 50mV-25V 100K, Rec/PB DIN jack 15mV-1.5V 1.5K. Outputs: line 316mV 50K, Rec/PB DIN jack 316mV 50K. Bias selector: STD, LH1, LH2. Equaliser: NAB (2-step), 1EC (2-step). Load peak indicator (ref. +6dB). Electronic mode switching. Size:  $18\frac{1}{2} \times 17\frac{7}{32} \times 9\frac{19}{32}$ in. Price: on application.

#### RT 1011L

Open reel tape deck. Drive system: 3 motor. Tape heads: 1  $\times$  4-track, 2-channel erase; 1  $\times$  4-track, 2-channel record; 1  $\times$  4-track, 2-channel PB. Reel size:  $10\frac{1}{2}$ in. Tape speeds:  $7\frac{1}{2}$  and  $3\frac{3}{4}$ /s. W and F: less than 0.08% WRMS. S/N ratio: better than 55dB. FR: 40-20,000Hz. Crosstalk: better than 60dB. Channel separation: better than 50dB. Erase coefficient: better than 60dB. Bias frequency: 125kHz. Equaliser: 2-step NAB standard. Bias selector: 2-step. Line/mic mixing. Inputs: 2  $\times$  line 50mV/25V/100K, 2  $\times$  mic 0.25mV/80mV/20K,

1 × Rec/PB DIN jack 15mV/1.5V/1.5K. Size: 16½ × 16½ × 9in. Price: on application.

### ■ REVOX

Distributors: C.E. Hammond & Co. Ltd,  
Lamb House, Church Street,  
London W4 2PB. Tel: 01-995 4551.

#### Series 77 ★

Stereo tape recorder. All figures quoted are minimum performance values as measured with Revox 601 tape normally exceeded by all units. Tape speed: 3¾/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 3¾/s. Weighted peak to peak flutter as per DIN 0.08% at 7½/s and 0.1% at 3¾/s. Tape slip: not exceeding 0.2%. Max spool size: up to 10½in (minimum hub diameter 2½in). Operating position: horizontal, vertical or inclined. Semiconductor complement: 54 transistors, 32 diodes, 4 silicon rectifiers, 1 CdS-Cell. FR (via tape): at 7½/s 30Hz-20kHz +2 (-3dB), 50Hz-15kHz ±1.5dB; at 3¾/s 30Hz-16kHz +2 (-3dB), 50Hz-10kHz ±1.5dB. Equalisation: record NAB, playback NAB and IEC (switchable). Distortion: measured via tape at 1kHz peak level and at OVU respectively; 7½/s less than 2% or 0.6% respectively; 3¾/s less than 3% or 1% respectively. S/N ratio: weighted as per ASA-A, readings via tape; 7½/s better than 66dB (4-track 62dB). 3¾/s better than 63dB (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 (1:100). Outputs (per channel): amplifier max 2.5V; internal impedance 600 ohms; radio max 1.2V; internal impedance 2.5K; headphones, volume adjustable, load impedance 200 ohms or more. Power amplifier: optional plug-in amplifiers, 2 × 8W continuous RMS power, 2 × 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:

#### A700

Stereo tape recorder. All figures quoted are minimum performance values as measured with Revox 601 (type Low Noise/High Output), normally exceeded by all units. Tape speed: 15i/s, 7½/s and 3¾/s. Weighted peak flutter: at 15i/s less than ±0.06%, at 7½/s less than ±0.08%, at 3¾/s less than ±0.1%. Timer: read-out in minutes and seconds (4 digits), reel-time indication for 7½/s tape speed. Accuracy 0.5%. Tape-reel dimension: up to 10½in outside diameter with automatic tension change down to a minimum hub diameter of 1½in. Tape tension:



Revox Series 77

electronically regulated during all operating modes, including stop sequence. FR (via tape): 15i/s 50Hz-18kHz ±1.5dB; 7½/s 50Hz-15kHz ±1.5dB; 3¾/s 50Hz-10kHz ±1.5dB. Equalisation: NAB. Peak recording level: 514nWb/m (corresponds to +6 VU). Level indication: VU meter. Overload indication (trigger level): +6 VU (514nWb/m). Response time: approximately 10m/sec. Storage time: approximately 0.2 sec. S/N: (ASA-A) referred to peak recording level (+6 VU), 15i/s better than 65dB, 7½/s better than 66dB, 3¾/s better than 63dB. Inputs: mic stereo, balanced 50-6000 ohms; position Low: 0.15mV 6K; position High: 1.8mV 6K. Phono 2.5mV 50K; radio 3mV 33K, 2 × 40mV 100K. All inputs have an overload margin of 40dB (1:100). Outputs: output level from a peak-level recording at +6 VU. Line A and B 1.55V 5K. 1 × radio (DIN): 0.775V, 10K; 2 × headphone: max 4.9V 100 ohms; 1 × power amplifier: max 3.1V 100 ohms, including remote mains switching for A722. Power requirements: voltage selector for 110-220V 50-60Hz. Price: (code 1372 2-track, code 1374 4-track) £699 (including VAT).

#### Model 1102 or 1104

Chassis in teak surround, no output amplifiers, ½ or ¼-track. Price: £329 (including VAT).

#### Model 1122 or 1124

Chassis in teak surround with output amplifiers, ½ or ¼-track. Price: £369 (including VAT).

#### Model 1302 or 1304

Chassis in metal encasement for rack mounting, no output amplifiers, ¼ or ½-track. Price: £329 (including VAT).

#### Model 1322 or 1324

As 1302/4, but with 10W output amplifiers, ¼ or ½-track. Price: £369 (including VAT).



★ Indicates entry is illustrated

#### Model 1222 or 1224

Complete recorder in suitcase with amplifiers and four speakers,  $\frac{1}{2}$  or  $\frac{1}{4}$ -track. Price: £384 (including VAT).

#### Model DL1132 or DL1134

As 1102 and 1104 but with Dolby B noise reduction system. Price: £445 (including VAT).

#### Model DL1332 or DL1334

As 1302 and 1304 but with Dolby B noise reduction system. Price: £445 (including VAT).

All models available in the 'H' series ( $7\frac{1}{2}$ /15i/s) £40 extra.

#### ■ SABA

Saba Radio & Television Ltd,  
6-12 Cornbrook Park Road,  
Manchester M15 4EE. Tel: 061-872 7661.

#### 544G ★

Two-speed four-track stereo tape recorder. Speeds:  $3\frac{3}{4}$  and  $7\frac{1}{2}$ i/s. Output: 10W music power per channel. Automatic or manual level control. Four internal speakers. Multiplay. 31 transistors, 11 diodes. Inputs: mic (2), radio, stereo PU, aux. Outputs: aux, speakers or headphones. FR:  $7\frac{1}{2}$ i/s 40Hz-18kHz. Size:  $19\frac{1}{2} \times 6\frac{1}{2} \times 13$ in. Finish: light walnut with tinted plastic cover. Horizontal or vertical operation. Finish: light walnut or white with tinted plastic cover. Four-digit tape position indicator with PB reset. Slider controls. Twin level meters. Price: £98.13 (including VAT).



Saba 544G



Scoptronics 1151

#### ■ SCOPETRONICS LTD

Crown Works, 91 Ewell Road, Surbiton,  
Surrey KT6 6BQ. Tel: 01-390 0184.

#### 1151 Professional Tape Recorder ★

Full-track,  $\frac{1}{2}$ -track, mono, twin-track. Speeds:  $7\frac{1}{2}$ i/s or  $3\frac{3}{4}$ i/s. Equalisation: NAB or IEC (CCIR). FR: 30Hz-20kHz  $\pm 2$ dB (15i/s). S/N ratio: -62dB, full-track 15i/s. Crosstalk: 47dB at 1kHz. Speed stab:  $\pm 0.2\%$  end-to-end of reel. Tape counter: accuracy better than 0.2%. Tape tension: 100gm. W and F: 0.08% unweighted 15i/s. Rewind time: 90 sec for 2400 ft. infinitely variable. Prices: from approximately £900.

#### ■ SHARP

Sharp Electronics (UK) Ltd,  
107 Hulme Hall Lane, Manchester M10 8HL.  
Tel: 061-205 7321.

#### RD708V

Mains operated stereo  $\frac{1}{4}$ -track recorder. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{4}$ i/s. Max spool: 7in. W and F:  $7\frac{1}{2}$ i/s 0.15%,  $3\frac{3}{4}$ i/s 0.2%,  $1\frac{1}{4}$ i/s 0.2%. H and N:

-45dB. FR:  $7\frac{1}{2}$ i/s 40Hz-16kHz,  $3\frac{3}{4}$ i/s 40Hz-8kHz,  $1\frac{1}{4}$ i/s 40Hz-4kHz. Replay char: DIN. Rewind time: less than 2 min for 1200ft. Meter level indicator. Inputs: mic 0.2mV 200 ohms, aux (DIN) 5mV 15K. Outputs: line (DIN) 500mV 2K, speaker 8 ohms. Output: 2.5W RMS per channel. Speakers: 6in bass driver, 2in tweeter. Transistors. One motor. Sharp deck. Straight-through amplifier. Monitoring. Parallel track replay. Size:  $15\frac{3}{4} \times 15\frac{3}{4} \times 10\frac{1}{2}$ in. Weight: 34lb. Mains: 110, 200, 220, 240V 50-60Hz. Price: £118.14 (plus VAT).

#### RT727

Mains operated stereo  $\frac{1}{4}$ -track tape deck. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ i/s. Tracks: 4-track 2-channel stereo. Max spool: 7in. Fast forward wind: 115 sec for 1200ft. Fast rewind: 65 sec for 1200ft. Vertical or horizontal operation. Mains: 110, 220, 240V AC 50Hz. One capacitor-start motor. One record/playback head, one erase head. AC bias and erase. Price: £78.14 (plus VAT).

■ SONY

Sony (UK) Ltd, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames  
Tel: Sunbury 87644

**TC 270**

Stereo tape recorder:  $\frac{1}{2}$ -track stereo and  $\frac{1}{2}$ -track mono. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{2}$ /s. Max spool 7in. W and F:  $7\frac{1}{2}$ /s 0.12% RMS DIN;  $3\frac{3}{4}$ /s 0.15% RMS DIN;  $1\frac{1}{2}$ /s 0.2% RMS. FR:  $7\frac{1}{2}$ /s 60Hz-13kHz  $\pm 3$ dB, 30Hz-16kHz DIN;  $3\frac{3}{4}$ /s 40Hz-12.5kHz DIN. S/N: 50dB. Bias frequency: 85kHz. THD: <3%. Two heads. Power: 5W  $\times$  2 into 8 ohms. Speaker: 120mm diameter, 8 ohms  $\times$  2. Input: diameter 8 ohms  $\times$  2. Input: mic low 0.2mV; line 0.06V 160K; rec/PB 3.9K. Output: line >10K 0.43V at 100K; external speaker 8 ohms; phones 8 ohms; rec/PB 80K 0dB 0.775V. Mains: 110, 127, 220 and 240V AC 50-60Hz (factory set 240V, 50Hz). Size: 513  $\times$  260  $\times$  387mm. Supplied accessories: two microphones F25, one connecting lead RK74, one reel R7ES, one mains lead, one set of head cleaning tips. Price: £124.95 (including VAT).

**TC 280 ★**

Stereo tape deck:  $\frac{1}{2}$ -track stereo and  $\frac{1}{2}$ -track mono. Max spool: 7in. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{2}$ /s. W and F:  $7\frac{1}{2}$ /s 0.1% RMS;  $3\frac{3}{4}$ /s 0.15% RMS;  $1\frac{1}{2}$ /s 0.2% RMS. FR: "normal" tape,  $7\frac{1}{2}$ /s 40Hz-18kHz  $\pm 3$ dB, 30Hz-18kHz DIN;  $3\frac{3}{4}$ /s 40Hz-12.5kHz DIN. "SLH" tape,  $7\frac{1}{2}$ /s 40Hz-21kHz  $\pm 3$ dB, 30Hz-20kHz DIN;  $3\frac{3}{4}$ /s 40Hz-14kHz DIN. S/N: "normal" tape 52dB, "SLH" tape 55dB. Bias frequency: 160kHz. Heads: F & F rec/PB, erase head. Input: mic low 0.2mV; line 0.06V 100K; rec/PB 3.8K. Output: line 0.775V 100K; phono 8 ohms, rec/PB 3.3K. Mains: 110, 127, 220 and 240V AC 50-60Hz (factory set 240V, 50Hz). Size: 394  $\times$  184  $\times$  353mm. Weight: 9.6kg. Supplied accessories: one reel R7ES, two connecting leads RK74, one head cleaning tip, one mains lead. Price: £106.43 (including VAT).

**TC 458**

Stereo tape deck:  $\frac{1}{2}$ -track stereo and  $\frac{1}{2}$ -track mono. Continuous playback, forward and reverse recording. Max spool 7in. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ /s. W and F:  $7\frac{1}{2}$ /s 0.06% RMS;  $3\frac{3}{4}$ /s 0.1% RMS. FR: "normal" tape,  $7\frac{1}{2}$ /s 30Hz-20kHz  $\pm 3$ dB, 30Hz-20kHz DIN;  $3\frac{3}{4}$ /s 20Hz-17kHz  $\pm 15$ dB; 40Hz-13kHz DIN. "SLH" tape, 7Ri/s 30Hz-25kHz  $\pm 3$ dB, 30Hz-24kHz DIN; 3Yi/s 20Hz-20kHz  $\pm 15$ dB, 40Hz-16kHz DIN. S/N: "Normal" tape 53dB, "SLH" tape 56dB. THD: <1.2%. Heads: F & F, one record, one playback, two erase. Input: mic low 0.2V; line



Sony TC 377 and TC 280

0.06V 100K DIN 10K. Output: line 0.775V 10K, phones 8 ohms DIN 50K. Mains: 240V AC 50Hz. Size: 403  $\times$  413  $\times$  203mm. Weight: 15kg. Supplied accessories: two RK74 connecting leads, lead cleaning tips, 7in plastic reel. Price: £222.18 (including VAT).

**TC 755**

Stereo tape deck:  $\frac{1}{2}$ -track stereo and  $\frac{1}{2}$ -track mono. Max spool 10 $\frac{1}{2}$ in. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ /s. W and F:  $7\frac{1}{2}$ /s 0.05% RMS;  $3\frac{3}{4}$ /s 0.08% RMS. FR: "normal" tape,  $7\frac{1}{2}$ /s 30Hz-20kHz  $\pm 3$ dB, 30Hz-20kHz DIN; 3Yi/s 20Hz-17kHz  $\pm 15$ dB, 40Hz-13kHz DIN. "SLH/CrO<sub>2</sub>" tape,  $7\frac{1}{2}$ /s 30Hz-25kHz  $\pm 3$ dB, 30Hz-24kHz DIN;  $3\frac{3}{4}$ /s 20Hz-20kHz  $\pm 15$ dB, 40Hz-16kHz DIN. S/N: "normal" tape 53dB, "SLH/CrO<sub>2</sub>" tape 56dB. THD: <1.2%. Heads: F & F, one record, one playback, one erase. Three motors. Inputs: mic low 0.2mV; line 0.06V 100K DIN 3.9K. Output: line 0.43V 10K; phones 8 ohms, DIN 0.43V 2K. Mains: 110, 127, 220 and 240V AC 50Hz (factory set 240V, 50Hz). Size: 435  $\times$  451  $\times$  221mm. Weight: 24kg. Supplied accessories: two RK74 connecting leads, head cleaning tips, 10 $\frac{1}{2}$ in plastic reel. Price: £305.51 (including VAT).

**TC 756-2**

Stereo tape deck:  $\frac{1}{2}$ -track stereo and  $\frac{1}{2}$ -track mono. Max spool 10 $\frac{1}{2}$ in. Speeds: 15,  $7\frac{1}{2}$ /s. W and F: 15i/s 0.04% RMS;  $7\frac{1}{2}$ /s 0.06% RMS. FR:

★ Indicates entry is illustrated

“normal” tape 15i/s 30Hz-22kHz  $\pm$ 3dB, 30Hz-30kHz DIN; 7½i/s 30Hz-15kHz  $\pm$ 3dB, 30Hz-20kHz DIN. “SLH” tape, 15i/s 30Hz-30kHz  $\pm$ 3dB, 30Hz-35kHz DIN; 7½i/s 30Hz-25kHz  $\pm$ 3dB, 30Hz-25kHz DIN. S/N: “normal” tape 56dB, “SLH” tape 59dB. THD: 1.2%. Heads: F & F, one record, one playback, one erase. Three motors. Input: mic low 0.2mV; line 0.06V 100K. Output: line 0.435V 100K; phones 8 ohms. Mains: 110, 127, 220, 240V AC 50-60Hz (factory set 240V, 50Hz). Size: 435 × 450 × 221mm. Weight: 24kg. Supplied accessories: 10½in plastic reel, RK74 connecting lead, head cleaning tips, mains lead. Price: £333.29 (including VAT).

#### TC 645

Stereo tape recorder. Recording system: AC bias, 160kHz. Track system: 4-track, 2-channel. Tape speeds: 7½i/s, 3¾i/s. W and F: DIN  $\pm$ 0.09% at 7½i/s,  $\pm$ 0.12% at 3¾i/s. S/N ratio: 53dB normal, 56dB special (SLH). Heads: F & F record head, PB head, erase head. FR: normal, 7½i/s 30Hz-20kHz  $\pm$ 3dB, 30Hz-20kHz DIN, SLH tape 30Hz-25kHz  $\pm$ 3dB, 30Hz-24kHz DIN, normal 3¾i/s 20Hz-17kHz  $\pm$ 15dB, 40Hz-13kHz DIN, SLH tape 3¾i/s 20Hz-20kHz  $\pm$ 15dB, 40Hz-16kHz DIN. THD: 1.2%. Inputs: mic low 0.2mV ( $-$ 72dB), line 60mV ( $-$ 22dB) 100K, DIN 10K. Size: 370 × 378 × 224mm. Weight: 18.5kg. Price: £212.92 (including VAT).

#### TC 377

Stereo tape recorder. Recording system: 4-track, 2-channel, stereo and 4-track monaural. Speeds: 7½i/s, 3¾i/s, 1¾i/s. Heads: F & F head, F & F PB head, erase head. Bias frequency: 160kHz approx. S/N ratio: normal tape 52dB, with SLH tape 55dB. FR: normal 7½i/s 30Hz-20kHz  $\pm$ 3dB, 30Hz-20kHz DIN, with SLH tape 7½i/s 30Hz-25kHz  $\pm$ 3dB, 30Hz-24kHz DIN, normal 3¾i/s 40Hz-13kHz DIN, SLH tape 3¾i/s 40Hz-16kHz DIN. THD: less than 1.2%. W and F: 7½i/s  $\pm$ 0.09% DIN, 3¾i/s  $\pm$ 0.12% DIN. Inputs: mic low  $-$ 72dB (0.2mV), line  $-$ 22dB (0.06V) 100K, Rec/PB  $-$ 33dB 3.8K. Size: 418 × 210 × 392mm. Weight: 11.5kg. Mains: 110, 127, 220 and 240V AC 50/60Hz. Price: £138.84 (including VAT).

#### TC 880-2

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  $\pm$ 0.04% DIN, 15i/s  $\pm$ 0.03% DIN. S/N ratio: 60dB SLH tape. FR: normal 7½i/s 25Hz-20kHz  $\pm$ 2dB, FeCr tape 25Hz-30kHz  $\pm$ 2dB, normal 15i/s 25Hz-30kHz  $\pm$ 2dB, FeCr tape 20Hz-40kHz  $\pm$ 2dB. Inputs: mic low  $-$ 72dB (0.2mV), line  $-$ 22dB (60mV)

100K. AC servo-controlled, direct-drive system motor. Mains: 240V AC. Price: to be announced.

#### ■ STUDER

Studer-Franz AG, Switzerland.  
Distributors: F. W. O. Bauch Ltd,  
49 Theobald Street, Boreham Wood,  
Herts WD6 4RZ. Tel: 01-953 0091.

#### Studer A80 ★

Professional tape deck with preamplifiers. Mono or stereo on ¼in tape, four-track on ½in tape, four-track or eight-track on 1in tape. 16-track on 2in tape, 24-track on 2in tape. Speeds: 7½ and 15i/s. Max spool: 12in. W and F: 15i/s  $\pm$ 0.04%, 7½i/s  $\pm$ 0.06%. H and N: 15i/s 62dB; 7½i/s 60dB. FR: 15i/s 30Hz-18kHz  $\pm$ 1dB, 7½i/s 60Hz-12kHz  $\pm$ 0.75dB. Replay char: switchable NAB/CCIR. Rewind time: 2 min for 1000m. Separate VU meter for each channel. Inputs: 0.3V to 10V ( $-$ 8dBm to +22dBm) adjustable. Balanced input with impedance higher than 8K between 30Hz-18kHz. Outputs:  $-$ 8dBm to 24dBm adjustable. Output balanced with impedance less than 30 ohms between 30Hz-18kHz. Servo-controlled capstan motor, two high-torque asynchronous spooling motors. Tape deck control by eight printed circuit cards equipped with logic circuits, giving constant tape tension throughout all operating modes. Five-digit counter indicating hours, min and sec (accuracy 0.2%). Mains: 240V AC. Price and further details to professional users on request.

