

HIFI YEAR BOOK 1979

HIFI YEAR BOOK 1979

Pickups/Motors/Tuners/Amplifiers/Microphones
Recorders/Speakers/Cabinets/Audio Systems

OUR NEW TRIO.



HIFI YEAR BOOK 1979

Edited by Kenneth Ellmore
Manager IPC Ancillary Publications and Year Books

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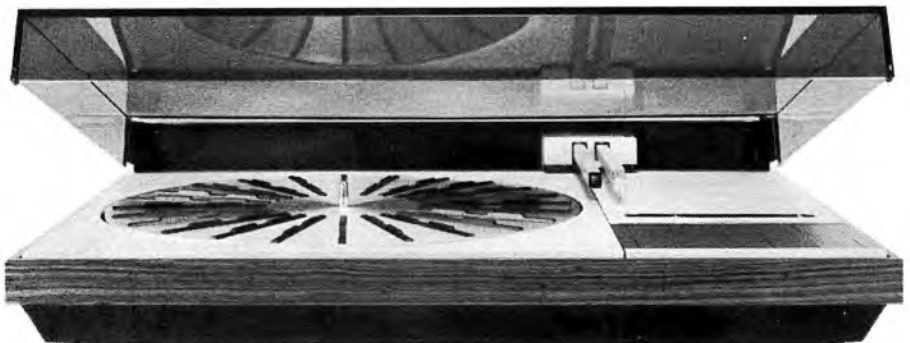
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Foreword

With the increasing buoyancy of the economy, there are signs that the Hi-Fi market is making a strong recovery. This year has seen two major TV and Radio companies, Pye and ITT, launch into Hi-Fi in a big way. One of them predicts that by 1980 at least one in eight families in the UK will own some kind of audio equipment, and while this may seem optimistic it catches the mood of the manufacturers.

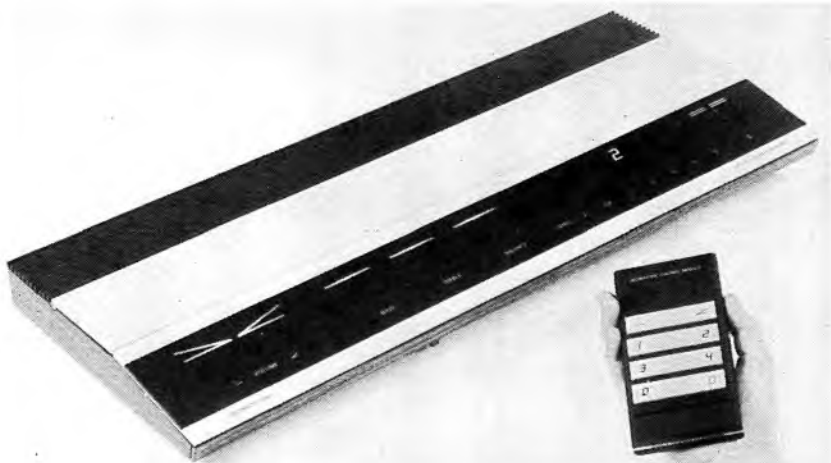
You will notice from this new edition that Music Centres are well and truly established. The true addict may wince but many of these new models are built to impressive specifications and offer a compromise to the aficionado who's enthusiasm is dampened by a wife who objects to 'wires all over the place'. A new product for the future is surely the "Casseiver, a combined cassette deck and receiver. In this book the few now available are detailed under "Unit Audio-Tape Systems" but for the next edition they will be given a separate section.

It is significant that many more suppliers are putting a recommended price on their products, much to the delight of the many readers who have written to me complaining that absence of a price guide makes it difficult for them to choose appropriate equipment within their price range. In this connection, however, I must repeat my usual warning that all prices quoted are those in operation at time of going to press and prospective purchasers should check with their local suppliers to ascertain current prices.

If you have any queries, please contact the makers or suppliers direct. We do not have facilities in this office to answer reader enquiries.

Every effort has been made to make this book as accurate and comprehensive as possible and I would like to express my gratitude to Geoff Shorter, Technical Editor of *Wireless World* for his help in this connection. However, the publishers cannot take responsibility for any errors or omissions.

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Matching problems in hi-fi

by Gordon J. King

WHenever you connect an input or an output to a hi-fi system there could be a matching problem. Happily, many hi-fi separates are designed for virtually total inter-connecting compatibility. This means that you can connect any tuner or magnetic pickup to any amplifier or couple any amplifier to any loudspeaker pair or any tape deck without coming up against too many so-called matching problems. Nevertheless, mild matching problems can and do occur and unless one has a knowledge of these and is able to correct them the hi-fi system as a whole could be operating below standard. Matching tends to become more important the more critical one becomes in terms of the nth degree performance of the system.

A Two-Part Problem

Matching is really a two-part problem. The first part has to do with the signal *level* and the second part with the interfacing resistances or *impedances*. Let us look at the first part first. The pickup, auxiliary, tuner and tape inputs of an amplifier are each rated in terms of *input sensitivity*. This merely refers to the level of signal voltage from the appropriate source required fully to drive the amplifier to its maximum power output when the volume control is at maximum. The parameter is based on 1kHz pure tone (sinewave) signal and is measured with the tone controls at 'flat' and all filters switched out. A typical value for tuner, auxiliary and possibly tape play is 150mV; for magnetic pickup the input needs to be much more sensitive owing to the relatively small voltage delivered by a cartridge, and a typical value here is 2mV.

It is obviously impossible for the input always to receive this level of signal because the level is continuously changing on music. An FM tuner commonly delivers 1V of signal at full modulation level. Clearly, this level of signal would well overload the amplifier should it be operated with the volume control at maximum. If it is assumed that the dynamic range of the music programme is 60dB, which is a 1,000:1 *voltage* ratio, the signal level range

from the tuner will thus be from 1V down to 1mV. If it was required to achieve the full power output from the amplifier at full modulation level, therefore, the volume control of the amplifier would need to be retarded from maximum down to a setting where 1V (1,000mV) tuner input would just be driving the amplifier fully. In other words, the signal would have to be attenuated by the ratio of about 6.6:1 (1,000/150), which corresponds to about -16dB. This attenuation, of course, is provided by the volume control. For normal listening it is unlikely that the volume control would be set so high, and for ordinary background music it would be turned down by about 20 to 30dB so that it is positioned at around 11 or 12 o'clock.

Thus we have seen that in spite of the tuner delivering 1V maximum signal the amplifier is not being overloaded even though its input sensitivity is as high as 150mV. It is the job of the volume control to 'normalise' the level of the source signal so that over the full music dynamic range the *power* amplifier operates within a 'sandwich' defined at the top by overload and at the bottom by the noise floor.

This applies to all the inputs. An average magnetic cartridge commonly produces an output of 1mV at 1kHz from pure tone disc modulation of 1cm/sec recording level. On modulation peaks, however, the output could rise to 20 or 30mV, while on very low-level modulation it could be as low as 30 μ V (0.03mV). A pickup input sensitivity of between 1.5 and 3mV thus satisfies this input voltage range with the volume control suitably adjusted, just as the lower input sensitivity of auxiliary, tuner, etc. satisfies the input voltage range of the higher output sources.

A very serious level mismatch would result by connecting the high output of a tuner to the high sensitivity pickup input. To prevent the power amplifier from overloading it would be necessary to turn the volume control almost fully anti-clockwise (maximum attenuation). There would also be a serious frequency response error because the amplification at the pickup input is not constant over the frequency

spectrum. The amplification is much greater at low frequencies than at high frequencies, which is required to equalise for the recording. The reproduction would thus have a very marked bass boost and treble cut. On top of these aberrations there would also be a great danger of the pickup preamplifier itself overloading, and because this is connected in front of the volume control the overload distortion would remain regardless of how far down the volume control is turned. This is one of the worst level mismatching conditions that can be visualised.

Conversely, of course, a very serious level mismatch would result by connecting a magnetic pickup to the auxiliary or tuner input. The volume control would have to be turned fully clock-wise to get any response and the sound that was obtained would be bass light and treble heavy, owing to the RIAA equalisation of the recording.

However, it is possible to connect ceramic cartridges (e.g., piezo-electric type) direct to the auxiliary or tuner input because this type of cartridge generally gives a much higher output than a magnetic species and tends automatically to apply equalisation to the recording, depending on the value of load resistor used. If a ceramic cartridge is connected to the magnetic pickup input of an amplifier overloading can be avoided by using an attenuating circuit which also automatically makes the frequency response suitable for the RIAA equalisation built into the magnetic pickup preamplifier. The circuit required for this is generally given on the leaflet accompanying the ceramic cartridge. For real hi-fi, though, it is generally considered that a properly matched magnetic pickup is required (see later).

Loading Effects

In addition to sensitivity, the resistance or impedance of each input is generally given. The low sensitivity (high-level) inputs for tuner and auxiliary have a typical value of 50K-ohms (50,000 ohms). This merely refers to the resistance or impedance (impedance can be looked upon simply as the 'resistance' to which programme signals are subjected) across the input as 'seen' by the connected source. Contrary to belief in some areas, it is not necessary for the source (tuner, etc.) to have the same output resistance or impedance as the amplifier input to which it is connected. Indeed, such resistance or impedance matching can be undesirable.

It is always best for high-level sources to have an output impedance or resistance (we will from now on refer to it simply as 'impedance') of lower value than that of the input.

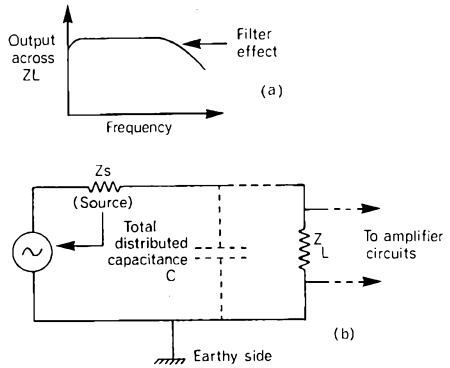


Fig. 1. Showing how cable capacitance can affect the upper-frequency response of a radio tuner or auxiliary source.

For example, a tuner of, say, 100 ohms output impedance would very satisfactorily couple to the tuner input of an amplifier of 50K-ohms impedance. Programme sources are connected to amplifier inputs through screened cables which possess distributed capacitance of so many pF per unit length. This capacitance lies in parallel with the signal path and can work as a high-cut filter. The upper-frequency at which the filtering starts to come into play depends on the value of the source impedance Z_s and on the total value of the distributed capacitance C , including the capacitance element of the source impedance.

The little diagrams in Fig. 1 put this into perspective. At (b) Z_s in conjunction with C forms a low-pass or high-cut filter whose effect is shown at (a). If C is of a fixed value, determined by the fixed length of connecting cable, etc., then the higher Z_s the lower the frequency at which the filtering starts to occur. For good hi-fi reproduction the filtering should not take place before 20kHz, and this is generally achieved. However, if Z_s happens to be of a high value and the lead from the tuner to amplifier is extended, thereby increasing C , the filtering effect will occur at a lower frequency and the treble content of the music will be attenuated and the life-like 'sparkle' of the reproduction will be impaired. If Z_s is low, then it would be possible to use a longer interconnecting cable without fear of the treble being rolled-off too early.

More technical aspects are involved, including the effect of the input impedance of the amplifier Z_L , but the above serves to illustrate the basic problem when Z_L is typically 50K-ohms. Thus if you are using a tuner having a

fairly high output impedance which is coupled to an amplifier through fairly high capacitance screened lead (an extended cable run, perhaps), the chance is that you are losing a little upper-treble which would manifest as impaired transient response (e.g., weakness of music 'attack') and 'dulled' highs.

Tape Decks

Tape decks can suffer similar problems particularly when connected to an amplifier through DIN plugs and sockets. For recording from a DIN socket the signal is usually taken from the amplifier through a high value series resistance R_s which forms one leg of a potential-divider. The other leg is formed by the input resistance of the recording amplifier, as shown in Fig. 2. The ratio $R_s : R_L$ determines the nominal level of signal applied to the recording circuits of the deck. Thus the actual level will depend on the value of R_L used in the deck.

The DIN requirement is for between 0.1 and 2mV to develop across R_L for every 1K-ohm of resistance. If R_L is, say, 50K-ohms then the recording signal could range between 5 and 100mV. Most manufacturers arrange for R_s in the amplifier to produce a nominal potential-difference (pd) of about 1mV across each 1K-ohm of R_L ; when R_L is 50K-ohms, therefore, the recording signal is around 50mV, which is a fairly typical DIN value. However, because the signal is derived from the high value R_s treble attenuation can again occur owing to the low-pass filter effect of R_s in conjunction with the lumped capacitance C of the DIN connecting cable (Fig. 2). If you have a choice, it is desirable to use the 'phono' type sockets because the source impedance is lower than DIN and hence the probability of early treble roll-off is diminished.

If you are obliged to use DIN and find that you are unable to obtain full recording level with the recording level controls at maximum you should have your dealer reduce the value of R_s in the amplifier. The alternative of increasing the value of R_L in the deck is usually more difficult. Both stereo channels would need such attention of course!

Tape replay (e.g., monitor) causes fewer problems; input sensitivity is about the same as (or, perhaps, a trifle lower than) that of tuner and auxiliary and quite a few tape decks are equipped with an output level control (main or preset) which allows the signal level to be normalised. The ideal situation is for the amplifier output to be similar from all the sources so that one can switch over the sources without having to reset the volume control each time a source is changed. Some amplifiers are

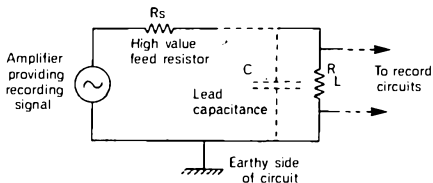


Fig. 2. Early treble roll-off can be encouraged when using the DIN socket for tape recording if the inter-connecting cable has appreciable capacitance. See text.

equipped with input sensitivity presets; but where there are output level controls on the tape deck and tuner these two outputs can be normalised against that of the record deck.

Pickup Loading

Most magnetic cartridges need to be loaded into 47 to 59K-ohms for the best upper-frequency response, and this is generally the impedance as 'seen' by the cartridge when connected to the magnetic pickup input of a hi-fi amplifier. Some cartridges are more load sensitive than others, and to obtain the best results from these either the shunt resistance or shunt capacitance (or both) may have to be critically adjusted. Frankly, it is very difficult for the ordinary user to know whether his amplifier is providing the best 'match' to the cartridge.

The better quality reviews of cartridges found in the hi-fi magazines often investigate this area of operation and hence discover the most desirable loading values; but even when these have been determined it is still difficult for the average user to be certain that his cartridge is optimised unless he has facilities for measuring the capacitance of the pickup input of the amplifier and the capacitance of the connecting leads. When these are known, also the most desirable values, steps can then be taken to adjust the total C and R by soldering in external components or, perhaps, by changing the values of components which are already in the circuit. This can be a very protracted and difficult task.

Some of the more specialised and hence expensive control amplifiers are equipped with a pair of extra controls, one for adjusting the pickup load resistance and the other for adjusting the shunt capacitance. These work over intervals of five or six values. The *Pioneer C-21* control amplifier, for example, has an R control switching over 0.1, 10, 25, 50, 75 and 100K-ohms and a C control switching over 100, 150, 200, 300, 400 and 500 pF. These make it

much easier to achieve the best loading for the pickup in use merely by auditioning the changes as the controls are adjusted.

The R at 0.1K-ohm (100 ohms) is suitable for moving-coil cartridges which call for a much lower resistance loading than the general run of magnetics. Another thing about moving-coil species is that owing to their low resistance they generally deliver a much lower output voltage than ordinary magnetics. This means that they need to be connected to the pickup input of the amplifier either through a step-up transformer or 'booster' preamplifier. Without one or other of these the small signal requires the volume control of the amplifier to be fully advanced, and even then the power amplifier may not be driven fully.

One or two moving-coil designs (*Onlife Ultimo*, for example) are appearing with higher outputs so they can be connected direct to the regular magnetic pickup input, and some amplifiers are now being made with pickup inputs of higher than normal sensitivity to cater for moving-coil cartridges of low output direct — for example, the latest version of the British (Bristol-based) *Nytech* receiver. It is generally agreed that moving-coil cartridges audition most desirably when loaded with low value resistance. This has to be paid for by a loss of about half the available signal output, but is of little moment when a booster is used.

With ordinary magnetics the treble response tends to rise as the load resistance is increased. This can be tamed and/or modified by decreasing the resistance and/or increasing the shunt capacitance. The best loading condition is usually specified in the data sheet.

Loudspeaker Loading

Contemporary hi-fi amplifiers and receivers are mostly suitable for loudspeaker systems ranging in nominal impedance from 4 ohms up to 16 ohms. Few like driving into systems of less than 4 ohms (e.g., two 4-ohm systems connected in parallel either directly or *via* two-circuit loudspeaker switching). There are one or two models which are also unhappy driving into systems of less than 8 ohms nominal impedance. The impedance range suitable for the amplifier or receiver is generally given in the operating manual.

The output of a power amplifier can be likened to a 'constant voltage' source which is derived from a very low effective output impedance of a fraction of an ohm. Viewed in this way, therefore, it is apparent that at a given output voltage the current through the load and hence the power consumed by it rise as its value is decreased. For example, an output of 20V across 8 ohms corresponds to a power of

50W, while the same voltage across 4 ohms corresponds to a power of 100W.

One would expect, therefore, that an amplifier of a rated 50W into 8 ohms would produce 100W into 4 ohms. This rarely follows exactly because, although of a low value, there is always a certain amount of output source resistance which consumes power and thus subtracts this from the total load power. Moreover, to limit very high current values through the output transistors some sort of 'protection' is generally built into the power amplifier stages. This either automatically reduces the drive when the current rises above the danger threshold or triggers a relay thereby disconnecting the load.

Because it seems that more power is delivered to a low value load, it is often thought more desirable to use loudspeakers of the lowest nominal impedance consistent with the loading requirements of the amplifier or receiver on the basis that more sound output will be produced from an amplifier of given power. This does not always follow because the efficiency or sensitivity of a loudspeaker system is to some degree determined by the number of turns of wire on the speech coils — also by the magnetic fields, of course. More turns of wire are used on higher impedance loudspeaker units than on lower impedance counterparts. Although this is not the whole story by any means it is an interesting point.

It should also be remembered that the impedance quoted for a loudspeaker system is a nominal value and that the effective value can change significantly over the frequency spectrum. Owing to the reactive components of the impedance, the current is not in phase with the voltage at all frequencies. The total 'in-phase' situation only occurs with pure resistance. Some amplifiers tend towards premature protection triggering when a fairly large phase-angle (between the current and voltage) coincides with a frequency where the modulus of



Fig. 3. JVC JT-V71 FM/AM tuner with meters for signal strength and FM tuning, incorporating 75-ohm aerial input.

impedance is low and when the amplifier is driven hard by a music component. This can produce a disconcerting type of peak distortion.

The power consumed by a loudspeaker is rarely the same value as the power consumed by a pure resistive load of the same ohmic value. This, again, results from the phase displacement between the current and voltage, and is one reason why it is rather pointless for manufacturers to rate amplifiers in terms of so many watts delivered to a purely resistive load of so many ohms! It would be far better for the output of amplifiers to be rated in terms of *volts* available across loads of defined parameters — such as real loudspeaker loads — for a given level of distortion. This would also neatly tie in with the way that the sensitivity of loudspeaker systems is often expressed; that is, as so many microbars or relative dB sound pressure level at 1m from the loudspeaker under hemispherical anechoic conditions when the loudspeaker is driven with weighted noise signal of so many *volts*. It would then be easier than it is at present to choose the electrical characteristics of a loudspeaker system to suit a given amplifier, or *vice versa*.

The nature of the leads connecting the loudspeaker systems to the amplifier have recently come under attention. In general, low resistance cables should be used and connections to the amplifier and loudspeakers should be very tight so as to produce the very least contact resistance. It is certainly true that even small amounts of contact resistance can significantly impair low-level reproduction by increasing the distortion. Contact resistance tends to produce a 'diode' effect, thereby rectifying the very small, low-level currents and introducing non-linearity. Worn or tarnished DIN loudspeaker plugs and sockets are sources of such trouble. This is why true hi-fi devotees prefer large terminals for tightly clamping the cable conductors.

A new type of cable has recently been introduced for connecting loudspeaker systems and which is claimed, in certain cases, to enhance the listening experience. This is a costly cable which, seemingly, has a characteristic impedance of around 8 ohms. At the time of writing this cable is very new and I have not yet had the opportunity of testing it. On the face of it, it appears to be a rather far-fetched claim; but there are still things which we have to learn about the subjective aspect of hi-fi reproduction. If contact resistance can introduce non-linearity due to the 'diode' effect, then it is possible that a whole series of very diminutive 'diodes' are developed between the molecules of certain conducting metals. On this assump-

tion, therefore, it is feasible that different conductors and cable systems could influence the auditioning differently! The threshold level of such 'diodes' would be extremely low so one would expect it to be the very low-level 'ambience' to be the most influenced. Perhaps by next year we shall have more to say about this subject. Special cables are also being advocated for connecting the source signals.

FM Aerial Matching

To conclude, a few words about FM aerial matching may not be amiss. For maximum transfer of signal from the aerial to the tuner or receiver the impedance of the aerial must match the impedance of the feeder and the impedance of the feeder must match the aerial input impedance of the tuner or receiver. This is one area of hi-fi where true matching is really required. Happily most tuner and receiver manufacturers are now fitting inputs for both 300-ohm and 75-ohm feeders, allowing freedom of choice. Sadly a few manufacturers are fitting only 300-ohm sockets. This sort of socket requires the use of a flat, ribbon-type balanced twin feeder which is used mostly on the Continent of Europe. The UK 'standard' is 75-ohm coaxial feeder of the type used for connecting aeriels to TV receivers.

Although the FM section would work by connecting 75-ohm coaxial cable to a 300-ohm balanced input, the full signal available at the aerial would not be delivered to the input owing to the resulting mismatch. This can be avoided by interposing a low-loss balance transformer between the 75-ohm feeder and the 300-ohm input. Your dealer would be able to advise you on this.

A less elegant solution which usually — though not always — works (depending on whether the aerial input coil has a centretap to chassis) is to connect the outer braid conductor of the coaxial cable to an earth point or terminal on the chassis and the inner conductor to *one only* of the 300-ohm sockets or terminals, leaving the other vacant. You must not attempt to obtain a chassis connection by removing the cabinet or enclosure. If you are in any doubt about the electrical safety of this operation be sure to consult a dealer.

Thinking about a new turntable?

by Mike Lewis

SOONER or later you are going to up-date your audio system. Even if you have just bought one, the time is going to come when you hear something better, and you begin to feel dissatisfied with your own set-up.

Alternatively, if you are contemplating buying your first audio system, and you have determined on 'separates', then you will be seriously considering which record deck and pick-up cartridge goes best with the system you fancy. Many of us start in audio with a reasonable-quality record-player or a 'mid-fi' music centre. (True hi-fi music centres are of necessity expensive and hence comparatively rare.)

Up-grading the record deck is fraught with problems, both electrical and physical, and unless you happen to have some technical knowledge I do not recommend it. The old saying 'you get what you pay for' is very true of record decks. On the other hand, it is pointless to spend more on the deck than on the other parts of the system — for the sound you hear is produced by them, and if they cannot do justice to the signal from the record deck you are wasting both time and money.

It is, of course, perfectly possible to buy a complete deck module in which the problems of 'compatibility' of the turntable, cartridge and tonearm have been solved for you, but you must still consider whether the complete module is suitable for the rest of your system.

We have just mentioned that mystic word 'compatibility', which seems to cause a great deal of head-scratching and brow-furrowing by both buyer and sales assistant alike in hi-fi shops.

Let us consider first the basics of record decks, starting with the turntable. Turntable drive systems fall into three main groups. The simplest of these is that in which motion is transmitted from the motor shaft via an idler to the turntable rim or top outer edge, with the three-speeds determined by varying diameters on the motor spindle. Most autochangers used in portable record players use this type, exemplified by the BSR P and C series.

Next come belt-driven types, in which a relatively heavy balanced turntable is driven by a rubber belt wrapped around a wide-

diameter drum integral with the turntable underside and also passing around the motor pulley. This type normally operates on 33 and 45 rpm only.

The main advantage of belt drive is that eliminating the idler reduces 'wow' and 'flutter', and at the same time acoustically isolates the motor from the turntable to greatly reduce 'rumble'. Simple belt-drive machines use a mains-operated motor, but as such cannot provide precise accuracy of rotation speed nor compensate for speed variations caused by mains voltage or frequency changes.

More-sophisticated belt-driven turntables use low-voltage high-torque d.c. operated motors, the supply to which can be electronically stabilised and regulated to provide a constant speed and allow small speed variations, using operator controls to the electronics, to change slightly the pitch of the output sound.

Finally the 'direct-drive' type. Here the motor is a flat, disc-shaped assembly in the centre of, but physically separate from and below the actual turntable. The motor contains a number of coils around its periphery which when d.c. energised magnetically influence a corresponding number of pole pieces set into the surrounding turntable to cause this to rotate round the motor.

Apart from obvious advantages of the minimum of moving parts, no direct mechanical connection between the turntable and motor, and the ability to make the turntable



ADC VLM Mk 11

virtually 'float' on its bearings (in fact one well-known maker actually uses repelling magnets on the motor and turntable to do just this), precise regulation of the speed can be ensured by constant monitoring of the d.c. supply to the motor.

The most advanced turntables of this type use a quartz crystal control system (similar in principle to that used in high-class watches) to give quite incredible degrees of speed accuracy, in the order of 0.09 per cent at 33 rpm. Turntables of this calibre are expensive — around three to six hundred pounds. This is because they require fine tolerances, careful assembly and calibration during manufacture, and sales are comparatively low when compared with the cheaper belt and idler drive types.

Consider next the tonearm. Ideally a tonearm should allow the pickup to trace as nearly as possible the straight line from the record outer edge to its centre, as did the cutting head when the original master disc was made. Clearly any tonearm which turns about a fixed pivot will trace an arc across the record. The ends of this arc should in theory be as far behind the ideal straight line as the centre of the arc is in front of it.

Tonearms come in two main types — either straight with an offset pickup mounting head, or S-shaped with the pickup head mounted squarely on the outer end. Straight arms can be tubular or square in section, or, in the case of the latest carbon-fibre arms, solid rod. S-shaped arms are tubular.

To make sure that the minimum weight is applied to the record via the stylus, the arms are counterweighted at the pivot end, either, in the case of low-priced record decks, by springs, or, more commonly today, by adjustable weights slid over that part of the arm which projects behind the pivot.

The actual pivot and bearing systems vary with the quality and sophistication of the tonearm. Some arms are supported in the horizontal plane only at either side in a rotating bearing assembly, while some have either two or four point 'gymbal' mounts (similar to those used in a gyroscope), and others have separate bearing systems for vertical and horizontal movement. It is important that the cartridge and tonearm 'agree' with each other — this is just one of the problems of compatibility (that word again!), otherwise distortion, poor tracking and excessive record wear can result.

Three makers currently produce record decks in which the pickup tracks in the 'ideal' straight line across the record. These are 'tangential' arms, and are obviously only available in module form with the cor-

responding deck turntable and mechanism. The firms concerned are B & O, Rabco (Harrison Kardon) and Revox. The Garrard Zero 100 series and its successor, the G155, none of which are now available, were mechanical compromises between the pivoted and tangential arms, in which the cartridge headshell offset angle was varied as the head moved across the record.

It should be obvious that both the mechanics and electronics of tangential arms are complex, and hence the decks are not cheap, and it is debatable whether the average ear can detect any noticeable improvement in the resulting sound, even though it is theoretically superior.

And now we must consider the cartridge itself. Much has been said in Hi-Fi magazines about cartridges, and much of this literature and that produced by makers can give rise to a lot of confusion in the mind of the layman.

Cartridges fall into two main types — ceramic and magnetic. The ceramic is the modern equivalent of the Rochelle crystal pickup, but much more robust and efficient. Its output can vary from 90 up to as high as 500 millivolts, which means that a much lower amount of pre-amplification is needed to feed the power amplifier.

Thus the cost of a budget amplifier can be substantially reduced, which is why most record players and lower-priced unit audio and music centres use ceramic cartridges in their record decks.

Furthermore, if the record deck includes a 78 rpm speed, then a ceramic cartridge is fitted, because it has to be of the 'turnover' type to accommodate both the 78 standard and the long-play microgroove styli. The only alternative to this is to have two cartridges plugging into the tonearm, which, besides increasing the cost, can also be a source of trouble due to bad contacts and possible physical damage during the head-swapping process.

The internal construction of a magnetic cartridge, and its necessary weight limitations and relatively delicate components do not allow for turnover, neither could it cope with the greater physical load of tracking a 78 groove.

Magnetic cartridges come in three forms — moving magnet, moving coil and 'variable



B.O. Beogram 4000



Condor Record Care Kit



Ultimo 20B

reluctance', the last type being the least frequently encountered. The majority are of the moving magnet type.

In these, reduced to the simplest terms, the movement of the stylus is transmitted to the pole pieces of a magnet suspended between coils. The voltage induced in the coils provides the output.

Moving coil cartridges operate the other way round — the coil is wound around the stylus support arm and moves between magnets. With one or two notable exceptions, such as the Ultimo, a moving coil cartridge output is somewhat lower than that of moving magnet types, and in consequence requires a step-up transformer between the cartridge and the input amplifier.

The variable reluctance type is a development of the moving magnet, in which the magnet, instead of being part of the vibratory system, is located within the main body of the cartridge, either integral with or a small distance from the pole pieces.

In all three magnetic systems the output is very much lower (in the order of 1 to 5 millivolts) than for ceramic types, and that for some moving coil cartridges can be as low as 0.3mV.

Hence a far greater amount of pre-amplification is necessary, so that to make use of a magnetic cartridge a more powerful and hence more costly pre-amplifier is needed.

However, in terms of fidelity, record wear and frequency response, the advantages of the magnetic type more than outweigh the increased cost of both the cartridge and the amplifier, particularly bearing in mind the

improved Hi-Fi quality and the increase in cost of LP records.

But by far the most important, the most precisely engineered — and the most fragile — part of any pickup is the stylus. A great deal has been written and said about styli — and the layman must be very perplexed at times as to how to make his choice. However, every cartridge maker also specifies a particular stylus, whether it is one of his own make or of another make suitable. What is important is the materials used, and the actual shape of the very small area which actually rides on the record groove.

All hi-fi styli are tiny diamonds, attached to an arm lying below the cartridge body. In most cartridges the stylus and mount form a complete assembly which is replaced when the stylus tip becomes worn. In some specialised styli both diamond and mount are inserted into a tube fixed to the cartridge, and in one or two cases the stylus replacement is a factory job, in which replacement is effected by supplying a new complete cartridge at a stylus-replacement price.

In shape a stylus tip can be round (spherical) or elliptical in section, and its shape can be round, hyperbolic or a special shape peculiar to the maker which is derived from the hyperbola with varying radii. It can be coated and polished, or in the natural diamond state ('nude').

The actual tip area can be as small as 0.003in. — so that the force applied at the tip to the record by even the lightest of cartridges is in effect enormous. This is why careful and accurate setting of the tonearm to be within the stylus force limits recommended by the maker is essential to ensure optimum performance with minimum wear both to the stylus and the record.

If you buy a record deck module with the cartridge supplied, then apart from setting it up, the problems of cartridge selection have been solved for you by the manufacturer.

But if on the other hand you want to choose a cartridge, then it must be one which is compatible both with the tonearm, electrically and mechanically, and which produces the best result when used with your particular amplifier. It is best to consult your hi-fi dealer and the hi-fi press for advice.

And last — but certainly not least — when you have achieved your aim and obtained the record deck and cartridge which give you the results you want, then don't forget that the deck needs maintaining. There are several well-known makers of a wide range of record-care accessories.

Tomorrow's audio world

by Donald Aldous

DESPITE the claims that domestic sound reproduction systems are available today capable of matching, or coming very close to, the original 'live' sounds, 'perfect' sound reproduction — however one defines that term — that transfers the musical sounds as heard in a concert hall or other auditorium into the home surroundings in such a form that they are indistinguishable from the initial sounds is not yet with us.

Fortunately, perhaps, from the point of view of the world's hi-fi industry, and for those dedicated seekers after the 'real hi-fi', there is still plenty of scope to develop improved audio equipment and experiment in listening rooms to find that elusive total fidelity.

Of course, the quality standard attainable today is very high and the consumer, to be able to recognize the genuine advances in audio technology often offering only subtle improvements, will have to be knowledgeable to select the best products with their advanced specifications and performance claims. Developing a good aural memory from 'live' concerts so that one has a 'golden ear' for reproduced sound in the home, bearing in mind the contribution of the listening room size and acoustics, is another faculty one needs to cultivate.

Let's start our look into the audio future, immediate or distant, with some details of a novel disc sound recording system, using digital PCM encoded signals, with the recording and scanning by means of laser beams.

The development is the result of research by a consortium of companies, TEAC, Mitsubishi and Tokyo Denka, with Sony and Pioneer reported as manufacturing software. Demonstrated at the autumn Tokyo Audio '77 Fair, a PCM Laser Sound Player used a small power He-Ne laser, with a $2\mu\text{m}$ spot from the laser beam focused on to the recorded 'pits' or holes on the disc. A semi-conductor laser is in process of development to provide light weight and ease of handling.

The glass-based disc, on which a metal coating has been deposited, revolves at 1,800 rpm anticlockwise (using quartz-locked direct drive). The frequency-modulated PCM signal

is received by the beam detector, then passed through an FM discriminator and restored as a PCM signal. The signal is then separated into two stereo channels and the coding errors caused by dropouts or other factors are observed and corrected. After passing through another circuit to correct any wow and flutter components, the signal is finally routed to a digital-to-analogue converter, which decodes the signal.

The Sony disc, based on their Betamax video player, has an impressive specification for frequency response (10Hz to 20kHz, $+0.1-0.5\text{dB}$), dynamic range better than 98dB, with noise and harmonic distortion less than 0.1 per cent.

The TEAC disc player was demonstrated in Japan, and Denon have been using PCM — pulse code modulation — for making records since 1972, but only for tapes. The theoretical inherent advantages of the PCM technique are so great that if the prototype models can be produced economically in quantity, with any teething troubles ironed out, the days of the conventional analogue disc, used by us all for so long, may well be numbered. Changing a workable system that has been around for 100 years is a formidable task, and the benefits must be readily demonstrable and not too expensive.

A vitally important factor is standardisation of the recording medium, and the three companies involved so far have reached agreement on the present system of disc storage. Engineers must agree on the digital code to be employed for any form of digital recording and transmission of audio signals, or the industry will be confronted with the same situation met with by the various video recording equipments having no compatibility, or the lack of an acceptable standard for quadrophony.

Independent design engineers have questioned whether a laser-scanned rotating disc at a turntable speed of 1,800 rpm, which is high, is really the best method but merely the most familiar medium? Perhaps developments in holography and bubble memory systems, capable of being scanned once and controlled by a

clocking mechanism, might be a better way to use digital coding. Many factors are involved in these decisions, not least the likely cost to the consumer of replay devices and the software.

Another step along the digital road is the digital time-delay system, exemplified in the Audio Pulse Model One unit. The aim of these systems is to simulate the ambience of the originating concert hall or other auditorium in one's own listening environment. The Audio Pulse device works on a digital delay line principle, in which each of the stereo channels is first digitised into a string of binary digits — ones and zeros that represent the instantaneous signal level. The encoding system used is known as 'delta modulation with memory', which is a wide dynamic range analogue-to-digital converter (A/D). Twelve LEDs monitor the peak input level, eight of which are green and show the safe working area, with the ninth, amber, indicating peak capability of the modulator, and the top three, red, show overload. This peak level device is frequency-weighted to reveal the slew-rate limitations of the converter.

In practice, even on old mono records, the carefully controlled reverberation fed to the front channels adds depth, and, with good stereo acoustic realism is given to the sound images, but a factor that must be borne in mind is that, when using a long delay setting, record rumble and disc clicks and plops are also reverberated by the system.

Signal processing devices fall into a number of categories, digital time delay and artificial reverberation have been mentioned here, and the other areas include equalisers and filters, limiters and compressors, plus such special effects as 'phasing', voltage-controlled filters, envelope shaping and ring modulators.

Noise gates and noise reduction systems come into the signal processors group, with a noise gate as an expander. In other words, it is the inverse of a compressor since its output always has a greater dynamic range than its input. Basically, a noise reduction system provides compression of signals during recording followed by complementary expansion during the replay mode. This is a 'two-pass' system, which differs from a simple noise gate in that it involves encoding as well as decoding of the programme material.

One name has so far become synonymous with noise reduction systems — Ray Dolby, whose 'A type' noise reduction is firmly established in professional recording circles, and the 'B type' Dolby system widely used today by the domestic audiophile. Both methods exploit the 'masking' phenomenon in operation, in



TEAC PCM Disc laser sound player

which when two sounds are present of widely different levels, the strong sounds 'mask' the weaker one.

The noise reduction system that is receiving considerable attention these days is known as dbx. Unlike the Dolby system, the dbx II, is a single-band system with one compressor-expander pair operating over the entire audio spectrum, which means that the method is incompatible with Dolby treated recordings. Although dbx II offers greater dynamic range than Dolby B, as well as not requiring to maintain a precise reference level, the circuitry has its own limitations. While Dolby B coded tapes (and FM broadcasts) can be listened to without decoding, offering at least usable quality, a dbx encoded signal requires proper decoding as it is highly compressed. Nevertheless, under the right replay conditions, it is an impressive system, and a few dbx encoded discs are available. Exon Audio, of Exeter, have experimented with this dbx system for certain of their LP releases.

Dolby 'B' and dbx II processors are examples of 'two-pass' systems, as are JVC's ANRS and Super-ANRS methods which although not identical can make tapes recorded on one system replayable on the other. Another method, favoured by some manufacturers in the USA, is Burwen 'dynamic noise filter'. This, in effect, is a low-pass filter with a controllable cutoff frequency. Yet another noise reduction system is known as the Phase Linear 1000. This circuit claims to

incorporate autocorrelation circuitry to assist in determining whether the signal being operated on is programme or noise. A series of bandpass filters covers the upper frequency range to the minimum bandwidth required to pass the programme sounds plus harmonics. A reduction of audible noise of about 10dB is claimed for this device.

Hi-fi tape recordists seeking to widen the dynamic range of their equipment can do so by pushing up the ceiling, lowering the noise floor, or a combination of both, and the latest tapes are significantly improved in dynamic range, particularly in obtaining a lower noise floor. Already in the pipeline are new tape formulations and magnetic heads, both of which incorporate radically new metal alloys and manufacturing techniques, providing a dynamic range in excess of anything in use today. Employed in top grade cassette decks, with the latest noise reduction circuits, the overall results could be better than the current leading open-reel tape recorders.

Most noise reduction systems are, of course, directed at lowering the hiss level, but gramophone record collectors are more concerned with discontinuities in the reproduction, namely, 'snap, crackle and pop' noises during the playing of a disc. Several devices have been recently introduced to tackle this impulse noise problem, starting with the SAE Model 5000 system. This distinguishes between clicks, plops and the programme material by the rapid rise and fall in signal level that depicts a click or other intrusive sudden noise. When one occurs, it is blocked from reaching the output, while a small segment of the music, or other programme material, which has been stored in an internal memory, is slotted in its place to maintain the continuity.

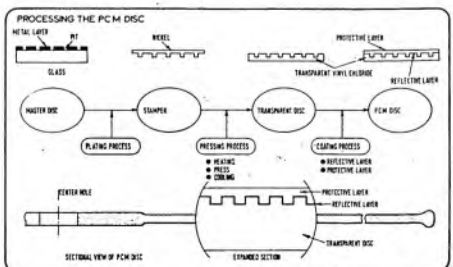
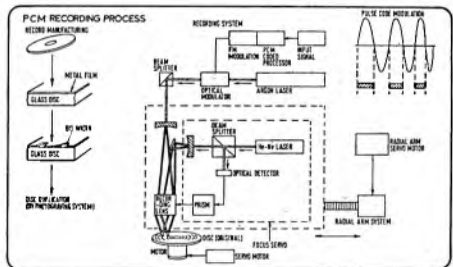
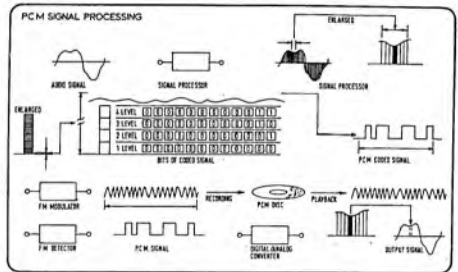
The latest of these devices has been developed by Dr. Becknor, of the Garrard laboratories, and has been called the MRM/101 Music Recovery Module, and is likely to sell for around £80 in the discount stores. The unit is intended to be connected between the pickup and an auxiliary input of the main amplifier. When activated, it exchanges serious scratch clicks on the record for very short gaps of 'silence'. These periods of 'silence' are either removed completely or at their worst appear as low-level 'thumps'. Briefly, the input amplifier output divides two ways, and one half of the signal is fed to a delay circuit, and the other half drives the detector circuit, whose function is to separate the click impulse from the music programme signal and produce a large amplitude pulse for operating the fader circuit. This unit works best when tackling a single bad

scratch (say, from a pickup dropped on the disc, or a pickup skidded across the surface), but the system will not clean up sonically hissy or dirty records. Nevertheless, an important British development.

So far all the quadrasonic sound systems have suffered a failure in the audio marketplace, due to several reasons from poor promotion, bad demonstrations, and lack of an agreed standard, but a resurgence of a multi-channel system will happen in my view. This method will give the home listener a sense of the acoustical environment of the concert hall or recording studio without any apparent sound sources from the rear.

Based on the research of Michael Gerzon, Peter Fellgett, and IMF's John Wright, the National Research Development Corporation system known as 'HJ' is a 'surround sound' method of great potential. The ultimate aim of

PCM signal processing



this 'Ambisonic' system is to provide a good illusion of an intended encoded directional effect, and this aim is not dependent on any particular number of channels, number or position of loudspeakers, or any particular method of originating surround programme material. Gerzon (of the Mathematical Institute, Oxford), has described the Ambisonic system, including the similarities and differences between the 'kernel' sound field approach and the matrix systems, in an article in *Studio Sound*, August 1975, and in NRDC publications (Kingsgate House, 66-74, Victoria Street, London, SW1E 6SL).

Looking at some of the developments in components of the hi-fi chain, it is apparent that amplifiers are attaining distortion figures of minuscule proportions and majestic power levels. For instance, Technics have a Class A amplifier rated at 350 watts per channel. This has been obtained by what they call a Class A+ circuit which — like the Soundcraftsmen 'Class H' system — has two power supplies, a low voltage one that functions with low-level signals and a high voltage circuit for larger power requirements. The automatic switching is confined to the power supply and in no way affects the signal. Tiny power amplifiers can be produced, but the controls have to be made operable by hand, so there must be a limit in size reduction.

Technics have released a companion pre-amplifier, SU-A2, which has a built-in oscillator for sine and square waves, pink noise and warble signals, with the pickup input sensitivity adequate for the direct connection of low output moving-coil cartridges. Sony's PWM — pulse width modulation — amplifier uses V-FETs and the rated output power is 160

watts per channel. The power supply is 'pulse locked', which means that it relates to the amplifier requirements. Dimensions are only 19in. long by 3in. high and a matching pre-amp is available.

Direct drive turntables with quartz control represent the state-of-the-art performance at the present time, but for the less expensive designs, the belt-drive models can offer a better performance.

Trends in loudspeakers seem to divide into two types — the so-called linear phase designs and the big models fitted with horns having diffusers. Sanyo (under the Otto brand name) have fabricated a three-way system using diaphragms made of metal. Older enthusiasts will recall the British GEC loudspeaker unit with a metal cone, but on the Sanyo SX-PI system the woofer cone is made from what is described as 'porous metal'.

Finally, microcomputer technology has entered the world of hi-fi. The latest models of radio tuners, receivers, turntables, tape cassette decks are becoming 'computerised'. An outstanding example of the application of microprocessors has been provided by Matsushita Electric, under their brand name of Technics. Their FM stereo tuner 38 series has three separate units: a quartz synthesizer tuning unit, an FM Processor Control unit, and a Programmable unit. The three units of the same size are stacked on top of each other. The controls include one for the aerial system rotator, with others for auto or manual tuning, time switch and push buttons for eight stations. Each section has a large readout display, one covering the station's frequency, another for signal strength, plus the time. Another 'milestone' tuner is the Sherwood Micro/CPU100.

Direct-to-disc recording

DIRECT cutting — or indenting — into the recording medium, be it cylinders or discs coated with or fabricated from tin-foil, wax, gelatine, cellulose-nitrate (so-called 'acetate' blanks), or any other substance, is, of course, the oldest method of inscribing a sound wave form used in the record industry.

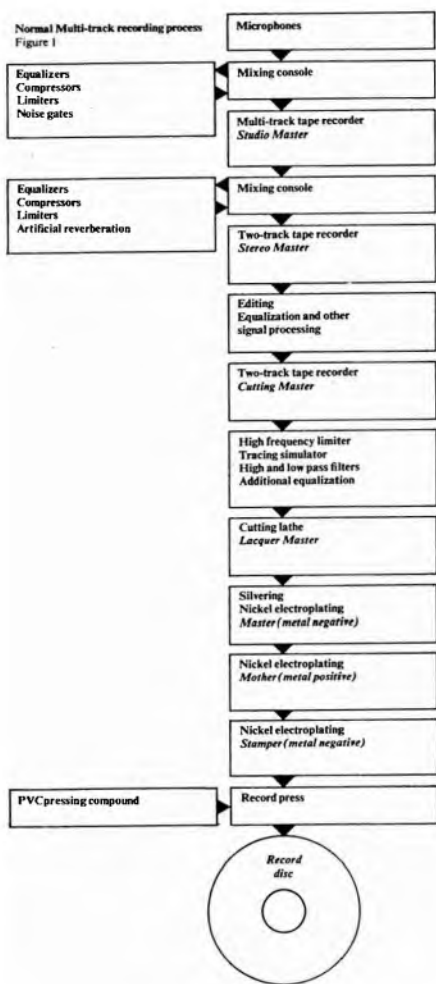
Recently this technique of recording straight on to the disc has achieved a strong revival of interest among the dedicated seekers for the 'real hi-fi'. The aim, one need hardly say, being to obtain maximum fidelity in the final pressing, which has suffered no distortions or degradations, however minute, due to the tape interface.

For the past 25 years, practically every commercial gramophone record released in

any quantity has been fed through a tape recording link, or in some cases several tape stages at the studio, before being transferred to the master disc on the cutting lathe.

Magnetic tape has become firmly established as the master recording medium for both the record and the broadcast industries. For a period the record technicians dallied with 35mm magnetic film, claiming such advantages as no flutter (because of the closed loop sprocketed guide path), wider track widths, and thicker film, 5 mils, reducing print-through contamination, but the process — exemplified in the Command Classic Series — seems to have vanished from the scene.

The standard procedure for commercial recording is to put the signals first on multi-



Processing the PCM disc

track tape, then mix-down to a two-track stereo tape master, which is then employed to cut the master lacquer on a complicated disc-cutting lathe. Obviously no tape recording/replay system has zero distortion, and in the recording process various signal modification devices — equalisers, filters, limiters, compressors, and noise reduction circuits — are used.

Devoets of the direct-cut process point out that even today's studio tape machines can exhibit high order harmonic and TIM products, plus some modulation noise. Again reference is made to the problem of tape

recorded electronics attaining a rise-time approaching that of the latest disc cutting amplifier and heads. The inability of the tape recorder to maintain phase linearity over the audible spectrum is another factor cited by the direct cut enthusiasts.

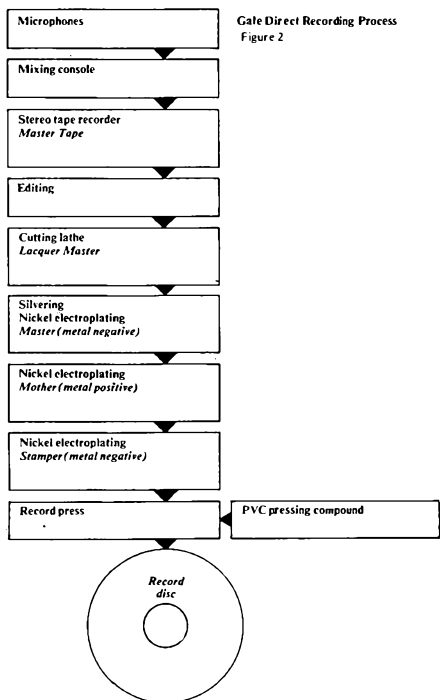
The direct-to-disc recording system eliminates all the tape stages and, when properly carried out, provides the listener with a higher dynamic range (which means lower noise levels and higher recorded velocities), less coloration, and greater 'liveness' of the instruments and voices. To obtain these optimum results, it is necessary to have a disc-cutting room located within the recording channel, plus the additional demands placed on the disc cutting engineer, studio engineer, not forgetting the artists, involved in creating a 'one-off' right first-time session!

To get maximum playing time, the basic groove spacing and depth have to be varied according to the programme modulations, yet still maintaining the specified minimum groove width and clearance between grooves (known as the 'land'). To ensure optimum conditions for the longest playing time, with accurate repeatability during any recutting required, the actual cutting process is made automatic, when a tape master is available.

This automatic operation is controlled by a small computer in the lathe, which is fed from signals derived from an extra replay head — known as a preview or advance head — on the tape machine. With very long experience, plus a knowledge of the programme material obtained, perhaps, from a rehearsal run, the necessary disc cutting adjustments can be done manually. The direct-disc cutting engineer has to work in this way, and there is no second chance to rebalance the instruments or vocalists as would be possible when a tape recording has been made. Artists, too, have similar demands made on them, as their performances must continue for the length of a record side without more than a few seconds' stop between selections or movements.

Another 'plus' feature for direct-disc cutting is that producers or companies who have gone to the trouble and expense of creating this type of 'master' will ensure that factory plating and pressing standards are of the highest quality. The best examples of these pressings use high-grade, low noise vinyl, with careful inspection of the release pressings.

Because a tape master is not available, only a limited number of pressings can be made from any one disc-master which, allied to the care in processing and pressing, means that the cost of direct-to-disc LPs is more expensive than the conventionally produced records.



PCM recording process

Prices can reach £10.00 per copy, or more.

As we have said, twenty-five years have passed since the tape medium offered note-perfect security to recorded music. To quote Lincoln Mayorga of Sheffield Records, Santa Barbara, California, whose 'Missing Linc' series of LPs must be regarded as the pioneer releases in modern direct cut discs — 'A by-product of that security has been a certain apathy which is often found in the recording studio. A "live" disc recording is a very exciting experience for all of us. Apart from the obvious sonic advantages over a conventional recording, cutting a live performance into the master captures an entirely different kind of feeling in the music, proving that musicians rise to heights with the challenge and the group effort.'

With your aural desires stimulated perhaps, all we need now is to look at some of the new labels and supply sources for these direct-cut LPs in the UK, but, alas, the story is not quite as simple as that! This technique has its critics, ranging from William Anderson, Editor of the American magazine *Stereo Review* (October 1977) to Columbia Records' producer Andrew Kazdin, who in the December 1977 issue of

another US magazine *High Fidelity* remarks that the method, carried to its logical conclusion, will mean that we shall be recording with Edison-styled equipment before long!

Mr. Anderson looks upon the 'd-to-d' process as 'regressive gimmickry' from a cottage industry that fails to satisfy any real need of the average consumer. He goes on to emphasize that costs must rise per disc, running times are usually restricted, and pressings must be limited editions only. The other penalties he lists include the fact that 'pop-music' records are virtually created by tape manipulation at the mixdown session, and with classical music the fluffs (what he calls 'bloopers') can be edited out, which is not possible with direct-cut discs. These little imperfections can become, he thinks, nagging intrusions when you hear them every time the record is played, and so artists recording for straight-to-disc masters tend towards 'pussyfooting carefulness'.

These are rather dramatic assertions, and for many listeners the spontaneity of an undoctored performance has a lifelike realism and minimal distortion that warrants the expense of the best d-to-d records. My personal criticism of the system is that few top-name performers/orchestras, particularly in the classical field, have made records in this manner and so the repertoire is limited, but certainly growing.

In the UK, the leading direct-to-disc catalogue is distributed by the enterprising Jon Soyka, of Quadramail, 5 Fellows Road, London, NW3. (01-722 4009). An updated catalogue and price list are now available, but for immediate reference the labels include eight of the Sheffield LAB. series (from £9.00 to £12.30), eight LPs with the Umbrella label (Canadian recordings made at JAMF and Soundstage, Toronto, but pressed in Germany by Teldec, as are the Sheffield discs) costing from £9.00 to £14.00, the Telarc record of the Cleveland Orchestra under Maazel, at £10.00, the Direct-Disk issue (mainly jazz), East Wind (jazz), three Philips' discs (mainly Afro-Latin), and The Great American Gramophone Company (TGAGC) with big band nostalgia (Les Brown, and a double LP of Brubeck (Direct-Disk at £14.00). Recent additions to the Quadramail list are Labyrinth (Climax Jazz Band) and Salisbury Lab. (Peter Appleyard in Person).

The hi-fidelity repertoire of LPs — using tape, but without signal processing and exceptional care taken in manufacture, now called Supercut — has been extended by the Gale and Merlin labels. The Gale GMFD series of four releases, at £6.95 and £9.95 for GMFD-

2-76-002-3, a double album, will be added to by five new issues, and Merlin has a couple of LPs (light music). Three Blind Mice Supercut discs are now handled by Wilmex Ltd, Compton House, New Malden, Surrey. Tel: 01-949 2545.

For the binaural headphone listener, several Dummy Head Stereo records are available — JVC and AMF, again all from Quadramail.

A few other direct-cut brands exist, such as, Early Warning, Nautilus, Sound Eighty — from Nautilus Recordings, Shell Beach, California — RCA (Japan), and Crystal Clear Records, San Francisco, handled at present in the UK by Metrosound Audio Products, 4-10, North Road, Islington, London N7 9HN (01-607 8141). Half a dozen Crystal Clear releases are available, with the early ones being 45 rpm, but the latest issues are 33 $\frac{1}{3}$ rpm versions, and includes classical items by Virgil Fox (organ) and Arthur Fiedler's Boston Pops.