#### Studer B62 ★

Professional tape deck with preamplifiers. Mono, stereo or twin-track on ¼in tape. Speeds: 7½ and 15i/s. Max spool: 10½in. W and F: 15i/s 0.05%, 7½i/s 0.08%. H and N: 15i/s 61dB, 7½i/s 58dB. FR: 15i/s and 7½i/s 30Hz-18kHz  $\pm$ 2dB. Replay char: CCIR or NAB by quick-change equaliser printed circuit cards. Rewind time: 100 sec for 700m. Servo-controlled capstan motor, two high-torque asynchronous spooling motors. Size: 19 × 14 × 8½in. Accurate tape timer indicating min and sec. Mains: 240V AC. Prices and further details to professional users on request.

#### ■ TELEFUNKEN

AEG Telefunken (UK) Ltd, Bath Road,  
Slough, Bucks. Tel: Slough 33311.

#### M3002 ★

¼-track stereo tape recorder. Speeds: 1¾i/s, 3¾i/s, 7½i/s. Max spool size: 7in. W and F: (measured to DIN 45 405): less than 0.2% (1¾i/s), less than 0.15% (3¾i/s), less than 0.1%



Studer B62



Uher 1200 Report Synchro and Synchroniser W352



Telefunken 3002 hi-fi



Uher 4200 Stereo

(7½i/s). S/N ratio (measured to DIN 45 405): less than 48dB (1½i/s), less than 52dB (3½i/s), less than 55dB (7½i/s). FR: 30Hz-12½kHz (1½i/s), 30Hz-15kHz (3½i/s), 30Hz-20kHz (7½i/s). Replay char: DIN 45 500. Rewind time: approximately 2½min. with 720m tape. Level indication: VU. Inputs: tuner 4mV 40K, mic 0.15mV 2K, pickup/tape 100mV/1M ohm. Outputs: line 0.7V 12K, monitor 0.7V 3.3K, phones 2½ 400K, speakers 35W per channel into 4 ohms. Motors: Cut out switch for motor when unit is used as amplifier. Size: 21 × 6¼ × 13¾in. Weight: 16kg. Mains: 110-240V AC 50Hz. 117 AC 60Hz. Price: £265 (including VAT).

**M3000 Hi-Fi Deck**

Specification the same as M3002 but without output stages and motor cut-off switch. Price: £225 (including VAT).

■ **TOSHIBA**

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

**FT862**

Stereo tape deck. 3 heads. Tape speeds: 4.75cm/s, 9.5cm/s and 19cm/s. FR: at 19cm/s; 20Hz-25kHz. Sound-on sound and echo, bias control and tape selector switch. Price: £113.61 (plus VAT).

**PT884**

Four channel playback, two channel record tape deck. FR and facilities as for PT862. Price: £272.69 (plus VAT).

■ **UHER**

Distributors: Uher (UK) Ltd, 15 Broomhills Estate, Braintree, Essex CM7 7RQ. Tel: Braintree 23192.

**Uher 1200 Report Synchro ★**

Transistorised professional mains/battery mono recorder. Full track. Speed: 7½i/s. Max spool 5in. W and F: 0.07%. H and N: -52dB. FR: 40Hz-20kHz +0dB -5dB. Replay char: CCIR or NARTB. Meter level indicator. Rewind time: 3 min for 900ft. Inputs: mic (2) 0.2mV 200 ohms balanced, line 40mV-1.55V. Output: 1W RMS. 600 ohms balanced line,

★ Indicates entry is illustrated



Uher SG520



Uher SG560



Uher 4000 Report Stereo IC

pilot tone to synchroniser. Brushless DC motor. Pause. Digit tape indicator. Straight-through amplifier. A/B monitoring. Neo-pilot tone input for synchronising sound with film camera. Optional automatic level control, pilot tone indicator, mixing of two mic channels. Supply: internal dry cells, rechargeable accumulator, or from 6V, 12V, 24V car battery, 110-240V AC mains with additional adaptor units. For supply only to industrial or scientific users. Size: 11 × 3 × 8in. Weight: 7lb. Price: approximately £260 (including VAT).

#### Accessory

Scene marker module No. Z521. Price: £3.80.

#### 4200 Report Stereo IC ★

Transistor mains/battery stereo tape recorder.  $\frac{1}{2}$ -track. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{4}$ ,  $1\frac{3}{16}$ i/s. Max spool 5in. W and F:  $7\frac{1}{2}$ i/s 0.2%,  $3\frac{3}{4}$ i/s 0.25%,  $1\frac{1}{4}$ i/s 0.35%,  $1\frac{3}{16}$ i/s 0.56%. H and N:  $7\frac{1}{2}$ i/s -57dB;  $3\frac{3}{4}$ i/s -55dB;  $1\frac{1}{4}$ i/s -53dB. FR:  $7\frac{1}{2}$ i/s 35Hz-20kHz;  $3\frac{3}{4}$ i/s 35Hz-16kHz;  $1\frac{1}{4}$ i/s 35Hz-8kHz;  $1\frac{3}{16}$ i/s 35Hz-5kHz (all to DIN 45-500). Replay char: NARTB. Level indicator: two meters. Rewind time: 3 min for 900ft. Inputs: mic 0.1mV 200 ohms; radio 2mV 47K; PU 30mV

1M. Outlets: line 1V 15K, speaker 4 ohms. One motor. Pause. Digital position indicator. Monitoring. Parallel track replay. Size: 11 × 3 × 8in. Weight: (approx) 7lb (3.8kg). Supply: internal dry cells, rechargeable accumulator, or from 6V, 12V, 24V car battery; 100-240V AC mains with additional adaptor units. Price: £249.50 (plus VAT).

#### 4400 Report Stereo IC

$\frac{1}{4}$ -track version of 4200. Specification almost identical. Price: £252.50 (plus VAT).

#### Uher 5000 Universal

Mains  $\frac{1}{2}$ -track mono recorder. Speeds:  $3\frac{3}{4}$ ,  $1\frac{1}{4}$ ,  $1\frac{3}{16}$ i/s. FR: 40Hz-15kHz  $\pm 3$ dB at  $3\frac{3}{4}$ i/s. Max spool: 5 $\frac{1}{2}$ in. W and F:  $3\frac{3}{4}$ i/s  $\pm 0.2\%$ . 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 £217.50 (including VAT).

#### 5000 Language Tutor

Specification as for 5000 Universal except double  $\frac{1}{2}$ -track heads and  $3\frac{3}{4}$ i/s speed only. Top track playback only, lower track record and playback. Price: approximately £225.

#### 724 Stereo

Transistor stereo mains recorder.  $\frac{3}{4}$ -track. Speeds:  $3\frac{3}{4}$ ,  $7\frac{1}{2}$ i/s. W and F:  $7\frac{1}{2}$ i/s 0.2%;  $3\frac{3}{4}$ i/s 0.25%. FR:  $7\frac{1}{2}$ i/s 50Hz-20kHz;  $3\frac{3}{4}$ i/s 00Hz-15kHz. Inputs: mic 0.25mV 200 ohms; radio 4.7mV 47K; phono 130mV 1M. Outputs: line 0.7V 4.75K; speaker (2) 4W each into 4 ohms. Level indicator meter. Monitoring by phones or speakers. VERTICAL horizontal operation. Price: £176 (plus VAT).

#### SG520 ★

Stereo mains operated reel to reel tape recorder with internal speakers and interchangeable head assemblies ( $\frac{1}{2}$ -track and  $\frac{1}{4}$ -track). Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{4}$ i/s. Max. spool size: 7in. W and F:  $7\frac{1}{2}$ i/s 0.05%,  $3\frac{3}{4}$ i/s 0.10%. Hum and noise:  $7\frac{1}{2}$ i/s

–57dB/2-tracks (–55dB/4-tracks),  $3\frac{3}{4}$ i/s  
 –55dB/2-tracks (–53dB/4-tracks),  $1\frac{1}{8}$ i/s  
 –55dB/2-tracks (–53dB/4-tracks). FR:  $7\frac{1}{2}$ i/s  
 30Hz-20kHz,  $3\frac{3}{4}$ i/s 30Hz-15kHz,  $1\frac{1}{8}$ i/s 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 track)  
 2 × 800mV across 15K, line (4 track)  
 2 × 600mV across 15K. Speaker: 2 × 6W  
 (sine) across 4 ohms. Features: Input mixing,  
 vertical and horizontal operation, interchange-  
 able plug-in head assemblies, add-on automatic  
 level control module (optional accessory), matt  
 black finish and tinted perspex cover. Price:  
 £247.50  $\frac{1}{2}$ -track (plus VAT); £250  $\frac{1}{4}$ -track (plus  
 VAT).

#### SG560 ★

Semi-professional mains operated reel to reel  
 tape recorder with Dia-pilot slide synchroniser  
 mono/stereo  $\frac{1}{4}$ -track or  $\frac{1}{2}$ -track (interchangeable  
 assemblies). Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{8}$ ,  $1\frac{5}{16}$ i/s. Max  
 spool size: 7in. W and F:  $7\frac{1}{2}$ i/s  $\pm 0.04\%$ ,  $3\frac{3}{4}$ i/s  
 $\pm 0.10\%$ ,  $1\frac{1}{8}$ i/s  $\pm 0.20\%$ . Hum and noise:  $7\frac{1}{2}$ i/s  
 –58dB/2-track (–56dB/4-track),  $3\frac{3}{4}$ i/s  
 –57dB/2-track (–55dB/4-track),  $1\frac{1}{8}$ i/s  
 –56dB/2-track (–55dB/4-track). FR:  $7\frac{1}{2}$ i/s  
 20Hz-20kHz,  $3\frac{3}{4}$ i/s 20Hz-15kHz,  $1\frac{1}{8}$ i/s 20Hz-  
 9kHz. All figures to DIN specification 45 500.  
 Replay characteristic: NARTB. Level indi-  
 cators: 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 × 0.65V across 15K,  
 line 2 × 600mV across 15K, speaker 2 × 10W  
 (sine) across 4 ohms. Audio output with inter-  
 nal speakers: 6W per channel (sine). Features:  
 pause, inching, straight through amplifier,  
 horizontal or vertical operation, A-B monitor-  
 ing, input mixing, echo, sound with sound,  
 sound on sound, dia-pilot slide synchronising,  
 separate replay bass and treble controls, matt  
 black finish and tinted perspex cover. Weight:  
 13.1kg. Price: £392  $\frac{1}{2}$ -track (plus VAT); £396  
 $\frac{1}{4}$ -track (plus VAT).

#### 4000 Report IC

Transistor mono battery portable tape  
 recorder  $\frac{1}{2}$ -track. Speeds:  $7\frac{1}{2}$ ,  $3\frac{3}{4}$ ,  $1\frac{1}{8}$ ,  $1\frac{5}{16}$ i/s. W  
 and F:  $7\frac{1}{2}$ i/s 0.20%,  $3\frac{3}{4}$ i/s 0.25%,  $1\frac{1}{8}$ i/s 0.35%.  
 Hum and noise:  $7\frac{1}{2}$ i/s –57dB,  $3\frac{3}{4}$ i/s –55dB,  
 $1\frac{1}{8}$ i/s –53dB. FR:  $7\frac{1}{2}$ i/s 35Hz-20kHz,  $3\frac{3}{4}$ i/s  
 35Hz-16kHz,  $1\frac{1}{8}$ i/s 35Hz-8kHz,  $1\frac{5}{16}$ i/s 35  
 Hz-5kHz. All figures to DIN specification  
 45 500. Inputs: mic 0.12mV-40mV across 200  
 ohms, radio 2.4mV-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, recharge-

able accumulator, 110-240V AC mains/  
 charger unit, 6V, 12V and 24V car battery,  
 power supply for condenser mic, internal  
 speaker, switchable (speech, music and off)  
 automatic level control. Weight: 3.6kg. Price:  
 £207.50 (plus VAT).

## Table of Tape Playing Times

Length of Tape (Feet)		3600	2400	1800	1700	1200	900	850
Size of Spool		8 $\frac{1}{4}$ DP	7 DP 8 $\frac{1}{4}$ LP	5 TP 7 LP 8 $\frac{1}{2}$ S	5 $\frac{3}{4}$ DP	5 DP 5 $\frac{3}{4}$ LP 7 S	4 TP 5 LP	5 $\frac{3}{8}$ S
Maximum Playing Times		H M	H M	H M	H M	H M	H M	H M
1 Track	15 i/s	48	32	24	22	16	12	11
	7 $\frac{1}{2}$ i/s	1 36	1 4	48	47	32	24	22
	3 $\frac{3}{4}$ i/s	3 12	2 8	1 36	1 30	1 4	48	45
	1 $\frac{7}{8}$ i/s	6 24	4 16	3 12	3 1	2 8	1 36	1 30
2 Tracks	15 i/s	1 36	1 4	48	45	32	24	22
	7 $\frac{1}{2}$ i/s	3 12	2 8	1 36	1 30	1 4	48	45
	3 $\frac{3}{4}$ i/s	6 24	4 16	3 12	3 1	2 8	1 36	1 30
	1 $\frac{7}{8}$ i/s	12 48	8 32	6 24	6 2	4 16	3 12	3 1
4 Tracks	15 i/s	3 12	2 8	1 36	1 30	1 4	48	45
	7 $\frac{1}{2}$ i/s	6 24	4 16	3 12	3 1	2 8	1 36	1 30
	3 $\frac{3}{4}$ i/s	12 48	8 32	6 24	6 2	4 16	3 12	3 1
	1 $\frac{7}{8}$ i/s	25 36	17 4	12 48	12 5	8 32	6 24	6 2
Length of Tape (Feet)		600	450	400	300	200	150	
Size of Spool		4 DP 5 S	3 TP 4 LP	3 $\frac{1}{2}$ LP	3 $\frac{1}{2}$ LP 4 S	3 $\frac{1}{4}$ S	3 S	
Maximum Playing Time		H M	H M	H M	H M	H M	H M	
1 Track	15 i/s	8	6	5	4	2 $\frac{1}{2}$	2	
	7 $\frac{1}{2}$ i/s	16	12	10	8	5	4	
	3 $\frac{3}{4}$ i/s	32	25	21	16	10	8	
	1 $\frac{7}{8}$ i/s	1 4	48	42	32	21	16	
2 Tracks	15 i/s	16	12	10	8	5	4	
	7 $\frac{1}{2}$ i/s	32	24	21	16	10	8	
	3 $\frac{3}{4}$ i/s	1 4	48	42	32	21	16	
	1 $\frac{7}{8}$ i/s	2 8	1 36	1 25	1 4	42	32	
4 Tracks	15 i/s	32	24	21	16	10	8	
	7 $\frac{1}{2}$ i/s	1 4	48	42	32	21	16	
	3 $\frac{3}{4}$ i/s	2 8	1 36	1 25	1 4	42	32	
	1 $\frac{7}{8}$ i/s	4 16	3 12	2 50	2 8	1 25	1 4	

**Note:** The 4 tape thicknesses are listed as S (Standard), LP (Long Play), DP (Double Play) and TP (Triple Play).

# Test Tapes and Discs

Abbreviations used in this section are given on page 27.

## ■ AGFA-GEVAERT

Agfa-Gevaert Ltd, Great West Road, Brentford, Greater London.  
Tel: 01-560 2131.

### Calibration Test Tape 38-25

Full-track recording. Speed: 15i/s. NARTB core. Magnetic coating out. 1in tape. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalisation: 35 $\mu$ s. Gliding tone: 31.5Hz-18kHz. Blank sections as per DIN 45 513. Price: on application.

### Calibration Test Tape 38-12

Same specification as Tape 38-25 above but on  $\frac{1}{2}$ in tape. Price: on application.

### Calibration Test Tape 38

Same specification as Tape 38-25 above but on  $\frac{1}{2}$ in tape wound on AEG core. Price: on application.

### Stereo Reference Tape 38

Recordings for both stereo channels and the separation track. Speed: 15i/s. Wound on AEG core.  $\frac{1}{2}$ in tape. Reference frequency: 1kHz. Gap adjustment recording: random noise. Equalisation: 35 $\mu$ s. Gliding tone: 63Hz-10kHz. Price: on application.

### Reference Tape 19-25

Full-track recording. Speed: 7 $\frac{1}{2}$ i/s. 1in tape. Wound on NARTB core. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalisation: 70 $\mu$ s. Gliding tone: 31.5kHz-18kHz. Price: on application.

### DIN Reference Tape 19S (Studio)

Same specification as Reference Tape 19-25 but on  $\frac{1}{2}$ in tape. Price: on application.

### DIN Reference Tape 19H (Amateur)

Full-track recording. Speed: 7 $\frac{1}{2}$ i/s.  $\frac{1}{2}$ in tape type PE31. Spool with  $\frac{3}{4}$ in diameter. Magnetic coating in. Reference frequency: 1kHz.

Gap adjustment frequency: 1kHz and 10kHz. Equalisation: 50/1590 $\mu$ s. Gliding tone: 31.5Hz-18kHz. Price: on application.

### DIN Reference Tape 9.5

Similar to Tape 19H above except speed 3 $\frac{1}{2}$ i/s and reference frequency 333Hz. Gliding tone: 31.5Hz-12.5kHz. Price: on application.

## ■ AMPEX

Ampeg Great Britain Ltd, 72 Berkeley Avenue, Reading, Berks RG1 6HZ.  
Tel: Reading 55341.

For all pro audio tapes, including CCIR and NAB test tapes  $\frac{1}{2}$ in to 2in. Prices and details of specifications on request.

## ■ A.P.A.E.

Association of Public Address Engineers Ltd, 47 Windsor Road, Slough.  
Tel: Slough 39455.

### A.P.A.E. Test Disc

7in 45rpm double-sided mono disc for testing sound systems, particularly public address and sound reinforcement installations.

Side One consists of three minutes of male speech followed by three minutes of female speech. At end of male speech there is a period of 30 seconds of 'off-mic' speech to illustrate correct microphone technique.

Side Two starts with 60 test phrases selected for phonetic balance. The next two bands are 1000 Hz tone and warble tone, for equipment line-up and measurement with sound level meters. Final two bands are white noise and pink noise. Produced primarily for A.P.A.E. members the record is now available generally. Price: 70p (plus VAT) plus 12p postage.

## ■ BASF

BASF United Kingdom Ltd, Audio/Video Tapes Division, PO Box 473, Knightsbridge House, 197 Knightsbridge, London SW7 1SA. Tel: 01-584 5080.

### DIN Calibration Tape 9

Full-track recorded  $\frac{1}{2}$ in tape. Speed: 3 $\frac{1}{2}$  i/s. Equalisation: 90 + 3180 $\mu$ s. Tape flux: 250nWb/m. Frequency range: 31.5Hz-16kHz in steps. Also for azimuth alignment. Unrecorded section, reference tape.

### DIN Calibration Tape 19H

Full-track recorded  $\frac{1}{2}$ in tape. Speed: 7 $\frac{1}{2}$  i/s. Equalisation: 50 + 3180 $\mu$ s. Tape flux:



★ Indicates entry is illustrated

320nWb/m. Frequency range: 31.5Hz-18kHz in steps. Also for azimuth alignment. Unrecorded section, reference tape.

#### **DIN Calibration Tape 38**

Full-track recorded  $\frac{1}{4}$ in tape. Speed: 15 i/s. Equalisation: 35 $\mu$ s. Tape flux: 320nWb/m. Frequency range: 31.5Hz-18kHz in steps. Also for azimuth alignment. Unrecorded section, reference tape.

#### **DIN Calibration Tape 4.75**

Full-track recorded  $\frac{1}{4}$ in tape. Speed: 1 $\frac{1}{8}$  i/s. Equalisation: 120 + 3180 $\mu$ s. Tape flux: 250nWb/m. Frequency range: 31.5Hz-16kHz in steps. Also for azimuth alignment. Unrecorded section, reference tape.

#### **Stereo Test Tapes**

Available for speeds 7 $\frac{1}{2}$  i/s and 15 i/s and is used in conjunction with Calibration Tapes 19 or 38 respectively, for aligning stereo recorders. Recordings are divided into four sections.

(1) Reference level 1kHz for 15 sec separate on each channel; (2) Track positioning (head alignment) 1kHz for 90sec; (3) Azimuth alignment noise recordings from 5.6kHz-16kHz; (4) Cross-talk test 63Hz, 1kHz and 10kHz for 8sec separate on each channel.

#### **Head Alignment Tape**

Noise recording 5.6kHz-16kHz, track 3 erased. For azimuth alignment on domestic recorders, also suitable for head alignment on 4-track machines.

#### **Azimuth Test Tape**

$\frac{1}{4}$ in test tape for speeds 7 $\frac{1}{2}$ , 15 and 30 i/s. Used for testing or aligning azimuth of replay heads. Accurate tests can be made without adjusting the head.

#### **DIN Calibration Cassette Tape (Fe)**

Full-track recorded cassette tape. Speed: 1 $\frac{1}{8}$  i/s. Equalisation: 120 + 3180 $\mu$ s. Tape flux 250nWb/m; unrecorded section reference tape.

#### **DIN Calibration Cassette Tape (Cr)**

Full-track recorded cassette tape. Speed: 1 $\frac{1}{8}$  i/s. Equalisation: 120 + 3180 $\mu$ s. Tape flux 250nWb/m. FR: 31.5Hz-12.5kHz. Also for azimuth alignment. Unrecorded section reference tape.

#### **Speed Test Cassette Tape**

Full-track recorded 50Hz. Speed: 1 $\frac{1}{8}$  i/s. For testing speed on cassette recorders.

#### **Wow and Flutter Cassette Test Tapes**

Full-track recorded 3150Hz/3000Hz, to check wow and flutter on cassette recorders.

#### **BASF Service Cassette (Fe)**

Full-track recorded cassette tape. Speed: 1 $\frac{1}{8}$  i/s. Equalisation: 120 + 3180 $\mu$ s. FR: 50Hz-

6300Hz. For speedy tests of wow and flutter, equalisation, tape speed, azimuth alignment on cassette recorders.