Direct-cut test discs have also been issued by the german magazine *Hi.-Fi. Stereophonie*.

The most recent American direct-cut label to

appear here is known as Orinda, and its first release features Robert Goulet. Details from William John Murphy Enterprises, 3 Woodlands Drive, Stillorgan, Blackrock, County Dublin (889200).

Another British source of supply of direct cut LPs is Westward records, 12 Beach Leaze, Alveston, Bristol.

The first UK direct-to-disc recording was made in November, 1977, at Trident Studios, London. A New Wave group called *Warsaw Pakt* recorded 'Needletime' on the Island label.

A specialist audio enthusiasts' magazine called *The Absolute Sound* — only available by subscription from Sea Cliff, New York — published a report on direct-to-disc records in its Winter 1978 edition, and made a significant comment that the next step in hi-fi recording may be the use of sophisticated digital tape recorders and laser phono cartridges, whose fidelity will outstrip any of the present-day conventional analogue recorders. D.A.

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Vintage wireless

by Gordon Bussey

Regular broadcasting began in Holland late in 1919 from the wireless station PCGG and a year later in America by the KDKA station, East Pittsburgh, Pennsylvania, but we were not entirely left behind. The Marconi Company had started experimental broadcasts from Chelmsford early in 1920 and a highlight was a broadcast by Dame Nellie Melba, but the Post Office suddenly withdrew Marconi's licence and for the next 18 months there was a clamp down on broadcasting. Unhampered by authority a boom industry was growing in America, and partly due to this our Postmaster General allowed himself to be persuaded by organisations, societies and manufacturers that we too should have a regular entertainment service. Thus the BBC was formed in August 1922 and, although not actually registered until 15th December, began to transmit from Marconi House in the Strand on 14th November 1922... 369 m... 2 LO calling.

After the BBC was formed in 1922, it was necessary for all wireless receivers to carry the BBC stamp surrounded by the words — type approved by the Postmaster General. This regulation remained in force until 1925, but manufacturers continued to use the BBC stamp surrounded by the words — entirely British made — until the BBC became the Corporation on the 1st January 1927.

The initial market for valve sets was small, people were nervous of their complexity and sudden outbursts of oscillations, with the result that many of the day-time transmissions were not listened to, though the desire to do so may have been great. They were very expensive too. A Marconi two valve set sold for £20 and a six valve for £83. With the crystal receiver the position was somewhat different; even children felt confident in tuning, and further, tuning with success to the local stations or 5XX as local conditions demanded. Consequently three-quarters of those early listeners would have been using crystal sets and the choice was tremendous. Over 500 different models offered by some 200 manufacturers from the Gecophone No. 2 crystal receiver at £9.15.0 to a Midge crystal set at 7s. 6d. In

addition, the home constructor market was bombarded by nearly 20 periodicals devoted to wireless.

A crystal set consisted of a huge aerial (100 foot) to pick up signals and an adjustable coil to tune the set to your local station... London 2 LO... Birmingham 5 IT... Manchester 2 ZY... but the signals you picked up then, as now, were high frequency, and to make them into an audio signal a device was needed that would only pass a current in one direction. This is where the crystal (mineral ore) and cat's whisker contact came in. A crystal set needed no source of power because a very high power was sent out from the transmitter and a tiny fraction of that power was picked up by the huge aerial sufficient to work headphones. A very few sets used a small battery, but this was

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Fig. 1. 1928 Philips 2514

Fig. 2. 1933 Philips 634A

Fig. 3. 1930 Marconi 560

Fig. 4. 1934 Ekco AD65

Fig. 5. 1923 Marconi RB7



simply to help the go no-go action of a particular type of crystal and in no way made the set work better.

The popularity of the crystal set was due to its simplicity and low cost, but in the end simplicity was to be its downfall. In the June of 1926 the BBC carried out an interesting experiment by transmitting two programmes simultaneously 100 metres apart. Valve listeners in London found no difficulty in separating the two programmes, but crystal listeners received the two programmes together because simplicity brought poor selectivity (in itself no problem whilst only one station was being transmitted on Medium wave in any one area). However, by 1926 many powerful European stations were beginning to appear, with the result that after dark the crystal listener would receive several programmes all at once.

Another important point is that the crystal set allowed no freedom of movement. In the beginning it was a novelty to spend the whole evening wearing headphones, but after 4 years the novelty began to wear off. By 1927 the valve set was still basically the same as in 1922, just as complicated to operate and required batteries and frequent charging of the accumulator. It nevertheless gave primitive selectivity and freedom of movement by virtue of the fact that it would operate a horn loud speaker.

After 1927 sets lost their primitive charm and romance. Cabinets became more conventional and the horn speaker like the horn gramophone was about to vanish. The single set was beginning to appear with loud speaker built-in. Sets became part of the furniture, the manufacturers started competing in terms of elegance of design with superb Wurlitzer, cathedral door and circular shapes in the early thirties; although there were also an awful lot of unpleasant designs. However, this was the wireless from the outside, the mere appearance of the set.

A salient technical feature of 1927 was the additional sensitivity of the screened-grid valve and with the superhet of the thirties this meant that you no longer needed external aerials. In the late twenties a dominant feature of the British landscape was the wireless aerial in the back garden. One forgets that almost every house owning a wireless had an outside aerial, which by regulation was allowed to have a 70 foot horizontal and 30 foot vertical wire.

The mains set in 1928 (Gambrell before as early as 1926 but the Philips 2514) was the pioneer of mass production in this field. Its circuit was that of an indirectly heated screen-grid and detector, followed by a pentode output, 2 wave ranges were covered and terminals provided for pick-up. In size and appearance,

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with its neat lever control and moulded cabinet ends, there is a remarkable similarity to a present-day radio cassette recorder and without doubt, was years ahead of its time. Complete with valves and circular companion loud speaker type 2007 the price was £28.5.0. A similar model type 2502 but battery operated, complete with valves and speaker, was available at £17.15.0. By 1929 the demand for portable receivers was unprecedented, and examples were being offered by nearly every manufacturer. Typical of the suit-case variety was the McMichael Super Range Portable Four, a high quality long range outfit priced at 22 guineas.

Easy to build was a description that did not apply to many early home constructor kits. Experience was not required in the assembly of components, but a great deal of work was involved in wiring up the receiver and in addition to the danger of a faulty connection the performance could severely be affected by arrangement of the actual wiring, particularly as regards HF equipment. However, in the new Cossor Melody Maker kit receiver of 1929 the difficult wiring associated with a tuned aerial HF inter valve coupling was avoided by supplying the entire HF equipment pre-built. The price of a complete kit, including the latest

type Cossor valves and a cabinet finished in blue lacquer with oxidised silver escutcheon, was £8.15.0. and copiously illustrated broad-sheet giving full details for the constructor.

The Cossor Company continued to produce kit receivers long into the thirties and, together with the pedestrian technology Scott-Taggart kits, were the last flowering of the hobby dabbler. On the majority of these receivers for the home constructor everything was adjustable, with as many as six knobs and some had camera settings (that is a little pre set mark). Twiddling a wireless, tweaking the knobs to see if you could get the station tonight that you could not quite get last night, was fun for people who still wanted to make an adventure out of driving a wireless.

With the arrival of the thirties the moving-coil loud speaker, which no longer required the adjustment knob needed for the moving-iron, had become very popular with manufacturers, although the pioneer example BTH model KK had made its debut in 1926. Single knob tuning had become established but it was still 3 valve with a screened-grid HF followed by transformer coupling to a leaky grid detector and transformer coupled to a pentode output as the basis.

With the growing congestion better selectivity was needed. It was no longer a question of just sensitivity — it was selectivity, and that led to two things. First of all the superinductance receiver which consisted of efficient tuned coils wound with litzendraht wire on glass formers. Two RF amplifiers and four variable tuned circuits were employed in the 5 valve Philips 634A, a classic mains operated superinductance receiver of 1933. But, of course, eventually this led to the superhet and here the frequency of every station is changed into a common frequency, with the advantage that many fixed-tuned circuits may be fitted.

From 1934 a set which symbolised a whole plateau of development was the Murphy A24, a mains-operated single knob tuned superhet, fitted with moving-coil loud speaker and very much the set, as it stayed with minor variations for 20 years. The difference from the 1922 to 1934 set is infinitely greater than from the 1934 to 1954 set, that is, up to the ferrite aerial, the transistor and VHF transmissions. Yes, of course, there were push buttons and short wave, but for the most part sets stayed more or less as they were for 20 years, having made an enormous amount of progress in 12 years. Short wave was more of a gimmick because by the time it became possible the novelty of broadcasting had worn off and SW reception of English speaking stations tended to be unreliable. I think a lot of people bought a short wave set, but it was a novelty they played with



1922 Gecophone No. 2 Crystal Set

for a few days then settled down to listen to the BBC and Luxembourg on Sundays.

In conclusion, I am author of the recently published *Vintage Crystal Sets 1922-1927* and an ardent collector of all twenties and in particular BBC stamped receivers. In 1977 I was involved in the highly successful exhibition called 'The Wireless Show!' at the Victoria & Albert Museum. This exhibition of nearly 150 models, from the crystal sets and bright emitter valve receivers of the twenties, to the first transistorised portable, provoked widespread interest and enthusiasm in the collecting and preservation of these early wireless receivers.

Recordings of the year

A personal selection chosen by the Editor

Prices are those applicable when going to press. Asterisks (★) denote recording quality. All records mentioned are presumed to be of reasonable standard, but those marked with one Asterisk (★) are of slightly superior sound, while two Asterisks (★★) denotes first-class recording worthy of demonstration.

Record numbers quoted are for Stereo Discs with Tape and Quad references added where applicable.

Classical releases

★★ **BEETHOVEN:** *The Late Piano Sonatas.* Maurizio Pollini. DG 2740 166.

Pollini plays with computer-like precision, and I mean that as a compliment. Every note is cleanly articulated and given its precise value and every direction faithfully observed. Others may give more warm and thrilling performances, but Pollini is the master to whom students will refer for the definitive version. Some may consider the opening Allegro of the Hammerklavier to be rather fast, but here Pollini is obviously following the tempo advocated by Czerny. Usually pianists follow the directions of Von Bulow who, with the gradual ascendancy of the stronger-toned British piano, suggested a slower pace. However, Pollini is perfectly capable of articulating at speed and his scale passages and attack on the almost-impossible fugue are breathtaking. His control is also evident in the E-major Op. 109 where in the variations Beethoven indulges in his fancy for long and complicated shakes. This Sonata takes up a whole side (about 18 minutes of music) and at £10.50 for three records covering only six Sonatas this is indeed a costly investment. The DG recording is superb.

BRAHMS: *A German Requiem (Ileana Cotrubas, Hermann Prey, New Philharmonia Chorus)/Alto Rhapsody (Yvonne Minton, The*

Ambrosian Singers) both with the New Philharmonia Orchestra cond. Lorin Maazel. CBS 79211. Cassette 40-79211.

The first three movements of the Requiem were first performed in Vienna in 1867 when Brahms had the traumatic experience of hearing his work soundly hissed. Even his champion, the critic Haslick, complained that the ending of the third movement sounded like a train rattling through a tunnel. On the basis of this recording I am inclined to agree with him, because it is rather poor if judged by usual CBS standards. The distant ambience is tolerable until the soloists enter. They stand out so prominently that it gives an impression of solo parts being recorded separately and superimposed upon the rest. Apart from upsetting the balance, this gives both soloists a coarse, unpleasant sound alien to their natural voices. Actual performance by Maazel is very good and the choir show their mettle particularly in the second movement. Note the precise attack on 'Aber des Herrn Wort' where the recording lets them down with some restricted sound in parts. In the same movement, the orchestra completely swamps the soprano line at the section 'Freude und Wonne'.

The same faults apply to the filler on side 4, where the *Alto Rhapsody* (all thirteen minutes of it) occupies a whole side! Yvonne Minton is given undue prominence and her voice takes on a harsh forced tone.

★ **BRITTEN:** *Phaedra Op. 93/Prelude and Fugue for Strings Op. 29/Sacred and Profane Op. 91/Four carols for unaccompanied voices.* Janet Baker, The Wilby Consort, English Chamber Orchestra. Decca SXL 6847.

This is a most important issue being the first recording of two late works. *Phaedra* is a setting of Racine first performed at Aldeburgh in 1976 for which Britten had schemed a five-part piece in the style of a Handel Italian Cantata. The language, however, is Britten's own and in a way sums up his vocal techniques, presenting the Greek drama in a moving and sometimes frightening way. It is dedicated to Janet Baker

who gives a polished and articulate performance backed by the ECO under Stuart Bedford.

Sacred and Profane dates from 1975 and consists of eight Medieval Lyrics written specially for the Wilbye Consort who need every ounce of virtuosity to cope with Britten's sudden changes of rhythm and harmonies. As a filler they perform three early carols and finish with the poignant *Shepherd's Carol* to words by W. H. Auden. Peter Pears directs.

A most valuable collection beautifully recorded in All Saint's Church, Petersham. But that is not all — the record opens with Prelude and Fugue for Strings conducted by the composer himself recorded at the Maltings in 1971. Highly recommended.

★★ **DONIZETTI:** *L'Elisir d'Amore*. Ileana Cotrubas, Placido Domingo, Ingvar Wixell, Geraint Evans. Chorus and Orchestra of the Royal Opera House, Covent Garden conducted by John Pritchard. CBS 79210.

This new version has a big advantage over the Sutherland-Bonyne in that CBS have squeezed it onto two records with only minor cuts. With a splendid cast and good recording it must therefore be first choice. Ileana Cotrubas is in good voice and, if she lacks the sheer vocal beauty of Sutherland, is well able to cope with Donizetti's coloratura. Only occasionally does she show signs of strain, most noticeably in Scene 9, Act 2 'Prendi: per me sei libero', a difficult passage. Her characterisation is subtle from the way she teases poor Nemorino with the Isolde story at the start of the opera to her rejection of Dulcamara's potions with 'La ricetta è il mio visino, in quest'occhi è l'élisir'. You can visualise her tantalising smile as she says 'my receipt is in my eyes — there the true elixir lies'.

Placido Domingo is firm and accurate and his 'Una furtiva lagrima' is a good example of his ability to sound Italian without the nauseating Italianate sobs so beloved by most Latin tenors. The pompous Sergeant Belcore is well taken by Ingvar Wixell — not an easy part to play; but there is no doubt that the whole recording is dominated by Sir Geraint Evans. He is in splendid voice, making the quack doctor sound completely plausible.

Stage effects are slightly phoney but since this is comic opera it matters little, and John Pritchard achieves some sprightly playing from the ROH Orchestra.

★★ **ELGAR:** *Violin Concerto in B Min.* Kyung-Wha Chung with the London Symphony Orchestra cond. Georg Solti. Decca SXL 6842 — Cassette KSCX 6842.

This record puts me in a spot! Last year I spoke highly of Zukerman and Barenboim on CBS and now along comes a superlative issue with the young Korean Kyung-Wha Chung supported by Sir Georg Solti. Miss Chung is a great technician and obviously has feeling for this music. She matches Zukerman in intensity and displays great virtuosity in the third movement giving this difficult piece a fairy-like touch so typically feminine. I still prefer Zukerman's stronger attack and the bold way he tackles the first movement. How heartening that two fine foreign musicians should turn their attentions to Elgar and put buyers in this happy predicament. Solti and the LSO are tremendous and the recording absolutely first class.

GLAZUNOV: *Piano Sonatas No. 1 in B flat Min./No. 2 in E Min./Grand Concert Waltz in E flat*. Leslie Howard. Pearl SHE 538.

Glazunov, favourite pupil of Rimsky-Korsakov, was strongly attracted to the symphonic tradition and produced two Sonatas that are 'full of melody, harmonically rich, full of character and grand without being pretentious' to quote the sleeve note by Leslie Howard. Perhaps he was too late. He was writing Symphonies and Ballets in the Tchaikowsky tradition in an age dominated by Ravel, Stravinsky and Prokofiev. Nevertheless all the music on this record is pleasant and extremely well handled by the young Australian pianist, Leslie Howard, clearly a name to be reckoned with in the future.

★ **GRANADOS:** *Piano Music Volume 7*. Thomas Rajna. CRD 1037.

With this volume, Hungarian-born Thomas Rajna comes to the end of his complete recordings of Granados piano music. Granados built himself a high reputation as a pianist and his original compositions were modelled on his contemporary Albeniz, but showing a simplicity and tunefulness mainly due to his lack of contrapuntal and harmonic knowledge. Thus they make an immediate appeal and deserve a wider audience. The composer was drowned at sea when the *Sussex* was torpedoed by German submarines during the First World War. Thomas Rajna shows a romantic flair for this music which is at its best in shorter forms. The Impromptu Op. 39 is quite delightful as are the Military Marches. The longest piece on the programme is 'Seis Estudios Expressivos', six variations on a Schumann-like theme which unfortunately falls short of Schumann's genius. The recording by Bob Auger is warm and natural.

★★ **HANDEL:** *Rinaldo. Ileana Cotrubas, Carolyn Watkinson, Jeanette Scovotti, Paul Esswood, Charles Brett, Ulrik Cold, with La Grande Ecurie et la Chambre du Roy conducted by Jean-Claude Malgoire. CBS 79308.*

Rinaldo was Handel's first London stage success, composed at the request of librettist Aaron Hill who, it seems, was anxious to cash in on the current vogue for Italian opera seria. Handel wrote the score in a few weeks, drawing upon music written for earlier operas in Germany and Italy and providing opportunity for popular male castrato Nicolini. Coming to it 260 years later one can see all the worst and best in Handelian opera. After the Overture there are no less than four continuous Da Capo arias for counter-tenors and sopranos with no variation either in voice range or construction. Handel is not to blame for he merely took over established convention and, indeed, after this unadventurous start, produced some wondrous music.

The cast is excellent with Carolyn Watkinson in the title role originally assigned to Nicolini. The two counter-tenors Paul Esswood and Charles Brett are in fine voice, Jeanette Scovotti makes a fiery Armida while Ulrik Cold is absolutely magnificent as the villain Argantes. The realisation of Handel's score is good, although I should have thought a vocal cadenza or two more in keeping with 18th Century tradition. As always Handel's orchestration is colourful, particularly his use of four trumpets in the battle music. Praise also for the harpsichordist who provides such interesting solos in Armida's 'Vo' far guerra'. The orchestra is polished and the use of original instruments gives an air of authenticity to the production. Absolutely first-class.

★★ **HAYDN:** *Piano Sonatas Volume 5. John McCabe. Decca 5HDN 112/15.*

With Volume 5, John McCabe comes to an end of his mammoth task of recording all the Haydn keyboard works, and very grateful we should be to him. First and foremost let me stress that these are not 'historical' performances. Most of the Sonatas were written for the Clavichord, but McCabe uses a modern Grand, and by dint of careful scholarship and masterly playing brings alive many pieces once thought fit only for teaching material.

His steady tempi are a pleasure and the sparing use of ornamentation a splendid compromise between 18th Century and modern art. I only question the validity of observing all repeat marks which tend to make some of the more mediocre pieces over-long.

The volume gets off to a good start with



Haydn's finest Sonata, the massive E flat written for the London tour of 1794, and obviously designed to be played on the piano. It shows an awareness of newer developments in keyboard design, and only certain sections reveal that Haydn wasn't a true concert pianist. The bare octaves in the development would not have gone unharmonised by a Mozart or Beethoven, neither would they have penned such thick chords in the opening of the finale.

Not all the material on these discs is of equal merit. Some of the early Sonatas (Nos. 14 in C and 16 in E flat for example) are uninspiring, and I cannot really believe that anyone would prefer the 'Seven Last Words' in piano form except as a novelty. The piano writing is forward looking and impressive, but seven slow movements in a row take some absorbing. Two Sonatas are included, now known to be by other composers (Pleyel and Schwanenberg) and both are extremely enjoyable. Other notable inclusions are the Arietta and Variations in E flat and Sonatas Nos. 12 in A, 29 in E flat, 15 in E, 61 in D, and 28 in D plus Seven Minuets.

★ **JANACEK:** *Kata Kabanova. Elisabeth Söderström, Petr Dvorský, Nadežka Krípková, Vienna State Opera, Vienna Philharmonic Orchestra conducted by Charles Mackerras. Decca D51D2 — Cassette K51K2.*

Leos Janáček was an impractical man and his scores were untidily written, full of mistakes, alternatives and ambiguities. The usual version heard in the Opera House is by Václav Talich who smoothed out many rough passages, but Charles Mackerras has developed an affection for Janáček's music and has gone

to untold trouble to produce a performing edition approximating the composer's wishes. He is lucky to have the services of the Vienna Philharmonic and a sympathetic interpreter of the title role in Elisabeth Söderström. She is supported by a largely Czech cast and since the only other version of the opera available is an elderly Supraphon this must be first choice. The accompanying booklet is particularly in formative giving not only the libretto but also a detailed study of the work with musical illustrations.

LISZT: *Années de Pèlerinage*. Lazar Berman. DG 2709 076.

Lazar Berman is the most aggravating pianist because, for all his exciting technique, he seems unable to produce a 'big' sound. Loud notes are struck with sheer force without follow-through pressure resulting in a loud clatter instead of a massive sound block. We are told that he is making efforts to become a musician instead of an empty virtuoso, and if so, still has a long way to go. However, Liszt must take some of the blame. Many of the numbers are frankly boring and it is no coincidence that the popular pieces are the most interesting musically.

However, it would be unfair to condemn Berman altogether. His technique is prodigious, he articulates clearly, and his pianissimo runs can be ravishing. He is best in *Au bord d'une source*, *Les cloches de Genevre*, where he brings off some wondrous crystal clear arpeggios, and the *Tarantella* where surprisingly he opts to omit a Cadenza.

The so-called *Dante Sonata* is a highspot of the collection and is given a breathtaking performance. This is Berman at his very best and worth the £11.85 cost of the complete set alone.

MAHLER: *Symphony No. 2 in C Min. 'Resurrection'*. Carol Neblett, Marilyn Horne, Chicago Symphony Orchestra conducted by Claudio Abbado. DG 2707 094 — Cassette 3370 015.

Abbado's finest achievement on record is surely this most thrilling account of the second symphony. The accuracy of the opening unison passage for cellos and basses is meticulous and underlines the continuing virtuosity of crack American orchestras. And yet I marginally prefer Zubin Mehta on Decca who, in this same passage coaxes the Viennese strings to show off their strong point with greater depth of tone and feeling. Abbado tends to extremes of forte and piano and is inclined to sudden changes of tempo. Mehta keeps a more even keel.

Abbado is superb in the second movement, making the first appearance of the theme like a stately 18th century dance and finally lapsing into a Schubertian derivation on the second time round. He is also very delicate in the *Nicht eilen* episode. The *Urlicht* is a disappointment with Marilyn Horne no match for the experienced Christa Ludwig on Decca, and Abbado much too perfunctory. In the Finale the Chicago Brass ring out magnificently (see page 149 of the Universal Edition score), but when the chorus enter the extreme ppp makes them almost inaudible. The following duet between Marilyn Horne and Caroline Neblett is beautifully judged and the closing pages are impressive although, here again, Mehta is more expansive. The recording is excellent.

MILHAUD: *La Création du monde/Saudades do Brazil/La Boeuf sur le toit*. Orchestre National de France conducted by Leonard Bernstein. HMV ASD 3444.

These three pieces have a common root in ballet. *La Création* owes much to the jazz craze of the twenties with its sweet sax, glissando trombone and percussive piano. The composer fuses these jazz elements with a classical technique and format resulting in a piece of complexity which can be taxing for the unprepared listener. *Saudades do Brazil* are more accessible. Based on piano pieces they comprise memories of Brazil in dance form. Four of the twelve are performed here including No. 11 dedicated to Audrey Parr, a ballet designer.

La Boeuf sur le toit is typical of 'Les Six' being jazzy, vulgar yet compelling. James Harding in his sleeve note compares it to a Charlie Chaplin silent film background. In structure it is an enormous jazz rondo with episodes in popular dance rhythm including tango, samba and fado. Milhaud himself styled it a 'Cinema-Symphony in South American Tunes', and overnight it changed his public image from a serious to a fun composer.

Such music is bread and butter to Leonard Bernstein who whips up the Orchestre National to great frenzy.

★ **MOZART:** *Serenade in G 'Eine Kleine Nachtmusik'*; *Serenade in D 'Serenata Notturna'*; *Symphony No. 29 in A*. New London Soloists Ensemble directed by Ronald Thomas. CRD 1040.

This ensemble was formed in 1970. It comprises about a dozen leading soloists and chamber musicians who, for reasons best known to themselves, perform standing around their leader and director Ronald

Thomas. Certainly they open the record with a fine performance of the ubiquitous 'Eine Kleine'. I have never before heard it with harpsichord continuo but as the instrument is inaudible it is of little consequence. The 'Serenata Notturna' is scored for two orchestras and absolutely tailor-made for stereo, but there is little separation here; the timpani is muffled, and it is the least successful item.

KV201 is Mozart's first real mature symphony and a measure of his skill is the way the opening theme appears in three-part canon in the first movement coda. I prefer a larger orchestra myself, but there is no denying that Ronald Thomas directs a fine version. He seems to have an unerring sense of tempo which is most commendable. The recording is superb and was made in the Unitarian Church, Hampstead by Bob Auger. Like most recent CRD's, the record comes in a most attractive cover.

★★ **OFFENBACH:** *La Grande Duchesse de Gerolstein. Régine Crespin, Alain Vanzo, Mady Mesplé, Chorus and Orchestre Capitale de Toulouse cond. by Michel Plasson. CBS 79207.*

This recording was badly needed as the paucity of authentic Offenbach is a disgrace to the record catalogue. The *Grande Duchesse* is a sure-fire winner. It has been in the repertoire of the Welsh National Opera for several seasons and is, therefore, reaching a wide audience. This is a first-rate stereo recording with good stage effects and stunning sound. Régine Crespin's first solo 'Ah! que j'aime les Militaires' is on the fast side and leaves her a trifle breathless, but thereafter she settles down to give an imperious and dominating performance. The rest of the cast are superb and the score is given a vivacious reading by conductor Michel Plasson. In fairness I must mention the rival Saga 5446 which offers over 73 minutes of music for only £1.50. The sound is atrocious but Eugenia Zarewska gives the star role a beguiling feminine character and Rene Leibowitz takes a lyrical view of the score. This, then, is the problem. Crespin or Zarewska? Personally I am going to keep both!

★ **PROKOFIEV:** *Violin Concerti Nos. 1 in D Op. 19/2 in G Min. Op. 63. Kyung-Wha Chung, London Symphony Orchestra cond. by André Previn. Decca SXL 6773.*

Prokofiev's violin concerti have never achieved the popularity accorded their piano equivalents, which is surprising because both are light and cheerful. The first dates from 1913 when the composer was exiled in Paris and starts with a most memorable tune. This

Andantino works up into a rhapsody rather than a conventional concerto movement and is followed by a brilliant Scherzo and bravura finale where the soloist's trills are truly magical.

The second work came twelve years later when Prokofiev had returned to the Soviet Union and is similar in style to the ballet *Romeo and Juliet*, composed at the same time. Both concerti reveal the two sides of Prokofiev's character with lyrical melodies alternating with brittle and sometimes brutal wit. The soloist gives a glorious performance and her only rival in the hi-fi field is Milstein on HMV.