#### **Dolby B Test Cassette**

Full-track recorded 400Hz Dolby level; to align level of cassette recorders with Dolby B System. Available in cassette only.

#### **Cassette Azimuth Alignment Tape**

Full-track recorded 6300Hz; to align azimuth of cassette recorders.

Prices of all BASF Test Tapes and Discs available on request.

#### ■ **BIB**

Bib Hi-Fi Accessories Ltd, PO Box 78, Hemel Hempstead, Herts HP2 7EP.  
Tel: Hemel Hempstead 61291.

#### **Ref: 53**

Test cassette. Price: £2.38 (including VAT).

#### **Ref: 58**

Test cartridge. Price: £2.48 (including VAT).

#### ■ **COMBINED ELECTRONIC SERVICES**

604 Purley Way, Waddon, Croydon CR9 4DR.  
Tel: 01-686 0505.

#### **Philips Testcassette 397 37001**

Speed: 1 $\frac{1}{8}$  i/s. Test cassette designed for checking and adjusting tape speed and the azimuth setting of the record/playback head. Range: 6.3kHz  $\pm$  1 per cent tone with 800Hz pulses. Equalisation: 120 $\mu$ s + 1,500 $\mu$ s. Price: £7.37 (plus VAT).

#### ■ **DECCA**

The Decca Record Co Ltd, Decca House, 9 Albert Embankment, London SE1 7SW.  
Tel: 01-735 8111.

#### **How to give yourself a stereo check-out**

Stereo SKL-4861. The record is designed to provide a means for the exacting listener to check the performance of his equipment without the need for expensive and complicated instruments. Side One starts with a short explanation of the purpose of the record and there is a detailed account of each band and how the information should be used on the sleeve. Side One: (1) Introduction, (2) left-right channel identification, speaker balance, channel phasing, (3) mono music, (4) tone controls, (5) sound colouration, (6) stereo music, (7) groove-jumping and distortion, (8) silent grooves. Side Two: (1) live versus recorded sound, (2) wow and flutter, (3) anti-skating band, (4) crosstalk, (5) musical show-piece. Price: approximately £2.26 (including VAT).

## ■ DEUTSCHE GRAMMOPHON

Polydor Ltd, 17 Stratford Place,  
London W1N 0BL.  
Tel: 01-499 8686.

### 101497

Stereo 7in 45rpm record providing tests for balance, phase, music, voice and effects. Price: on application.

## ■ EMI RECORDS

EMI Records Ltd, EMI House,  
20 Manchester Square, London, W1.  
Tel: 01-486 4488.

### TCS102

12in stereo record at 33 $\frac{1}{3}$ rpm. 30Hz-20kHz gliding tone.

### TCS101

12in stereo record at 33 $\frac{1}{3}$ rpm. 30Hz-20kHz in bands.

### TCS104

12in mono record (lateral) at 33 $\frac{1}{3}$ rpm.

### TCS105

12in mono record (vertical) at 33 $\frac{1}{3}$ rpm.

### SEOM 6

12in stereo record at 33 $\frac{1}{3}$ rpm providing tests for channel identification, channel balance, phase checking, stereo spread, volume and tone plus nine musical excerpts.

Prices and further details of EMI test records available on request.

## ■ EMISERVICE DIVISION

EMI Sound and Vision Equipment Ltd,  
252 Blyth Road, Hayes UB3 1HW.  
Tel: 01-573 3888.

### SRT19

Test tape at 3 $\frac{3}{4}$ i/s with 90 + 3180 $\mu$ s 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.

### SRT18

Test tape at 7 $\frac{1}{2}$ i/s with 70 $\mu$ s 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.

### SRT17

Test tape at 15i/s with 35 $\mu$ s characteristic. Full-track recording. Spoken announcement followed by 30Hz-20kHz in bands. Section of 3kHz tone for wow and flutter check also strobe markings for checking speed.

### SRT.18C

Test tape at 7 $\frac{1}{2}$ i/s with 70 $\mu$ s characteristic.

Full-track recording. Spoken announcement followed by 30Hz-16kHz in bands. Wound into broadcast type cartridge.

Prices and further details of EMI test tapes available on request.

## ■ HI-FISOUND

Distributors: Howland-West Ltd,  
3-5 Eden Grove, London N7 8EQ.  
Tel: 01-609 0293/6.

### Test Record HFS75

Side 1. Test 1, channel recognition and phasing; Band A left and right channel identification; Band B phasing check signals in phase; Band C phasing check signals out of phase. Test 2, lateral modulation for determination of tracking pressure in conjunction with bias correction. Band A 300Hz lateral +11dB; Band B 300Hz lateral +14dB; Band C 300Hz lateral +18dB. Test 3, vertical modulation for determination of tracking pressure in conjunction with bias correction. Band A 300Hz vertical +7dB; Band C 300Hz vertical +11dB. Test 4, pink noise. Test 5, rumble.

Side 2. Test 1, determination of bias correction and tracking ability at outside of disc. Test 2, white noise. Test 3, determination of bias correction and tracking ability at centre of disc. Test 4, channel balance and separation. Band A left channel, Band B right channel. Test 5, wow and flutter. Test 6, determination of bias correction and tracking ability at inside grooves of disc. Price: £1.85 (plus VAT).

## ■ LYRICHORDS

N. Miers & Co Ltd, 28 Piercing Hill, Theydon Bois, near Epping, Essex CM 16 7LE.  
Tel: 037-881 2611.

8-track cartridge demonstration and test tape £2.30 (plus VAT).

## ■ PYE

Pye Business Communications,  
Cromwell Road, Cambridge CB1 3HE.  
Tel: Cambridge 45191.

7in 45rpm record. Side One: (mono) For the Love of Mike — information on use and installation of microphones. Side Two: (stereo) stereo tests. Sent free on request.

## ■ REDIFFUSION

Rediffusion Ltd, King's Court,  
2-16 Goodge Street, London W1.  
Tel: 01-580 9506.

### Popular Guide to Stereo PHF 1000

12 in demonstration disc created by Popular

★ Indicates entry is illustrated

Hi-Fi and Rediffusion Records narrated by James Burke. It presents contrasts in stereo, large orchestra, small groups, voices, soloists accurately recorded and precisely projected.

James Burke uses twelve music tracks to show stereo quality, ambience, balance, projection, channel identification and special effects. Price: £1.65 (including VAT).

#### ■ TUTCHINGS ELECTRONICS LTD

14 Rook Hill Road, Friars Cliff, Christchurch, Dorset BH23 4DZ.

Tel: Highcliffe 72019.

##### **Test Tape No.1**

Pure tones 40Hz-10kHz with voice identification of each band. Recorded to IEC 70 plus 3180 microsecond characteristic at  $7\frac{1}{2}$ i/s. Track 2 carries continuous 7.5kHz tone for azimuth alignment.

This tape is used to measure the playback frequency response of  $\frac{1}{4}$ -track and  $\frac{1}{2}$ -track recorders. 3in spool. Price: £2 (including VAT and postage).

##### **Test Tape No.2**

Pure tones 40Hz-7.5kHz with voice identification of each band. Recorded to NAB 90 plus 3180 microsecond characteristic at  $3\frac{3}{4}$ i/s. Track 2 carries continuous 7.5Hz tone for azimuth alignment.

This tape is used to measure the playback frequency response of  $\frac{1}{4}$ -track and  $\frac{1}{2}$ -track recorders. 3in spool. Price: £2 (including VAT and postage).

##### **Test Cassette No.1**

Track 1. Frequency run 7500Hz to 40Hz followed by 7500Hz azimuth alignment tone. IEC 120 + 1590 $\mu$ s characteristic. Track 2. 50Hz speed test. Set recorder speed for zero beat with 50Hz mains supply. Price: £2 (including VAT and postage).

##### **Test Tape No.3**

One third octave bands of filtered white noise covering range 40Hz-10kHz with voice identification of each band. Recorded to IEC 70 plus 3180 microsecond characteristic at  $7\frac{1}{2}$ i/s.

This tape is used to measure acoustic responses of recorders, microphones and loudspeakers. On 3in spool. Price £2 (including VAT and postage).

##### **Test Tape No.4**

One octave bands of filtered white noise with centre frequencies 100Hz-6.4kHz with voice identification of each band. Recorded to IEC 70 plus 3180 microsecond characteristic at  $7\frac{1}{2}$ i/s. Track 2 carries full range of unfiltered white noise.

This tape is used for reverberation and transmission tests of rooms, studios, etc. It can also be used for subjective testing of room acoustics and listening tests on loudspeakers and enclosures. On 3in spool. Price £2 (including VAT and postage).

##### **Test Tape No.5**

Azimuth and vertical head alignment tape. Full track white noise with track 3 blank. Allows accurate setting of height and azimuth of  $\frac{1}{4}$ -track heads by ear, using no test equipment at all. On 3in spool. Price: £2 (including VAT and postage).

# FM/VHF Aerials

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 27.

## ■ AERIALITE

Aerialite Aerials Ltd, Radnor Park Trading Estate, West Heath, Congleton, Ches CW12 4PX. Tel: Congleton 3892.

Aerialite also manufacture a range of vertical rod-type aerials and anti-static systems.

### FMS100

FM/stereo single dipole with straight stand-off arm and 1-2in bracket. Price: £2.99 (plus VAT).

### FMS200

FM/stereo dipole and reflector array with 1-2in mast attachment bracket. Price: £3.90 (plus VAT).

### FMS300

FM/stereo three element array with 1-2in mast attachment bracket. Price: £5.83 (plus VAT).

### FMS400 ★

High power stereo four-element array with 1-2in mast attachment bracket. Price: £6.35 (plus VAT).

### FMS600

Six-element extra high power (array only) stereo/FM, with 1-2in mast attachment bracket. Price: £9.70 (plus VAT).

## ■ ANTIFERRENCE

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

### FM214/1A

Single dipole complete with 7in stand-off arm and universal clamp for easy attachment to existing masts. For areas close to a transmitter. Price: £2.90 (plus VAT).

### FM214/EM

Single dipole aerial complete with Easimount bracket for surface mounting on wall, window frame or under eaves. Suitable for good reception areas close to a transmitter. Price: £3 (plus VAT).

### FM224 Mushkiller

Dipole and reflector 'H' type array. Complete with universal mast/boom clamp. For use in good reception areas. Price: £3.90 (plus 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: £5.60 (plus VAT).

### FM234T Mushkiller

Three-element array with Trumatch dipole, complete with universal mast/boom clamp, for medium range FM stereo reception. Price: £5.85 (plus VAT).

### FM244T Mushkiller

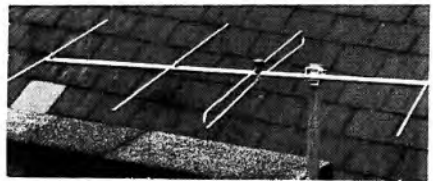
Four-element array with Trumatch dipole, complete with universal mast/boom clamp. The most popular FM stereo array. Price: £6.32 (plus VAT).

### FM235T Mushkiller

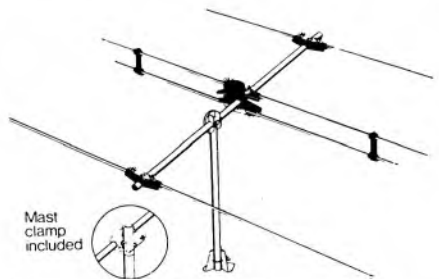
Five-element array with Trumatch dipole suitable for outdoor or loft fitting. Supplied with loft mounting arm bracket and clamp plus a universal clamp for outdoor fixing. For medium to long range reception. Price: £7.65 (plus VAT).

### FM264T Mushkiller ★

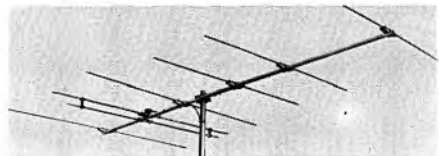
Six-element array with Trumatch dipole, complete with universal mast/boom clamp. Suitable for medium and long-range FM stereo reception. Price: £9.65 (plus VAT).



Aerialite FMS400



Antiferrence FM235T Mushkiller



Antiferrence FM284T Mushkiller

★ Indicates entry is illustrated

### TRR/V/SP Receiver Transformer

Matches 75 ohms coaxial input feeder into 300 ohms aerial sockets on continental and Japanese tuners and tuner/amplifiers. Price: £1.42 (plus VAT).

### RTA 175 Rotenna

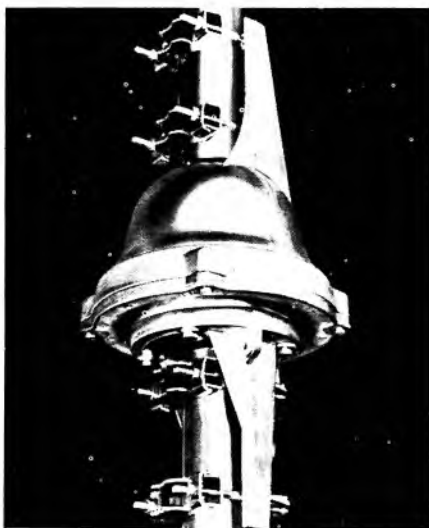
Fully automatic standard aerial rotator suitable for carrying a standard size antenna. Price: £32.50 (plus VAT).

### RTA 200 Rotenna ★

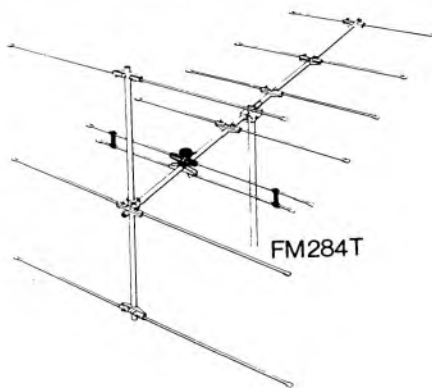
Fully automatic heavy duty rotator designed to support large FM and TV arrays. Price: £37.50 (plus VAT).

### FM284T Mushkiller ★

Eight-element array with Trumatch dipole complete with universal mast/boom clamp. Price: £11.82 (plus VAT).



Antiference RTA 200 Rotenna



Antiference FM284T Mushkiller

### 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: £6.82 (plus VAT).

### PUI02 Power Unit

Power unit for MA102 FM. Fully insulated housing. Price: £5.88 (plus VAT).

### ■ EAGLE

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

### FMA 10

Band II dipole for loft mounting. Price: £2 (including VAT).

### FMA 20

Band II FM aerial outdoor or loft mounting, 3dB gain. Price: £2.80 (including VAT).

### FMA 30

Band II FM aerial outdoor or loft mounting, 6dB gain, front to back ratio 18dB. Acceptance angle 40 degrees. Price: £4.60 (including VAT).

### FMA 40

Band II aerial, 4-element, outdoor or loft mounting, 7.5dB, front to back ratio 25dB, acceptance angle 35 degrees. Price: £5.40 (including VAT).

### FMA 50

Band II aerial, 2-director, double reflector, 8dB gain, front to back ratio 32dB, acceptance angle 35 degrees. Price: £8.80 (including VAT).

### DA1 ★

Complete 75Ω indoor aerial with lead. Price: £2 (including VAT).

### LK1/AMI ★

LK1 lashing kit and AMI aerial mast. Complete kit and 4ft mast for securing aerials to all types of chimney stack. Price: (LK1) £1.90; (AMI) £1.80. Both prices include VAT.

### ■ JAYBEAM

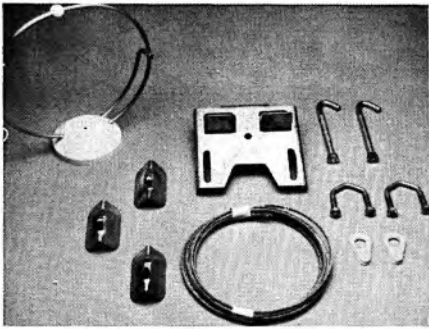
Jaybeam Ltd, Sandfield Close, Moulton Park Industrial Estate, Northampton NN3 1QQ. Tel: Northampton 46611.

### 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: £3.95 (including VAT).

### Stereobeam SBM3 ★

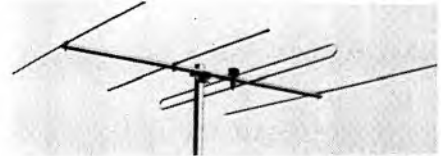
Band II aerial comprising folded dipole, reflector and director on boom. Supplied complete with clamp to fit masts up to 2in diameter. Gain: 6dB. Gives protection against signals more than 40° off bearing. Price: £5.72 (including VAT).



Eagle DA1 and LK1/AM1



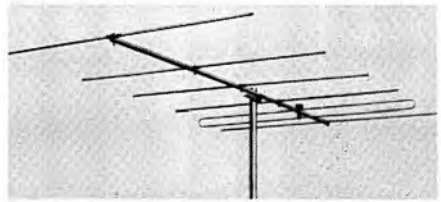
Jaybeam Stereobeam SBM3



Jaybeam Stereobeam SBM4



Jaybeam Stereobeam SBM2



Jaybeam Stereobeam SBM6

**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: £6.26 (including VAT).

**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 FM/VHF band, including the more powerful continental stations in favourable locations. Gain: 8.5dB. Price: £9.45 (including VAT).

**Stereobeam room aerial ★**

Band II compressed dipole using inductive loading. Suitable for areas of high signal strength. Can be stood on base or fixed to wall. Supplied complete with lead and plug. Price: £3.08 (including VAT).

**FM9S Superfringe Area FM Antenna ★**

Consists of folded dipole, five directors and triple reflector unit with universal mast clamp. Price: £20.52 (including VAT).

**Stacking Kit PM3**

For extreme long range reception two SMB4 or SMB6 arrays can be stacked together using

phasing and matching harness PM3. Price: £2.92 (including VAT).

**2010/220 Aerial Rotator**

Control unit with position selector knob, plus motor unit for driving aerial. Operation indicated by signal lamps. Motor: 20V 65W. 360° rotation. Suitable for 220-240V AC only. Speed: one revolution in 50 sec. Magnetic disc brake and self-restraining worm-gear drive hold aerial in chosen position. Five-core control cable available separately (see below). Price: £33.48 (including VAT).

**2030/220 Multimatic Aerial Rotator**

Control unit with position selector knob, direction indication shown by flashing light that follows to position set. Motor 20V 65W. 360° rotation, suitable for 220-240V AC only. Speed: one revolution in 50 secs. Magnetic disc brake and self-restraining worm gear drive hold aerial in chosen position. Four-core control cable available separately (see below). Price: £37.80 (plus VAT).

**Control cable**

Five-core colour-coded control cable available in 20 metre or 50 metre lengths. Price: C5/20 £3.78; C5/50 £9.45 (both including VAT).

**RZ100**

Alignent bearing suitable for use with the

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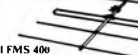



## Tune into Aerialite's new range of Stereo Aerials

If you've invested in top class audio equipment or recently bought an expensive tuner, you've the right to expect perfection. Unfortunately, you may still have neglected one vital aspect of stereo radio. The aerial. Without the right aerial, your equipment can be operating way below potential. **FM stereo needs up to ten times the level of signal required for mono.** Given this plain fact, even the world's finest FM tuner is totally dependent on the strength and quality of the received signal.

To give you the finest stereo reception possible from your equipment, Aerialite have designed a superb range of stereo aerials. They'll eliminate background noise, cut out unwanted signals and interference, and just as important, give high directional selectivity to minimise multipath reception.

Flawless stereo reception is a rewarding experience. The sooner you contact your nearest hi-fi/radio centre or Aerial Contractor, the sooner you'll achieve perfection.

 <p><b>Model FMS 100</b> Useful in high signal strength areas, up to 10 miles from transmitter.</p>	 <p><b>Model FMS 200</b> Normal range of 20 miles or so from the transmitter.</p>
 <p><b>Model FMS 300</b> Good directivity and gain, with approx. 30 miles transmitter radius.</p>	 <p><b>Model FMS 400</b> High gain and good directivity, for 40 miles or more transmitter radius.</p>
 <p><b>Model FMS 600</b> Excellent in fringe areas and for multipath reception problems. Good reception in excess of 40 miles.</p>	<p>Please send your new Stereo Aerials leaflet.</p> <p>Name _____</p> <p>Address _____</p> <p>_____</p> <p>_____</p> <p>_____</p> <p>_____</p>

Free literature from your nearest HI-FI Centre, or fill in coupon and return to:

### Aerialite Aerials Ltd

Aerialite Aerials Ltd., Radnor Park Trading Estate, West Heath, Congleton, Cheshire, CW12 4PX. Telephone: Congleton 3892/9.

DELTA

B  
A  
S  
I  
C

above-mentioned equipment. Price: £8.21 (including V A T).

### ■ MAXVIEW

Maxview Aerials Ltd, Maxview Works, Setch, King's Lynn, Norfolk. Tel: Watlington 376.

#### Maxview D/DW

Band II wall-mounting dipole with stand off arm and adjustable swivel fitting. Price: £2.28 (plus V A T).

#### Maxview D/DM

Band II dipole array with bracket for mast fitting. Price: £1.96 (plus V A T).

#### Maxview D/HM

Band II array comprising dipole and reflector on boom. Bracket for mast mounting. Price: £2.70 (plus V A T).

#### Maxview D/S3

Band II three-element array comprising director, dipole and reflector. Bracket for mast mounting. Price: £3.08 (plus V A T).

#### Maxview D/FD3 ★

Band II three-element array comprising director, folded dipole and reflector. Bracket for mast mounting. Price: £3.54 (plus V A T).

#### Stereomax 4

Tripole, two directors and reflector. Price: £5 (plus V A T).

#### Stereomax 6 ★

Tripole, four directors and reflector. Price: £7.26 (plus V A T).

### ■ PREMIER

Premier Industries Ltd, 343/345 High Street, Cheltenham Spa, Gloucestershire GL50 3HS. Tel: Cheltenham 27782.

#### C4ST

Four-element Band II array comprising two directors, folded dipole and folded reflector. Price: £7.12 (plus V A T).

#### C6ST

Six-element Band II array comprising four directors, folded dipole and folded reflector. Price: £9.24 (plus V A T).

#### Clarity PH/ST

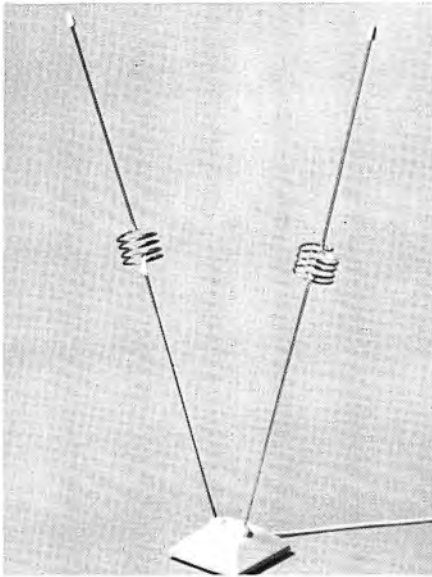
Phasing harness for coupling two C4 or two C6 arrays for extra long distance reception. Price: £2.16 (plus V A T).

### ■ STOLLE

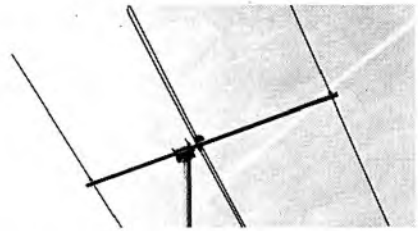
Karl Stolle, 29 Church Street, Ickley, Yorks. Tel: Ickley 2193.

#### Type US-3

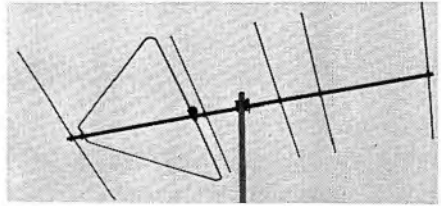
Three-element high power FM array. Universal mast clamp. Built-in balancer for 240 or 75 ohms



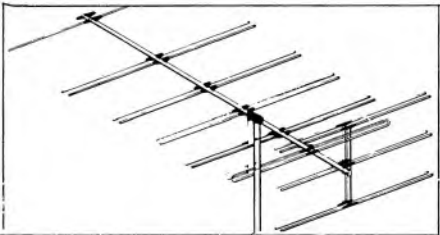
Jaybeam Stereobeam room aerial



Maxview D/FD3



Maxview Stereomax 6



Jaybeam FM9S

down leads. Forward gain: 5.5dB. Front/back ratio: 13dB. Acceptance angle: horizontal 68 degrees, vertical 110 degrees. Price: on application.

**Type US-5**

Five-element high power FM array with double reflector. Universal mast clamp. Built-in balancer for 240 or 75 ohms down leads. Forward gain: 7.5dB. Front/back ratio: 20dB. Acceptance angle: horizontal 60 degrees, vertical 90 degrees. Price: on application.

**Type US-8**

Eight-element high power FM array with treble reflector. Universal mast clamp. Built-in balancer for 240 or 75 ohms down leads. Forward gain: 10dB. Front/back ratio: 22dB. Acceptance angle: horizontal: 50 degrees, vertical 70 degrees. Price: on application.

**Stereo Set-top (indoor) Aerials**

Apollo. Model Z.1912. With built-in amplifier.

8dB gain. Model Z.1906. Model Z.1942. With built-in amplifier. 14dB gain. Orion. Z.1956. With built-in amplifier. 8dB gain. Model Z.1955. Model Z.1960. With built-in amplifier. 14dB gain. Further details and prices of models on application.

**FM Masthead Amplifiers**

Model TRA.3552. Supplied complete with remote power unit. 14dB gain. (Also a complete range of ultra broadband Masthead amplifiers, suitable for FM or TV reception. 14 to 30dB GAIN(. Further details and prices of models on application.

**FM Amplifier**

Model TRA.3652. For indoor use only. With built-in amplifier. 14dB gain. Price: on application.

**Receiver Balancer**

Model SG.1200. Matching transformer 300/75 ohms. Price: on application.

■ **VORTA**

Vorta Systems (UK). 297/299 High Street, Cheltenham Spa, Glos GL50 3HS. Tel: Cheltenham 31166.

**Vorta Mk VI**

Dome antenna. Omni-directional stereo enclosed aerial. Price: £16.50 (plus VAT).

**Octophonic-OST8**

Continental style 8-element Band II aerial, comprising 5 directors, folded dipole, (75/300 ohms matching transformer built-in), and a 2-element fish tail type of reflector. Robustly constructed on a 25mm sq section boom. Complete with mast fixing clamp. Price: £14.34 (plus VAT).



★ Indicates entry is illustrated



For improved  
stereo  
reception

## Wolsey Clearsound amplifiers and aeriels

Expensive equipments are only as good as the strength of signal received and therefore in fringe areas you need not only a first class FM aerial, such as the Clearsound FM/4U illustrated



here, but also a Clearsound Amplifier, which can be mounted on the mast alongside the aerial or to a fascia board or any other convenient position. Not only will the amplifier overcome cable losses but its very low noise design will provide good quality reception even from weaker signals.

### WOLSEY ELECTRONICS

Cymmer Road, Porth, Rhondda,  
Mid Glamorgan CF 39 9BT  
Telephone Porth 2711



### Quinphonic-QST5

Continental style 5-element Band II aerial, comprising 2 directors, folded dipole, (75/300 ohms matching transformer built-in), and a 2-element fish tail type of reflector. Robustly constructed on a 25mm sq section boom. Complete with mast fixing clamp. Price: £11.04 (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. Price: £2.84 (plus VAT).

### VS2

Dipole and reflector ('H' type) deluxe Band II aerial. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Price: £5 (plus VAT).

### VS3

3-element deluxe Band II aerial. Comprising 1 director, folded dipole, folded reflector. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Price: £8.12 (plus VAT).

### ■ WOLSEY ELECTRONICS

Cymmer Road, Porth, Rhondda,  
Glamorgan CF39 9BT. Tel: Porth 2711.

### FM/DD

Band II single dipole for loft or room mounting. Price: £2.10 (plus VAT).

### FM/DU

Band II single dipole for outside masthead mounting. Supplied with fixing clamp. Price: £2.42 (plus VAT).

### FM/HU

Band II dipole with reflector for outside mounting. Supplied with fixing clamp. Price: £3.52 (plus VAT).

### FM/4U

Band II four-element array comprising folded dipole, two directors, one reflector. Supplied with fixing clamp. Price: £5.72 (plus VAT).

### Clearsound FM Amplifier

Signal booster for use with FM/4U four element array to boost wanted weak station without introducing distortion from strong unwanted stations. Designed to be fitted to aerial mast, weatherproofed. Supplied with power unit. Price: £14.95 (plus VAT).

# Stop Press

This section comprises product details that arrived too late for inclusion in the main text. Abbreviations, page 27.

## Cassette Recorders and Decks

### ■ DECCA SOUND

Decca Radio & Television Ltd,  
Neachells Lane, Willenhall, Wolverhampton,  
Staffs. Tel: Wolverhampton 67367.

#### DC2000

Stereo cassette deck. FR: (standard tape) 100Hz-8kHz  $\pm 2$ dB, (CrO<sub>2</sub>) 30Hz-12kHz +0, -5dB. W and F: 0.1% RMS (DIN). Two heads: erase, record/playback. Single motor. Mic and line inputs, slide input and output controls. Double VU meter. Dolby noise reduction. Memory counter. Two microphones. Price: £95 (including VAT).

#### DC1100

Stereo cassette deck. FR: (standard tape) 100Hz-8kHz  $\pm 2$ dB, (CrO<sub>2</sub>) 30Hz-12kHz -5dB. W and F: 0.18% RMS (DIN). Two heads: erase, record/playback. Pause control. Single motor. Mic and line inputs, slide input and output controls. Double VU meter. Memory counter. Two microphones. Size: 13.8 x 9.5 x 4.35in. Weight: 3.7kg. Price: £65 (including VAT).

### ■ DOKORDER

Acoustico Enterprises Ltd, Unit 7,  
Space Way, North Feltham Trading Estate,  
Feltham TW14 0TZ. Tel: 01-751 0141.

#### MK-50

Stereo cassette deck. Mains operated single speed. W and F: 0.10% RMS (DIN). Two heads. FR: 4.75cm/s 30Hz-15kHz  $\pm 3$ dB. Single motor. Size: 4 x 16.4 x 11 $\frac{1}{2}$ in. Price: on application.

### ■ GOODMAN'S

Goodmans Loudspeakers Ltd,  
Downley Road, Havant, Hants PO9 2NL.  
Tel: Havant 6344.

### SCD 100 ★

Stereo cassette deck with Dolby noise reduction. Auto stop. Twin VU meters. Tape speed: 1 $\frac{1}{8}$  i/s. CrO<sub>2</sub> facilities. Mic and headphone sockets. Price: £195.70 (including VAT).

## Combination Units

### ■ AIWA

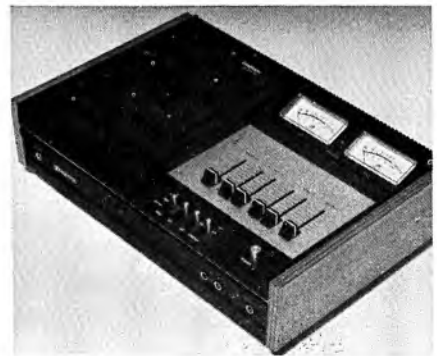
Johnsons of Hendon Ltd, 14 Priestley Way,  
London NW2 71N. Tel: 01-450 8070.

#### AF5080 ★

Features include tape deck with Dolby noise reduction system, two oil-damped eject mechanisms, three mechanical pause, four quick review/cue, and a three-step tape selector (LH, CrO<sub>2</sub>, Fe Cr). Belt drive record deck. Two speed. Fitted with magnetic cartridge. Four waveband radio with FM stereo.



Aiwa AF5080



Goodmans SCD 100

★ Indicates entry is illustrated

Mono/stereo circuitry. Output: 20W per channel. Price: approx £240 (plus VAT).

#### **TPR 3020**

Stereo cassette tuner/amplifier incorporating a 4-band radio (AM/FM/SW/LW). Cassette recording facilities from the tuner, a record deck or tape deck, with mic inputs for stereo mic recordings. CrO<sub>2</sub> tape selector button and AFC tuning switch. Manual recording level controls can be visually monitored on two VU meters. Power output: 15W RMS per channel. No further details available at time of going to press. Price: £164.92 (plus VAT).

#### **Model TPR 4001**

Stereo 8-track tape recorder, tuner/amplifier incorporating 4-band stereo radio. Styled with front controls for shelf mounting, it includes a programme memory for pre-selection of recording or playback of desired channels. Mechanical pause, fast forward, manual and automatic eject. VU meters. Input facilities include magnetic or ceramic record deck cartridge, DIN tape, aux. Output: 12W RMS per channel. Price: £176.78 (plus VAT).

#### **AF 3060**

Stereo cassette recorder (Dolby) with receiver. Oil damped cassette eject, quick cue/review. 4-band stereo radio. Output: 20W RMS per channel. No further details available at time of going to press. Price: to be announced.

### Complete Audio Systems

#### ■ **RIGSTON**

Brown Brothers Ltd., Great Eastern House, Edinburgh Way, Harlow, Essex.  
Tel: Harlow 29511.



*Rigston BHS 140*

#### **BHS 140 ★**

Receiver/amplifier with integral stereo cassette recorder and mic facilities, gram unit or other inputs. Supplied complete with matching speakers and a pair of microphones. AM/FM radio with multiplex decoder and stereo indicator light. Headphone socket. Recording level meters. Automatic end-of-tape socket. Monitor switch. Output: 7.5W per channel. Price: £104.55 (plus VAT).

#### ■ **PHILIPS**

Philips Electrical Ltd, Century House, Shaftesbury Avenue, London WC2H 8AS.  
Tel: 01-437 7777.

#### **RH837**

FM tuner/amplifier in cabinet with record deck and two separate speakers. 46 transistors, 23 diodes and one IC. Range: 87.5-104MHz. Four preset stations. Switchable AFC. Stereo decoder fitted. Slider controls for volume, balance, bass, treble, presence, contour/rumble/scratch, quiet tuning, speaker selection, input selector, AFC, headphones, stereo-4. Output: 20W RMS per channel  $\pm$  1dB. Output impedance: 4 ohms. FR: 30Hz-25kHz  $\pm$  1.5dB. HD: <1%. Motor unit: Philips GC008. Finish: polystyrene case with tinted transparent plastic cover. Speakers: Philips RH431 enclosures. Price: (complete system) £311.34 (including VAT).

### Magnetic Tape

#### ■ **PRECISION TAPES LTD**

Precision House, 11 Denmark Street, London WC2H 8NR. Tel: 01-836 3104.

Producers of 8-track stereo and quadraphonic cartridges and mono/stereo compatible cassettes. More than 2,000 cassettes/8-track of top artists including latest releases.

### Pickups and Arms

#### ■ **JVC**

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

#### **4MD20X**

Four-channel stereo cartridge. Developed for playing discrete four-channel records. Shibata diamond stylus. FR: 20Hz-60kHz. Pw: 1½gm. Output: 2mV. Price: £36.50 (plus VAT).

#### **4MD10X**

Four-channel stereo cartridge. Shibata stylus.

FR: 20Hz-60kHz. Pw: 1.8gm. Price: £33.50 (plus VAT).

### Radio Tuners

#### ■ CAMBRIDGE AUDIO

FM stereo tuner. Tuning range: 88-108MHz. Sensitivity:  $1.4\mu\text{V}$ . FR: 20Hz-15kHz  $\pm$  1dB. Channel separation: 40dB (1kHz). S/N ratio: 65dB. THD: 0.5%. Available in black or silver finish. Price: on application.

#### ■ LUX

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

#### WL717 ★

AM/FM stereo tuner. Range: 88-108MHz, 187-572 metres. Variable tuning. Meter tuning indicator. Sensitivity:  $3\mu\text{V}$  for 20dB quieting. Output: 700mV. Stereo decoder fitted. FET cascode amplifier in front end. Mains: 240V AC. Size:  $15\frac{3}{8} \times 5\frac{1}{8} \times 9\frac{1}{2}$ in. Price: £85 (plus VAT).

#### WL500

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-572 metres. Variable tuning. Signal strength meter. Centre-zero tuning meter. Stereo decoder included. Auto stereo beacon. Usable sensitivity: FM  $1.7\mu\text{V}$ , MW  $45\mu\text{V}$ . Dual gate FET front end. Quiet tuning facility. Noise limiter switch. Mains: 240V AC. Size:  $17\frac{3}{8} \times 6\frac{3}{8} \times 10\frac{1}{2}$ in. Finish: rosewood. Price: £170 (plus VAT).

#### ■ NIKKO

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

#### FAM-500 ★

AM/FM stereo tuner. Range: FM 88-108MHz, MW 187-555m. Variable tuning. AFC. One signal strength meter, one centre-zero tuning meter. Usable sensitivity: FM  $2\mu\text{V}$ , MW  $150\mu\text{V}$ . Aerial input: 300 ohms balanced twin, 75 ohms coaxial. Output: FM 1V, AM 300mV. Stereo decoder fitted. Mains: 120, 220, 240V 50/60Hz. Size:  $15 \times 12\frac{3}{8} \times 8\frac{3}{8}$ in. Finish: wood cabinet with champagne front panel. Price: £79.20 (including VAT).

#### ■ SERVO-SOUND

Servo-Sound (Cybernetic Hi-Fi), Lamb House, Church Street, London W4 2PB. Tel: 01-995 4551.

#### SR3

Stereophonic and quadrasonic multiplex FM tuner. Range: 88-108MHz. Variable tuning. Switchable AFC. Squelch circuit FM discriminator. Meter tuning indicator. Usable sensitivity:  $0.9\mu\text{V}$  for 30dB signal-to-noise. Aerial input: 240-300 ohms balanced. Output: 1V. Stereo decoder included. Circuit includes two FETs and one IC. Size:  $42 \times 8.5 \times 16.5$ cm. Mains: 110-240V AC. Finish: metal front and black wood cabinet. Price: on application.

### Receivers

#### ■ AIWA

Johnsons of Hendon Ltd, 14 Priestley Way, London N7 8EQ. Tel: 01-609 0293/6.

#### AX 7500

AM/FM stereo receiver. Output: 30W RMS per channel into 8 ohms. Pushbutton programme source selectors. Facilities: loudness switch, bass and treble controls, signal and tuning meters, muting switch, sound mixing mechanism, rumble filter. No further details available at time of going to press. Price: to be announced.

### Record Decks

#### ■ DENON

Johnsons of Hendon Ltd, 14 Priestley Way, London NW2 7TN. Tel: 01-450 8070.

#### DP 3500

Direct drive turntable. Built-in stroboscope enables manual speed adjustment. Supplied with either a blank tone-arm board or pre-cut for an SME arm. W and F: less than 0.03%. S/N ratio: more than 60dB. Stylus pressure: 0-3gm. Price: £182.36 (plus VAT).

#### ■ YAMAHA

Natural Sound Systems Ltd, Strathcona Road, North Wembley HA9 8QL. Tel: 01-904 0141.

#### YP 701

Plinth mounted motor unit with pick-up arm, cartridge and tinted hinged dust cover. Speeds:  $33\frac{1}{3}$ , 45rpm. W and F: <0.05%. Rumble: 58dB. Speed constancy: 0.05%. 12in diecast aluminium turntable. Belt drive. 16-pole outer rotor motor (110 and 240V AC). 9in pick-up arm with tracking weight, bias compensation adjustments, and lateral balance weight. Fitted with 'S' type arm. Auto-return of pick-up arm. Dual hydraulic cueing device. Built-in stylus protractor. Price: £89 (plus VAT).

#### YP 800

Direct drive stereo turntable. 12-pole brushless

DC servo motor. Speeds: 33½ and 45rpm, electronic switching. Speed control: ± 3% each speed. W and F: less than 0.3% RMS. Platter: 31cm die-cast aluminium 4.4lb. Tone arm: static balanced 'S' type. Tracking error: less than 1.5 degrees. Tracking force: 0.3gm. Shell: universal plug-in type. Anti-skating device. Hydraulic (manual) cueing system. Finish: walnut cabinet with aluminium panel. Price: £149.50 (plus VAT).

#### YP 400 ★

Two-speed belt drive and auto return turntable. Speeds: 33½ and 45rpm. W and F: 0.08%. Tubular tone arm. Cartridge: Yamaha CG6500. Platter: 12in aluminium die-cast. Motor: 4-pole hysteresis synchronous motor. Stylus pressure: 0.3gm. Finish: aluminium. Price: £69.95 (plus VAT).

#### CS 50P ★

As YP 400 but fitted with Yamaha 5500 cartridge. Finish: black. Price: £59.95 (plus VAT).



Yamaha CS 50P



Yamaha YP-400

#### YP-700 ★

Plinth mounted motor unit with pickup arm, cartridge and tinted hinged dust cover. Speeds: 33½, 45rpm. W and F: <0.05%. Rumble: 58dB. Speed constancy: 0.05%. 12in diecast aluminium turntable. Belt drive. 16-pole outer rotor motor (110 and 240V AC). 9in pickup arm with tracking weight, bias compensation adjustments, and lateral balance weight. Auto-return of pickup arm. Dual hydraulic cueing device. Built-in stylus protractor. Yamaha CG-7000 cartridge. Price: £89 (plus VAT).

### Speaker Accessories

#### ■ VITAVOX

Vitavox Ltd, Westmoreland Road, London NW9 9RJ. Tel: 01-204 4234.

#### 500 filter

Two networks with crossover at 500Hz and 1kHz, embodying high grade capacitors and air-cored induction coils, providing stable allocations between HF and LF units and smooth crossover at 100W. Adjustable HF attenuation in 2dB steps to 6dB. Frequency fall-off at crossover point 12dB per octave. Size: 180 × 80 × 278mm. Price: on application.

### Speaker Drive Units

#### ■ FANE ACOUSTICS LTD

Hick Lane, Batley, Yorks. Tel: Batley 6431.

Manufacturers of hi-fi and heavy duty speaker drive units in all sizes and types. Also a range of speaker accessories and crossovers. No product information obtainable as this edition of the Year Book closed for press.

#### ■ VITAVOX

Vitavox Ltd, Westmoreland Road, London NW9 9RJ. Tel: 01-204 4234.

#### S3 HF pressure unit

High frequency pressure unit. 3in voice coil. Copper wound voice coil. Impedance: 15 ohms. Gap flux: 18,000 gauss. Total flux: 250,000 maxwells. HC: 70W RMS above 500Hz. FR: 200Hz-16kHz. Recommended crossover: 500-1000Hz. Price: on application.

#### High frequency horn

Designed for use with S2, S3 and GPI pressure units. Cast in aluminium alloy. Non-resonant. Cut-off frequency 300Hz. Price: on application.

**4kHz Horn**

Designed for use with the Vitavox S3 HF pressure unit for wide dispersion of the upper audio frequencies. When mounted in a vertical position it gives a wide sound distribution in the horizontal plane. Made from heavy gauge steel, treated with acoustic damping compound, with a heavy duty mounting bracket to support the pressure unit weight.