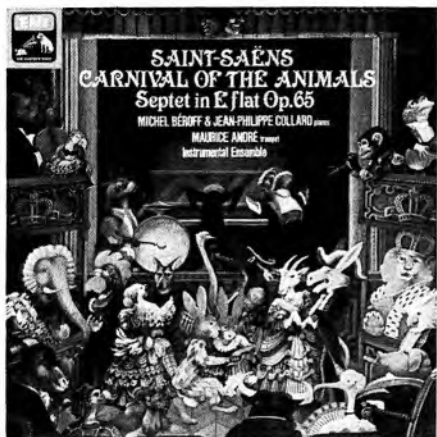
RACHMANINOV: *Five Preludes from Op. 23, Two Preludes from Op. 32, Etudes-Tableaux Op. 39. Janos Solyom. Caprice CAP 1106.*

Janos Solyom is a 40-year old Hungarian who has lived in Sweden since the 1956 uprising. This is his second Rachmaninov record on the Caprice label issued in this country by CRD, and he gives straightforward, uncomplicated performances. A far cry from the delicacy of Ashkenazy on Decca who has also recorded all music on this disc. Rachmaninov considered his shorter pieces the most difficult to perform and Solyom doesn't really get to grips with them. Yet he certainly has the technique and feeling for Rachmaninov. I can well imagine him giving enthusiastic account of the Second Concerto, for instance. If you want these particular pieces both recording and playing are sound but, frankly, Ashkenazy is worth the extra outlay.

ST. SAENS: *The Carnival of the Animals/Septet in E flat. Michel Beroj, Jean-Philippe Collard, Maurice André and Instrumental Ensemble. HMV ASD 3448.*

The Septet in E flat for Trumpet, Strings and Piano is a most unlikely combination scored as a request from a group of amateurs who wanted something suitable for their little band. It certainly stretched the imagination even of the facile St. Saens and nobody can claim that this is great music. Naturally the trumpet dominates, and even the artistry of Maurice André cannot hide the simple fact that the music would sound more effective on Piano and Strings alone. Jean-Philippe Collard is the sympathetic pianist.

The original *The Carnival of the Animals* is also something of a rarity. It tends to focus attention more on the two pianos than does the orchestral version but there is no doubt that many inner parts become clearer. For example how often does the ear catch the fugato entry of 'Ah, vous dirai-je Maman' in *Fossils* which is



usually swamped by a full orchestra? There are at least nine other *Carnivals* available and your choice will obviously depend on the coupling or your preference for the chamber version.

SCHUBERT: *Piano Sonatas in A (D.969) and A flat (D.557)*. Radu Lupu. Decca SXL 6771 — Cassette K5XC 6771.

Radu Lupu is a fine Schubertian, being both forceful and gentle, and he injects a rhythmic vitality into the rarely heard early A flat Sonata. In the tremendous A-major he offers serious challenge to Serkin (CBS) and Brendel (Philips) and has the better recording. He brings to the First Movement a classical severity with minimum of pedal, except for the Coda where he completely changes style to give a romantic ethereal ending. The real joy of this Sonata is the beautiful final rondo, a variation on a tune already used in an earlier Sonata in A Min. D.165. Even the second subject bears a remarkable similarity to the second subject of the D.165, so Schubert must have been particularly fond of the early Andante. Lupu brings off some stunning passagework during the development and is equally brilliant in the finale presto where Schubert ties-up the whole thing by hammering home the opening motto theme.

SHOSTAKOVICH: *Symphony No. 10 in E Min. Op. 93*. London Philharmonic Orchestra cond. Bernard Haitink. Decca SXL 6838 — Cassette K5CX 6838.

Shostakovich's finest symphony is well served on disc and Haitink lays claim to be considered amongst the best. The work was a milestone for the composer being written after the death of Stalin in 1953 when he was at last

able to shake off the shackles of party intervention and write music without fear of causing government displeasure. Even so, a three-day debate in Moscow condemned the work as over-pessimistic. Indeed the first and third movements are steeped in gloom and separated by a short frenzied barbaric Allegro. The Finale is more optimistic and is built on the musical equivalents of the composer's style D-S-C-H or D, E flat, C and B. This is the first of a series in which Haitink will record all the symphonies with the LPO. It is an auspicious start but in all honesty I must remind readers of Andrew Davis with the same orchestra on the CFP bargain label which is equally impressive at a third of the cost.

STRAUSS FAMILY: *Radetzsky March*. The Johann Strauss Orchestra of Vienna conducted by Willi Boskovsky. HMV ESD 7052.

This charming record features the indefatigable Willi Boskovsky, not with the Vienna Philharmonic, but a smaller sounding body called the Johann Strauss Orchestra of Vienna. All the family is represented, Father by the title track and the *Seufzer Galop*, Josef by his *Artists Greeting* Polka, and Edward by the popular *Bahn Frei* polka. I always think it a pity that poor Eddy is so badly represented in the catalogues. Admittedly he was the least talented of the family, but we should be able to judge him better than by the mere handful of Polkas available. The lion's share of course, goes to the Waltz King himself, mostly mature works. The orchestra lacks the sheer string weight of the VPO, but with Boskovsky at the helm no one will complain.

TSCHAIKOWSKY: *1812/Romeo and Juliet*. London Philharmonic Orchestra cond. Hubert Soudaint. Pye Nixa PCNHX11 — Cassette ZCPNH11. Price £3.25 (Cassette £3.50).

This latest 1812 has much to offer particularly in the evenly spread stereo sound (I haven't heard it on quad) which would make it suitable for demonstrations if recording quality was more consistent. The actual performance is nicely controlled but lacking in the final touch of urgency and it cannot compete with Previn on HMV or Ormandy on RCA. Personally I can do without the canon effects and would opt for Del Mar on the old Contour bargain label still available through Pickwick. *Romeo and Juliet* has a spaciousness which I enjoyed and I rate it the best of Soudaint's Tchaikowsky readings.

★★ **VERDI:** *La Traviata*. Ileana Cotrubas, Plácido Domingo, Sherrill Milnes with the Chorus and Orchestra of the Bavarian State Opera cond. Carlos Kleiber. DG 2707 103.

Ileana Cotrubas gives a polished performance as the luckless Violetta, being extremely moving, particularly her agonised 'Cose alla misera' and 'Dite alla giovine' in Act 2. At times she tends to scoop top notes but in this particular opera it only underlines the poor health of the character. Domingo is impeccable and is by far my favourite tenor in Italian opera: he is reliable, assured and always dramatically plausible. Sherrill Milnes is his usual tower of strength and revels in the tender role of the elder Germont.

But the real star of this set is the magnificent playing of the Bavarian State Opera House Orchestra under Carlos Kleiber. Right from the start Kleiber shapes a most moving Prelude and follows this with some brilliant wood-wind in the party scene. He makes a few small cuts which do not in any way detract from the enjoyment of the opera and this version is highly recommended.

★★ **VERDI:** *Simon Boccanegra*. Mirella Freni, Piero Cappuccilli, José Carreras, Nicolai Ghiaurov, José Van Dam. Orchestra and Chorus of La Scala, Milan, conducted by Claudio Abbada. DG 2740 169.

Simon Boccanegra is a singers' opera, yet lack of set-pieces is one reason for its comparative neglect. The libretto is complicated even by Verdi standards and the most ardent opera-goer can surely have little idea of the plot. Some characters develop different names; for example, Maria suddenly becomes Amelia, and Jacopo Fiesco is sometimes known as Andrea. Some situations are frankly ludicrous: The Doge and Amelia, suddenly discovering they are Father and Daughter, accept the situation in about three lines of dialogue and launch into a loving duet!

The cast list reads like an operatic role of honour and Claudio Abbada draws some superb playing from the La Scala Orchestra.

The title role is taken by Piero Cappuccilli, who hasn't a particularly powerful voice yet uses it with authority. He and Nicolai Ghiaurov dominate the long Prologue. The Prelude to the first Act is beautifully executed by the orchestra making a fitting introduction to Mirella Freni's opening aria. Her Gabriele (José Carreras) is lightweight but with true Bel Canto. Dutch Bass José Van Dam sounds better with each recording he makes and his villain Paolo is so plausible that I genuinely felt sympathy for him.



The big climax is the Council Chamber scene that closes Act 2 and this is excellently done. My only criticism is that at least two sides are abnormally short (18 mins on side 2 and less than 15 on side 3).

★ **VIVALDI:** *Magnificat/Gloria*. Teresa Berganza, Lucia Valentini Terrani. New Philharmonia Chorus and Orch. cond. by Riccardo Muti. EMI ASD 3418 — Cassette TC-ASD 3418.

Vivaldi's *Gloria* came into prominence just before the war in a version by Casella, and further investigation revealed that there were at least three versions. Malipero's edition used here employs Mezzo and Contralto soloists with string orchestra reinforced by trumpet and oboe. The score is operatic in style and Vivaldi provides a great variety in his writing. The *Magnificat* also exists in alternative versions, one mostly choral and the other (used here) with five parts for soloists. We actually know the names of the five girls at the Pieta who sang the originals and a lighthearted poem of 1730 describes their voices. On this recording the five different parts are given to two singers, Teresa Berganza and Lucia Valentini Terrani. The work emphasises Vivaldi's inventiveness and harmonic explorations and the score is given a sympathetic reading by Riccardo Muti.

★ **WILLIAMS:** *Stars Wars/Close Encounters*. National Philharmonic Orch. cond. by Charles Gerhardt. RCA RL 12698.

Film music is usually purely functional and it is rare to find a score effective enough to stand on

its own feet in the concert hall. *Things to Come*, *Henry V*, and the *Spitfire Prelude and Fugue* are isolated cases, although recently film music is becoming more appreciated, largely due to the efforts of Charles Gerhardt, the National Philharmonic Orchestra and the good offices of RCA. *Star Wars*, composed by Californian John Williams, is perhaps the most effective film score of recent years. It could be argued that the music is a consommé of Holst, Walton, and Korngold, yet it is effective and obviously popular. This is the fourth recording in the space of a few months—we have had the composer conducting the London Symphony both on sound track and in studio, Zubin Mehta with the Los Angeles Philharmonic, and now Gerhardt. In many ways this is the best of them all and has the added attraction of music from another John Williams film *Close Encounters of the Third Kind*. The latter is not nearly so effective on record, although probably adequate for film purposes. The new RCA recording is excellent and can be recommended.

Organ Recitals

The specialist label for organists is Vista, a small company directed by Michael Smythe, an organ enthusiast who generally uses simple recording techniques with just a single microphone placed strategically to obtain best results according to the acoustics of the building. There are some 60 recordings, mostly of organ music performed by British organists and featuring instruments in leading cathedrals and churches in the UK.

Perhaps his best achievement to date is a complete set of Rheinberger Sonatas (Vista VPS 1010–1020) available singly if required, played by Conrad Eden at Durham Cathedral, Robert Munns at Norwich, Robert Fisher at Chester, and Timothy Farrell at Westminster Abbey. Herbert Howells is also well represented with two records. Michael Nicholas at Norwich (VPS 1031) plays the Six Pieces for Organ and the Siciliano. The follow-up (VPS 1056) has the Psalm-Preludes Op. 32 played by Robert Weddle at Coventry and Richard Galloway at the Church of the Holy Rude, Stirling.

While at Norwich Mr. Smythe also recorded Graham Barber in a programme of French music (VPS 1032). The exciting *Fanfare* by the blind Breton Jean Langlais, Marcel Dupré's *Vision* and music by Jeanne Demessieux. VPS 1039 is unusual, being the first disc I have encountered of an organ duet, in this case

Stephen and Nicholas Cleobury at Westminster Abbey. Gustav Merkel is a name conjuring up pretty little Victorian salon pieces in the 'Star Folios', but his Sonata in D·Min. is a classic organ duet in Mendelssohnian style. The record also contains music by Samuel Wesley, Thomas Tomkins, Elisabeth Lutyens and Kenneth Leighton. Highly recommended. Donald Hunt is at the organ of Worcester Cathedral on VPS 1057 in a programme by Langlais, Boellmann, D'Indy and Dubois. These are all impressive recordings of vital importance to lovers of organ music.

Organ Music from Cambridge No. 5 (Grosvenor GRS 1057) presents Dr. Richard Marlow playing Bach on the new Metzler organ in the Chapel of Trinity College, Cambridge. Dr. Marlow has already recorded on the old Harrison and Harrison instrument and now he shows off the first organ Metzler's have built in this country. It has a clear bright tone with impressive bass, although at times the recording becomes rather top-heavy. All the pieces date from Bach's early years at Saxe-Weimar and Dr. Marlow gives careful, thoughtful readings. The recording by John Taylor is of a high standard.

Organ Music from Hexham Abbey Volume 2 (Crescent ARS 116) is played by Gerald Gifford and presents a sequence of English organ music from Tomkin, Blow, Greene, and Arne to the impressive Choral Song and Fugue by S. S. Wesley. Side 2 comprises voluntaries by the blind John Stanley, a Noel by D'Aquin and finally some Bach. The organ was built in 1974 with two manuals, 34 stops. Mr. Gifford gives his usual competent performance but the recording is not quite as vivid as Volume One reviewed last year.

Collections

Readers looking for glittering performances of popular Russian showpieces should beware **Rostropovich Conducts** (HMV ASD 3242), as the world-famous cellist takes an extremely cautious approach on the conductor's rostrum. He seems unable to give a coherent account and tends to divide the music into short sections which can be disturbing in Glinka's *Ruslan and Ludmilla* Overture and his *Valse-Fantaisie*. The caravan crossing *The Steppes of Central Asia* seems more weary than usual, and there are some dull moments in Rimsky-Korsakov's *Caprice Espagnole*. Best performance on the record is of Mussorgsky's *Night on a Bare Mountain*. The general pedestrian approach has infected the Orchestre de

Paris who, in spite of individual instrumental solos of high quality, can do better than this. By contrast **Herbert Von Karajan** ★ (HMV ASD 3431) with the Berlin Philharmonic Orchestra produces some exciting versions of Debussy and Ravel. Star of the disc is flautist Karl-Heinz Zoller. Apart from his beautiful account of *L'Après midi d'un faune* he is heard to good affect in *Dialogue du vent et la mer* and at the start of Ravel's *Bolero*. Debussy's *La Mer* is clearly a Germanic ocean and there is little Gallic charm, but nevertheless this is a cracking performance with every department in this great orchestra showing magnificent form. Highly recommended.

From full orchestra to a single guitar and in particular to the artistry of John Williams who plays **The Music of Barrios** ★ (CBS 76662) (Cassette 40-76662). Augustin Barrios (1885-1944) was Paraguayan, the first guitarist to make records, the first to play Bach on the guitar. A virtuoso who ended up as Professor of Guitar but who claimed Indian descent and appeared on the Halls in full costume. His catholic taste ranged from Bach and the classics to Latin American dance music. All is represented here, in fact *La Catedral* is a mixture of both styles. Barrios sometimes used a special guitar to reach a top 'C', and in the sleeve note John Williams explains that he has achieved the same effect by sticking a matchstick to the fingerboard. Absolutely enchanting.

Reader's Digest continue to provide excellent boxed sets of popular classical music, valuable in particular to those just investing in hi-fi equipment and wanting a basic library in the handiest and most economic way. If your fancy is for Piano then **Classical Piano Magic** played by Earl Wilde is just the thing. Earl Wilde is one of those rare breed — a pyrotechnical wizard who is also a thorough musician into the bargain. He is unsurpassed in the romantic repertoire and, in this country at any rate, does not always receive the full adulation he deserves. This six record set features him in famous concerti by Chopin, Rachmaninov, St. Saens and Liszt together with Mussorgsky's *Pictures From an Exhibition* and other solo pieces. Every one is a winner and if some of the recordings show a faint sign of age, Wilde's playing is so compelling that it goes unnoticed.

Light Music

Just as Vista specialises in serious organ music, another small company (Grosvenor) devotes a large section of its catalogue to the

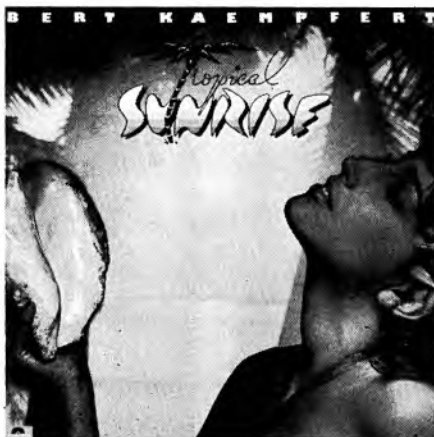
electronic organ. **Howard Beaumont Plays** (GRS 1061) features the European demonstrator for the Baldwin Piano and Organ Co. putting a Baldwin Fanfare 133 through its paces. **I Hear Music** (GRP 1062) has Graeme Wright of Farfissa demonstrating the Coronet, a complex machine giving off a sound not unlike the Wurlitzer cinema organs of old. Blind organist **Peter Bartle** shows his mastery on the X-5 Hammond coupled to a Leslie 760 speaker system (GRS 1060). Also on the Hammond X-5 is Brian Hazelby on a disc entitled **Great Expectations** (GRS 1064). Brian is a frequent guest at organ clubs throughout the country and works regularly in a Sutton Coldfield theatre-restaurant. He is reinforced by a Leslie 145 ARP synthesizer, Elka Rhapsody 610 and Kawai Grand Piano. Better still he has the advantage of Brian Ford on drums which gives an added sparkle not possible when the soloist relies entirely on the in-built rhythm of his organ.

Strictly Instrumental is the title of Les Bonner's third record for Grosvenor (GRS 1063) on Farfissa Coronet supported by Eddie Hayes on percussion and Mike Miller on guitar. Finally, the Wurlitzer 625T features on **Tomorrow's Sounds Today** (GRS 1065) with organist Jimmy Smith. All titles comprise a good cross section of modern light and popular music and my only complaint is that most of the organists slip in an arrangement of a classical piece, music which sounds completely out-of-place on electronic organs. In all cases the recordings are first-class.

On the Lighter Side ★★ is a fair description of the Robin Davis Orchestra on Merlin Fidelity MRF 77901. This new label is aimed at the hi-fi enthusiast and the company claims to have minimised the problems of surface noise, tape hiss, lack of dynamic range and distortion. These are not Direct-Cut records but recorded by mixing direct to stereo as against the usual multi-track method. Only four records are available at the moment distributed through Wilmax Ltd., 35 High Street, New Malden, Surrey. The only question which the record buyer will ask is whether or not the discs are worth the £6.95 recommended retail.

Make the Most of Every Moment (Pye NSPL 18519 — Cassette ZCP 18519) is the title track of Graham Dee's record of pleasant ballads with a beat, ideal for late night listening. There is a small backing vocal and instrumental group and the recording is good.

Max Bygraves is in irrepressible form in **Gold Greats of the Fifties** (Pye NSPL 18532 — Cassette XCP 18532). Titles are taken from past hits but this present recording is first class. Backing orchestras include those of Norrie



Paramor, Nick Ingrams and Frank Barber. Bert Kaempfert albums are always well produced and this latest offering *Tropical Sunrise* (Polydor 2310 562 — Cassette 3100 405) is up to standard being in the demonstration class. The mood is quiet and mellow with some crisp latin percussion backing. Tracks include *Footprints in the Sand* and *Island in the Sun*. Recommended.

Bing! is the simple title of the Decca double album (DBC 1/2) which pays tribute to the old groaner in a unique way. The first record contains twelve stereo tracks all recorded in 1975-6 including three titles appearing for the first time. The second comprises fourteen 1931 vintage solos including one, *I found you*, cut in December 1931 which is released for the first time outside USA. The attractive cover presents a selection of pictures and sentimental sleeve notes.

The **Music of Eric Coates** makes a welcome return on CFP 40279 where Charles McKerras conducts the London Symphony Orchestra in all the old favourites including *Sleepy Lagoon* and *The Three Bears*. It first appeared on a ten inch Columbia in 1956 but has transferred really well and can be recommended. Even the original succinct sleeve note by Charles McKerras has been reprinted. As a filler there are Gilbert and Sullivan Overtures concluding with a fine *Yeomen of the Guard* from Kenneth Alwyn. Unfortunately Sullivan rarely bothered with Overtures, leaving them to his assistant conductors to score. Hamilton Clarke's *Mikado* is the usual potpourri type which would have given the first-night audience little indication of the masterpiece to follow. The original *Ruddigore* Overture was a crude selection of doubtful authorship and for



the revival 34 years later was replaced by a new piece scored by Geoffrey Toye.

Reader's Digest continue to provide excellent value in their boxed sets, particularly in the field of light entertainment. The **Best of Andy Williams** contains six records from CBS catalogue including all the old favourites, *Happy Heart*, *Can't Help Falling in Love*, *Bridge over Troubled Water* — in fact just about everything the fans could wish for, plus a bonus record featuring the Percy Faith Orchestra. **The Incomparable Como** is a six-record set of Perry Como from RCA sources. Many tracks are electronically processed for stereo, but the collection represents an opportunity for Como fans to possess a great anthology in one library box.

The Best of James Last ★ is a six record set with bonus disc culled from Polydor catalogue. One of the refreshing facts about James Last is that, although there is no mistaking his special sound, he is versatile enough to avoid being stereotyped. Sometimes he features only brass and percussion, sometimes the accent is on electronic organ, and of course he can 'go to town' with strings, wordless chorus — in fact the lot! All these facets can be heard on this set with some extremely good stereo sound on all tracks. These three boxed sets are obtainable only from Readers' Digest or their appointed outlets.

RCA are producing some brilliant brass band records and one in the demonstration class is **Jubilant Brass** (PL 25081) featuring British Music for Symphonic Brass Ensemble. A tremendous recording with great stereo presence brilliantly played by the Locke Brass Consort conducted by James Stobart. A must for dealer demonstrations. Apart from that I cannot

envisage anyone sitting down to listen to sixteen fanfares (or even one) for an evening's entertainment. The demand must be extremely limited.

Of same high quality is **European Brass** (PL 25117) with the **Black Dyke Mills Band** conducted by Edward Heath and Roy Newsom. The programme has been designed to show the technique and musicianship of one of our finest bands in a super recording such as we have come to take for granted from Chandos (who have made it for RCA). Edward Heath conducts three Denis Wright arrangements of music by Smetana, Rossini and Tchaikowsky, and he wins some elegant tones and delicate crisp playing in the *Nutcracker Overture*. Among the items conducted by Roy Newsom is a Gordon Langford arrangement of a Handel *Siciliana* and *Giga* with some agile horn work from Kevin Wadsworth.

National Brass Band Festival (PL 25118) was recorded live from the Albert Hall with the Grimethorpe Colliery, Wingate's Temperance, Stanshawe (Bristol), and Yorkshire Imperial Metal Bands, all conducted by Elgar Howarth. Guest conductor is 75 year old Harry Mortimer, who leads the combined bands in *Life Divine*, a Cyril Jenkin's test piece that he has made his own. Gerald Schwarz, co-principal trumpet of the New York Phil is soloist in a *Trumpet Voluntary* by John Bennett and Harry James' *Concerto for Trumpet*. Unfortunately the Albert Hall acoustics defeat the music for most of the time, although Elgar Howarth turns the notorious echo to advantage in his arrangement of *Greensleeves*.

Bargain Basement

Pickwick International provides many serviceable versions of the classics on the Camden Classics label retailing at a mere £1.15. However, the company have released a double album newly recorded in St. Giles, Cripplegate by Bob Auger. **Music You Have Loved** (Pickwick PDA 036) features the London Symphony Orchestra conducted by Vilem Tausky in 26 tracks of popular Grand Hotel genre mixed with a few surprises. Arthur Benjamin's witty *Jamaican Rumba* has been missing from the catalogues far too long and it is nice to welcome the *Intermezzi* from *Goyescas* and *I Quattro Rusteghi* in a popular programme. Soloists are John Georgiadis, Maurice Murphy and David Cripps. Recommended.



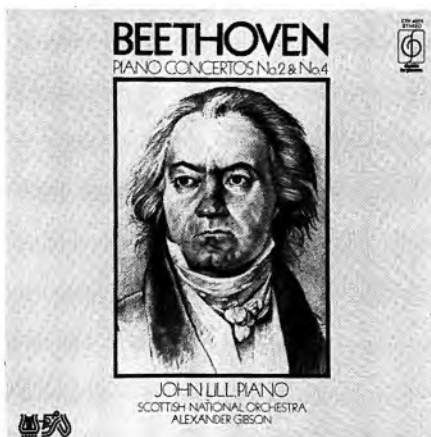
Much interesting music on Saga label is marred by poor surfaces. Of recent records sampled this puts out of court the fascinating **Early Guitar** featuring James Tyler (5455), **Songs of Love and Death** (5450) with baritone Norman Bailey and John Constable, and the **Guitar Music of Villa-Lobos** played by Eric Hill (5453). **Chopin Recital** by Natalia Karp (5457) has heterodox sound. The piano tone tends to be harsh in the treble but not enough to spoil listening enjoyment. Sleeve note quotes Arthur Hedley as saying 'Natalia Karp is outstanding among women pianists of our day for her sensitive and artistic comprehension of Chopin's work', and this is true although lack of firm technique lets her down when under pressure. Thus her finest achievements are the centre section of the *Fantaisie-Improptu*, the *Andante Spianato* and the *Nocturne in E Min.*, all showing remarkable beauty of tone. The *Waltz in A flat* Op. 34 No. 1 is spoiled by a tendency to detach grave notes and over pedalling. The much-publicised *Cantabile in B flat* (first recording) turns out to be a trifle of 14 bars length sounding like the first draft of the *Waltz in A Min.* Op. 34 No. 2 dating from the same period. The gem of the latest batch of Sagas is **Second Book of Debussy Preludes** played by Livia Rev (5442). I mentioned her first Book (5391) in the 1977 edition and this sequel is equally impressive. Debussy expected the pianist to regard the instrument as being without hammers, to produce an ethereal haze of sound from which specially designated hard-struck notes would emerge in greater force. His own playing (available on transfers from piano rolls) well illustrates this. Livia Rev achieves this effect with apparent ease. She is sensitive, plays with real feeling, and her pedalling, so important in

Debussy, is faultless. It would be invidious to pick out individual pieces but I was particularly impressed by the brilliant *Feu d'Artifice*, the full value given to reiterated notes in *Ondine* the tremendous technique and control in *Les Fees* and the confident attack and cake-walk swagger of *General Lavine*. Tremendous stuff!

On Classics for Pleasure, American pianist Craig Sheppard tackles the formidable **Rachmaninov Piano Concerto No. 3 in D Min.** (CFP 40257) in a clean, crisp manner, although the first movement Cadenza and some of the violent outbursts in the slow movement tax his technique to its limits. The opening bars do not impress but this is the fault of conductor John Pritchard who, however, soon gets into the swing of things and improves with each bar until his final *Alla breve* movement is really in full-blooded Romantic tradition. My first choice on bargain labels is Byron Janis on Camden Classics, but Sheppard is much preferable to the eccentric Berman on full-price CBS. Recording is adequate but not exceptional and my copy had more than a reasonable amount of surface noise on Side 2.

Gaetana Delogu conducts the London Philharmonic Orchestra in **Mahler's First Symphony** on CFP 40264, and on first hearing this is a magnificent achievement with the conductor rivetting attention from beginning to end. On repeated hearings, however, I do not think that he quite gets to the heart of Mahler's complicated reasoning in the outer slow movements. The oboe cuckoo calls are roughly handled (not, I may add, is this any reflection on the fine soloist), and compared with Walther on CBS or Levinne on RCA the approach is almost casual. No doubt the two middle movements are Delogu's best. The Schubertian *Ländler* dances merrily, and the macabre *Funeral March* with its interruptions of Jewish dance rhythms is calculated expertly. Recording is lacking in presence but for £1.25 is good value.

On CFP 40278 the leader of the LPO quits his desk to give us a recital of tried and trusted **Kreisler Favourites** with Michael Isador at the piano. Warm and sensitive performances by Rodney Friend to delight the connoisseur, although I personally thought him too hurried in the *Gluck Melodie* and the *Corelli-Tartini Variations*. Kreisler was also a fine pianist and his very first record was in that capacity. His piano writing is particularly rewarding and Michael Isador obviously enjoys himself, producing a lovely tone. In fact his involvement with tone production sometimes leads to slackness of rhythm.



John Lill continues his series of **Beethoven** concertos with the Scottish National Orchestra under Alexander Gibson on CFP 40271 which contains numbers two and four. His aristocratic classical approach produces the best version of the early B flat Concerto on record and if the Romanticism of the later G major escapes him one can still revel in the sheer accuracy of his scale passages. First choice of the same coupling would be Stephen Bishop and Colin Davis on Philips, but for £1.25 this is a well-recorded recommendable disc. Incidentally, Lill uses Beethoven's own Cadenza's in each case.

Spoken Word

Barrie's **Peter Pan** caused a sensation when first produced as the large cast and five scene changes made it something completely new in the theatre world. That first-night audience awarded complete approval and it has been charming youngsters every year since. Argo boxed set (ZSW 581-3) is based on a novel which appeared in 1906 and stars the talented Dotrice family. Roy Dotrice performs the gargantuan task of narrating as well as acting the villainous Captain Hook, typical Edwardian daddy Mr. Darling, and a variety of pirates. Remaining characters are shared between the ladies of the family: Michele, Karen, Kay and Yvette. The use of Mendelssohn's *A Midsummer Night's Dream* is an inspired choice and it is well played by the New Philharmonia under Rafael Fruhbeck. Some stereo effects are most spectacular. All royalties go to the Great Ormond Street hospital.

Jazz, Rock and Pop

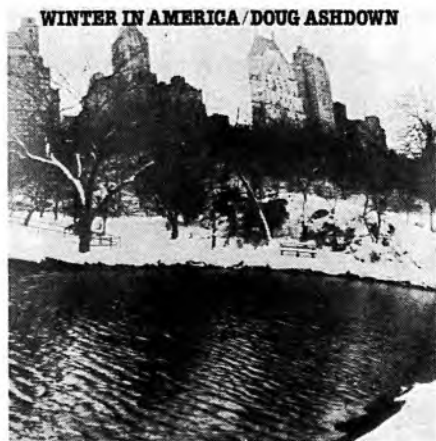
The Duke Ellington Song Book (Verve 2332 090 — Cassette 3100 405) is a tribute from one great jazzman to another. The Oscar Peterson Trio in sparkling form reproduce some of the Hit songs of the Duke, mostly those composed between the years 1938-41. The tracks originate from 1958 but the present recording is fresh and with a warm ambience well suited to Peterson's cool detached style. He is given solid support by Ray Brown on Bass and Ed Thigpen (drums) and the three give their best performance in the hauntingly beautiful *Prelude to a Kiss*.

Much modern music is hard to classify and Tom Newman's *Faerie Symphony* could hardly be called pop. Tom is the person who discovered Mike Oldfield for Virgin Records some five years ago and engineered and co-produced the legendary *Tubular Bells*. During the last year he has been working in his studio on board a barge in Little Venice and *Faerie Symphony* (Decca TXS 123 — Cassette KTXC 123) is the result.

Doug Ashdown's debut record in England is entitled *Winter in America* (Decca TXSR 125 — Cassette KTXCR 125). Doug was born in Warlingham and moved to Australia in his youth. He made several hit singles and albums in Australia before moving to Nashville in 1970. The title track on this album is also available as a single.

True to Life ★ (Cross-over SHU 8509 — Cassette KSACU 8509) presents the inimitable Ray Charles in such classics as *Oh, What a beautiful mornin'*, *Let it be* and *I can see clearly now*, in accompaniments by Larry Mahoberack, Sid Feller, Roger Newman and Ray himself. Highly recommended.

De Danaan (Decca SKL.R.5287) is an Irish folk group and the record was cut in Germany. The five-piece band play an assortment of fiddle, banjo, bazouki, bodhran and bones in authentic style. The sleeve gives ample information about the tunes but nothing on the group itself. A fine recording of attractive, catchy music.



Surround sound in the UK

by Geoff Shorter

THE LAST Hi-Fi Year Book survey of surround sound (1975 edition) showed a prominent bias toward commercial interests. Hardly surprising because then the field was dominated by Japanese and American equipment manufacturers and record companies: the proponents of the CD-4, UD-4, SQ and QS systems were widely known. Broadcasters and others hardly ever seemed to get a look in. Now, the situation is completely different and Britain is in the forefront of development.

Of course it wasn't just commercial interests that were responsible for this — hardly anyone knew where they were going. Part of the trouble was that the systems had been invented before the complexities of human hearing had been properly understood and the marketers got hold of them too soon. Indeed it is only recently that a major broadcasting organisation asked itself to clarify the degree of improvement of 'quadraphony'* over two-speaker stereo in terms of subjective quality†.

Consumers were very much left to sort it all out for themselves, a point brought home by the issue of a test record in four systems by *Hi-Fi News*, listeners making up their own minds about how effective the four systems

were. Earlier, the only system evolution published in the technical press had been the limited-scale informal listening test carried out on the directional characteristics of three two-channel surround systems by the author, *Hi-Fi News*, March 1975, which showed directional superiority for a central listener of BMX, the baseband code of UD-4.

The systems are still 'ticking over' except perhaps for CD-4 which, as a philosophy at least, appears to have been quietly buried. Sansui's QS system can still be bought in at least one of their receivers and other firms also sell QS decoders, but the repertoire of records available in the UK is limited. The Variomatrix technique also remains as a respectable way of decoding stereo into four speakers, as a decoding method for SQ, and for the BBC's HJ surround coding with some alteration in circuitry (see for example *Wireless World* May and June 1977, and corrections, Sept. p59 and Dec. p77).

The SQ system and its decoding technique came out well in FCC comparisons with a pair-wise mixed four-track master tape on music, which didn't surprise many — its decoder is designed to do just that. Perhaps its future will depend on whether other parties can convince the FCC that their systems have more to offer and that a pwm-tape test is not the best way to evaluate systems.

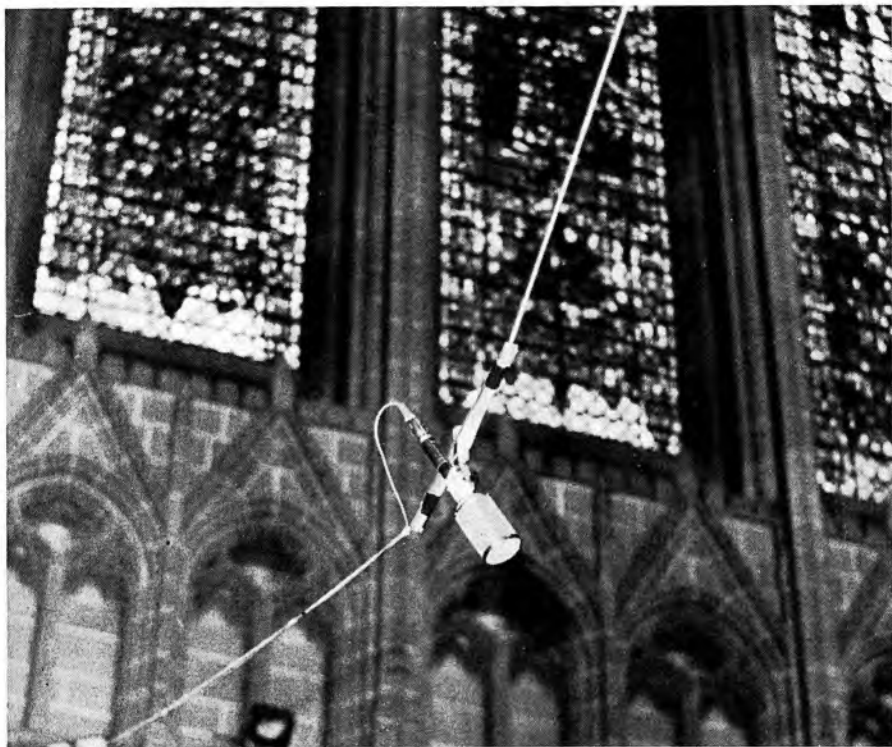
The UD-4 system is currently not available in the UK but is far from dead; its baseband coding is likely to be altered to be closely compatible with NRDC system UHJ when it does reappear on the UK market.

★ ★ ★

*Quadraphony, or quad, as a descriptive term for all-round or surround sound, is nowadays deprecated. Besides being ambiguous — microphones, channels or loudspeakers? — there's no one-to-one correspondence, and some writers change from one to another without telling you — there is no fundamental need for four of anything in reproducing sound, synthetic or natural.

†Average preference scores for quadraphony by non-experts, audio enthusiasts, and audio and acoustic engineers were +1.3, +1.2, and +0.8 for four speakers in front, and +0.9, +0.5, and +0.3 for a square of speakers respectively where +1.0 means 'slightly better' than two-speaker stereo. NHK Laboratories Note 203.

There are two extremes in two-channel codings for surround sound. One is the amplitude code of regular matrix or RM (a horizontal great circle on the phase-amplitude sphere, or the energy sphere of Gerzon), to which the QS system approximates as a pan-potted version. Relatively poor mono compatibility is the main problem with this.



The other is a phase coding, thought of by Cooper (BMX), Fellgett (omni-phasor), and by Gerzon in various forms, all at around the same time. Phase differences in stereo generally let this vertical-circle approach down.

Michael Gerzon of the Mathematical Institute, Oxford was the first to suggest a compromise locus based on a circle tilted at 45 degrees, in 1972. Called SMQ, it reduced centre-front phase difference to 22 degrees and maintained reasonable compatibility with both RM and BMX. Then, armed with an energy sphere model for analysis of matrix systems, his theory of one-point microphone design, an approach to psychoacoustic decoding, and a study of periphonic systems (and much more besides), he turned to John Wright and Peter Fellgett to enjoy NRDC backing for what became known as ambisonics. Work continued and they published their ideas for a surround-sound standard in *Electronics Letters* at the end of 1975, after having tried to interest various parties in a unified standard. While Nippon Columbia (UD-4) showed willing, the BBC with a broadly similar code, went their own way and as a result are somewhat behind in ambisonic technology.

Calrec sound field microphone used in Liverpool Cathedral during the Centenary Celebration performance of Mahler's 8th Symphony. The live broadcast was the first transmission using Ambisonics system and was carried out by Radio City, Liverpool in collaboration with IBA engineers. One of these microphones was used to record this year's Promenade Concerts.

They ended up with not only a proposal for a compatible two-channel surround system but proposals for a hierarchy of inter-compatible systems, including a three-channel implementation and a band-limited version for broadcast use with reduced third-channel level (dubbed 2½-channel), and a four-channel option for periphony (all-round sound, as in nature).

Ambisonics, as they called their project, is not just one system or even a family of kernel systems, it is the new technology of surround sound, how to mike it in three dimensions, process it, transmit it in a given number of channels, and decode it into four or more

speakers; the present-day equivalent of the Blumlein philosophy if you like.

★ ★ ★

Meanwhile, the BBC had been testing SQ and QS, with various decoders, a Scheiber tetrahedral locus, BMX, and other possibilities called G and its computer-generated variants, one of which was H.

They found H gave best compatibility of those tested, being similar to a BMX locus with its upper portion bent forward so that centre-front position would have a 48-degree phase difference and not 90 degrees. Trouble was — as the originators of QS and SQ found with their two-channel systems — a high sensitivity to listener position, and in the case of H an effect described as a ‘closing-in’ sensation. Cooper, Shiga & Takagi avoided this in UMX by augmenting BMX with a third channel to give what was called channel TMX, but this isn’t on with a bent locus if you want to cater for different amounts of band-limited third channel, according to the Ambisonics people. In any case, the BBC had said they weren’t interested in three-channel systems.

So the BBC looked at what they considered the most promising of the program-actuated decoders — Sansui’s Variomatrix — to help sell, in effect, matrix H. Adding a phase shift circuit to a Variomatrix decoder (wideband phase difference networks in the two inputs to the decoder) can give a crude approximation to an H decoding of pair-wise mixed material.

A better match would be obtained if the left and right inputs and outputs of the Variomatrix were interchanged. Alternatively, the H locus could be inverted to achieve the same effect.

The BBC haven’t said why they didn’t opt for this; switching between QS and H would then be a simple matter, and Sansui would then have added an H decoding position to their equipment.

In addition to this approach there is the possibility of modifying the variable matrix in a more direct way to decode H. This would normally be a matter of consultation between Sansui and licensee, but Sansui last year agreed to supply sets of integrated circuits to one-off constructors and a suitable design appeared in *Wireless World* June 1977 (corrections Sept. p.59 and Dec. p.77).

This design was published to coincide with the start of experimental matrix H surround-sound broadcasts by the BBC, around May 1977. The BBC made some surprising statements about that time, not least one about the

compatibility of its broadcasts. Apparently convinced that H was the most compatible thing under the sun, BBC Radio said it was *entirely* compatible and that they would not have gone ahead if the normal signal had been ‘in any way impaired’. (They were later to eat these words).

To the Home Office, who had been informed that matrix H ‘had the greatest likelihood of giving quadraphony with negligible impairment to listeners with ordinary equipment’, the impairment was certainly regarded as noticeable, even though not serious. The BBC statement went on to say that all the existing systems had some drawback for broadcasting and ‘so the BBC decided to develop its own system, known as BBC Matrix H, which tests showed gave the best overall performance, and the best compatibility’. But the tests, reported in the May issue of *Wireless World*, did not include the NRDC J system, and thus the BBC statement was entirely misleading. (This announcement was made to representatives of the general press; the technical press would almost certainly have queried such assertions.)

Like its earlier statement to the technical press in which three-channel systems were dismissed, in December 1976, this one presented an air of overwhelming confidence, ultimately reflected of course in the subsequent press coverage, as though the BBC were *the* centre of excellence in matters to do with ‘quadraphony’. It had of course spent some years doing valuable work on phase effects, properties of hearing and ‘quadrasonic’ systems, rigorously investigating proposals, all in fact except the very one that held most promise for the future. But BBC confidence didn’t extend to ignoring the Ambisonics lecture on April 12; they also chose that day to announce the H broadcasts!

The tests referred to were originally intended as ‘open’ tests, in which one would be able to get the best out of each system. But the terms of reference were changed a day or two before they were due to commence, to those of a ‘blind’ test, with anonymous black boxes for each of the two-channel systems. With so little time to optimize their system for these new conditions, the NRDC team felt they had no alternative but to withdraw from the test.

Michael Gerzon, a partner and bright mathematician in the Ambisonics team uses a colour tv analogy to make his point. ‘It’s like testing five tv sets in black and white, with one a colour set. Optimized for colour, the colour set could conceivably have come off worse in black and white.’

Nevertheless the BBC went ahead to promote matrix H, perhaps prompted by sugges-

tions that the BBC was holding back after an incorrect suggestion that it had found in favour of Sansui's QS system. Its promotional campaign appeared to gather momentum and broadened to Europe and to the FCC in the USA.

In the matrix H prom concerts, though some were good, others proved to be 'pretty terrible', and there were reports of them being 'very harsh and patchy' and inducing bad listening fatigue. 'It's difficult to say whether its because of the mic technique or because of the matrix' said one BBC engineer 'we aren't sure yet what the determining factors are'. About half way through the proms, the BBC became convinced under certain conditions a centre front phase problem existed, and they responded by reducing phase difference down to 30 degrees (thus bending their locus even further). Actually, a joint statement by the Ambisonic team and the BBC some time later showed that they had agreed to a set of zones to work within on a circle diagram that encompassed their original H and J loci, but with reduced phase in the front. Tests will continue until March 1979 within these limits, but with the BBC still favouring their bent locus and Ambisonics still favouring a circle locus.

Concerned at what was happening and that H may not meet its long-term needs, the IBA began a programme of research into surround systems. It soon became clear that realism

deteriorated with non-linear decoders, though directional effect is improved, and that three-channel systems sounded very good, whether TMX, JT or HT. They found that bandwidth of JT could be reduced to around 2kHz without loss of surround realism. An IBA listening group found a clear preference for the 2½ channel mode compared to the two-channel mode using either linear or non-linear decoding. This is the mode the BBC say is 'of no interest'. 'We are filled with doubt as to whether a three channel system would ever get off the ground in Europe,' they say.

A third channel would be at a lower level than the other two to avoid causing distortion in certain receivers. This means signal to noise ratio would suffer; but with those systems, e.g. J, that allow band-limiting the subjective increase may be much less than commonly supposed. IBA engineers say the s/n loss to stereo listeners is 0.2dB for a level of -10dB, and in the surround mode the loss would be a further 1.3dB for a 2kHz bandwidth (it may be possible to reduce this even more), slight compared to the difference between mono and stereo reception.

Further studies are being made at the IBA, who are also planning field trials. One preliminary point is the expectation that 2½ channel receivers would not be more expensive than those fitted with variable matrix decoders, and they might even be cheaper.

Aerials FM/VHF

★ Indicates entry is illustrated
Abbreviations used in this section are given on page 140.

■ ADASTRA

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

P200

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

P201

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

■ AERIALITE

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

Aerialite also manufacture a range of vertical
rod-type aerials and anti-static systems for AM
reception.

FMS200

FM/stereo dipole and reflector array with 1-2in
mast attachment bracket. Price: £6.08 (plus
VAT).

FMS300

FM/stereo three-element array with 1-2in mast
attachment bracket. Price: £8.85 (plus VAT).

FMS400 ★

High power stereo four-element array with
1-2in mast attachment bracket. Price: £9.56
(plus VAT).

FMS600

Six-element extra high power (array only)
stereo/FM, with 1-2in mast attachment bracket.
Price: £14.57 (plus VAT).

■ ANTIFERRENCE

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

FM224 Mushkiller

Dipole and reflector 'H' type array. Complete
with universal mast/boom clamp. For use in
good reception areas. Price: £7.20 (plus VAT).

FM234T Mushkiller ★

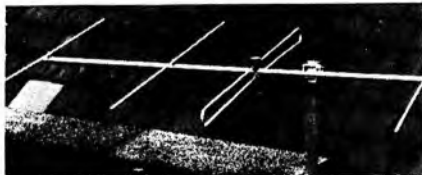
Three-element array with Trumatch dipole,
complete with universal mast/boom clamp, for
medium range FM stereo reception. Price:
£10.50 (plus VAT).

FM244T Mushkiller

Four-element array with Trumatch dipole,
complete with universal mast/boom clamp.
Price: £11.50 (plus VAT).

FM264T Mushkiller ★

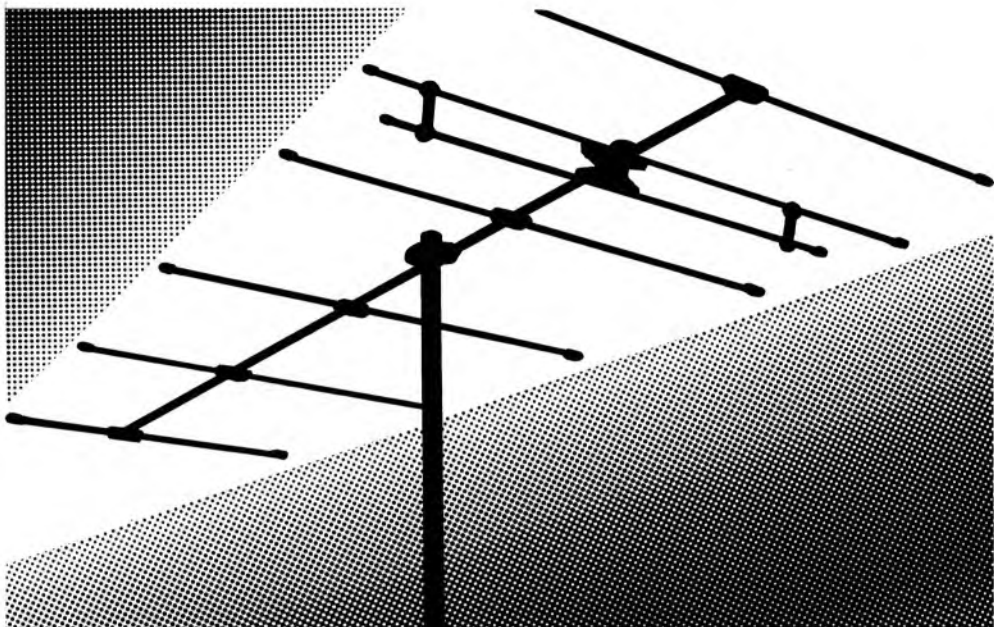
Six-element array with Trumatch dipole, com-



Aerialite FMS 400



Antiferrence FM234T Mushkiller



Antiference ***mush*killers** for better FM stereo reception

Specially designed to bring in the strong clear signal that FM stereo needs. Mushkiller FM aerials are available in various sizes to suit differing locations. The unique Tru-match dipole gives even better all-round performance; wide, even bandwidth and low VSWR

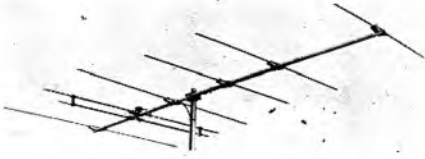
New do-it-yourself models of the three and five element Mushkillers are available, each individually packed with both loft and outdoor mountings.

Send for literature to:

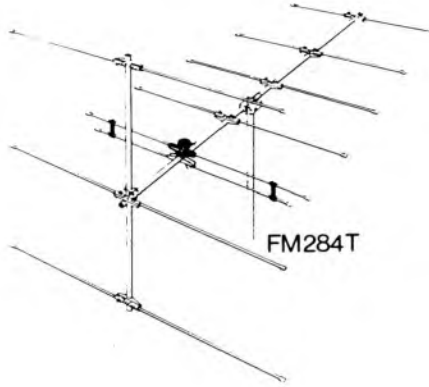
Antiference 

Antiference Ltd Aylesbury Bucks HP19 3BJ Tel 82511 Telex 83666





Antiference FM264T Mushkiller



Antiference FM284T Mushkiller

plete with universal mast/boom clamp. Suitable for medium and long-range FM stereo reception. Price: £17.50 (plus VAT).

FM284T Mushkiller ★

Eight-element array with Trumatch dipole complete with universal mast/boom clamp. Price: £22.50 (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: £10.50 (plus VAT).

FM255T D.I.Y. 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: £13.50 (plus VAT).

MA102 FM Mast Head Amplifier

Masthead amplifier in fully weatherproof housing complete with perforated strip and bracket for mast or surface mounting. Typical gain: 15dB. Price: £10.40 (plus VAT).

PUI02 Power Unit

Power unit for MA102 FM. Fully insulated housing. Price: £9.10 (plus VAT).

TRR/V/SP Receiver Transformer

Matches 75 ohms coaxial input feeder into 300 ohms aerial sockets on imported tuners and tuner/amplifiers. Price: £2.25 (plus VAT).

UF2/SP TV/FM Aerial Combiner

In fully weatherproof housing complete with perforated strip and bracket for mast or surface mounting. Price: £2.86 (plus VAT).

Y12SP TV/FM Aerial Outlet

With built-in diplexer to separate TV and FM signals from a common download. Can also be used indoors to combined TV and FM aerials. Surface mounting. Price: £1.82 (plus VAT).

812/SP TV/FM Aerial Outlet

Similar to Y12 but designed for flush-mounting. Price: £2.86 (plus VAT).

FMS/2 Stacking Kit

For stacking two Mushkillers. Price: £4.00 (plus VAT).

■ EAGLE

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

FMA 10

Band II dipole for loft mounting. Price: £3.15 (plus VAT).

FMA 20 ★

Band II FM aerial outdoor or loft mounting, 3dB gain. Front to back ratio of 6dB. Price: £4.25 (plus VAT).

FMA30

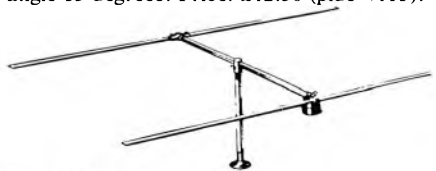
Band II FM aerial outdoor or loft mounting, 6dB gain, front to back ratio 8dB. Acceptance angle 40 degrees. Price: £6.80 (plus VAT).

FMA 40

Band II aerial, 4-element, outdoor or loft mounting, 7.5dB, front to back ratio 25dB, acceptance angle 35 degrees. Price: £8.50 (including VAT).

FMA 50

Band II aerial, 2-director, double reflector, 8dB gain, front to back ratio 32dB, acceptance angle 35 degrees. Price: £12.50 (plus VAT).



Eagle FMA 20

★ Indicates entry is illustrated

DA1

Complete 75 ohms indoor aerial with lead.
Price: £3.45 (plus VAT).

■ EXATOR

Audio Workshops Ltd, 33 London Road,
Southborough, Tunbridge Wells,
Kent TN4 0PG.
Tel: Tunbridge Wells 39222.

Exa Stereo UKW 5

A 5-element aerial for medium/long range
reception. Gain 7dB. Front-to-back ratio
22.5dB. Gold anodised finish. 75 ohms unbal-
anced output. Price £15.12 (inc. VAT).

Exa UKW 2

A 2-element FM aerial for local/medium range
reception. Gain 3.0dB. Front-to-back ratio
9.0dB. Gold anodised finish. 75 ohms unbal-
anced output. Price: £8.40 (inc. VAT).

VMB 420

Masthead amplifier covering the FM band
from 87.5MHz to 104MHz. Gain 15dB. Price:
£34.00 (inc. VAT).

■ FUBA

Audio Workshops Ltd, 33 London Road,
Southborough, Tunbridge Wells,
Kent TN4 0PG.
Tel: Tunbridge Wells 39222.

Uka Stereo 8 ★

A semi-professional 8-element FM aerial for
very difficult positions and when only the very
best is good enough. Gain 9.9dB. Front-
to-back ratio 24dB. Output imp 75 ohms unbal-
anced. Gold anodised finish. Price: £36.65.

Uka Stereo 5 ★

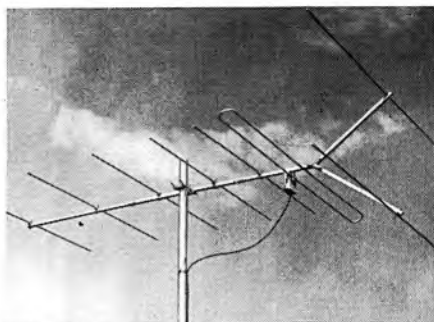
A semi-professional 5-element FM aerial for
very difficult positions. Gain 7.9dB. Front-
to-back ratio 23dB. Output imp 75 ohms unbal-
anced. Gold anodised finish. Price: £24.40.