**Power range loudspeakers**

Featuring a replaceable cone and coil assembly, rigid chassis and high flux density ceramic magnet. Nominal FR: 20Hz-5kHz. Power rating: 70W RMS. Total effective flux: 260,000 maxwells. Price: on application.

**Speaker Enclosures****■ BRAHMS**

Brahms Manufacturing & Development Co, Unit E, Rochester Airport, Maidstone Road, Rochester, Kent ME1 3QJ.  
Tel: Medway 48816.

**Sandringham**

Infinite baffle enclosure with units and crossover. One 8in rubber-edged bass driver, one dome HF unit. Crossover: 2.5kHz LC unit. FR: 45Hz-20kHz. HC: 20W RMS. Impedance: 8 ohms. Size: 19 × 10½ × 10in. Finish: teak. Front loaded with removable brown reticulated foam front. Cabinet mounted on plinth. Price: £26.50 each (plus VAT).

**Buckingham**

Infinite baffle enclosure with units and crossover. Two 8in rubber-edged bass drivers, one dome HF unit. Crossover: 2.5kHz LC unit. FR: 40Hz-20kHz. HC: 40W RMS. Impedance: 8 ohms. Size: 31¼ × 12 × 12in. Finish: teak. Front loaded with removable brown reticulated foam front. Cabinet mounted on plinth. Price: £42 each (plus VAT).

**Balmoral**

Infinite baffle enclosure with units and crossover. One 12in. rubber-edged bass driver, one 5in mid-range unit, one dome HF unit. Crossover: 1.5kHz and 6kHz (LC unit). FR: 35Hz-20kHz. HC: 35W RMS. Impedance: 8 ohms. Size: 28 × 16 × 12in. Weight: 50lb. Finish: teak. Front loaded with removable brown reticulated foam front. Cabinet mounted on plinth. Price: £46 each (plus VAT).

**Queen Ann**

Infinite baffle enclosure with units and crossover. One 12in bass driver, one 5in mid-range unit, one dome HF unit. Crossover: 1.5kHz and 6kHz. FR: 35Hz-20kHz. HC: 35W RMS. Impedance: 8 ohms. Size: 28 × 16½ × 12in (plus 6in legs). Weight: 48lb. Finish: mahogany,

walnut. Front loaded with removable brown reticulated foam front. Connector block with DIN and Continental sockets at rear. Price: £81 each (plus VAT).

**Regency**

Infinite baffle enclosure with units and crossover. Specification identical to Queen Anne model except cabinet styling. Price: £82.50 each (plus VAT).

**Windor**

Infinite baffle enclosure with units and crossover. One 10in woofer, one 1in dome HF unit. Power handling: 30W. FR: 40Hz-22kHz. Impedance: 4-8 ohms nominal. Size: 61 × 33 × 28cm. Weight: (each unit) 13.5kg. Finish: teak, walnut. Price: £34 each (plus VAT).

**BT1000**

Infinite baffle enclosure with units and crossover. One 8in woofer with parastic cone. Power handling: 10W. FR: 70Hz-14kHz. Impedance: 4-8 ohms nominal. Size: 34 × 25 × 16cm. Weight: (each unit) 4.0kg. Finish: teak, walnut. Price: £10.50 each (plus VAT).

**BT1500**

Infinite baffle enclosure with units and crossover. One 8in woofer, one 3¾ tweeter. Power handling: 15W. FR: 50Hz-18kHz. Impedance: 4-8 ohms nominal. Size: 43 28 × 18cm. Weight: 5.2kg. Finish: teak, walnut. Price: £14 each (plus VAT).

**BT2000**

Infinite baffle enclosure with units and crossover. One 8in woofer, one 3¾ tweeter. Power handling: 20W. FR: 45Hz-20kHz. Impedance: 4-8 ohms nominal. Size: 51 × 30 × 22cm. Weight: 7.5kg. Finish: teak, walnut. Price: £16.50 each (plus VAT).

**SAL 3000**

Infinite baffle loudspeaker. Impedance: 4 ohms. Power handling: 30W RMS. Two drivers. Crossover frequency: 2.5kHz. Size: 48 × 26.7 × 25.4cm. Finish teak with brown reticulated foam front. Price: on application.

**■ FISHER RADIO**

Hayden Laboratories Ltd,  
Hayden House, 17 Chesham Road,  
Amersham, Bucks HP6 5AG.  
Tel: Amersham 5511.

**XP-44S**

Two-way speaker system. FR: 39Hz-19kHz. Maximum music power: 20W. Sound dispersion: 90°. Crossover frequency: 1.5kHz. Impedance: 8 ohms. Size: 15½ × 8½ × 6¼in. Weight: 16lb. Finish: walnut. Price: £66 per pair (plus VAT).

★ Indicates entry is illustrated

### XP-55S ★

Two-way speaker system. FR: 37Hz-20kHz. Maximum music power: 30W. Sound dispersion: 90°. Crossover frequency: 1.5kHz. Impedance: 8 ohms. Size: 20 × 10 × 7½in. Weight: 18lb. Finish: walnut. Price: £74 per pair (plus VAT).

### XP-56S ★

Two-way speaker system. FR: 35Hz-20kHz. Maximum music power: 30W. Sound dispersion: 90°. Crossover frequency: 1.5kHz. Impedance: 8 ohms. Size: 21 × 11½ × 9in. Weight: 20lb. Finish: walnut. Price: £92 per pair (plus VAT).



Fisher XP-55S



Fisher XP-56S



Fisher XP-9S

### XP-60S

FR: 33Hz-20kHz. Maximum music power: 30W. Sound dispersion: 90°. Crossover frequencies: 800Hz and 4kHz. Impedance: 8 ohms. Size: 23¼ × 12 × 10in. Weight: 21lb. Finish: walnut. Price: on application.

### XP-65S

Three-way speaker system. FR: 33Hz-20kHz. Maximum music power: 30W. Sound dispersion: 90°. Crossover frequencies: 600Hz and 3kHz. Impedance: 8 ohms. Size: 23 × 13 × 10in. Weight: 27lb. Finish: walnut. Price: £118 per pair (plus VAT).

### XP-7S

Three-way speaker. FR: 33Hz-20kHz. Maximum music power: 45W. Sound dispersion: 90°. Crossover frequencies: 800Hz and 4kHz. Impedance: 8 ohms. Size: 24¼ × 13⅞ × 12in. Weight: 32lb. Finish: walnut. Price: £136 per pair (plus VAT).

### XP-9S ★

Four-driver, three-way speaker system. FR: 28Hz-20kHz. Maximum music power: 60W. Sound dispersion: 90°. Crossover frequencies: 650Hz and 3kHz. Impedance: 8 ohms. Size: 27 × 17 × 13in. Weight: 50lb. Finish: walnut. Price: on application.

### ■ HED

Cerwin-Vega (UK), 281 Balmoral Drive, Hayes, Greater London. Tel: 01-573 1566.

New range of loudspeaker enclosures. No details available at time of going to press.

### ■ IMF

IMF Electronics Ltd, Westbourne Street, High Wycombe, Bucks. Tel: High Wycombe 35576.

#### IMF super-compact loudspeaker

Bookshelf loudspeaker measuring approximately 18 × 11 × 11¼in. Bass unit 8in roll surround, mid-range unit 5in impregnated cone in separate line, domed tweeter. Crossover electrical three-way at approximately 375Hz and 3kHz. FR: 30Hz-20kHz. Efficiency measured via pink noise 1m on axis: 44W produces 100dB. Impedance: 8 ohms nominal. Driving power requirements 20 to 50W. Price: £99 per pair (plus VAT).

#### IMF ALS 40 loudspeakers

Free standing or bookshelf loudspeaker system measuring approximately 13½ × 13½ × 26½in. Bass unit 8in foam surround, sub-bass driver 8in roll surround, mid-range unit 5in impregnated cone contained in separate line, tweeter domed.

Crossover electro-acoustic four-way at approximately 180Hz, 375Hz and 3kHz. FR: 28Hz-20kHz. Efficiency measured via pink noise 1m on axis: 40W produces 100dB. Impedance: 8 ohms nominal. Driving power requirements 25 to 60W. Price: £165.04 per pair (plus VAT).

#### Studio TLS 50 loudspeaker

Free-standing loudspeaker system measuring approximately 36 × 14 × 15in. Bass unit 8in plastic diaphragm, mid-range 5in impregnated cone contained in separate line, tweeter 1 $\frac{1}{2}$ in soft dome and  $\frac{3}{4}$ in chemical dome super-tweeter. Crossover electrical four-way at approximately 375Hz, 3kHz and 13kHz. Frequency range control including nominally flat setting. Efficiency measured via pink noise 1m on axis: 50W produces 100dB. Impedance: 8 ohms nominal. Driving power requirement 25 to 60W. Finish: teak, walnut. Price: £203.38 per pair (plus VAT).

#### IMF Monitor TLS 80

Free standing loudspeaker system measuring approximately 38 $\frac{1}{2}$  × 16 × 18in. Bass unit 11 $\frac{1}{2}$  × 8 $\frac{1}{2}$ in flat polystyrene diaphragm loaded by transmission line, mid-range unit 6in plastic cone containing in separate line, tweeter 1 $\frac{1}{2}$ in diaphragm and  $\frac{3}{4}$ in chemical dome super-tweeter. Crossover electrical four-way at approximately 375Hz, 3.5kHz and 13kHz. FR: 20Hz to beyond audibility. Variation in impedance: ±1 ohm at 1.5kHz. Efficiency measured via pink noise 1m on axis: 40W produces 96dB. Nominal impedance matching 4 to 8 ohms. Driving power requirements 40 to 80W. Price: £355 per pair (plus VAT).

#### IMF professional monitor

Free-standing loudspeaker system fitted with castors measuring approximately 42 × 17 $\frac{1}{2}$  × 19 $\frac{1}{2}$ in. Bass unit 13 × 9 $\frac{1}{2}$ in flat polystyrene diaphragm, mid-range unit 6in plastic cone, contained in separate line, tweeter 1 $\frac{1}{2}$ in diaphragm and  $\frac{3}{4}$ in chemical dome super-tweeter. Crossover electrical four-way at approximately 375Hz, 3.5kHz and 13kHz. FR: 17Hz to beyond audibility. Calibrated level controls: ±2dB for mid and high frequencies. Efficiency measured via pink noise 1m on axis: 50W produces >100dB. Nominal impedance: 8 ohms. Driving power requirements 25 to 100W. Price: £423.50 per pair (plus VAT).

#### ■ LOWTHER

Lowther Acoustics Ltd, Lowther House, St Marks Road, Bromley, Kent BR2 9HQ. Tel: 01-460 5225.

No details available of loudspeaker range at time of going to press.

#### ■ SERVO SOUND

Servo Sound Cibernetic Hi-Fi, Lamb House, Church Street, London W4 2PB. Tel: 01-995 4551.

#### Amplifier/loudspeaker

Acoustic pressure: 103dB at 1kHz. Output power: 15W RMS. FR: 35Hz-30kHz ±1dB. Power consumption: 38VA (full signal). AC mains: Fitted with 7 transistors, 4 diodes, 1 thermistor. Size: (loudspeaker) 18 × 27 × 28cm. Price: on application.

#### ■ SONY

Sony (UK) Ltd, Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

#### SS7200

Infinite baffle enclosure with units and crossover. One 10in bass driver, one 5in mid-range, one 1in tweeter, with ultra linear magnetic circuits TM Crossover: 450Hz, 4500Hz. FR: 50Hz-20kHz. HC: 70W. Impedance: 6 ohms. Size: 13 $\frac{3}{4}$  × 23 $\frac{3}{16}$  × 11 $\frac{1}{4}$ in. Weight: 35lb 5oz. Finish: walnut with detachable front grille. Front mounted mid-range and tweeter controls. Spring loaded terminals. Price: £64.77 each (plus VAT).

#### SS5088

Infinite baffle enclosure with units and crossover. One 6 $\frac{1}{2}$ in bass driver, one 2in tweeter. Crossover: 6.5kHz. FR: 80Hz-20kHz. HC: 12W. Impedance: 8 ohms. Size: 9 $\frac{1}{16}$  × 15 × 5 $\frac{5}{16}$ in. Weight: 7lb 11oz. Finish: walnut with front grille cloth. Price: £18.47 each (plus VAT).

#### SS70

Infinite baffle enclosure with two units. One 5 $\frac{1}{2}$ in bass driver, one 2 $\frac{1}{2}$ in tweeter. FR: 95Hz-18kHz DIN HC: 10W. Impedance: 8 ohms. Size: 6 $\frac{1}{4}$  × 10 $\frac{9}{16}$  × 9 $\frac{1}{16}$ in. Weight: 4lb 3oz. Finish: teak cabinet with front grille cloth. Price: £9.21 each (plus VAT).

#### SS5177

Three-way, three-speaker system. Speaker units: woofer 8 $\frac{1}{2}$ in diameter cone type, mid-range 3 $\frac{1}{2}$ in diameter cone type, tweeter 2in diameter cone type. Nominal impedance: 8 ohms. Crossover frequencies: 3kHz and 5kHz. FR: 50Hz-20kHz DIN. Output sound pressure: 92dB/W/m. Handling power: 35W max DIN. Size: 285 × 495 × 240mm. Weight: 5.5kg. Price: £27.73 each (plus VAT).

#### SS5300A

Three-way, three-speaker system. Speaker units: tweeter 2in cone type, mid-range 3 $\frac{1}{2}$  cone type, woofer 10in cone type. Crossover frequencies: 1.5kHz and 4kHz. FR: 30Hz-



★ Indicates entry is illustrated

20kHz DIN. Input impedance: 8 ohms. Output sound pressure: 88dB/W/m. Handling power: 50W max DIN. Finish: walnut. Size: 330 × 560 × 305mm. Weight: 12kg. Price: £41.62 each (plus VAT).

#### SS7300A

Three-way, three-speaker system. Speaker units: tweeter 1in dome type, mid-range 4½ cone type, woofer 12in cone type. Crossover frequencies: 750Hz and 4.5kHz. FR: 40Hz-20kHz DIN. Input impedance: 6 ohms. Output sound pressure: 88dB/W/m. Handling power: 120W max DIN. Finish: walnut. Size: 390 × 636 × 310mm. Weight: 22kg. Price: £87.92 each (plus VAT).

#### ■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

#### SS-24

Infinite baffle enclosure with units and crossover. One 20cm concave woofer, one 7cm cone tweeter. Crossover frequency: 6kHz. FR: 50Hz-20kHz. Max. input power: 15W RMS. Impedance: 8 ohms. Sensitivity: 93dB. Size: 308 × 193 × 439mm. Weight: 4.5kg. Price: on application.

#### SS-17

Infinite baffle enclosure with units and crossover. One 20cm concave woofer, one 7cm cone tweeter. Crossover frequency: 6kHz. FR: 50Hz-20kHz. Max input power: 15W RMS. Impedance: 8 ohms. Sensitivity: 93dB. Size: 270 × 220 × 440mm. Weight: 5kg. Price: on application.

#### SS-37

Infinite baffle enclosure with units and crossover. One 25cm concave woofer, one 12cm concave mid-range, one 2.5cm dome tweeter. Crossover frequencies: 700Hz and 7kHz. FR: 40Hz-20kHz. Max. input power: 20W RMS. Impedance: 8 ohms. Sensitivity: 92dB. Size: 342 × 295 × 590mm. Weight: 10kg. Price: on application.

#### SS-47

Infinite baffle enclosure with units and crossover. One 30cm concave woofer, one 12cm concave mid-range, one 2.5cm dome tweeter. Crossover frequencies: 700Hz and 7kHz. FR: 35Hz-20kHz. Max. input power: 25W RMS. Impedance: 8 ohms. Sensitivity: 93dB. Size: 400 × 330 × 680mm. Weight: 15kg. Price: on application.

#### ■ WAR

Western Audio Research Ltd, Chosen View Road, Cheltenham, Glos GL51 9LT. Tel: Cheltenham 34749.

#### HD 4545

FR: 25Hz-20kHz±2.5dB. Nominal impedance: 8 ohms. Sensitivity: 6V (at 1kHz) for 96dB. Drive units: bass 2 × 203mm diameter Bextrine cone, mid-range 101mm diameter cone, HF 25mm diameter dome. Crossover frequencies: 1.5kHz and 3kHz. Size: 863 × 330 × 305mm. £179 per pair (plus VAT).

#### HD 3535

FR: 40Hz-20kHz±2.5dB. Nominal impedance: 8 ohms. Sensitivity: 6V (at 1kHz) for 96dB. Drive units: bass 254mm diameter cone, mid-range 101mm diameter cone, HF 57mm diameter cone. Crossover frequencies: 1.5kHz and 3kHz. Size: 788 × 305 × 305mm. Price: £129 per pair (plus VAT).

#### HD 2020

FR: 50Hz-20kHz±2.5dB. Nominal impedance: 8 ohms at 400Hz. Sensitivity: 9V for 96dB. Drive units: bass 203mm diameter Bextrine cone, HF 25mm diameter cone. Crossover frequency: 3kHz. Size: 505 × 240 × 282mm. Price: £79 per pair (plus VAT).

#### HD 2525

FR: 45Hz-20kHz±2.5dB. Nominal impedance: 8 ohms at 400Hz. Sensitivity: 9V for 96dB. Drive units: bass 203mm diameter Bextrine cone, mid-range 101mm diameter cone, HF 57mm diameter cone. Crossover frequencies: 1.5kHz and 3kHz. Size: 737 × 305 × 305mm. Price: £109 per pair (plus VAT).

### Surround Sound

#### ■ SONY

Sony (UK) Ltd, Pyrene House, Sunbury Cross, Sunbury-on-Thames. Tel: Sunbury 87644.

#### SQA 100

SQ decoder amplifier. Rated output power: 6W RMS per channel, into 8 ohms. FR: 20Hz-50kHz +1, -1.5dB at 0dB output. HD: 5% at rated output. Inputs: high 25mV 250K, low 250mV 100K, 2-channel tape 440mV 100K, discrete 440mV 110K, DIN 440mV 100K. Tone controls: bass ±10dB at 100Hz, treble +10, -6dB at 10kHz. Blend MTXSQ decoder, regular MTX decoder. 21 transistors, 2 ICs, 3 diodes. Mains: 110, 127, 220 and 240V 50/60Hz. Size: 128 × 231 × 197mm (including projecting parts). Weight: 3.0kg. Price: £41.62 (plus VAT).

#### SQA 2030

SQ decoder amplifier. Rated output power: 18W RMS per channel into 8 ohms between 20Hz-20kHz, both channels operating 22W per channel, both channels operating, 1kHz into 8

ohm load. Power bandwidth: (IHF) 10Hz-25kHz. FR: 20Hz-20kHz  $\pm$ 3dB SQ, RMTX, 2-4, 20Hz-20kHz +0, -3dB others. HD: 0.8% at rated output. Inputs: 2-channel (SQ, RMTX, 2-4) low 75mV 75K, normal 250mV 90K, high 500mV 100K, (2-channel tape) low 250mV 50K, normal 750mV 80K, discrete (4-channel) 250mV 100K, DIN 250mV 80K. Tone controls: bass  $\pm$ 10dB at 100Hz, treble  $\pm$ 10dB at 10kHz. Loudness control: 50Hz +10dB, 10kHz +4dB (att -30dB). S/N ratio: 85dB. Circuit system: full logic IC SQ decoder, hybrid power amplifier (rear channel) tone, loudness controls (rear channel). 27 transistors, 5 ICs, 14 diodes. Mains: 110, 127, 220, 240V AC 50/60Hz. Size: 226 x 156 x 307mm including projecting parts. Weight: 6.9kg. Price: £111.06 (plus VAT).

Wide range of head cleaners, blank cassettes/cartridges, carrying cases including cassette albums, designed to build a cassette library, storage racks.

## ■ THORN

Thorn Consumer Electronics Ltd,  
Thorn House, Upper St Martin's Lane,  
London WC2 9ED. Tel: 01-366 1155.

### Foot switch TA/19

Facilitates use of recorder as dictating machine. Recorder runs when switch is depressed. For models with remote pause facility. Price £3.23 (plus VAT).

### Monitoring Stethoset TA/29

Stethoscope type earpiece to monitor programme during recording. Fitted with Continental speaker plug. Price: £1.72 (plus VAT).

### Stereo headphones TA/39

General purpose stereo headphones. Fitted with  $\frac{3}{8}$ in standard jack plug. Price: £9.63 (plus VAT).

### Stereo headphones TA/41

Stereo headphones. High impedance. High quality performance. Price: £11.85 (plus VAT).

The tape recorder accessories listed above are primarily for use with machines marketed under the Thorn brand names Ferguson and Marconiphone.

## Tape Accessories and Components

### ■ AGFA-GEVAERT

Agfa-Gevaert Ltd, Great West Road,  
Brentford, Greater London.  
Tel: 01-560 2131.

### Editing Accessory Kit

Price: £2.52½ (including VAT).

### Splicing Tape Outfit

Price: 51p (including VAT).

### Splicing Tape

33ft  $\frac{1}{4}$ in tape. Price: 31½p (including VAT).

### Leader Tape

80ft  $\frac{1}{4}$ in tape in red, green, white. Price: 28p (including VAT).

### Silver Stop Foil

33ft  $\frac{1}{4}$ in. Price: 46p (including VAT).

### Plastic library boxes

No. 13 (5in) 44½p; No. 15 (5½in) 57½p; No. 18 (7in) 71p. All prices include 10% VAT.