Uka Stereo 2

A high quality aerial for local/medium range
reception. Gold anodised finish. Gain 3dB.
Front-to-back ratio 10dB. Price: £12.70.

Uka 061

An omni-directional broadband FM aerial
utilising the crossed dipole technique. Gain
-3dB. Output imp 300 ohms balanced. Con-
version to 75 ohms possible using AKW 561.
Gold anodised finish. Price: £17.30.



Fuba UKA Stereo 8



Fuba UKA Stereo 5



Jaybeam Stereobeam SBM2

■ 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 inter-
ference from rear. Price: £6.80 (plus VAT).

Stereobeam SBM3 ★

Band II aerial comprising folded dipole, reflec-
tor 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: £10.40 (plus VAT).

Stereobeam SBM4

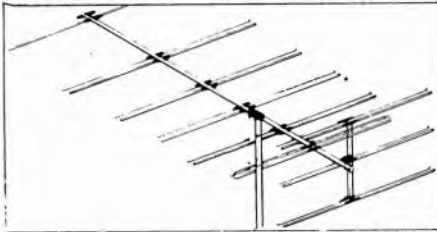
Band II aerial comprising folded dipole, reflector and two directors on boom. Supplied complete with clamp to fit masts up to 2in diameter. Suitable for medium fringe areas where large input signal is required for optimum performance. Gain: 7dB. Price: £11.30 (plus VAT).

Stereobeam SBM6 ★

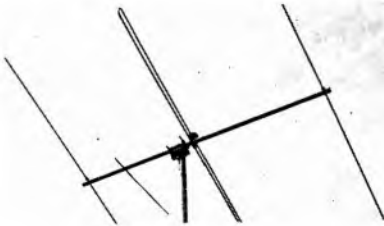
High-gain Band II aerial comprising folded dipole, reflector and four directors on boom. Supplied with clamp to fit masts up to 2in diameter. Suitable for use over the whole of the FM/VHF band, including the more powerful continental stations in favourable locations. Gain: 8.5dB. Price: £16.50 (plus VAT).



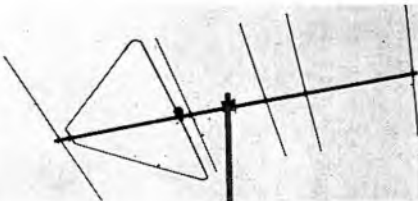
Jaybeam Stereobeam SBM3



Jaybeam FM9S



Maxview D/FD3



Maxview Stereomax 6

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: £5.35 (plus VAT).

FM9S SuperFringe Area FM Antenna ★

Consists of folded dipole, five directors and triple reflector unit with universal mast clamp. Price: £29.70 (plus 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: £5.80 (plus VAT).

■ MAXVIEW

Maxview Aerials Ltd, Maxview Works, Setch, King's Lynn, Norfolk.
Tel: Watlington 376/591.

Maxview D/DW

Band II wall-mounting dipole with stand-off arm and adjustable swivel fitting. Price: £4.40 (plus VAT).

Maxview D/DM

Band II dipole array with bracket for mast fitting. Price: £4.20 (plus VAT).

Maxview D/HM

Band II array comprising dipole and reflector on boom. Bracket for mast mounting. Price: £5.63 (plus VAT).

Maxview D/S3

Band II three-element array comprising director, dipole and reflector. Bracket for mast mounting. Price: £7.00 (plus VAT).

Maxview D/FD3 ★

Band II three-element array comprising director, folded dipole and reflector. Bracket for mast mounting. Price: £7.74 (plus VAT).

Stereomax 4

Tripole, two directors and reflector. Price: £10.74 (plus VAT).

Stereomax 6 ★

Tripole, four directors and reflector. Price: £15.02 (plus VAT).

Stereomax 9

Tripole, four directors and four reflectors. Price: £20.80 (plus VAT).

★ Indicates entry is illustrated

■ PREMIER

Premier Industries Ltd, 297-345 High Street, Cheltenham Spa, Gloucestershire GL50 3HS. Tel: Cheltenham 27782.

TS4 ■

Four-element Band II array comprising two directors, folded dipole and reflector with easier assembly. Bright alloy and very robust. Price: £12.04 (plus VAT).

TS6

Six-element Band II array comprising four directors, folded dipole and reflector with easier assembly. Bright alloy and very robust. Price: £14.26 (plus VAT).

Clarity PH/ST

Phasing harness for coupling two TS4 or two TS6 arrays for extra long distance reception. Price: £4.32 (plus VAT).

TS1

Single dipole Band II array. Supplied with 2 in. universal mast clamp. Price: £3.64 (plus VAT).

TS2

H Band II array. As above. Price: £5.40 (plus VAT).

TS3

Three element array, folded dipole. Price: £8.84 (plus VAT).

Soundtrack

Five element on round boom construction for areas where trouble with interference is prevalent. Price: £19.28 (plus VAT).

TS3L

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

■ ROSS

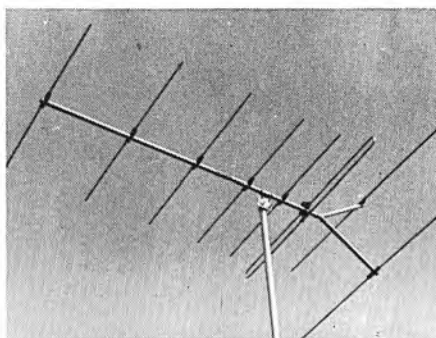
Ross Electronics, 32 Rathbone Place, London W1P 1AD. Tel: 01-580 7112.

RE-530K/RE-534K

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



Vorta Mk VI Dome Antenna



Vorta Octophonic OST 8

■ VORTA

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

Vorta Mk VI ★

Dome antenna. Omni-directional stereo enclosed aerial. Price: £32.87 (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. Gold finish. Gain: 10.27dB. Price: £34.64 (plus VAT).

Quinphonic-QST5

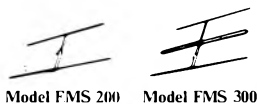
Continental style 5-element Band II aerial, comprising 2 directors, folded dipole (75/300 ohms matching transformer built-in), and a 2-element fish tail type of reflector. Robustly constructed on a 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £26.68 (plus VAT).



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.



Model FMS 200 Model FMS 300



Model FMS 400 Model FMS 600

Aerialite Aerials

Whitegate, Broadway, Chadderton.
Oldham, OL9 9Q Lancs.
Tel: 061-652 1111



Please send your new Stereo Aerials leaflet

Name _____
Address _____
HF-YB101

VS1

Single dipole. Deluxe Band II aerial. Dipole mounted on 25mm sq section stand-off arm 30mm in length. Complete with mast fixing clamp. Gold finish. Price: £4.78 (plus VAT).

VS2

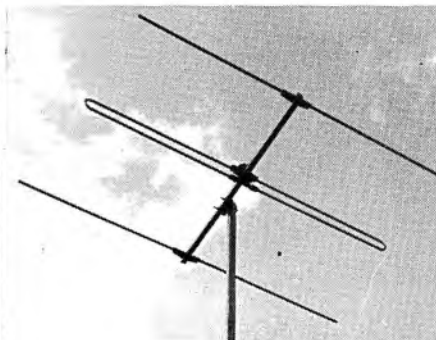
Dipole and reflector ('H' type) deluxe Band II aerial. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £7.30 (plus VAT).

VS3 ★

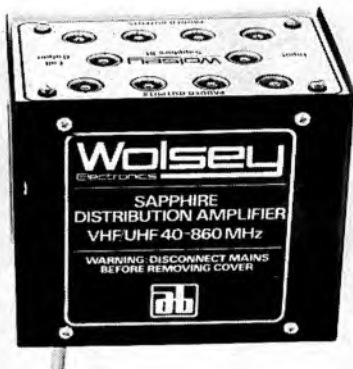
3-element deluxe Band II aerial. Comprising 1 director, folded dipole, folded reflector. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Gold finish. Price: £12.40 (plus VAT).

Axiomatic

18-foot AM Skyrod finished in radiant blue plastic sheath. Supplied with mountings and isolation arm, two transformers and special download. Price: £29.27 (plus VAT).



Vorta Three Element VS3



Walsey Distribution Amplifier

AERIALS FM/VHF

■ WOLSEY ELECTRONICS

Cymmer Road, Porth,
Mid Glamorgan CF39 9BT. Tel: Porth 2711.
Price: £4.68 (plus VAT).

FMD (Single Dipole)

Rugged outdoor version of above with similar or improved performance. Price: £4.68 (plus VAT).

FM2 (Dipole and Reflector)

Economic design giving improved directional characteristics and higher gain in forward direction. Price: £6.77 (plus VAT).

FM4 (Four element)

Fringe area high gain array providing superior

characteristics in both gain and directivity. Price: £12.10 (plus VAT).

FM6 (Six element)

Super gain array designed to give best results under most difficult conditions, especially useful in areas where multipath distortion is predominant. Price: £16.43 (plus VAT).

Clearsound Amplifier ★

With a minimum gain of 20dB this aerial booster amplifier has been designed for areas of weak signal. Operates with any 75 ohm imp aerial, particularly effective with stereo reception on fringe or distant transmissions, even in areas of local high signal levels. Supplied with separate mains power unit for installation near the tuner or receiver. Price: £25.58 (plus VAT).

Amplifiers and Control Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ACCUPHASE

Pysier Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA.
Tel: Edenbridge 4116.

P-250 ★

Dual channel power amplifier. Power output: 100W 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. Damping factor: 20 at 8 ohms load, 20Hz-20kHz. Input sensitivity and imp: 1V 100K for rated output at maximum level control. Controls: Left level-right level speakers, speaker damping. Power consumption: 70W at zero signal output. Size: 44.5 × 15.2 × 35.5 cm. Price: £390.00 (plus VAT).

E-202 ★

Integrated stereo amplifier. Power output 100W 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. FR: 20Hz-20kHz +0dB, -0.2dB. Damping factor: 20 at 8 ohms load, 20Hz-20kHz. Headphone jack: for listening with low imp (4-32 ohms) dynamic stereo headphones. Controls: 10-step rotary switch for both channels with on/off switch. Tone is varied in 2dB steps. Bass turnover frequency: 400Hz ±10dB at 100Hz; treble turnover frequency: 2.5kHz ±10dB at 10kHz. Volume control: less than 1dB tracking error. Power consumption: 70W at zero signal output. Size: 45.5 × 15.2 × 35.5 cm. Price: £525.00 (plus VAT).

P-300 ★

Dual channel power amplifier. Power output: 150W 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. Damping factor: 20 at 8 ohms load. Input sensitivity and imp: 1V 100K for rated output at the maximum level control. Power consumption: 100W at zero signal output. Size: 44.5 × 15.2 × 35.5 cm. Price: £630.00 (plus VAT).

C-200

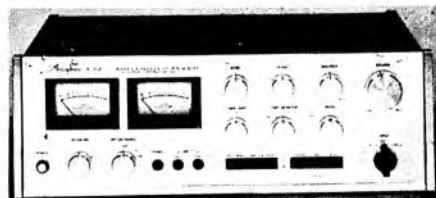
Stereo pre-amplifier. FR: 20Hz-20kHz +0dB, -0.2dB. Distortion: lower than 0.05% at rated output level. Inputs: disc (1) 2-6mV 30K, 47K; disc (2) 2-6mV 47K, mic 2mV 47K, tuner 200mV 130K, aux (1 & 2) 200mV 130K, tape play (1 & 2) 200mV 130K. Maximum output level: 10V at 0.05% distortion. Tone controls: 10-step rotary switch for each channel with turnover frequency switches. Volume control: less than 1dB tracking error control down to -60dB. Power consumption: 36W. Size: 44.5 × 15.2 × 5.5 cm. Price: £525.00 (plus VAT).

M-60

Monophonic power amplifier. Output 300W. THD: 0.1%. FR: +0 -0.2dB over 20Hz-20kHz; +0-3dB over 2Hz to 90kHz range.



Accuphase P-250 power amplifier



Accuphase E-202



Accuphase P-300

★ Indicates entry is illustrated

Input sensitivity and imp 2V, 100K. Damping Factor 45. Controls 1dB step attenuator type volume control. Power Level meter. Dimensions 48.2 × 34.5 × 17cm. Features/Facilities: Heavy duty large energy power supply. Subsonic Filter to eliminate noise below audible range. Price: £685.00 (plus VAT).

F5

Professional frequency dividing network. Maximum output: 6.5V. THD: 0.1% maximum 20 Hz-20kHz. FR: + 0 - 0.2dB 20Hz-20kHz. Input sensitivity: 0dB gain. Imp: 100K. Controls: output level for mid and high. Dimensions Type A: 48.2 × 34.5 × 8.2cm. Type B: 44.5 × 34.9 × 8.2cm. Features: Cross over frequencies selectable with plug in boards. 12dB or 18dB/octave filter slope, switchable. Guaranteed specifications. Price: £395.00 (plus VAT).

P20

Professional stereo power amplifier. Output: 100W at 4 ohms, 70W at 8 ohms, 35W at 16 ohms. THD: 0.1% maximum 20Hz-20kHz. FR: 20Hz-20kHz. Inputs sensitivity and imp: 0.1V, 100K. Damping Factor: 50, 5 or 1 changeable. Controls: Power on/off, subsonic filter, damping factor switch, notched attenuators one each channel. Dimensions: 48.2 × 35.3 × 15cm. Features: Dual power supplies, comprehensive protection circuit. 18dB/Oct. subsonic filter. Guaranteed specifications. Price: £525.00 (plus VAT).

C-220

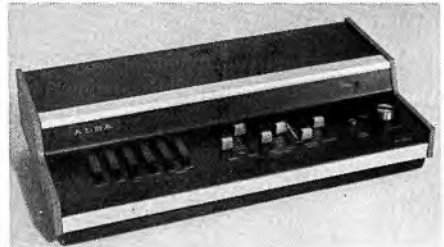
Pre-amplifier and disc equaliser. THD: 0.01% at rated output level 20Hz-20kHz. FR: ±0.2dB. Inputs: Phono 1 & 2. Sensitivity: 2.0mV, 100 ohms, 30K. Imp: 47K × 100 ohms switchable. Controls: volume, balance, power head amp, Disc 1, Disc 2, imp selector. Dimensions: 48.2 × 8.2 × 34.5cm. Features: head amp imp selector. Price: £550.00 (plus VAT).

■ AKAI

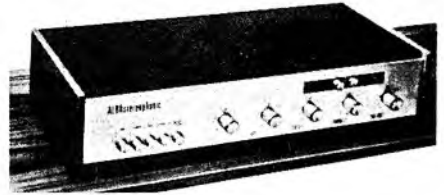
Rank Audio Visual Ltd, PO Box 70,
Great West Road, Brentford TW8 9HR.
Tel: 01-568 9222.

AM 2200

Power amplifier. Output: 20W per channel into 8 ohms. THD: less than 0.5%. FR: 30Hz-15kHz ± 1dB. Damping Factor: more than 60. Controls: Bass, treble, loudness. Dimensions: 38 × 26.3 × 12.5cm. Features: High and low filters. Mono/stereo selector, balance control, headphones output jack, tape inputs. Price: £110.84 (plus VAT).



Alba 900



Alba 700A

AM 2600

Integrated amplifier with output of 60W. THD: <0.08%. FR: 30Hz-15kHz ±0.8dB. Inputs: (1) 3mV/50K (2) 3mV/33, 47, 100K. Damping Factor: >60 (1kHz, 8> ohms). Controls: power, speaker selector, audio mute, high and low filters, tone, bass, treble, meter, mode, loudness, selector, volume, balance. Dimensions: 44 × 33.1 × 14.1cm. Price: £277.07 (plus VAT).

AM 2800

Integrated amplifier with output of 80W. THD: <0.08%. FR: 30Hz-15kHz ±0.5dB. Inputs: (1) 3mV/50K (2) 3mV/33, 47, 100K. Damping Factor: >60 (1kHz, 8 ohms). Controls: power, speaker selector, meter, audio mute, tone, bass, mid, treble, high and low filters, tape monitor, selector, volume, balance, mode, loudness. Dimensions: 44 × 39.6 × 16.5cm. Price: £286.80 (plus VAT).

AM 2400

Power amplifier. Output: 40W into 8 ohms. THD: less than 0.15%. FR: 30Hz-15kHz ± 1dB. Damping Factor: more than 60. Controls: Bass, treble, tone, loudness. Dimensions: 44 × 33.1 × 14.1cm. Features: High and low filters, mono/stereo selector, balance control, speaker selector, turnover frequency buttons, dubbing facility. Price: £161.78 (plus VAT).

■ ALBA

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

900 ★

Integrated stereo amplifier. 40W per channel. THD: less than 0.1%. FR 20Hz-20kHz. Inputs, magnetic PU 2.7mV/47k; tuner, tape replay 150 mV/1ma; surround sound decoder. Damping Factor greater than 200 at 50Hz; S/N ratio: 69dB (77dB weighted) other input 79dB (82dB weighted). Dimensions: 46 × 24 × 10cm. Features: var. channel separation for surround decoder. adaptor. L/S switching (A, A+B, B). Scratch and rumble filter. Price on application.

UA700A ★

Integrated stereo amplifier. 10W per channel. THD: less than 0.1%. FR 30Hz-18kHz ± 1dB. Input impd. PU (mag) 5mV/50K, (cer) 60mV; mic 2.3mV/50K; aux (high) 2V/3M; other aux 3.75mV/500K. S/N ratio: tuner (aux) 63dB, mag PU 55dB. Controls: level, bass, treble, loudness and balance calibrated in dB's. Dimensions: 41.5 × 19.5 × 10cm. Price on application.

■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4936.

AX 500

Integrated amplifier. Output: 25W per channel. THD: 0.15%. FR: 30Hz-40kHz. Inputs: mag PU 2.5mV 47K, radio 100mV 100K, tape 150mV 150K. Damping Factor: 30:1. S/N Ratio: 65dB. Controls: volume, bass, treble, balance. Dimensions: 44 × 21 × 10cm. Price: £59.50 (plus VAT).

FA 600

Integrated amplifier. Output: 32W per channel. THD: 0.5%. FR: 15Hz-40kHz. Inputs: mag PU 3mV 47K, xtal 260mV 500K, aux 260mV 500K, tape 260mV 500K. S/N Ratio: 65dB. Controls: bass, treble, balance, volume. Dimensions: 41 × 30 × 13cm. Price: £89.00 plus VAT).

■ MACRON

Macinnes Laboratories Ltd,
Macinnes House, Carlton Park
Industrial Estate, Saxmundham,
Suffolk IP17 2NL.
Tel: Saxmundham 2262/2615.

DI50A ★

Stereo power amplifier. Output: 100W RMS per channel into 8 ohms (200W RMS per channel into 2.5 ohms). THD: below 0.05%. Frequency response: ±0.1dB DC-20kHz, ±1dB DC-100kHz. Inputs/Imp: unbalanced 20K,

1.19V for full output. Damping factor: greater than 400, DC-400Hz into 8 ohms. Controls: two front panel input level controls and power switch. Stereo/mono switch on rear. DC-coupled throughout. Can be converted from stereo to mono by single switch. Dimensions: 43 × 22 × 13.7cm. Rack mounting kit available. Price: on application.

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. THD: <0.05%. Intermodulation distortion: <0.05% from 10mW to 30W. FR: 5Hz-30kHz ± 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 × 8³/₄ × 1³/₄in. Weight: 10lb. Fully protected against short circuit or mismatch. Outlet socket for headphones on front panel. Price: on application.

DC300A

Stereo power amplifier. Output: 500W RMS per channel into 2.5 ohms, 350W RMS per channel into 4 ohms, 200W RMS per channel



Macron D150A



Macron D60



Macron IC150A


50+50

Watts RMS Watts RMS



- 50 watts RMS per channel 40-16000 Hz @ 0.7 THD into 8 ohms
- 45 watts RMS per channel @ 1 kHz into 8 ohms
- 40 watts RMS per channel 20-20000 Hz into 8 ohms

Which ever way you look at it, you get a lot of power for your money with the new A 7400 from Eagle.

Please send me details of the A 7400 

Name

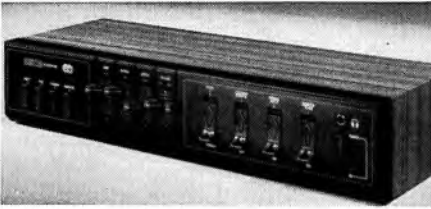
Address.....

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Eagle International, Precision Centre, Heather Park Drive, Wembley HA0 1SU.



Amstrad IC 2000 Mk III

into 8 ohms, 650W RMS into 8 ohms or 4 ohms mono. THD: <0.05% from 0-20kHz. Inter-modulation 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 x 7 x 9 7/8 in. Price: on application.

IC150A ★

Stereo preamplifier and control centre. New phono input circuitry and stepped attenuator level control. Inputs: 2 phono, 1 tuner, 2 tape, and 3 aux. Output: 2.5V, max 12V into Hi.Z H & N: 95db below rated output. FR: Hi level \pm 0.6db 3Hz-100kHz into Hi Z. Volume, loudness, panorama, bass and treble controls. Headphone monitor socket on front panel. Rumble and scratch filters. Size: 17 x 5 1/4 x 8 1/8 in. Price: on application.

■ AMSTRAD

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

I.C. 2000Mk III ★

Integrated amplifier. Output: 25W per channel. THD: <0.1% at rated output. FR: 15Hz-30kHz. Inputs: mag PU 3mV 47K, ceramic PU(velocity loaded), tape 70mV 150K, radio 70mV 150K. S/N Ratio: 60dB. Controls: bass, middle, treble, left and right volume, mono/stereo switch, loudness, rumble filter, scratch filter. Dimensions: 42.9 x 16.3 x 9.2cm. Features: headphone socket, extension loudspeaker outlets, slider controls, tape recording signal output. Price: approx. £53.66 (plus VAT).

EX 330

Integrated amplifier. Output: 35W per channel. THD: 0.1%. FR: 15Hz-30kHz \pm 3dB. Inputs: phono 1.5mV, 47K, aux 270mV 82K, tape 70mV-3V variable — 56K, tuner 70mV 150K. Controls: bass, middle, treble, volume, balance, rumble filter, scratch filter, mono/stereo switch, loudness, meter range. Dimensions: 42 x 34 x 14.5cm. Features: 2 power

meters (dual range), loudness switch, tape monitor. Price: £77.92 (plus VAT).

■ A & R

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

A60

Integrated amplifier with output of 30W into 8 ohms. THD: <0.2% at 30W/8 ohms 20Hz-20kHz both channels driven. FR: Mag PU: \pm 1dB 40Hz-20kHz typ -5dB at 20Hz. Other Inputs: \pm 1dB 20Hz-20kHz. Inputs Sensitivity: Mag PU: 3mV 47K at 1kHz; overload margin 36dB. Others: 100mV 100K overload margin infinite. Damping Factor >25 into 8 ohms, >50 into 16 ohms at 40Hz. Controls: Input selector — Mag PU, tuner, aux, tape monitor, HF filter (12dB/Octave, turnover 7kHz), mono, volume, bass, treble, balance controls. Dimensions: 45 x 24 x 6cm. Features: Mag. Pu. input resistance and capacitance user-chargeable via plug-in modules. Phones socket. Delayed electronic protection of power amplifier. Toroidal mains transformer, built-in rumble filter on RIAA. Low turnover frequency bass control. Single fibre-glass P.c. board. Price: £124.00 (Teak, walnut); £128.00 (Black) (plus VAT).

■ A/R/D

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

A/C/D 4000 ★

Integrated amplifier with output of 50W per channel. THD: 0.08% FR: 20Hz-20kHz + 1.5dB. Inputs Sensitivity: PU 2.2mV 47K, radio 1 and 2, tape 1 and 2 100mV 47K. Damping Factor: 34 at 1kHz 8 ohms. Controls: Volume balance max-zero, bass and treble \pm 12dB 50Hz, 10kHz. Dimensions: 26 x 35.2 x 11.2cm. Features: Three position low pass fil-

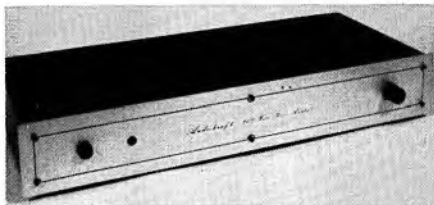


A/R/D stereo amplifier 4000

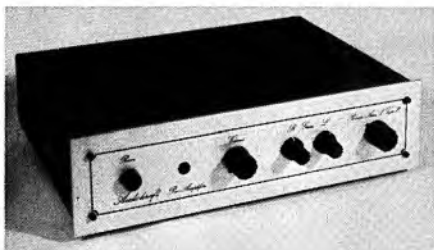
★ Indicates entry is illustrated



Armstrong 621



Audio Kraft Power Amplifier



Audio Kraft Pre Amplifier

ters 4kHz, 7kHz, 10kHz. All input levels preset. Price: £180.00 (plus VAT).

■ ARMSTRONG

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

621 ★

Integrated stereo amplifier. 40W per channel into 8 ohms. THD: 0.08% at rated output. FR: 20Hz-20kHz \pm 1dB. Inputs: disc (1) 3.0mV 47K; disc (2) 6.0mV 47K; tape 250mV 68K; tuner 120mV 68K; auxiliary 120mV 68K. Damping factor better than 50. S/N ratio: -65dB unweighted. Controls: volume, bass, treble, balance, input selector, loudspeakers 1+2. Loudness, monitor, mono/stereo, filter 1 & 2, slope and low filter. Dimensions: 31.2 x 28.5 x 8.2cm. Features include electronic gate switching on inputs, teak or rosewood case. Price: £136.00 (inc. VAT).

■ AUDIO KRAFT

Audio Kraft, 8a Clarence Road, South Benfleet, Essex.
Tel: South Benfleet 58944.



BGW 500D

PS 707CV

Integrated amplifier with output of 25W into 8 ohms. THD: less than 0.5%. FR: 15-30,000Hz. Inputs Sensitivity: PU 2mV RIAA 47K. Aux 1, 2 and tape 200mV, 100K. Controls: Volume, balance, bass, treble, filter, spk 1, spk 2, on-off. Features: Two sets speakers, filter, toroidal transformer. Price: £95.00 (inc. VAT).

Power Amplifier ★

Output: 100W into 8 ohms. THD: 0.05%. FR: 5Hz-50kHz. Inputs sensitivity: 1V. Controls: Rt/Lft gain. Features: Half power switch suitable for both monitor speakers in Audio Kraft range. Supplied now in mono form. Price: £189.00 (inc. VAT).

Preamplifier ★

Controls: Volume, balance, input selector. Inputs: PU, aux, tape 1 and 2. FR: 5Hz-50kHz. THD: 0.05%. Output: 1V nominal, 10V max. Price: £145.00 (inc. VAT).

■ BGW

BGW, 129 Waltham Green Court, Moor Park Road, London SW6.