### Plastic spools

No. 13 (5in) 31½p; No. 15 (5½in) 31½p; No. 18 (7in) 34½p; No. 26 (10½in) £1.40. All prices include 10% VAT.

### Cassette head cleaner

Price: 73p (including VAT).

### Empty album

Price: £1.21 (including VAT).

### Publications

"Tape Recording Technique". Price: 45p.

"Tape Recorder Manual". Price: 35p.

"Recording with Compact Cassettes". Price: 65p. Prices exclude postage and packing.

### ■ PRECISION TAPES LTD

Precision House, 11 Denmark Street,  
London WC2H 8NR. Tel: 01-836 3104.

### ■ WEIRCLIFFE

Amos of Exeter Ltd, Weircliffe Court,  
Exwick, Exeter, Devon.  
Tel: Exeter 72132.

### Weircliffe Bulk Erasers

Models 6, 7 and 8. Model 6 accepts reels up to 8½in diameter of  $\frac{1}{4}$ -lin tape. Capacity 180-400 reels per hours. Model 7 accepts 8 x 8in cassettes of  $\frac{1}{4}$ in tape. Model 8 accepts reels of up to 14½in diameter containing tape from  $\frac{1}{4}$ in audio up to 2in video including  $\frac{1}{4}$ in and 1in instrument tape and 16 and 35mm film. Capacity 100-400 reels per hour (NATO catalogue No. 5835-99-972-5371). Model 9 now takes reels of 2in wide video tape on 16in reels as against 35mm only. Sizes: (Models 6 and 7) 11½ x 12¼ x 7½in. Weight: 43lb. Size: (Model 8) 20½ x 20½ x 10½in. Weight: 92lb. Prices: (Models 6 and 7) £73.41; (model 8) £226; (Model 9) £360. Models available for 115V 60Hz.

# Record releases of the year

## Demonstration discs

by Kenneth Ellmore

This feature is not intended to be a comprehensive record review but a personal selection, including bargain labels, with emphasis on discs of demonstration quality. Tape equivalents are given where applicable.

### What the Equipment Manufacturers recommend

Whether presenting a private or public demonstration of Hi-Fi equipment, the choice of suitable records is a most important factor. Undoubtedly the most popular demonstration disc at 1975 Audio Exhibitions was *Le Cid* coupled with *Scenes Pittoresques* (Columbia TWO 350). Although released in 1971 it retains its freshness and the Studio Two recording has excellent stereo separation. The firm beat of *Castillane* and *Aragonaise*, the exciting *Navarraise* with pulsating lower strings and wind, and frenzied *Fete Boheme* make an ideal test for equipment.

Musically I have reservations. The City of Birmingham Symphony Orchestra plays well enough for conductor Louis Fremaux, but the engineers tend to spotlight soloists who do not always stand close examination.

Much better is *The Planets* by Holst (EMI ASD 3002), with the London Symphony Orchestra in top form under Andre Previn. Barbaric *Mars* comes across with full force and clear timpani. Often, even in modern recordings, one hears just a dull thud. Woodwind chording in *Venus*, clanging bells of *Saturn*, xylophone solo in *Uranus*, and ethereal chorus in *Neptune* are the outstanding spots on this fine disc.

Bargain sampler discs feature widely on demonstration stands. The companies use them to advertise full price labels and, naturally, choose the best tracks. *Impulsion* (Circle of Sound 2485 025) comprises sixteen tracks ranging from James Last to the Bournemouth Symphony Orchestra. Recommended.

For pop, many manufacturers chose *Best of Bread* (EMI Elektra K 42115) and *Tubular Bells* (Virgin Records V2001). The latter has enjoyed tremendous popularity with youngsters and features versatile Mike Oldfield.

### Outstanding New Releases

My choice of outstanding production of the year is *Organ of York Minster* (Polydor Select 2460 225), a worthy tribute to Francis Jackson, connected with York Minster for forty-five years and organist since 1946. The instrument was built by Elliott and Hill in 1831 and rebuilt by J.W. Walker in 1960.

The programme displays its technical and tonal qualities, hence the inclusion of Cocker's *Tuba Tune* demonstrating the Tuba Mirabilis, a stop and sound unique in the organ world. Producer Brian Culverhouse and his engineers have done a magnificent job and to demonstrate the qualities of your equipment and hear the organ at its best, both *Tuba Tune* and resonant bass of Dubois *Toccata* provide excellent examples of organ reproduction.

My palm for Opera goes to Karajan's exquisite *Madam Butterfly* (Decca SET 584-6 Tape: Dolby (4) K2A1) surprisingly only the second recording in recent years. Choice is between Barbirolli emphasising beauty of the voice and Karajan, who draws some ravishing playing from the Vienna Philharmonic but sometimes taxes his singers with slowish tempi. Mirelli Freni makes an ideal Butterfly and is ably supported by the experienced Christa Ludwig as Suzuki. Tenor Luciano Pavarotti and baritone Robert Sharpless make less vocal impact but give good characterisations of their roles. The orchestra dominates the set revealing Puccini's brilliant orchestration in its full glory. For demonstration try the famous *Un Bel Di* on Side Three continuing into the scene between Butterfly and Sharpless.

Decca excell themselves in the *Bruckner*

*Symphony No. 4 in B flat* (Decca 6BB 171/2) by spreading the work over four sides for the price of one record. Such spacing gives superlative sound: and the engineers have captured the warmth of the hall. Conductor Karl Bohm has a powerful sense of nobility and structure, and his reading is a worthy contender to existing versions by Karajan and Jochum. Choice must be personal but for a sampler of Bohm's style try the elegant second movement or the clod-hopping scherzo.

Sir Georg Solti gets an exciting performance of *Rite of Spring* (Decca SCL 6691. Tape: Dolby KXSC 6691) from Chicago Symphony Orchestra. Engineers have done a splendid job with every part so clear that I suspect use of close-up mikes to spotlight passages which tend to be obscured in live performance. Overall sound is perfectly natural with a dry acoustic suitable for Stravinsky.

Finnish conductor Paavo Berglund gives a loving, almost gentle account of Sibelius *5th Symphony* coupled with *En Saga* (EMI ASD 3038). It takes time for the genial approach to register, accustomed as we are to sharp dynamic contrasts, and only after the stark isolated chords end the symphony does the pattern make sense. The Bournemouth Symphony Orchestra is in fine form, and the recording first-rate.

DGG maintains its usual high standard with Schumann *Symphonies 1 and 4* conducted by Karajan (DG 2530169). Berlin Philharmonic is in magnificent form and Karajan shapes a sympathetic and exciting reading. Recording is outstanding with good stereo separation

highlighting both brass and delicate string playing.

*Prodigal Son* (CBS 73363 Tape: CBS Dolby (4) 40-733-63) is a ballet based on music by Scott Joplin orchestrated for the Festival Ballet by Grant Hossack. He obtains maximum variety by interplay of two groups, a jazz band ably led by pianist Michael Bassett pitted against full symphony orchestra. CBS Studio recording nicely captures the syncopated piano and raucous orchestral brass and is ideal for demonstration, except for the final track which deteriorates badly.

Piano tone is not easy to capture on record, but I recommend Beethoven *Sonatas 31 and 32* (Decca CXL 6630. Tape (4) KSX 6630). Ashkenazy fearlessly tackles the complexities of Beethoven's last two sonatas with amazing insight, and brings off a definitive interpretation.

A few points disturb. The bass line swamps the treble at bars 28-29 and 88-89 of Op. 110, the scherzo coda is rushed contrary to the poco ritard marking, and the final fugue is taken slowly, resulting in insufficient contrast with the interweaving adagio sections. But these are of minor consequence, and the C Minor gets an impeccable performance with superb control in the second movement variations, finisishly difficult to interpret.

*Something in the Air* featuring the Simon Park Orchestra (EMI EMC 3059. Tape: (4) TC EMC 3059, (8) 8X TC3059) decks out popular tunes in spectacular orchestral guise with accent on unusual effect. All tracks are eminently suitable for demonstration especially *7.48 Stomp* where the harp solo stands out with absolute clarity above a heavy percussive beat.

Bernard Herrmann conducts the *BBC Northern Dance Orchestra* in an enjoyable programme of light music (BBC REC 133S). The recording is impressive with good stereo separation, and the orchestra maintains a high standard, particularly noticeable in brass and wind chording. Most arrangements are by Alan Roper and Pat Nash, and I particularly liked the alto sax of John Roadhouse in *Maria* and the clarity of xylophone, glockenspiel and bells in *It's All in the Game*.

Good quality pop recordings are to be found in *White Gold* (20th Century BT 458), a programme of soul arranged and conducted by Barry White and Gene Page, and *King Fu*



*Fighter* (Pye NSPL 18450) where forward sound is aided and abetted by tape recorder and synthesizer.

Normally I abhor synthesizers, but the *Amazing Sounds of the Electronic ARP Synthesizer* (RCA LPL1 5075) turns out to be a pleasant programme of light music ranging from Mozart to Lennon and McCartney, amusingly arranged and played by Gordon Langford. Stereo gimmicks and extraneous electronic noises make it fine for demonstration as well as providing pleasurable listening. The send-up of the *Light Cavalry Overture* is a delight.

### Personal Favourites

I have had many happy hours listening to the *New Year's Concert of Strauss* (Decca SXL 6692. Tape: Dolby (4) KSCX 6692). As usual, Willi Boskovsky conducts the Vienna Philharmonic and the recording made in the Sofiensaal is first-class. Most unusual is *Festival Valse Comique* specially written for Strauss's promenade concerts at Covent Garden in 1867, based on popular Music Hall songs. The *Blue Danube* comes in its original form for mens chorus and, combined with the familiar *Tik Tak Polka*, *Perpetuum Mobile* and brother Josef's beautiful *Music From the Spheres*, this is sheer delight.

Also with the Vienna Philharmonic, Claudio Abbado conducts Brahms *Symphony No. 1 in C* (DG 2530 424). The natural recording reveals the beauty of the Vienna strings. Listen to them in the pizzicato movement in the Finale, and also the lovely brass and bassoon tone in the following hymn tune. Right from the start Abbado dominates this performance, although some listeners may feel that he projects too much of his own personality to the detriment of Brahms.

The sound is not quite so good in Mendelssohn *Italian and Reformation Symphonies* (DG Privilege 2538 329) although still smooth and clear. Lorin Maazel conducts the Berlin Philharmonic in a rather pedantic account of the *Reformation* although, to be fair, this is not one of Mendelssohn's most inspired works. However, the *Italian* glows nicely and the descant flutes in the Pilgrim's March are, for once, audible but not too pronounced.

A revelation is the Beethoven *Piano Concerto No. 4 in G* (BAC 3002. Tape: BASF Dolby KBACC 3002) played by Paul Badura-

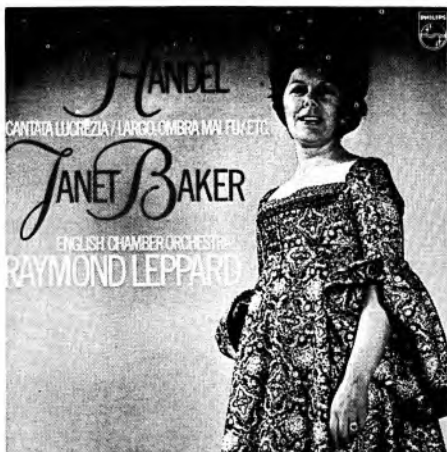
Skoda on an 1820 Hammerflügel built by Conrad Graf. The Collegium Aureum accompany on old instruments of that period, so the whole effect is as Beethoven would have conceived. It is like entering another world, and loss of brilliance is counter-balanced by extra sonorous tone. The Harmonia Mundi production recorded in the Cedernsaal, Schloss Kirchheim, is warm and sympathetic. As a bonus Badura-Skoda gives a separate band of the composer's own intended first-movement cadenza plus his *Fantasie Op. 77* for piano solo.

Janet Baker is one of the great mezzos of our time and in *Operatic Arias* by Handel (Philips 6500 523) gives a definitive performance of the early cantata *Lucretia* coupled with a selection of opera arias. The choice is nicely gauged to show the versatility of Miss Baker's voice ranging from the tonal beauty of *Pompe vane di morte* (Rodelinda), the flowing lines of *Ombra mai fu* (Serse), the dramatic *Where shall I Fly?* (Hercules) to the pyrotechnics of *O Had I Jubal's Lyre* (Joshua).

Stravinsky's ballet *Petrushka* receives a fine performance by the New York Philharmonic Orchestra under Pierre Boulez (CBS 73056), who uses the 1911 version. The recording is clean, natural, and free of gimmicks. Boulez is at his best in the crowd scenes and Paul Jacobs gives a good account of the important piano part.

Mozart *Concertone in C* and Pleyel *Sinfonie Concertante in B* (CBS 76310) couples early Mozart with a piece by Ignaz Pleyel, better known as a piano maker. The music is not great, but would make better impact if the recording was not so dry. Isaac Stern and Pinchas Zukerman play well, ably supported by Neil Black in the important Mozart oboe part.

A much better Mozart recording is the coupling of the *Concerto for Flute and Harp* with the *Sinfonie Concertante in E flat* for Wind (Philips 6500 380). The forward positioning of soloists mars an otherwise top-class disc, with the Academy of St. Martin-in-the-Fields up to usual standard and director Neville Marriner choosing exactly the tempo. right Claude Monteux and Osian Ellis are flute and harp soloists, and the *Sinfonie Concertante* stars Neil Black, Jack Brymer, Michael Chapman and Alan Civil.



The attraction of *A German Evening* (Pye Virtuoso TPLS 130363 Tape: Pye Virtuoso Dolby (4) ZCTPL 13063) must surely be the first recorded version of Brahms *Liebeslieder Waltzes* in orchestral guise. Inspired by his friend Johann Strauss, Brahms wrote three sets of waltzes for vocal quartet with piano duet, and in 1870 produced a suite of eight numbers from Op.52 for quartet with orchestra. Five years later he inserted a piece from Op.65 as a soprano solo. Here the quartet is enlarged to a small vocal ensemble in the shape of the Ambrosian Singers with Ursula Connors as solo soprano. The *Symphonica of London* is conducted by Wynn Morris.

On Side Two, the same orchestra and conductor are joined by Shura Cherkassky in the Schumann *Piano Concerto*. Cherkassky, a pupil of Josef Hoffman, is one of the last grand romantic pianists. The sound on this side is somewhat restricted, but do not let that deter you from hearing this great artist.

"Top of the Pops" in church music is an apt way of describing the *Choir of Winchester Cathedral* (Pye GH 589. Tape (4) ZCGH 589 (8) Y8GH 589). Star performer is boy soprano Timothy Wilson singing popular Mendelssohn and Gounod, while Director of Music Martin Neary is heard at the Henry Wilkes organ in the inevitable *Tocatta and Fugue in D Min* (Bach) and ubiquitous *Tocatta in F* (Widor). The recording catches the cathedral atmosphere effectively.

Gustav Leonhardt gives a good straight-

forward account of *Ten Sonatas* for Harpsichord by Domenico Scarlatti (BAC 3068), free of excessive registration changes. The recording nicely catches the tone of the instrument, a 1962 copy of a 1745 Duellcken. For a sample of Leonhardt's positive style try the K491 Allegro which I enjoyed immensely.

*Concerti for Strings* by Vivaldi (Decca SXL 6628) features the Lucerne Festival Strings conducted by Rudolf Baumgartner. They sound a fairly large body and achieve excellent rapport especially in *Al Santo Sepolcro*, a sombre work for which Vivaldi specified no continuo. The soloists are un-named but all are good, particularly the sweet-toned third violin in the F major concerto, who has the slow movement tune all to himself.

If you like song cycles try *The House of Life* and *Songs of Travel* by Vaughan Williams (Polydor 2460 236). The first-named is seldom heard presumably because six songs in slow tempo makes for monotonous listening. *Songs of Travel* are rightly popular, and young tenor Anthony Rolfe Johnson sings well enough with David Willison at piano. However, both have to face strong competition from existing recordings by John Shirley-Quirk with Viola Tunnard and Robert Tear with Philip Ledger. Recording quality is good.

The Academy of St. Martin-in-the-Fields turns up again in a selection of popular snippets entitled *The Academy In Concert* (EMI ASD 3017. Tape TC ASD 3017). The Beethoven *Twelve Contradances* are worth the price of the record alone, but every item is tastefully conducted by Neville Marriner.

Andre Previn conducts the London Symphony Orchestra in the complete *Nutcracker Ballet* (EMI SLS 834 boxed set) and a single disc of excerpts is available on ASD 3051 (Tape TC ASD 3051). He gives an affectionate reading and resists the temptation to sentimentalise the broad Tchaikowsky melodies. The recording is spacious and to test it try the *Waltz of the Snowflakes* (which often blurs in recording), the natural orchestral spread in the *Pas de Deux*, or the snappy brass in the *March*. On the whole Previn keeps to balletic tempi and only occasionally gets carried away to let his virtuoso band have its' fling.

The *King's Singers Contemporary Collection* (EMI EMD 5521) comprises five extended works mostly commissioned by the singers. *Winter Afternoons* by Peter Dickinson also

features Rodney Slatford on double bass, and other items are by Malcolm Williamson, Richard Rodney Bennett, Penderecki, and Paul Patterson. If you enjoy the unique artistry of this group this disc is recommended.

*Citizen Kane* (ARL1 0707) and other works by Bernard Herrmann is the latest addition to RCA classic film scores. Concerto Macabre from *Hangover Square* is far removed from the usual romantic pastiche and surely unique in that the soloist (Joaquin Achucarro) finishes alone without orchestra. It deserves a permanent place in the concert repertoire.

Other outstanding tracks are Death Hunt from *On Dangerous Ground*, where eight horns and percussion accompany a police chase across ice, and *Beneath the 12 Mile Reef*, where Herrmann uses nine harps to simulate the movement of sea. Charles Gerhard conducts the National Philharmonic Orchestra and Kiri Te Kanawa is featured in the operatic aria from *Citizen Kane*.

In complete contrast, Josef Suk is an expressive soloist and conductor with the Prague Chamber Orchestra in *Violin Concertos 1 and 2* by Mozart (RCA LRL1 5084). Recommended.

Julian Bream gives a superb performance of the *Sonata in C* by Fernando Sor (RCA ARL1 0711), a piece moulded on classical lines and more difficult to perform than it sounds. On the reverse side, two suites *Le Rossiniane* by Mauro Giuliani are blatant display items.

Finally from RCA, Leontyne Price sings *Four Last Songs* by Richard Strauss together with operatic arias (ARL1 0333) with the New Philharmonia Orchestra conducted by Erich Leinsdorf. I wouldn't normally associate Miss Price with Strauss, but her lovely voice brings fresh light to these pieces, and the opulent recording makes this a desirable issue.

### The Collegium Aureum

For early music played on original instruments BASF Harmonia Mundi series features the Collegium Aureum. The two-record set of Bach *Brandenburgs* (BAC 3007/8) contains some nicely-judged tempi in concertos three, five and six. The last benefits most from this performance being scored entirely in the bass. If often sounds muddy on modern cellos, but with gambas the polyphonic writing is crystal clear.

A number of intonation lapses may be

blamed on the instruments rather than players, but the tempi of the first concerto Allegros are questionable. They drag so much that at times the piece seems in danger of falling apart. The warm intimate recording made in the Cedernsaal des Fugger-Schloss Kirheim is admirably suited to Bach and, apart from reservations mentioned, I recommend this set.

Other fascinating discs in this series include *Motets* by Josquin Des Prez (BAC 3029) with the Tolzer Boys Choir, Beethoven *Quartet No.15 in A Min* (BAC 3071) played by four young members of the Collegium, Bach's *Christmas Cantata* and *Magnificat in D* (BAC 3054) and *Renaissance Dance Music* (BAC 3042). The *Anna Magdalena Notebook* (BAC 3054) is a gem. The music is mostly by Bach, but includes a Rondo by Couperin and a couple of items by Bach's gifted son, Carl Philip Emanuel. The main burden falls on Gustav Leonhardt on harpsichord, but Elly Ameling, Hans-Martin Linde and the Tolzer Boys Choir also contribute.

### In A Lighter Mood

*That's My Desire* (Pye 41036. Tape (4) ZPC 41036 (8) Y8P41036) presents Acker Bilk in mellow mood with string backing. The maestro takes the vocal himself in the title song, and a surprise inclusion is *Arie* from Bachianas Brasileiras No.5 by Villa-Lobos.

Ebullient Tommy Steele features in a collection of his own songs in *My Life, My Song* (Pye TS101). There is first-class backing in arrangements by Chris Gunning and an excellent recording obviously aimed at Mums and Dads.

*In Tune* (BASF BAP 5045) stars the Oscar Peterson Trio with The Singers Unlimited in arrangements by Gene Puerling. The standard of singing is unusually high but inevitably Oscar's piano steals the limelight.

"Stix" Hooper on drums and Andy Simkins, bass, join George Shearing in an entertaining programme of six numbers in typical Shearing style entitled *Light, Airy and Swinging* (BAP 5043. Tape (4) KBAP 5043). The recording is good with every solo crystal clear.

Valerie Tryon gives a pleasing piano recital on BBC Records (REC 112S Tape: BBC (4) MRMC 015) entitled *These You Have Loved*. All the old favourites are here together with the more substantial Chopin Scherzo in B flat.

*Robert Farnon* (Pye NSPH 400) is backed by the might of the London Philharmonic Orchestra in a concert recorded live at the Royal Festival Hall. The LPO is in good, swinging form with some nice fiddle solos from leader Rodney Friend. Highly recommended.