BGW Model 500D ★

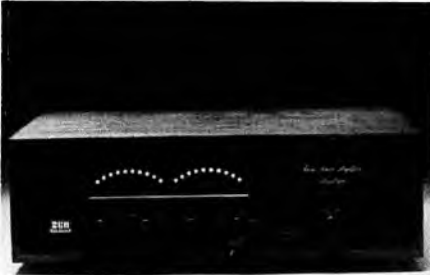
Power amplifier. Power output: 200W per channel with both channels driven into 8 ohms at 25kHz to 15kHz. THD: not more than 0.2% at any power level from 250mV to 200W into 8 ohms. FR: 20Hz-20kHz +0dB, -0.2dB. Noise and hum level: better than 110dB below rated output into 8 ohms. Input sensitivity: 2V for 40V output. Voltage gain: 26dB. Input imp: 47K. Damping factor: greater than 1000 at low frequencies into 8 ohms. Load imp: \geq 2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Size: 19 x 7 x 12in. Finish: standard brush silver rack panel with handles. Weight: 49lb. Price: £550.00 (plus VAT).

BGW Model 250B

Power amplifier. Power output: 85W per chan-



BGW 203



BGW 410

nel 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 imp: 47K. Damping factor: greater than 500 at low frequencies into 8 ohms. Load imp: ≥ 2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Finish: standard brush silver rack panel. Weight: 27lb. Price: £325.00 (plus VAT).

BGW Model 750A

Power amplifier. Power output: 200W 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 imp: 47K. Damping factor: greater than 1000 at low frequencies into 8 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Fan cooled. Size: 10 x 7 x 12in. Finish: standard black rack panel with handles. Weight: 49lb. Price: £650.00 (plus VAT).

BGW pre-amplifier 202

Contains an advanced phono preamplifier design. Output: Line out 8 volts into 600 ohms, Phono at tape output: 10 volts into 5K. Rated



Bose 1801



Cambridge Audio P80 Amplifier Control Unit

Output: 4 volts into 5K. THD: less than 0.01% at rated output 20-20,000Hz. Noise: Phono equivalent input noise: 0.8 microvolt with input shorted over 20-20,000Hz. S/N: 82dB. FR: 20-20,000Hz. Dimensions: 5.25 x 19 x 10.75in. Price: £395.00 (plus VAT).

410 ★

Stereo power amplifier with output of 200W at 8 ohms. THD: 0.05%. FR: 3Hz-100kHz +0 -3dB, 20Hz-20kHz +0-2dB. Controls: power switch, speaker selection headphone jack, volume controls, meter sensitivity, Lexan window. Dimensions: 5 1/4 x 19 x 11 1/4in. Price: to be announced.

203 ★

Stereo system control centre. Advanced, dual band, phono preamplifier. THD: less than 0.01%. FR: 20Hz-20kHz \pm 2dB. High and low pass filters. Tone control equalisation. Dimensions: 5 1/4 x 19 x 10 3/4in. Price: to be announced.

■ BOSE

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

Model 1801 ★

Power amplifier. Output: 250W per channel into 8 ohms or 400W RMS per channel into 4 ohms. FR: 20Hz-20kHz \pm 1dB. Input imp: greater than 50K. Input sensitivity: 1.5V RMS for

★ Indicates entry is illustrated

25W into 8 ohms. Damping factor: greater than 40. S/N ratio: 120dB. Controls: input gain controls, 1/2 channel selection switch, speaker selection A and B, on/off, LED and meter display switch. Current limiting. Built-in thermal heat sensors. Dimensions: 18 × 18½ × 7½in. Price: £682.00 (plus VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey KT14 7LA.
Tel: Byfleet 51051.

P80 ★

Integrated stereo amplifier. 40W per channel into 8 ohms. THD: less than 0.05% at 1kHz. FR: 25Hz-25kHz ±0.5dB. Inputs for phono 1mV 47K, radio 250mV 180K, cassette 150mV 100K, aux 150mV 100K, tape 1 & 2 400mV. Tape 1 & 2 cassette outputs 400mV. Damping factor 80 into 8 ohms. S/N ratio: phono 60dB tuner <70dB unweighted. Controls: balance, input selector, pre-amp volume control, treble, bass, power amp level. Dimensions: 41.9 × 24.4 × 5.1cm. Features include variable gain front end. Visual monitoring of signal levels. Price: £199 (plus VAT).

■ CERWIN-VEGA!

C. E. Hammond & Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

A1800

Power amplifier with output of 225W at 8 ohms or 350W into 4 ohms. THD: 0.08% or less. FR: 10Hz-60kHz. Inputs: 1.4V for 200W output 10K nominal. Controls: Gain (2). Dimensions: 48.25 × 29.20 × 17.80cm. Features: LED indicators for each channel. Price: £555.00 (plus VAT).

A 1800 M

As above with large illuminated output meters, headphone jack and switching for two sets of speakers. Price: £595.00 (plus VAT).

■ DUAL

Audiodecks Ltd, PO Box 7, Sandbeck Way, Wetherby, West Yorks.
Tel: Wetherby 65477.

CV 1600/CV 1600 MB ★

Integrated amplifier with 80W output. THD: <0.2%. FR: 10Hz-40kHz ±1dB. Inputs: Mic 0.5mV-47K, p.c. 0.5mV-47K, tuner 150mV-47K, tape 150mV-47K. Controls: volume, loudness, bass, treble, balance, mic level, mic blend. Dimensions: 44 × 36 × 15cm. Features: rear-panel sensitivity switches (-6 & -12dB)

on PU/tuner & tape 1. Switchable turnover freqs. Silver or brushed bronze finish. High and low pass filters (12dB/8ve). Price for silver finish: £325.35 (plus VAT).

CV 1400/CV 1400 MB ★

Integrated amplifier with 50W output. THD: <0.15%. FR: 10Hz-40kHz ±1dB. Inputs as for CV 1600. Controls: volume, loudness, bass, treble, balance, mic level. Dimensions: 44 × 36 × 15cm. Features: Hi & Lo pass filters (12dB/8ve). Silver or brushed bronze finish. Price for silver finish: £239.60 (plus VAT).

■ EAGLE

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

A 6400 ★

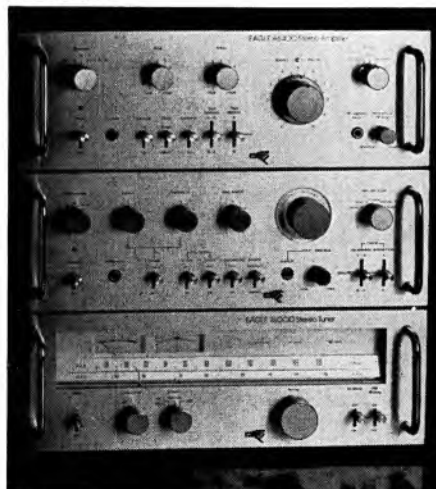
Integrated amplifier with facility for use as



Dual CV 1400



Dual CV 1600



Eagle A6400/A6600 with 16000 Tuner



Eagle A4400/A4600 with T4000 Tuner

preamp or power amp. Output: 40W both channels driven at rated distortion figure 20Hz-20kHz. THD: less than 0.2% at rated output. FR: 15-35,000Hz \pm 0.5dB. Inputs sensitivity: Phono 3mV at 47K, Aux 180mV at 100K, tuner 180mV at 100K, tape A (line) 180mV at 100K, tape B 180mV at 100K. Damping Factor: 27 controls: volume, balance, bass, treble, input, mic mixing, loudness, mode, subsonic filter, tape dubbing, tape monitor A/B. Dimensions: 40 x 29 x 13.2cm. Features: OCL Quasi-complementary power stage, speaker switching microphone, input and level control, speaker protection. Price: £115.00 plus VAT).

A 4200

Integrated amplifier with output of 12W. Details and price: on application.

A 4400 ★

Integrated amplifier with output of 25W. FR: 25Hz-20kHz \pm 2dB. Inputs: phonos 1 & 2, tuner, aux, tape line, tape DIN. Controls: volume, balance, bass, treble, input, mono/stereo, filter, loudness, speakers 1 & 2, Tape A, Tape B, tape response. Dimensions: 38 x 29 x 15cm. Features: six inputs, tape dubbing, tape response (alters recording characteristic). Price: on application.

A 4600

Integrated amplifier with output of 25W per channel. FR: 25Hz-20kHz +2dB. Inputs: phonos 1 & 2, tuner, aux, tape line, tape DIN.

Controls: volume, balance, mono/stereo, filter, loudness, speakers 1 & 2, Tape A, Tape B, tape response, sectone controls (5 controls). Dimensions: 38 x 29 x 15cm. Features: 6 inputs, tape dubbing, tape response (alters the recording characteristic) tone controls at 40Hz, 200Hz, 1.2kHz, 6kHz, 15kHz. Price: on application.

A 7200

Integrated amplifier with output of 30W. Dimensions: 40 x 29 x 13.2 cm. Price: on application.

A 7400

Integrated amplifier with output of 45W. Inputs: phono, aux, tuner, tape A, tape B, mic. Controls: volume, balance, bass, treble, input, speakers A and B, subsonic filter, mono/stereo, loudness, tape dubbing, tape monitor, mic level. Dimensions: 40 x 29 x 13.2cm. Features: microphone unit with mixing. Tape dubbing A to B/B to A, separable pre and power stages. Price: on application.

A 7600

Integrated amplifier with outputs of 60W. Inputs: phono 1 & 2, aux 1 & 2, tuner, tape A, tape B, mic. Controls: volume, balance, treble, bass, input, speakers A and B, subsonic filter, mono/stereo, high filter, loudness, tone defeat, tape dubbing, tape monitoring, mic level. Dimensions: 40 x 29 x 13.2cm. Features: 8 inputs, mic input with mixing, tape dubbing A to B/B to A. Separable pre and power stages, tone defeat, illuminated volume control. Price: on application.

■ ENIGMA AUDIO

136a Portland Road, Hove, Sussex BN3 5QL. Tel: Brighton 723979.

Variation 1

Pre-amplifier with THD: <0.1%. FR: 20Hz-20kHz. Inputs: disc 3.5mV, tuner 125mV, tape 125mV, aux 125mV-50K. Features: tone defeat. Price: £140.72 (plus VAT).

Variation 1a

As above but with added disc input for moving coil cartridges. Price: to be announced.

Variation 2

Power amplifier with output 60W per channel. THD: <0.05% @ 1kHz-35W; <0.1% at all levels. FR: 20Hz-20kHz. Inputs: 1V into 6K. Price: £165.72 (plus VAT).

Variation 3

As above but rated at 100W per channel. Price: £192.14 (plus VAT).

★ Indicates entry is illustrated

■ EXPOSURE

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

Exposure IV

Power amplifier with output 20W per channel.
THD: 0.002%. FR: 10Hz-20kHz. Inputs: 1.2V
for output. Price: £25.00 (plus VAT).

Exposure III

Pre-amplifier with output 15V peak. THD:
0.002%. Inputs: 200 μ V for moving coil. Controls:
volume and balance. Features: hand
built. Price: £250.00 (plus VAT).

■ GOODMAN'S

Goodmans Loudspeakers Ltd,
Downley Road, Havant,
Hants PO9 2NL. Tel: Havant 486344.

SA 200

Details to be announced.

SA 4000

Integrated amplifier with output of 40+40W
into 4 ohms. THD: better than 0.08% at all
powers up to 30W. FR: 25Hz-50kHz \pm 1.5dB.
Inputs: mag. phono: 3mV into 47K.
Aux/Tape/250mV into 470K. Damping Factor:
15. Controls: volume, bass, treble, loudness,
Hi and Lo filters. Dimensions: 44.6 \times 31 \times
13cm. Features: surround sound. No rec. retail
price.

■ HARRISON

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

S200 ★

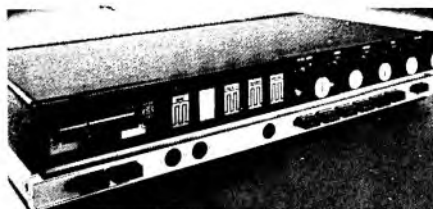
Stereo integrated amplifier. Incorporates
touch sense function switching, an LED out-
put level meter and full output protection
which is self-restoring. Inputs: mic 110mV
68K, phono 2.5mV 47K, two aux and radio
adjustable 100mV 50K. Noise level: mic and
phono 60dB ref 100W, aux and radio 70dB
ref 100W. 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 0.5dB at 50W. Size:
17 \times 10 $\frac{1}{2}$ \times 3 $\frac{3}{8}$ in. Price: £238.21 (plus VAT).

■ HITACHI

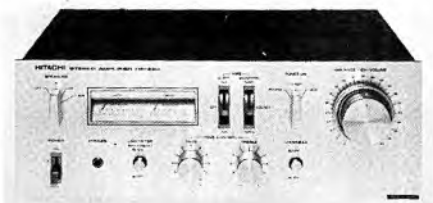
Hitachi Sales (UK) Ltd, Hitachi House,
Station Road, Hayes UB3 4DR.
Tel: 01-848 8787.

HA 250

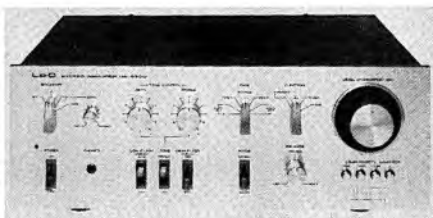
Stereo amplifier with output 20W per channel



Harrison S200



Hitachi HA330



Hitachi HA 5300

into 8 ohms. THD: 0.05% at half-power, 0.3%
full power. FR: 30Hz-15kHz \pm 0.3dB. Inputs:
phono 1, 2, tuner, tape 1, 2, mic, aux, overload
phono. Damping Factor: 50. Dimensions: 39 \times
14.3 \times 33.3cm. Price: £89.00 (inc. VAT).

HA 330 ★

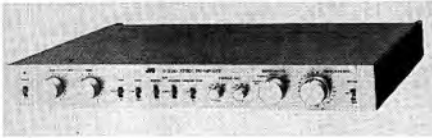
Stereo amplifier. Output: 40W per channel.
THD: 0.02% half power, 0.3% full power. FR:
30Hz-15kHz \pm 3dB. Inputs: phono 1, 2, tuner,
tape 1, 2, aux, mic, overload phono. Damping
Factor: 50. Dimensions: 39 \times 14.3 \times 33.3cm.
Price: £125.00 (inc. VAT).

HA 610

Stereo amplifier. Output: 60W per channel.
THD: 0.3%. FR: 30Hz-15kHz \pm 0.3dB. Inputs:
phono 1, 2, tuner, tape 1, 2, mic, aux, overload.
Damping Factor: 70. High and low filters.
Dimensions: 43.5 \times 14.5 \times 38.8cm. Price:
£240.00 (inc. VAT).

HA 5300 ★

Stereo amplifier. Output: 60W per channel.
THD: 0.05% half power, 0.3% full power. FR:
30Hz-15kHz \pm 0.2dB. Inputs: phono 1, 2,
tuner, tape 1, 2, mic, aux, overload phono.
Damping Factor: 80. Low and high filters.
Dimensions: 43.5 \times 16.6 \times 39.1cm.



JVC P-3030



JVC M-3030

HMA 8300

Power amplifier with output of 200W. THD: 0.05% half power, 0.1% full power. FR: 5Hz-80kHz +0dB -1dB. Dimensions: 43.5 x 18.2 x 40.4 cm. Price: £410.00 (inc. VAT).

HCA 8300

Pre-amplifier. THD: 0.005%. FR: 20Hz-20kHz ±0.2dB. High and low filters. Dimensions: 43.5 x 15.2 x 30.8cm. Price: £220.00 (inc. VAT).

■ **JENNINGS**

Janorhurst, Century House, Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

101

Power amplifier with output of 100W.

202

Power amplifier with output of 150W.

101C

Control pre-amp.

202C

Control pre-amp. Details not yet released.

■ **JVC**

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

P-3030 ★

Stereo control pre-amplifier with built-in MC head amplifier. Output/Output Imp: tape rec out 140mV/2K; output 1, 2 1V/600 ohms rated or 20V/600 ohms maximum. Power Consumption: 10W. THD: phono 1, 2 less than

0.005%, phono 3 less than 0.05%, aux less than 0.005%. FR: Phono 1, 2 20Hz-20kHz ±0.3dB. Phono-3 30Hz-20,000Hz ±0.5dB; Aux 10Hz-40,000Hz ±0.5dB. Inputs: Phono 1, 2, 3, tuner, aux, tape play 1, 2. Dimensions: 6.1 x 4.2 x 34.8cm. Price: on application.

M-3030 ★

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

JA-S71

Integrated stereo amplifier with output 85W per channel into 8 ohms. THD: 0.1%. FR: 20Hz-70,000Hz +0-1dB. Dimensions: 16.2 x 42 x 39cm. Price on application.

JA-S31

Integrated stereo amplifier with output 45W into 8 ohms. THD: 0.2%. FR: 20Hz-50,000Hz. Dimensions: 15.2 x 39 x 33cm. Price: on application.

JA-S11

Integrated stereo amplifier with output of 33W per channel into 8 ohms. THD: 0.1%. FR: 25Hz-40,000Hz ±0-1dB. Dimensions: 15.2 x 39 x 33cm. Price: on application.

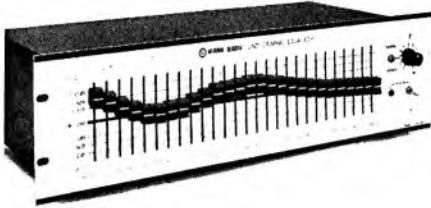
■ **KLARK-TEKNIK**

Klark-Teknik Research Ltd., Summerfield, Kidderminster, Worcs.
Tel: Kidderminster 64027/63467

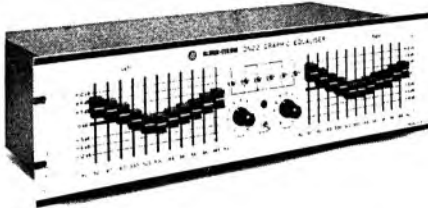
DN27 ★

Mono graphic equaliser with 27 variable filters giving 12dBs of boost or cut at the following frequency centres: 40, 50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1K, 1.25K, 1.6K, 2K, 2.5K, 3.15K, 4K, 5K, 6.3K, 8K, 10K, 12.5K, and 16kHz. Each filter has a band width of two-thirds of an octave. Specification: Distortion: <0.01% 1kHz at +4dBm into a 600 ohm load; <0.05% 20Hz at +18dBm into a 600 ohm load. Calibration accuracy: ±0.5dB. Hum and noise: 20Hz-20kHz unweighted <-90dBm. Centre frequency accuracy: ±2%. Input imp: Unbalanced 10K nominal. Output imp: unbalanced <10 ohms, short circuit protected. Operating level: -20dBm to +24dBm input protection -60V RMS. Balanced floating inputs and outputs available. Input: 10K. Output: 600 ohms. Output clipping point: +22dBm into 600 ohm load. 6dB of gain is available adjusted by the front panel control. This can be increased to 20dB by an internal

★ Indicates entry is illustrated



Klark Teknik DN27



Klark Teknik DN22



Klark Teknik DN15

preset. Panel controls include a mains on/off switch with LED indicator, level control and equalization bypass switch. Size: $19 \times 5\frac{1}{4} \times 8\frac{1}{2}$ in. Price: on application.

DN22 ★

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

DN15 ★

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



Lecson Systems AP1

■ LECSON SYSTEMS

Lecson Systems Ltd, Burrell Road, St. Ives, Hunts, Cambs. PE17 4LE.
Tel: St. Ives 64124.

AC1

Preamplifier THD: <0.02% at 1kHz. Inputs Sensitivity $2 \times$ PU 2.5mV at 68K, $2 \times$ Aux 125mV at 68K. Dimensions: $36 \times 25.4 \times 3.8$ cms. Price: approx £224.00 (plus VAT).

API ★

Power amplifier with output of 50W. THD: <0.05% at 1kHz. FR: 10Hz-20kHz \pm 0.5dB. Inputs sensitivity 500mV. Dimensions: 28×14.5 dia. cm. Price: approx £159.00 (plus VAT).

■ LENCO

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

A50

Integrated amplifier with output $2 \times$ 40W into 8 ohms. THD: 0.2% at 1kHz. FR: 10Hz-40kHz at 5W. Inputs: phono 2.5mV/50K ohms, mic, aux tape 160mV/50K. Controls: treble, bass, loudness, high filter, low filter. Dimensions: $43 \times 37 \times 13.2$ cm. Features: 'rack mount' style with side handles. Price: £155.00 (plus VAT).

■ LUX

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



Lux L31

Inputs: phono, tuner, aux, monitor. Damping Factor: 40. Controls: vol, bass, treble, individual channel control, mode selector, stereo/mono/reverse, balance, high and low filters, low cut, high cut. Dimensions: 45 × 30 × 16cm. Features: low boost, loudness switch, tape monitor, tape dubbing switch, tape connector DIN + phono, facilities for two pairs of speakers, headphone input. Price: £255.00 (plus VAT).

L85V

Integrated amplifier with output of 80W into 8 ohms. THD: <0.05%. FR: 10Hz-50,000Hz-1dB. Inputs: phono, tuner, aux, tuner. Damping Factor: 40. Controls: vol, bass, treble, input selection switch, speaker switch, linear equaliser, high and low filters, low boost and loudness switch. Dimensions: 45 × 31 × 16cm. Features: High and low filter, attenuator, linear equaliser, tape dubbing circuit, tape monitor circuit. Price: £400.00 (plus VAT).



Lux M6000

M6000 ★

Power amplifier with output of 300W into 8 ohms. THD: 0.05%. FR: 5Hz-50,000Hz ± 1dB. Inputs: 1.25V. Damping Factor: 100. Controls: Power switch, left and right attenuator controls. Dimensions: 57 × 42.5 × 220cm. Features: left and right VU meters, peak power LED display safety switch, four protection circuits, one for speaker and three for amp. Price: £1,650.00 (plus VAT).



Lux C1000

C1000 ★

Preamplifier. THD: 0.007%. FR: 2Hz-80,000Hz-0.5dB. Inputs: aux, tuner, phono (2). Controls: input selector switch, bass/treble controls, bass-treble frequency selector switch, touch, mute switch. Dimensions: 48.5 × 24.5 × 17.5cm. Features: touch muting function, linear equaliser, output signal muting, speaker, select, remote control, phono gain control. Price: £610.00 (plus VAT).

L31 ★

Integrated amplifier with output of 38W into 8 ohms. THD: 0.05%. FR: 15Hz-50kHz-1dB. Inputs: phono, aux, tuner, monitor. Damping Factor: <90. Controls: volume, bass, treble, individual channel control, input selector switch, high and low filters, loudness, mono/stereo switch, balance. Dimension: 44 × 22.5 × 16cm. Features: NF tone control, high cut, low cut. Facilities for two pairs of speakers, headphones, phono/DIN connector for tape. Price: £160.00 (plus VAT).

MQ3600

Valve power amplifier with output of 50W. THD: 0.5%. FR: 10Hz-35kHz-1dB. Inputs: 850mV. Damping Factor: 14. Dimensions: 46.5 × 20.6 × 16.8cm. Price: £470.00 (plus VAT).

CL 32

Valve preamplifier. THD: 0.03%. FR: 10Hz-40,000Hz-1dB. Inputs: tuner, phono (2), aux, tape. Controls: volume, linear equaliser, selector switch. Dimensions: 43.8 × 32.2 × 77.4cm. Features: Two pairs monitor and dubbing circuits. Dual pairs preamp-out terminals. Price: £480.00 (plus VAT).

L81

Integrated amplifier with output of 45W into 8 ohms. THD: <0.1%. FR: 5Hz-50kHz-1dB.

★ Indicates entry is illustrated

L100

Integrated amplifier with output 110W into 8 ohms. THD: 0.05%. FR: 5Hz-50,000Hz. Inputs: phono, tuner, aux. Damping Factor: 50. Controls: volume, input selector, treble level control, bass, treble, speaker selector switch, balance. Dimensions: 48.5 × 35 × 17.5cm. Price: £680.00 (plus VAT).

M4000

Power amplifier with output of 180W into 8 ohms. THD: 0.05%. FR: 3Hz-100,000Hz. Inputs: 1V (8 ohms 180W/ch 1kHz) 50K. Damping Factor: 100. Controls: power switch, left and right attenuators. Dimensions: 48.5 × 39 × 17.5cm. Features: Two VU meters, Peak LED displays, sensitivity button, speaker protection circuitry, input level setter, three protection circuits for amplifier. Price: £1,100.00 (plus VAT).

5L15

DC integrated amplifier with output of 80W. THD: 0.02%. FR: Phono-20Hz-20,000Hz ±0.2dB; Tuner DC — 100,000Hz; Aux 1.2 DC-100,000Hz; Main in DC — 100,000Hz. Inputs: Phono 2.7mV, Tuner 300mV, Aux 1.2 300mV, Main 300mV. Damping Factor: 80 (8 ohms 1kHz). Controls: volume, phono, tuner, aux, selector switch. Dimensions: 44.2 × 40 × 14.6cm. Features: power meters, circuit prevention selector, input capacitor in/out switch, peak indicator connector, phono subsonic circuit, tape monitor and dubbing, audio attenuator. Price: £625.00 (plus VAT).

5M21

DC power amplifier with output of 100W. THD: 0.005%. FR: D — 100,000Hz (-1dB). Inputs: 890mV, 50 K. Damping Factor: 80 (8 ohm-1kHz). Controls: power switch. Dimensions: 44.2 × 40 × 14.6cm. Features: VU meter for left and right channels, meter sensitivity switch, input capacitor in/out switch, audio attenuator for both channels. Price: £950.00 (plus VAT).

5C50

DC preamplifier. THD: Phono 1.2-0.005%, Tuner/Aux — 0.005%, Monitor 1.2-0.005%. FR: Phono 1.2-20Hz-20,000Hz (±2dB), Tuner/Aux — 1Hz-200,000Hz (-0.5dB), Monitor 1.2-1Hz-200,000Hz (-0.5dB). Inputs: Phono 1.2-2.5mV, Tuner/Aux 150mV, Monitor 1.2-150mV, Phono 1.2-30K-50K-100 ohms (variable), Tuner/Aux — 50K. Controls: Volume, balance, linear equaliser, phono, tuner aux, selector switch. Dimensions: 44.2 × 40 × 10.1cm. Features: subsonic filter, high filter, input impedance adjustor, tape monitor-

ing, tape dubbing, auditor attenuator, socket for MC input, transformer. Price: £600.00 (plus VAT).

■ **MARANTZ** — Audio UK Ltd., Debmarc House, 203 London Road, Staines, Middlesex. Tel: Staines 50132.

1250

Integrated amplifier with 125W output. THD: less than 0.1% at any power. FR: 5Hz-60kHz. Inputs: phono 1.8mV/47K. Damping Factor: 50. Controls: treble, bass and mid per channel. Can record on two decks from different sources whilst listening to a third. Price: £580.44 (plus VAT).

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. Load imp: 8 ohms. Tone controls: bass ±12dB at 50Hz, treble ±12dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz. HD: 0.5% from 40Hz-20kHz. FR: 20Hz-20kHz ±1dB at 1W. Output circuits automatically protected. Mic input on front panel. Main and remote speakers and headphones. Size: 14½ × 4¾ × 12in. Finish: gold anodised front panel. Price: £94.67 (plus VAT).

1060

Integrated stereo amplifier. 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. Load imp.: 8 ohms. Tone controls: bass ±15dB at 50Hz, treble ±12dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz, middle control ±6dB at 700Hz. HD: 0.5% 20Hz-20kHz. FR: 20Hz-20kHz ±0.5dB at 1W. Automatic protection of output circuits. Three-zone tone controls. Front panel sockets for mic and aux. Size: 14¼ × 4¾ × 14in. Finish: gold anodised front panel. Price: £132.44 (plus VAT).