If you don't object to great masterpieces being mauled, *Verdi Wonderland* (BAP 5039) is a fairly innocuous disc of favourite Verdi arias superimposed on a rhythmic beat by the Arno Flor Orchestra.

### Bargain Labels

In the past most Hi-Fi enthusiasts would have scoffed at 18/2 for a mere 87p. Now, the standard of most bargain labels is extremely high and the recording of this overture together with *March Slave* and *Romeo and Juliet* (Contour 2870 419) is clean, exciting, and spacious without being spectacular. The New Philharmonia is conducted by Norman Del Mar without the usual impedimenta of canons and bells. For the musician this is something of a blessing, although the conductor tends to linger overlong on the big tunes.

*Vivaldi's Greatest Hits* (CBS 30054. Tape: Dolby (4) 40-30054) is latest in the series. With the favourite *Spring* are many novelties such as *Concerto For Diverse Instruments Including Mandolines*. Soloists blend nicely without being unduly highlighted. Among a plethora of international talent, John Williams stands out for a beautiful rendering of the *Guitar Concerto*.

Classics for Pleasure has done great service by restoring the Halle Orchestra to the catalogues under its new conductor James Loughran. His performance of Brahms *Symphony No.4 in E Min* (CFP 40084) ranks alongside that of Sir Adrian Boult, which is rare praise indeed. Another absolute winner from the same team is *Symphony No.2 in E Min* by Rachmaninov (CFP 40065). Halle string tone may not match other orchestras, but Mr. Loughran extracts every ounce of passion from the work.

Stravinsky's neo-classical *Dumbarton Oaks* Concerto is coupled with the *Octet* and concert suite from *A Soldier's Tale* (CFP 40098). Elgar Howarth conducts the Nash Ensemble. Ian Partridge brings intelligence and sensitivity to the Schumann song cycles *Dichterliebe* and *Liederkreis* (CFP 40099). John Lill is soloist with the Scottish National Orchestra in *Piano Concerto No.5 in E flat* by Beethoven (CFP 40087), where he claims to adhere to original phrase markings. The first movement could do with more urgency, but otherwise a good performance.

Handel's *Water Music* (CFP 40092) is played by the Virtuosi of England conducted by Arthur Davison in an edition by Richard Townend. There is some superb playing, but some numbers lack "spring" and I missed timpani in the D Major Suite.

Finally from Classics For Pleasure, *Musical Triangles* (CFP 40205) is an entertaining mixture based on Thames TV series containing solos from Michael Laird, Keith Puddy, Craig Sheppard, Desmond Bradley, Julian Byzantine, ending with Tristan Fry manfully wrestling with Stockhausen's solo percussion piece *Zyklus*. As with all above CFP releases, recording and sound reproduction is first-rate.

Young pianist Homero Francesch really gets to grips with Mendelssohn, Schumann and Ravel on DG (Debut 2555 011), being light and fanciful in *Papillons*, aptly serious but not pedantic in *Variations Serieuses*, and elegant in *Tombeau de Couperin*. Piano tone is good and at 97p this is a bargain indeed.

### Band Music

Five Volumes of Virtuosi Brass Band covers the whole gamut of the repertoire from exacting test pieces to popular marches, transcriptions and novelty solos. Available only from Virtuosi Recordings Ltd, Norwich Union





House, 26 High Street, Huddersfield, West Yorkshire.

Volume One (VR 7301. Tape VCR 7301) includes music by Percy Fletcher, Dean Goffin and Eric Ball. Volume Two (VR 7302) consists of popular marches. Volume Three (CR 7303) contains John Ireland's *Comedy Overture* and spotlights some deft playing in a *Scherzo* by Denis Wright. Volume Four (VR 7304) is most entertaining with a fine arrangement by Eric Ball of Bach's *Saint Anne Fugue*. *Eight Bells* makes an excellent stereo demonstration number being written as a double quartet, and the star item for me is Henry Geehl's fine concert overture *Oliver Cromwell*. Volume Five (VR 7405) gets off to a cracking start with a Gounod March and also contains the *Moor-side Suite* by Gustav Holst.

All the recordings are good, particularly Volumes 3-5 which, I understand, were pressed by DGG. The band is made up of musicians drawn from prize-winning bands all over the country, and no lover of brass band music should miss this set.

From Amberlee Records comes another brass programme by *Carlton Main Frickley Colliery Band* conducted by Robert Oughton (Amberlee ABL 401X) devoted entirely to music by Eric Ball including the famous test piece *Resurgam*.

For military band I recommend *Music on Command* (BBC REC 121S) with the Band of the Welsh Guards playing marches by Kenneth Alford plus music associated with the regiment and Wales.

#### Off the Beaten Track

*Golden Brass* (Argo ZRG 717) features the Philip Jones Brass Ensemble in English, Italian and German music of the Sixteenth and Seventeenth Centuries. The players show tremendous virtuosity and improvise ornaments in Seventeenth Century fashion, but with less than twenty minutes music time per side this is short measure for a full-priced label.

*Morceaux de Salon Pour Le Piano* (Rare Recorded Edition SRR 140) will revive memories for Senior Citizens. Sydney Smith, Joseph Ascher, and Aloys Forster are all represented and played with charm by Kathleen Brady in a perfectly acceptable recording.

#### Pops

Singles are rarely spotlighted these days, but *Layla* (BTC 2161) is reputed to be the most

expensive ever made. Producer Lon Reizner has gone to enormous trouble to boost young singer Ronnie Charles, backing him with the London Symphony Orchestra and choir. The result is spectacular, but I doubt if the soloist is worthy of such talent and suspect that the youngsters will prefer Eric Clapton's original.

*Can't Get Enough* (20th Century BT 444) features Barry White with the Love Unlimited Orchestra. Beautifully produced with impressive stereo spread, it should sell well. I cannot say the same for *Airto Virginland* (Pye CTL 23), progressive rock with Airto on drums. Sound is exciting but I couldn't make sense of the vocal mutterings which intruded from time to time. I presume this is only for the faithful.

*Jigsaw*, a group new to me, present a programme of light rock, mostly undistinguished, on *I've Seen The Film, I've read the Book* (BAP 5051). In contrast *The Prince of Heaven's Eyes* (Dawn DNLH2) features Fruup, a versatile and engaging group. Drummer Martin Foye is impressive and there is good keyboard work from Stephen Houston. *Crystal Brook* makes full use of stereo spread, and *Perfect Wish* and *It's All Up Now* are cleverly worked.

Two from RCA should be winners. David Bowie in *Young Americans* (RS 1006) and *Close-Up* (LPL1 5026) with the incomparable Cleo Lane. Miss Lane is better recorded and for demonstration try *Loving Isn't Easy* or *I Saw the Light*. However, for sheer enjoyment I pick *The Sun and I* and *Wish You Were Here*.

#### Collections

For anyone starting a record library the albums issued by Readers Digest Association Ltd, 7-10 Old Bailey, London EC99 1AA afford wonderful value. On the classical side, *The Great Barbirolli* comprises seven records from old Pye catalogues with sound refurbished to compare favourably with modern full-priced labels. The repertoire covers Italian Overtures and Intermezzi, Debussy and Ravel, the famous Barbirolli interpretations of Elgar and Delius, complete records devoted to Wagner and Johann Strauss, a collection of Lollipops, and the *New World Symphony* of Dvorak thrown in as a bonus.

Only occasionally does a track show it's age and the whole set is a tribute to one of our finest conductors and no true music lover should miss it.

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Tel: 01-848 8787.

**Hokushin Audio Visual Ltd.**  
2 Ambleside Avenue, London, SW16.  
Tel: 01-677 9919.

**Holder Pearce Ltd.**, 66 Grove Road,  
Eastbourne, Sussex, BN21 4UH.  
Tel: Eastbourne 26565.

**Howland-West Ltd.**, 3-5 Eden Grove,  
London, N7 8EQ.  
Tel: 01-609 0293/6.

## I

**I.D. Electronics (Europe)**, 7 Priory Road,  
High Wycombe, Bucks.  
Tel: High Wycombe 36783.

**IMF Electronics Ltd.**, Westbourne Street,  
High Wycombe, Bucks.  
Tel: High Wycombe 35576.

**Imhofs (Retail) Ltd.**  
112-116 New Oxford Street,  
London, WC1A 1HJ.  
Tel: 01-636 7878.

**Impo Hi-Fi.**  
22 Buckingham Palace Road,  
London, SW1.  
Tel: 01-834 0050.

**ITT Consumer Products (UK) Ltd.**  
Maidstone Road, Footscray, Sidcup.  
Kent, DA14 5HT.  
Tel: 01-300 7733.

## J

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

**Jamo Audio Ltd.**, Rock House,  
3 Grenfell Road, Maidenhead, Berks.  
Tel: Maidenhead 37575/6.

**Johnson Brody Marketing Company.**  
394 Northolt Road, South Harrow,  
Greater London.  
Tel: 01-422 1863.



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Telephone Wickford (037 44) 63414

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**Johnsons of Hendon Ltd.**  
14 Priestley Way. London. NW2 7TN.  
Tel: 01-450 8070.

**E.J. Jordan**, 22 Hyde Green.  
Marlow-on-Thames. Bucks. SL7 1QL.  
Tel: Marlow 3787.

**Jordan-Watts Ltd**, Benlow Works.  
Silverdale Road. Hayes. UB3 3BW.  
Tel: 01-573 6928.

**JVC (UK) Ltd.**  
Eldonwell Trading Estate.  
Staples Corner. 6-8 Priestley Way.  
London. NW2. Tel: 01-450 2621.

**J.W. (W.) Company**,  
14-16 Walton Street.  
Walton-on-the-Hill.  
Surrey. Tel: Tadworth 3778.

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## K

**Keesonic Audio Sales Ltd**, Halldore Hill.  
Cookham. Maidenhead. Berks.  
Tel: Bourne End 22726.

**Kef Electronics Ltd**, Tovil. Maidstone.  
Kent. ME15 6QP.  
Tel: Maidstone 57258.

**KF Products Ltd**, Ashton Road.  
Bredbury. Stockport.  
Cheshire. SK6 2SP.  
Tel: 061-494 1441.

**Klark Technik**, Moss Industrial  
Estate. Summerfields.  
Worcester Road. Kidderminster.  
Tel: Kidderminster 64027.

**Klinger Controls Ltd**, Spencer Court.  
7 Chalcot Road. London. NW1 8LU.  
Tel: 01-586 2922.

**Kuba Radio Sales and Service**,  
1105 London Road. Thornton Heath.  
Surrey. CR4 6JJ.  
Tel: 01-764 5255/3702.

---

## L

**Lallex & Co Ltd**, PO Box 98.  
Manchester. M60 3BJ.  
Tel: 061-236 8186.

**Lawtronics Ltd**, 139 High Street.  
Edenbridge. Kent. TN8 5AX.  
Tel: Edenbridge 51912.

**Lee Products (International) Ltd**,  
Dallas House. Aintree Road.  
Perivale. UB6 7LA.  
Tel: 01-998 2838.

**Leavers-Rich Equipment Ltd**,  
319 Trinity Road. Wandsworth.  
London. SW18 3SL.  
Tel: 01-874 9054.

**Lennard Developments Ltd**,  
206 Chase Side. Enfield. EN2 0QX.  
Tel: 01-363 8238.

**L. & H. Britimpex Ltd**,  
8-12 Rickett Street. London. SW6.  
Tel: 01-385 0883.

**Linn Products**, 235 Drakemire Drive.  
Castlemilk. Glasgow.  
Scotland. G45 9SZ.  
Tel: 041-634 3860.

**Loytron Electronics Ltd**, Martin House.  
179-181 North End Road.  
London. W14 9NL. Tel: 01-381 3908.

**L.N.B. Audio Ltd**, Duke Street.  
Loughborough. Leics.  
Tel: Loughborough 61229.

**Lockwood and Co (Woodworkers) Ltd**,  
63 Lowlands Road. Harrow.  
Greater London.  
Tel: 01-422 3704.

**Loudspeakers Ltd**, Brookroyd Mills.  
Bradford Road. Batley. Yorks.  
Tel: Batley 473646.

**Lowther Acoustics Ltd**, Lowther House  
St Mark's Road. Bromley.  
Kent. BR2 9HQ.  
Tel: 01-460 5225.

**Luxitone**, 38 Jamestown Road.  
London. NW1 7ES.  
Tel: 01-267 4937/4930.

**Douglas A. Lyons & Associates Ltd**,  
99 Larkhall Lane. London. SW4.  
Tel: 01-622 0287.

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## M

**Macel Electronics Ltd**, PO Box 64.  
14 High Street. Ipswich. IPI 3LR.  
Tel: Ipswich 215465.

**Macinnes Laboratories Ltd**, Macinnes  
House. Carlton Park Industrial Estate.  
Saxmundham. Suffolk. IP17 2NL.  
Tel: Saxmundham 2262/2615.

**Magnat Sound Systems Ltd**, Unit D.  
St John's Industrial Estate.  
Penn. Bucks. Tel: Penn 4615.

**Magnetic Components Ltd**,  
Penryn. Cornwall. TR10 8AR.  
Tel: Penryn 2267.

**Magnetic Tapes Ltd**, Chilton Works.  
Garden Road. Richmond. Surrey.  
Tel: 01-876 7957.

**Marsden Hall International Ltd**,  
High March. Long March Industrial  
Estate. Daventry.  
Northants. NN11 4HB.  
Tel: Daventry 4011.

**Mastertape Cassettes Ltd**,  
Blackthorne Road.  
Poyle Trading Estate. Colnbrook.  
Bucks. SL3 0AQ.  
Tel: Colnbrook 2431.

**Maxview Aerials Ltd**, Setch. Kings Lynn.  
Norfolk. Tel: Watlington 376.

**Mayware Ltd**, 17 Herongate.  
Edgware. HA8 7LD.

**Memorex (UK) Ltd**, Hoechst House.  
50 Salisbury Road. Hounslow West.  
Greater London. Tel: 01-570 7716.

**Metrosonic Audio Products Ltd**,  
Audio Works. Cartersfield Road.  
Waltham Abbey. Essex. EN9 1JF.  
Tel: Lea Valley 712712.

**N. Miers & Co Ltd**, 28 Piercing Hill.  
Theydon Bois. Epping.  
Essex. CM6 7LE.  
Tel: 037-881 2611.

**Millbank Electronics Group**,  
Bellbrook Estate. Uckfield.  
Sussex. TN22 1PS.  
Tel: Uckfield 4166.

**J.A. Michell Engineering**,  
2 Theobald Street. Boreham Wood.  
Herts. Tel: 01-953 0771/2.

**3M (United Kingdom) Ltd**, 3M House.  
Wigmore Street. London. W1A 1ET.  
Tel: 01-486 5222.

**MMG Associates**, 19 St Andrews Road.  
Malvern. Worcs.

**Modern Engineering & Technology 4**  
Station Road West. Canterbury. Kent.  
Tel: Canterbury 604310.

**Monitor Audio Ltd**,  
347 Cherry Hinton Road.  
Cambridge. CB1 4DJ.  
Tel: Cambridge 42898.

**Monitor Distribution Co Ltd**,  
76 Bedford Road. Kempston.  
Beds. MK42 8BB.  
Tel: Bedford 854133.

**Monitor Sound Equipment Ltd**,  
PO Box 28. Eastleigh.  
Hants. SO5 5XD.  
Tel: Chandler's Ford 68492.

**Keith Monks (Audio) Ltd**,  
26-28 Reading Road South. Fleet.  
Aldershot. Hants.  
Tel: Fleet 7316.

**Mordaunt-Short Ltd**, The Causeway.  
Petersfield. Hampshire. GU31 4JT.  
Tel: Petersfield 4631.

**B.H. Morris & Co (Radio) Ltd**,  
Trio House. The Hyde.  
London. NW9 6JP.  
Tel: 01-205 6441.

**Motion Electronics Ltd**,  
Aldstead Farm. Tonbridge Road.  
East Peckham. Kent.  
Tel: East Peckham 871354.

**Musonico Ltd**, 34-38 Verulam Road.  
St Albans. Herts. AL3 4DF.  
Tel: St Albans 50611.

**Mustang Communications**,  
Nelson Street. Scarborough.  
Yorks. YO12 752.  
Tel: Scarborough 63298.

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## N

**National Panasonic (UK) Ltd**,  
101-109 Whitby Road. Trading Estate.  
Slough. SL1 3DR.  
Tel: Slough 34522.

**Natural Sound Systems Ltd**, Strathcona  
Road. North Wembley.  
London. HA9 8QL.  
Tel: 01-904 0141.

**J.H. Nelson Audio**, Mycott House.  
Station Road. Borehamwood. Herts.  
Tel: 01-953 9851.

**Norse Audio Systems Ltd**, 9  
Hawkesworth Trading Estate. Swindon.  
Wilts. SN2 1DZ.  
Tel: Swindon 22592.

**North East Audio Ltd**,  
5 Charlotte Square.  
Newcastle-upon-Tyne. NE1 4XF.  
Tel: Newcastle-upon-Tyne 26660.

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## O

**Omni Group Ltd**, Omni House.  
North Circular Road.  
London. NW10 7UF.  
Tel: 01-965 8787.

**Omex Products Ltd**, Churchill House,  
33 Dingwall Road,  
East Croydon. CRO 99XG.  
Tel: 01-688 9322.

**Osmabet Ltd**, 46 Kenilworth Road,  
Edgware. HA8 8YG.  
Tel: 01-958 9314.

## P

**Pageantry Radio & TV Co Ltd**,  
104 Felsham Road, Putney,  
London, SW15 1DQ.  
Tel: 01-788 5588.

**J. Parkar & Co (London) Ltd**,  
Parkar House, Beresford Avenue,  
Wembley. HAO 1XY.  
Tel: 01-903 5211.

**Peal Sound Equipment**, 57 Albert Street  
Rugby, Warwick. CV21 2JG.  
Tel: Rugby 71419.

**Perdix Components**, 31 Green Lane,  
Chislehurst, Kent. BR 7 6AG.  
Tel: 01-467 0109.

**Period High Fidelity Ltd**, Clivemont  
Road, Cordwallis Trading Estate,  
Maidenhead, Berks. SL6 7BO.  
Tel: Maidenhead 21221.

**Philips Electrical Ltd**, Century House,  
Shaftesbury Avenue,  
London. WC2H 8AS.  
Tel: 01-437 7777.

**Photax (London) Ltd**, Hampden Park,  
Eastbourne. Sussex.  
Tel: Eastbourne 51197.

**Plustronics Ltd**, Hempstalls Lane,  
Newcastle, Staffs. ST5 0SW.  
Tel: Newcastle 615131.

**Polydor Ltd**, 17-19 Stratford Place,  
London. W1N 0BL.  
Tel: 01-499 8686.

**Premier Industries Ltd**,  
343-345 High Street, Cheltham Spa,  
Glos. GL50 3HS.  
Tel: Cheltham 27782.

**Pye Ltd**, PO Box 49, St Andrews Road,  
Cambridge. CB4 1DS.  
Tel: Cambridge 58985.

**Pye Radio and Television Ltd**,  
St Andrews Road,  
Cambridge. CB4 1DS.  
Tel: Cambridge 58985.

**Pye Business Communications Ltd**,  
Cromwell Road, Cambridge. CB1 3HE  
Tel: Cambridge 45191.

**Pyrat (UK) Ltd**, Airport House,  
Purley Way, Croydon,  
Surrey. CRO 0XZ.  
Tel: 01-681 2833.

**Pyser Ltd**, Fircroft Way, Edenbridge.  
Kent. TN8 6HA.  
Tel: Edenbridge 4111.

## Q

**Quality Audio Supplies**, Wollaton Road,  
Beeston, Notts. NG9 2PB.  
Tel: Nottingham 256141.

**Quasar Division**, Precision Centre,  
Heather Park Drive,  
Wembley. HAO 1SU.  
Tel: 01-902 8832.

## R

**Radford Audio Ltd**, Ashton Vale Road,  
Bristol. BS3 2HZ.  
Tel: Bristol 662301.

**Rank Audio Visual Ltd**, PO Box 70,  
Great West Road,  
Brentford. TW8 9HR.  
Tel: 01-568 9222.

**Rank Radio International Ltd**,  
PO Box 596, Power Road, Chiswick,  
London. W4 5PW.  
Tel: 01-994 6491.

**Record Housing Ltd**,  
7a Newnham Road,  
London. N22 5SS.  
Tel: 01-888 7487.

**Regent Acoustics**, Carrington House,  
130 Regent Street, London. W1R 6BR.  
Tel: 01-437 1997.

**Reslosound Ltd**, Spring Gardens,  
London Road, Romford. RM7 9LJ.  
Tel: Romford 61926.

**Richardson Electronics Ltd**,  
57 Jamestown Road,  
London. NW1 7EJ.  
Tel: 01-267 0723/4874.

**Richmond Audio Ltd**, 27 Church Road,  
Bishops Cleeve, Glos. GL52 4LR.  
Tel: Bishops Cleeve 3952.

**Rogers Developments (Electronics) Ltd**,  
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London. SE6 3BN.  
Tel: 01-698 7424/4340.

**Rola-Celestion Ltd**, Ditton Works,  
Foxhall Road, Ipswich,  
Suffolk. IP3 8JP.  
Tel: Ipswich 73131.

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

**RS Components Ltd**, PO Box 427,  
13-17 Epworth Street,  
London. EC2P 2HA.  
Tel: 01-253 1222.

## S

**Saba Radio & Television Ltd**,  
6-12 Combrook Park Road,  
Manchester. M15 4EE.  
Tel: 061-872 7661.

**Sanyo Marubeni (UK) Ltd**, Sanyo House,  
Bushey Mill Lane, Watford,  
Herts. WD2 4UQ.  
Tel: Watford 30421.

**Scopetronics Ltd**, Crown Works,  
91 Ewell Road, Surbiton,  
Surrey. KT6 6BQ.  
Tel: 01-390 0184.

**Selmor Engineering Industries Ltd**,  
24 Milberry Street, Tower Hamlets,  
London. E1 1EH.  
Tel: 01-247 3344.

**Servo-Sound (Cybernetic Hi-Fi)**,  
Lamb House, Church Street,  
London. W4 2PB.  
Tel: 01-995 4551.

**Sharp Electronics (UK) Ltd**, 107 Hulme  
Hall Lane, Manchester. M10 8HL.  
Tel: 061-205 7321.

**Shriro (UK) Ltd**, Shriro House,  
The Ridgeway, Iver, Bucks. SLO 9JL.  
Tel: Iver 652222.

**Shure Electronics Ltd**, Ecclesion Road,  
Maidstone, Kent. ME15 6AU.  
Tel: Maidstone 59881.

**Siemens Ltd**, Great West House,  
Brentford, Greater London.  
Tel: 01-568 8281.

**J.J. Silber Ltd**, 11 Northburgh Street,  
London. EC1. Tel: 01-253 8031.

**Sinclair Radionics Ltd**, London Road,  
St Ives, Hunts. PE17 4HJ.  
Tel: St Ives 64646.

**Skantic (UK) Ltd**, Station Road,  
Edenbridge, Kent. TN8 6EY.  
Tel: Edenbridge 5231.

**SME Ltd**, Steyning, Sussex. BN4 3GY.  
Tel: Steyning 814321.

**Sonab Ltd**, PO Box 4, Oldfield Road,  
Hampton, TW12 2HN.  
Tel: 01-979 0134.

**Sony (UK) Ltd**, Pyrene House,  
Sunbury Cross, Sunbury-on-Thames.  
Tel: Sunbury 87644.

**Soundex Ltd**, 18 Blenheim Road,  
London. W4 1ES.  
Tel: 01-995 1661.

**Sound Ideas**, 216 Brampton Road,  
Bexleyheath, Kent. Tel: 01-303 9272.

**The Sound Studio Ltd**, London House,  
Mayfield, Sussex.  
Tel: Mayfield 3419.

**South Western Agencies**,  
Spring Gardens, Bigbury, Kingsbridge,  
Devon. TQ7 4AP.  
Tel: Bigbury-on-Sea 323.

**Spectrum Aerials Ltd**, Thirsk Place,  
Omaton Park Industrial Estate,  
Derby. DE2 8JJ. Tel: Derby 362481.

**Spendor Audio Systems Ltd**, Unit 12,  
Station Road Industrial Estate,  
Hailsham, Sussex.  
Tel: Hailsham 843474.

**Staples and Company Ltd**, Staples  
Corner, Junction Edgware Road and  
North Circular Road, London, NW2.  
Tel: 01-452 1144.

**Steepleton Products Ltd**, Station  
Approach, Bicester, Oxon. OX6 7DP.  
Tel: Bicester 42031.

**Stereosound Productions**, Capital Works,  
12-14 Wakefield Road, Brighouse,  
Yorks. HD6 1PQ.  
Tel: Brighouse 4355.

**Karl Stolle**, 29b Church Street, Ickley,  
Yorks. Tel: Ickley 2193.

**John Street (Manufacturers) Ltd**, Falcon  
Works, Barmston Road, Catford,  
London. SE6.  
Tel: 01-698 1177/8.

**A.R. Sugden & Co (Engineering) Ltd**,  
Atlas Mill Road, Brighouse,  
Yorks. HD6 1ES.  
Tel: Brighouse 2142.

**J.E. Sugden & Co Ltd**, Carr Street,  
Cleckheaton, Yorks. BD19 5LA.  
Tel: Cleckheaton 2501.

**T**

**Tannoy Products Ltd**, Norwood Road,  
West Norwood. London. SE27 9AB.  
Tel: 01-670 1131.

**Tape Marketing Technology Ltd**,  
8 Green Street, London. W1.  
Tel: 01-493 4205.

**Tape Music Distributors Ltd**,  
114 Ashley Road, St Albans,  
Herts. AL1 5JR.  
Tel: St Albans 64337.

**Tape Recorders Spares Ltd**,  
206-210 Ilderton Road,  
London. SE15 1NS.  
Tel: 01-639 7844.

**Tape Distributor (UK) Ltd**, Brighton  
Road, South Croydon. CR2 6EQ.  
Tel: 01-688 7372.

**Technics**, Technics Hi-Fi Division,  
Building 63, Whitby Road, Trading  
Estate, Slough SL1 3DR.  
Tel: Slough 34522.

**Telerenters (London & Provincial) Ltd**,  
155-159 Queens Road, Watford,  
Herts. WD1 2QH.  
Tel: Watford 24543.

**Teleton Electro (UK) Co Ltd**,  
Teleton House, Waterhouse Lane,  
Chelmsford, Essex. CN1 1BD.  
Tel: Chelmsford 62442.

**H.O. Thomas Electronics Ltd**,  
Thames Road, Crayford, Kent.  
Tel: Crayford 26671.

**Thorn Consumer Electronics Ltd**,  
Thorn House, Upper St Martin's Lane,  
London. WC2H 9ED.  
Tel: 01-836 2444.

**Tonesta Ltd**, 179 North End Road,  
London. W14 9NL.  
Tel: 01-381 3908.

**Toshiba (UK) Ltd**, Toshiba House,  
Great South West Road, Feltham,  
Greater London. Tel: 01-751 1281.

**Transcriptors Ltd**, Mycott House,  
Station Road, Boreham Wood, Herts.  
Tel: 01-953 9851.

**Tutchings Electronics Ltd**,  
14 Rook Hill Road, Friars Cliff,  
Christchurch, Dorset. BH23 4DZ.  
Tel: Highcliffe 72019.

**U**

**Uher (UK) Ltd**, 15 Broomhills Estate,  
Braintree, Essex. CM7 7RQ.  
Tel: Braintree 23192.

**Unilet Products Ltd**, 35 High Street,  
New Malden, Surrey. KT3 4BY.  
Tel: 01-942 9567.

**V**

**Valradio Ltd**, Browells Lane,  
Feltham, TW13 7EN.  
Tel: 01-890 4837.

**Van der Molen Ltd**, 101 Hainault Road,  
Romford, Essex. RM5 3HF.  
Tel: Romford 22018/9.

**Vernitron Ltd**, Thornhill,  
Southampton. SO9 5QF.  
Tel: Southampton 444811.

**Vero Electronics Ltd**, Industrial Estate,  
Chandler's Ford, Eastleigh,  
Hants. SO5 3ZR.  
Tel: Chandler's Ford 2952.

**Vesso Vision and Radio Ltd**, Unit 4,  
Blackwater Way, Ash Road, Aldershot,  
Hants. GU12 4DL.  
Tel: Aldershot 321661.

**Videotone Ltd**, 31 Green Lane,  
Chislehurst, Kent DA4 6AG.  
Tel: 01-437 0100.

**Vitavox**, Westmoreland Road,  
London. NW9 9RJ.  
Tel: 01-204 4234.

**Vorta Systems (UK)**,  
297-299 High Street, Cheltenham Spa,  
Glos. GL50 3HS.  
Tel: Cheltenham 31166.

**W**

**Cecil E. Watts Ltd**, Darby House,  
Sunbury-on-Thames.  
Tel: Sunbury-on-Thames 83252.

**Webland Electronics Ltd**,  
Mirabel House,  
117-121 Wandsworth Bridge Road,  
London. SW6. Tel: 01-736 0980.

**Webland International Ltd**, Mirabel  
House, 117-121 Wandsworth Bridge  
Road, London. SW6. Tel: 736 0980.

**Western Audio Research Ltd**,  
Chosen View Road, Cheltenham,  
Glos. GL51 9LT.  
Tel: Cheltenham 34749.

**Wilmex Ltd**, Import Division,  
Crompton House, New Malden,  
Surrey. KT3 4DE.  
Tel: 01-949 2545.

**Wilmslow Audio**, Swan Works,  
Bank Square, Wilmslow.  
Tel: Wilmslow 29599.

**The Wilson Stereo Library Ltd**,  
104 Norwood High Street,  
London. SE27.  
Tel: 01-670 6394.

**Wolsey Electronics**, Cymmer Road,  
Porth, Rhondda, Glam. CF39 9BT.  
Tel: Porth 2711.

**Woollett Audiostatics**,  
Anerley Station Road,  
London. SE20 8PY.  
Tel: 01-699 5296.

**Worden Audio Developments Ltd**,  
54 Chepstow Road, London. W2 5BE.  
Tel: 01-299 4996.

**Wyndson Recording Co Ltd**,  
2 Bellevue Road, London. N11 3ES.  
Tel: 01-368 2226.

**Z**

**Zerostat Instruments Ltd**,  
9 Station Road, Huntingdon, Cambs.  
Tel: St Ives 62225.

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Station	Frequency (MHz)	Maximum E.R.P.	Station	Frequency (MHz)	Maximum E.R.P.
Birmingham	95.6	5.5kW	Medway	97.0	5.5kW
Blackburn	96.4*	1.5kW	Merseyside	95.85	2.5kW
Brighton	95.8	500W	Newcastle	95.4	3.5kW
Bristol	95.1	5kW	Nottingham	94.8*	2.0W
Derby	96.5*	5.5kW	Oxford	95.0	4.5kW
Durham	94.5	2.6kW	Sheffield	88.6	10W
Humberside	95.3	4.5kW	Rotherham†	95.05	9W
Leeds	94.6	140W	Solent	96.1	5kW
Leicester	95.2	140W	Stoke-on-Trent	94.6	2.5kW
London	95.3	16.5kW	Teesside	96.6	5kW
Manchester					

\*Slant polarization; all other transmissions use horizontal polarization  
 †Relay.

# 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.

## BATH

**GREEN BROTHERS**  
19 New Bond Street, Bath.  
Tel: 63146

## BEDFORDSHIRE

**AUDIO IMPRESSIONS LTD**  
32 High Street, South Dunstable.  
Tel: Dunstable 603517.

## BERKSHIRE

**L.J. GALE LTD**  
66-68 King's Road, Reading.  
Tel: Reading 51046/51062.

**HOWLETT & SONS**  
51 St. Leonards Road, Windsor SL4 3BP.  
Tel: Windsor 64796.

**WOODLEY HI-FI**  
65 Wokingham Road, Reading.  
Tel: Reading 666372.

**READING HI-FI CENTRE**  
6 Harris Arcade, Friar Street, Reading.  
Tel: Reading 585463.

**SOUNDS SYSTEMS**  
49 King Street, Maidenhead.  
Tel: Maidenhead 32796.

## BIRMINGHAM

**LIBBY'S**  
244 Soho Road, B21 9LR.  
Tel: 021-554 8557.

**NORMAN H. FIELD HI-FIDELITY CENTRE**

423 Stratford Road, Sparkhill II.  
Tel: 021-772 5160  
35-37 Hurst Street, B5 4BJ.  
Tel: 021-622 2323  
23a Hurst Street, B5 4TD.

**GRIFFIN RADIO LTD**  
94 Bristol Road, B5.  
Tel: 021-622 4339/021-692 1359.

**HOCKEN SOUND**  
1185 Pershore Road, Stinchley 30.  
Tel: 021-458 1022

**LASKY'S**  
116 Corporation Street. Tel: 021-236 1953

**KEN WHITTLE LTD**  
788 Stratford Road, Springfield B11 4BP.  
Tel: 021-777 5964.

## BOURNEMOUTH

**SUTTONS**  
10 Gervis Place.  
Tel: Bournemouth 25512.

## BRISTOL

**AUDIO BRISTOL**  
Park Street Avenue, Bristol 1.  
Tel: Bristol 291931.

**HENRY'S**  
55 Gloucester Road.  
Tel: Bristol 45791.

**HOUSE OF SOUND LTD.**  
5 Marsh Street, Bristol 1.  
Tel: Bristol 291534.

**HUSBANDS**  
The Centre, Bristol 1.  
Tel: Bristol 293978.

**RADFORD HI-FI**  
53-54 Gloucestershire Road, Bristol 7.  
Tel: Bristol 422709.

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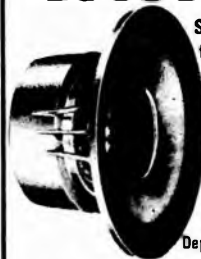
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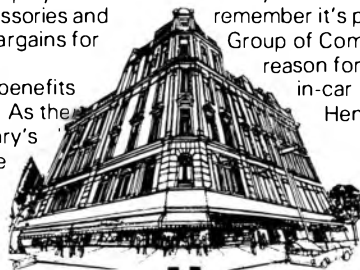
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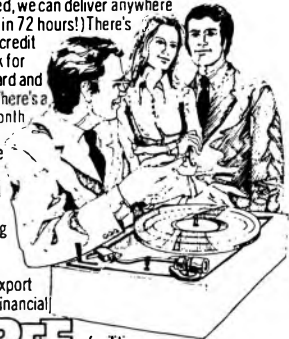
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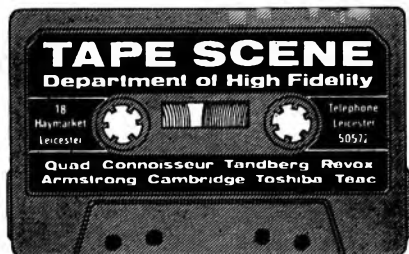
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**BIC.** Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.  
**BIC Venturi.** Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.  
**Bigston.** Brown Brothers Ltd, Great Eastern House, Temple Fields, Harlow, Essex. Tel: Harlow 29511.  
**Binatone.** J. Parkar & Co (London) Ltd, Parkar House, Beresford Avenue, Wembley HA0 1YX. Tel: 01-902 8991.  
**Bush.** Rank Radio International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.  
**Bush-Arena.** Rank International Ltd, PO Box 596, Power Road, Chiswick, London W4 5PW. Tel: 01-994 6491.

## C

**C.A.S. City Audio Services Ltd.** 144 Lavender Hill, London SW11 5RA. Tel: 01-223 2496.  
**Celestion.** Rola-Celestion Ltd, Ditton Works, Foxhall Road, Ipswich, Suffolk IP3 8JP. Tel: Ipswich 73131.  
**David Clark.** Hampshire Instruments Ltd, PO Box 28, Eastleigh, Hants SO5 5XD. Tel: Chandler's Ford 5232.  
**CL.R.** Colne Loudspeaker Research, 51 Lion Road, Twickenham, Greater London. Tel: 01-891 1837.  
**Connoisseur.** A. R. Sugden & Co (Engineers) Ltd, Connoisseur Works, Atlas Mill Road, Brighouse, Yorks HD6 1ES. Tel: Brighouse 2142.  
**Crown Merton.** Hancock, Corfield & Waller Ltd, Station Road, Merton Abbey, London SW 19 2NJ. Tel: 01-542 1012.

## D

**Decca.** Decca Radio & Television Ltd, Neachells Lane, Willenhall, Wolverhampton, Staffs. Tel: Wolverhampton 67367.  
**Decca.** Decca Special Products, Ingate Place, Queenstown Road, London SW8 3NT. Tel: 01-622 6677.

**Denon.** Johnsons of Hendon Ltd, 14 Priestley Way, London NW2 7TN. Tel: 01-450 8070.  
**Deutsche Grammophon.** Polydor Ltd, 17 Stratford Place, London WIN OBL. Tel: 01-499 8686.  
**Dokorder.** Acoustico Enterprises Ltd, Unit 7 Space Way, North Feltham Trading Estate, Feltham TW14 0TZ. Tel: 01-751 0141.  
**Dual.** KF Products Ltd, Ashton Road, Bredbury, Stockport, Cheshire SK6 2SP. Tel: 061-494 9911.

## E

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**Edwardus.** J. R. Edwards Electronics Ltd, 783 Romford Road, Manor Park, London, E12. Tel: 01-553 4349.  
**Ekco.** Pye Ltd, PO Box 49, St Andrews Road, Cambridge CB4 1DS. Tel: Cambridge 58985.  
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**Electro-Voice.** Gulton Europe Ltd, Special Products Division, The Hyde, Brighton BN2 4JU. Tel: Brighton 66271.  
**EMT.** F.W.O. Bauch Ltd, 49 Theobald Street, Boreham Wood, Herts. Tel: 01-953 0091.  
**Emperor.** MMG Associates, 19 St Andrews Road, Malvern, Worcs.  
**ESS.** Regent Acoustics, Carrington House, 130 Regent Street, London W1R 6BR. Tel: 01-437 1997.

## F

**Falcon.** John Street (Manufacturers) Ltd, Falcon Works, Barmston Road, Catford, London, SE6. Tel: 01-698 1177.  
**Fantavox.** Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Clarendon Road, London NW2 1TU. Tel: 01-452 6288.  
**Ferguson.** Thorn Consumer Electronics Ltd, Thorn House, Upper St Martin's Lane, London WC2H 9ED. Tel: 01-836 2444.

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## G

**Gabraphone.** Modern Engineering &  
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## J

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**Jensen.** B. H. Morris & Co (Radio)  
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**JMR.** Monitor Sound Equipment Ltd,  
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SO5 5XD. Tel: Chandler's Ford 68492.  
**Jordan.** E. J. Jordan,  
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Bucks SL7 1QL. Tel: Marlow 3787.  
**Jordan-Watts.** Jordan-Watts Ltd,  
Benlow Works, Silverdale Road,  
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## K

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## L

**Leak.** Rank Radio International Ltd,  
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## M

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**Melodium.** Keith Monks (Audio) Ltd,  
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## O

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**Pickering.** Highgate Acoustics,  
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**Pioneer.** Shriro (UK) Ltd,  
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**Q**

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**QAS.** Quality Audio Supplies,  
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**Quad.** Acoustical Manufacturing Co  
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Huntingdon, Hunts PE18 7DB.  
Tel: Huntingdon 52561.  
**Quasar.** Quasar Division,  
Precision Centre, Heather Park Drive,  
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**R**

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**Radionette.** Norse Audio Systems Ltd,  
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**S**

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**Sennheiser Electronic.** Hayden  
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**Silver.** J. J. Silber Ltd,  
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**SMC.** Monitor Distribution Co Ltd,  
76 Bedford Road, Kempston,  
Beds MK42 8BB. Tel: Bedford 854133.  
**Soundcraftsmen.** Gale Electronics &  
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London W1Y 1PE. Tel: 01-499 9966.  
**STC.** Coles Engineering (Hoddesdon)  
Ltd, Pindar Road, Hoddesdon Herts.  
Tel: Hoddesdon 66685.  
**Stephen Speakers.** Wilmslow Audio,  
Swan Works, Bank Square, Wilmslow.  
Tel: Wilmslow 29599.  
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Unit N22, Cricklewood Trading Estate,  
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Tel: 01-452 6288.  
**Stolle.** Karl Stolle,  
29 Church Street, Ickley, Yorks.  
Tel: Ickley 2193.

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**T**

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**Tandberg.** Farnell-Tandberg Ltd,  
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Leeds LS3 1HR. Tel: Leeds 35111.  
**TDK.** Tape Distributor (UK) Ltd,  
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Surrey CR2 6EQ. Tel: 01-688 7372.  
**Teac.** Acoustico Enterprises Ltd,  
Unit 7, Space Way, North Feltham  
Trading Estate, Feltham TW14 0TZ.  
Tel: 01-751 0141.  
**Teknik.** Klark-Teknik Ltd,  
Summerfield, Kidderminster  
DY11 7RE. Tel: Kidderminster 64027.  
**Telefunken.** AEG-Telefunken (UK)  
Ltd, Bath Road, Slough, Bucks.  
Tel: Slough 33311.  
**Thomas Laney Audio.** Electronic  
Manufacturing Co (UK) Ltd,  
Devonshire House, High Street,  
Deritend, Birmingham B12 0LP.  
Tel: 021-772 3669/7145.  
**Thorens.** Metrosound Audio Products  
Ltd, Cartersfield Road, Waltham  
Abbey, Essex EN9 1JF.  
Tel: Lea Valley 712712.  
**TMT.** Tape Marketing Technology Ltd  
8 Green Street, London, W1.  
Tel: 01-493 4205.  
**Trio.** B. H. Morris & Co (Radio) Ltd,  
Trio House, The Hyde, London  
NW9 6JP. Tel: 01-205 6441.

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**U**

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**Ultra.** Thorn Consumer Electronics  
Ltd, Thorn House, Upper St Martin's  
Lane, London WC2H 9ED.  
Tel: 01-836 2444.  
**Unimixer.** Soundex Ltd,  
18 Blenheim Road, London W4 1ES.  
Tel: 01-995 1661.  
**Unisound.** Condor Electronics Ltd,  
100 Coombe Lane, London  
SW20 0AY. Tel: 01-946 0033.

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**V**

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**Voxson.** DCS (Audio Products) Ltd,  
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Tel: Colwyn Bay 49275.

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**W**

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**WAR.** Western Audio Research Ltd,  
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Glos GL51 9LT.  
Tel: Cheltenham 34749.  
**Weicliffe.** Amos of Exeter Ltd,  
Weicliffe Court, Exwick, Exeter,  
Devon. Tel: Exeter 783132.  
**Wharfedale.** Rank Radio International  
Ltd, PO Box 596, Power Road,  
Chiswick, London W4 5PW.  
Tel: 01-994 6491.  
**Wollensak.** 3M United Kingdom Ltd,  
3M House, Wigmore Street, London  
W1A 1ET. Tel: 01-486 5522.

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**Y**

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