1040

Integrated console amplifier with output of 20W. THD: 0.3%. FR: 20-20,000Hz. Dimensions: 36 × 28 × 12cm. Price: £112.89 (plus VAT).

1070

Integrated console amplifier similar to 1040 but with 35W output. Price: £167.11 (plus VAT).

"ON AIR"



From the beginning the Technics SP 10 Mark II was designed as a 'no-compromise' broadcast-standard turntable.

It is already installed in many broadcasting stations both here and abroad.

The reasons are many and varied.

In 1969, Technics were the first to introduce the DC electronically controlled direct-drive principle to the world with the SP 10.

With the experience gained we've never looked back, and the SP 10 Mark II represents a considerable advance in turntable technology.

Take speed accuracy. Wow and flutter are an insignificant 0.025% WRMS. And speed drift + or - 0.002%. Rumble is also very low at -70 dB.

Through the use of a quartz locked drive system a very high torque is developed by the motor. This results in an instant start facility which takes the record from 'stop' to 33 $\frac{1}{3}$ in 0.25 secs.

And in addition you can change from one speed to another very quickly. 33 $\frac{1}{3}$ to 45 in 0.1 sec.

Another benefit is that a record can be easily cleaned 'on air' with no audible speed variation.

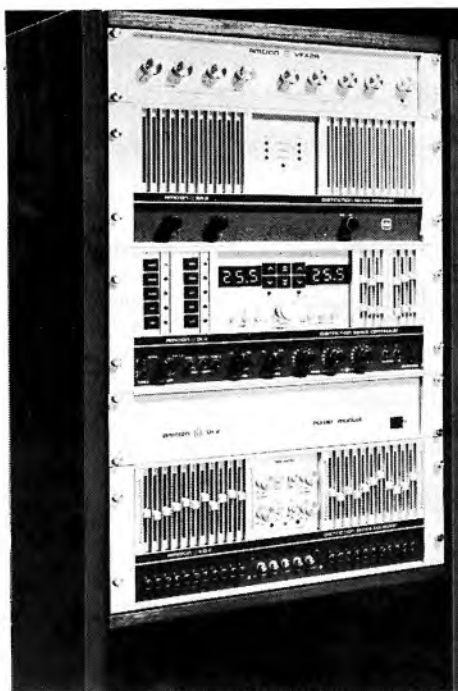
The three speeds (33, 45, 78) are selected by illuminated microswitches and the start/stop function can also be remotely operated. Extremely useful if you are operating a bank of turntables.

The power supply is separate and the mains supply is not directly linked to the turntable, thus avoiding any possible hum problems.

For more information about these and other benefits just write to Technics, 107/109 Whitby Road, Slough, Berkshire SL1 3DR. Tel: Slough 27516.

 **Technics**

The SP 10 Mark II Quartz-controlled Direct Drive Turntable.



Does it
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component
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You bet it does. Especially if you care about absolutely accurate reproduction of recorded sound.

The new Amcron DL-2 Distinction Series Controller is close to being the perfect pre-amplifier. It controls the signal level but changes nothing else unless you want it to.

The DL-2's sonic excellence is impeccable. New, patent-pending circuitry and no-compromise, common-sense design have resulted in outstanding specifications. Signal-to-noise ratio is better than 97dB unweighted. Frequency response ± 0.2 dB, 3Hz to 100KHz. THD, IMD and TIM are simply not audible.

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The revolutionary phono preamp mounts next to the turntable. That eliminates most RFI problems. But it also in-

cludes wholly new circuit concepts for unmatched sonic performance, and new convenience in hook-up.

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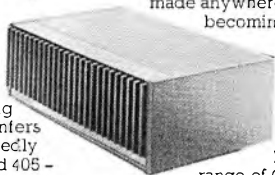
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*At current rate of VAT.

B. H. Morris and Co. (Radio) Ltd. Dept. C, Precision Centre, Heather Park Drive, Wembley, Middx. HA0 1SU

Agents in Eire: Peat Wholesale Ltd., Dublin.



Marantz 1152 DC



Marantz 1180 DC



Marantz 1122 DC

1152 DC ★

Integrated amplifier with output 76W. THD: 0.03%. FR: 20Hz-20kHz ± 0.2 dB. Inputs: phono 1.8mV-47K, aux/tape 180mV-25K. Damping Factor: 60. Controls: contour, 100Hz/10kHz t/over centre. Features: independent tape copy, 15Hz and 9K filters, tone defeat, 20dB muting. Price: £323.56 (plus VAT).

1180 DC ★

Integrated amplifier with 90W output. THD: 0.03%. FR: 20Hz-20kHz ± 0.2 dB. Inputs: phono 1.8mV-47K, aux/tape 180mV-25K. Damping Factor: 60. Controls: calibrated for control contour. Features as for 1152 DC. Price: £395.56 (plus VAT).

1090

Integrated amplifier with 45W output into 8 ohms. THD: 0.1%. FR: 20Hz-20kHz ± 0.2 dB. Inputs: phono 1.8mV-47K, aux 180mV-25K. Damping Factor: 45. Controls: treble, mid, bass, mode SW, 2 tape, lo-filter. Price: £182.22 (plus VAT).

1122 DC ★

Integrated amplifier with output 61W into 8 ohms. THD: 0.03%. FR: 20Hz-20kHz ± 0.2 dB. Inputs: phono 1.8mV-47K, aux/tape 180mV-25K. Damping Factor: 60. Controls:

treble, mid, bass, mode SW, 2 tape, Hi and lo filters, tone defeat. Features: Direct coupled output. Price: £259.56 (plus VAT).

MISSION

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

Voltage Amplifier ★

Minimum output: 150W into 8 ohms. THD: less than 0.05%. 20Hz-20kHz typically 0.005% 1kHz. Inputs: line input 1.5V RMS for 150W into 8 ohms 12K imp. Rear panel controls, on/off, speaker switches for three sets loudspeakers, feedback control switch. Dimensions: 44 x 31.25 x 11.25cm. Features: open-loop performance permits use of very low amount of overall negative feedback. Remote switching of speakers and supply from control unit. Freedom from transient inter-modulation distortion. Price: to be announced.

Control Amplifier ★

Dimensions: 44 x 31 x 8.75cm. Details and Price: to be announced.

MONOGRAM

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

3200 ★

Power amplifier Class A auto AB + B. Output: 150W into 8 ohms. THD: 0.01%. FR: DC — 32kHz, 100kHz optional. Inputs: 0dB-0.775V. Damping Factor: 500. Controls: 2 gain speakers A + AB. Dimensions: 19 x 12 x 5 1/4in. Features: 12 LED power indicators. 2 separate power supplies. Price: £485.00 (plus VAT).

3300

Class A Switching power amplifier. Output: 200W into 8 ohms. THD: 0.01%. FR: DC — 32kHz, 100kHz optional. Inputs sensitivity: 0dB-0.775V. Damping Factor: 600. Controls: 2 gain speakers A + AB. Dimensions: 19 x 12 x 7 1/2in. Features: 12 LED power indicators, subsonic filter, 2 separate power supplies. Price: £595.00 (plus VAT).

5000

Class A pre-amp with output 2-10V. THD: 0.006%. FR: 15Hz-32kHz. Inputs: phono, tuner, aux, tape. Controls: input selector, bass, treble, vol, two filter, two tape. Dimensions: 19 x 12 x 3in. Features: high and low filters, two-tape inputs, aux amp monitor. Price: £189.00 (plus VAT).

★ Indicates entry is illustrated



Monogram 3200



Mission Amplifiers



Mustang SS100

3000

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

5300

Power amp with output of 250+250 8 ohms, 400+400 4 ohms and 505+505 2 ohms. THD: 0.005% at 20-20kHz, 0.02% at 1kHz. FR: DC-80kHz+0-3dB; 20Hz-32kHz +0 -0.2dB. Inputs: 0.775V, imp variable internally. Damping Factor: 600. Controls: two x gain. Dimensions: 19 x 14 x 7in. Features: twin 1kW power supplies. Price: £545.00 (plus VAT).

3500 (Custom)

Power amp mono only. Output: 300W into 8 ohms, 450W into 4 ohms. THD: 0.05% at 20-20kHz, 0.02% at 1kHz. FR: DC-80kHz +0 -3dB; 20Hz-32kHz +0 -0.2dB. Inputs: 0.775V, imp variable internally. Damping Factor: 600. Controls: 2 x gain speaker A + B. Features: 1kW power supply, 2 x meters. Variable attenuators. Price: £329.00 (plus VAT).

5600

Power amp with output of 20Hz-20kHz into 8 ohms. THD: 0.05%. FR: 2Hz-52kHz +0-1dB. 20Hz-32kHz +0-0.2dB. Inputs: 0.775V. Damping Factor: 500. Controls: 2 x gain. Dimensions: 19 x 8 x 5 1/4in. Features: Class A drive system, optional LED monitors. Price: £189.00 (plus VAT).

5200

Power amplifier with output 150+150 into 8 ohms, 180+180 into 4 ohms. Other specs as 5600. Dimensions: 19 x 8 x 7in. Price: £279.00 (plus VAT).

■ MUSTANG COMMUNICATIONS

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

SS.50

Power amplifier. Output: 100W. THD: less than 0.5% (typically 0.1%). FR: (Ref. 1kHz) -0.2dB at 10Hz and -0.2dB at 20kHz. Inputs/imp: standard jack (others to order) 0.775V into 10K. Damping factor: 200. S/N ratio: 90dB. Controls: gain control, VU meter and mains illuminated on & off switch. Output fully protected. Unit is rack mounted in chassis form. A range of steel cabinets are available. Dimensions: 48.3 x 33.7 x 8.9cm. Price: £122.86 (plus VAT).

SS.100 ★

Power amplifier. Output: 175W. Details as per SS.50. Price: £160.57 (plus VAT).

■ NAIM AUDIO LTD

11 Salt Lane, Salisbury, Wilts SP1 1DT. Tel: Salisbury 3746.

NAP 160

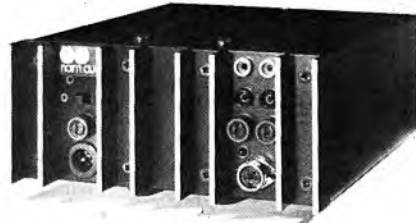
High power amp delivering continuously 50W into 8 ohms from each channel. Inputs: 1.4V/22V. Dimensions: 76 x 43 x 30cm. Price on application.



Naim NAP 250



Naim NAC 32



Naim NAP 120

NAC 12S

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

NAP 250 ★

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

NAC 32 ★

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

NAP 120 ★

Power amplifier with output of 40W into 8 ohms. Inputs: 700mv/22K. Controls: on/off. Dimensions: 8.9 x 20.3 x 23cm. Price: on application.



Nikko TM 650



Nikko TRM 750



Nikko Beta II

NAC 22

Pre-amp with output of 1V/47 ohms, 75mV 3 6000L. Controls: volume, balance, selector and tape monitor. Dimensions: 8.9 x 20.3 x 21cm. Price: on application.

■ **NIKKO**

Dowall Audio Ltd, Ardfallen, Forthill, Magheraleave Road, Lisburn, Northern Ireland, BT28 3BB. Tel: Lisburn 2899.

TRM-650 ★

Integrated amplifier with output of 30W at 8 ohms. THD: >0.2% continuous rated output, >0.1% (1W+1W output). FR: 20Hz-30kHz ±2dB. Inputs: phono, mic, aux, tuner, tape mon. Damping Factor: 50. Controls: bass, treble, high filter, loudness, balance. Dimensions: 40 x 31 x 14.3cm. Features: mic mixing, tape monitor, dubbing; tape 1 to tape 2, speaker A, B, A+B. Price: £102.10 (plus VAT).

TRM-750 ★

Integrated amplifier with output of 55W at 8 ohms. THD: >0.15% continuous rated output, >0.1% (1W+1W). FR: 10Hz-40kHz ±1dB. Inputs: phono, mic, aux, tuner, tape mon 1, 2, main in. Damping Factor: 50. Controls: 40 x 31 x 14.3cm. Features: mic mixing, tape monitor,

★ Indicates entry is illustrated

dubbing: tape 1 to tape 2, tape 2 to tape 1, Speaker A, B, A+B. Price: £140.43 (plus VAT).

Alpha—II

Power amplifier with output of 110W at 8 ohms. FR: 5Hz to 100kHz +0-1dB. Inputs: 1V/100K. Damping Factor: 70. Controls: Speaker, A, B, A+B. Dimensions: 48.2 × 32.5 × 13.5cm. Features: Two VU meters. Price: to be announced.

Beta—II ★

Preamplifier. THD: 0.007% at 1V (Aux). FR: 10Hz-100kHz +0-1dB (Aux). Inputs: phono, tuner, aux. Controls: bass, treble, balance, audio muting, subsonic filter, phono impedance selector, dubbing tape 1 to tape 2, tape 2 to tape 1. Dimensions: 48.2 × 25 × 63.5cm. Features: attention for volume control. Price: to be announced.

■ PHASE LINEAR

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

700B ★

Power amplifier with output of 345W @ 8 ohms. THD: 0.25%. FR: 20Hz-20kHz. Inputs sensitivity: 175mV, 100K reducing to 10K at full rotation of control. Damping Factor: minimum 1,000 @ 20Hz. Dimensions: 48.25 × 27.95 × 17.75cm. Features: Brushed light gold finish, protection circuitry. Price: £700.00 (plus VAT).

400 ★

Power amplifier with output of 201W @ 8 ohms. THD: 0.25%. FR: 20Hz-20kHz. Inputs sensitivity: 170mV imp 10K. Damping Factor: 1000: 1 @ 20Hz. Dimensions: 48.25 × 25.40 × 17.75cm. Features: Brushed light gold finish, protection circuitry. Price: £440.00 (plus VAT).

4000

Preamp, output 8V. THD: <0.25% typically 0.02%. FR: within ± 5dB from 20Hz-20kHz. Inputs Sensitivity: phono 47K high level 50K. Controls: separate bass and treble, tone defeat switch, active equaliser, tone turnover, two tape monitor circuits, five position input selector switch, three accessory AC outlets. Dimensions: 48.25 × 25.40 × 17.75cm. Price: £547.00 (plus VAT).

2000 ★

Preamp, output 2V. THD: guaranteed less than 0.1% at rated output. FR: within ± 5dB

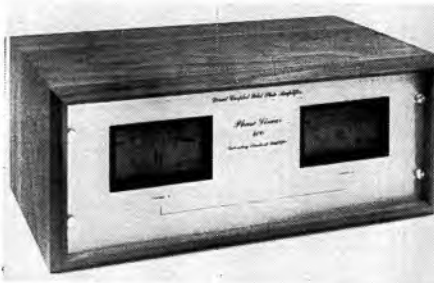
from 20Hz-20kHz. Inputs Sensitivity: low level 47K, high level 40K. Controls: bass, treble, tone defeat, tone turnover, tape monitor, active equaliser, power switching capability. Dimensions: 48.25 × 22.20 × 13.95cm. Feature: ambience control circuit. Price: £262.00 (plus VAT). C3 Cabinet £24.00.

200 ★

Power amplifier with output of 105W @ 8 ohms. THD: <0.25%. FR: 20Hz-20kHz. Inputs Sensitivity: 150mV 18K. Controls: Velocity feedback switch. Damping factor: 100-1. Dimensions: 48.25 × 22.20 × 13.55cm. Price: £330.00 (plus VAT). C3 Cabinet £29.00.



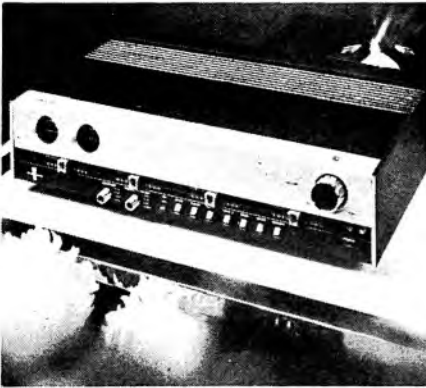
Phase Linear 700B



Phase Linear 400



Phase Linear 200 and 2,000



Philips RH551



Philips AH 386

■ PHILIPS

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

RH551 ★

Stereo preamplifier suitable for use with Philips motional feedback speakers. 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 × 1V. Controls: rumble -3dB at 80Hz (12dB/Oct), scratch -3dB at 7kHz (12dB/Oct), slide controls for bass ±14dB at 50Hz, presence ±6dB at 2kHz, treble ±15dB at 10kHz, rotary volume control. FR: 20Hz-20kHz +0.5dB. S/N ratio: -70dB. Price: on application.

AH483

Integrated amplifier with output of 4W. Features: switching for two pairs of speakers, headphone socket, high and low filters, audio mute, tape dubbing, mic socket, power output meters, two phono sockets. THD: 0.1%. Other details on application.

AH386 ★

Integrated amplifier with output of 65W, otherwise similar to AH384.

RH743

Tuner/pre-amp for use with M.F.B. Outputs: line, headphones, tape. Inputs: tape, M.D.P.U. THD: <0.1%. FR: 20Hz-25kHz +1.5-2dB. Price: on application.

AH762

Tuner/pre-amp for use with motional feedback loudspeakers. THD: <1%. FR: 20Hz-25kHz +1.5-3dB. Inputs: mag pu, recorder, aux, mic. Dimensions: 63 × 12.2 × 34.4cm. Price: on application.

■ PIONEER

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

SA 9500 II ★

Integrated power/preamplifier. Output: 80W to 8 ohms. THD: 0.05%. FR: 5Hz-50kHz +0 -1dB. Inputs: phono (2), aux, tuner, tape play and record, mic, power amp. Damping factor: 30. Controls: twin bass/treble at 50/100/10k/20kHz, volume control 32 steps. Speaker selector off/a, b/a + b. Cartridge load switch, C/R tone defeat switch, duplicate switch, high and low filters, balance control. Dimensions: 42 × 37.6 × 15cm. Features: hum/noise (IHF short circuited A network) phono/75dB auxiliary/tuner/tape replay. 95dB RIAA equalisation 20Hz-20kHz ± 0.2dB. Price: £360.55 (plus VAT).

SA 8500 II

Integrated power/preamplifier. Output: 60W to 8 ohms. THD: 0.05%. FR: 5Hz-50kHz +0 -1dB. Inputs sensitivity: phono (1) 2.5mV/50K, phono (2) 2.5mV/5mV/switchable at 50K, mic 7.5mV/15mV/85K, tuner/aux/tape play/tape record/150mV/50K, power amp in 1V. Damping factor: 30. Controls: bass, treble, volume, balance, main functions, speakers off A/B/A + B, high and low filters, mode switch, duplicate switch, muting switch. Dimensions: 42 × 37.6 × 15cm. Price: £259.63 (plus VAT).

SA 7500 II ★

Integrated power/preamplifier. Output: 45W to 8 ohms. THD: 0.1%. FR: 10Hz-40kHz +0 -1dB. Inputs sensitivity: phono 2.5mV/50K, mic 7.5mV/85K, tuner/aux/tape playback/tape record 150mV/50K. Damping factor: 30. Controls: speakers off A/B/A + B, bass, treble, 32 step volume control function, high low filter, loudness, balance, mode tape,

★ Indicates entry is illustrated



Pioneer SA 9500 Mk II



Pioneer SA 6500 Mk II



Pioneer SA 7500 II



Pioneer SA 5500 Mk II

duplicate, tape monitor. Dimensions: 38 × 30.8 × 13.9cm. Price: £179.44 (plus VAT).

SA 6500 II ★

Integrated power/preamplifier. Output: 30W to 8 ohms. THD: 0.1%. FR: 10Hz-40kHz +0 1dB. Inputs sensitivity: phono 2.5mV/50K, aux/tuner/tape play/tape record 150mV/50K. Damping factor: 30. Controls: speakers off A/B/A + B, bass, treble, tone defeat, volume, balance, function, loudness, tape duplicate. Dimensions: 38 × 30.8 × 13.9cm. Price: £128.97 (plus VAT).

SA 5500 II ★

Integrated power preamplifier. Output: 15W to 8 ohms. THD: 0.5%. FR: 20Hz-20kHz ± 1dB. Inputs sensitivity: phono 2.5mV to 50K, aux/tuner/tape play/tape record 150mV/50K. Damping factor: 30. Controls: speaker off A/B+A+B, volume function, base, treble, balance, tape monitor loudness. Dimensions: 38 × 26.9 × 12.4cm. Price: £82.88 (plus VAT).

U24

Integrated stereo programme selector. Inputs: phono, aux, tape play/record pre out. Controls: power amp (1-2-3) tape duplicate (play 1-2-3-4) record (1-2-3-4), tape monitor (source 1-2-3-4) auxiliary (1-2) phono (1-2-3). Dimensions: 42 × 32.9 × 8.1cm. Features: all push buttons selection provides four tape lines and

duplicate of any combination. Price: on application.

M 22

Class A integrated power amplifier. Output: 30W at 8 ohms. THD: 0.01% at rated power. At 15W 0.005%, at 1W 0.005%. FR: 2Hz-150kHz +0-1dB at 1W. Inputs sensitivity: 1V/50K. Damping factor: 60. Dimensions: 42 × 37 × 15.3cm. Price: on application.

D 23

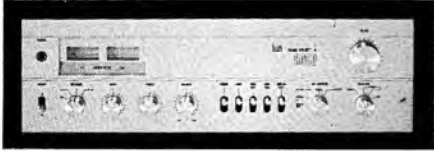
Integrated crossover network. Output: RL: 50K 1V to 10V max. THD: 20Hz-20kHz O/P at 1V = 0.005%, O/P at 10V = 0.1%. FR: 10Hz-100kHz +0-1dB. Input imp: 50K. Controls: low/mid low/mid high/ high crossovers × 64 sep. level control/0±30dB (1dB steps) 6 slope controls. Dimensions: 42 × 35.2 × 15cm. Price: on application.

C 21

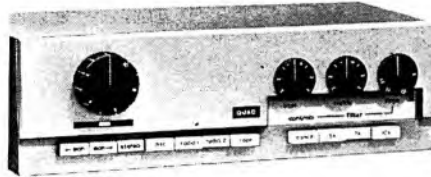
Integrated preamplifier. Output: tape record 150mV/1K. Output RL: 50K 1V/450 ohms (rated) 20V/150 ohms (maximum). THD: 0.06%. FR: 20Hz-20kHz, aux 10Hz-100kHz. Inputs sensitivity: phono 2.5mV/100/10k/25k/50k/75k/100K. Aux 1 + 2 150mV/50K, tape play/tape record 150mV/50K. Controls: left and right gain, cartridge load pF, cartridge load ohms, function, main volume control. Dimensions: 42 × 35.7 × 8.1cm. Price: on application.



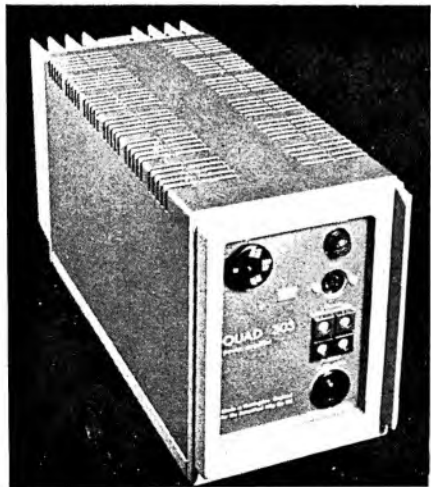
Pye A12000



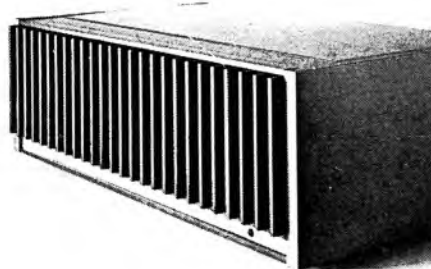
Pye A8000



Quad 33



Quad 303 power amp



Quad 405

■ **PYE**

Pye Ltd, 137 Ditton Walk, Cambridge
CB5 8QD.
Tel: Teversham 2781.

A 12000 ★

Integrated amplifier with output of 60W (8 ohms) 65W (4 ohms) per channel at 8 ohms. THD: 0.3%. FR: 20Hz-20,000Hz +0.5-1.5dB. Inputs: phono (1, 2), mic, aux, tape/monitor (A, B). Outputs: Loudspeakers, headphones. Controls include contour, bass, treble, low and high filters, audio muting. Dimensions: 48 × 15 × 38cm. Price: £176.89 (plus VAT).

A 8000 ★

Integrated amplifier with output of 40W (8 ohms) 45W (4 ohms) per channel. THD: 0.3%. FR: 20Hz-20,000Hz +0.5-1.5dB. Inputs: phono (1, 2), aux, tape/monitor (A, B). Controls include contour, bass, treble, low and high filter, audio muting. Dimensions: 48 × 15 × 38cm. Price: £150.22 (plus VAT).

■ **QUAD**

The Acoustical Manufacturing Co. Ltd,
St. Peters Road, Huntingdon PE18 7DB.
Tel: Huntingdon 52561.

Quad 33 ★

Preamplifier. Output: 0.5V into not less than 10K (3.7mV, 20mV or 100mV to recorder). THD: 0.02%. FR: 30Hz-20kHz ±0.5dB. Inputs/imp: radio (×2) 100mV into 100K; tape 100mV, 400mV or 1V pre-set, 40K; disc pre-set for cartridges of 0.5-6mV/cm/sec magnetic or 25-80mV/cm/sec ceramic. S/N ratio: (0-30 phon weighting 15.7kHz bandwidth) -90dB. Controls: volume/on-off, balance, bass, treble, filter slope and frequency, channel selection, source selection. Features/facilities: variable slope filter switched at half octave intervals 5-10kHz; pre-set adjustments on plug-in boards for pick-up and tape parameters. Dimensions: 26 × 9.2 × 16.5cm. Price: £99.00 (plus VAT).

Quad 303 ★

Power amplifier. Output: 45W per channel into 8 ohms. THD: 0.03%. FR: (within 1dB) 30Hz-35kHz into 8 ohms and 20Hz-35kHz into 16 ohms. Inputs/imp: 0.5V RMS 22K in parallel with 60pF. Damping factor: output source 0.3 ohms in series with 2000μF and 6μH. S/N ratio: -100dB. Features/facilities: unconditional stability, triple output circuit; output protected by current and voltage limiters. Dimensions: 12 × 15.9 × 32.4cm. Price: £108.00 (plus VAT).

★ Indicates entry is illustrated



Revox A722

Quad 405 ★

Power amplifier. Output: 100W per channel. THD: 0.01%. FR: (Ref. 1kHz) -1dB at 20Hz, -0.5dB at 20 kHz, -3dB at 50kHz. Inputs/imp: 0.5V RMS 20K in parallel with 50pF. Damping factor: source 0.03 ohms in series with 3.3 μ H. S/N ratio: ('A' weighted) -95dB, (unweighted) -90dB (15.7kHz bandwidth). Features/facilities: new current dumping circuit, instantaneous recovery up to +20dB overload, unconditional stability, output current limiter, pre-set power limiter for 50W, excellent input slew and output offset. Dimensions: 11.5 x 34 x 19.5cm. Price: £160.00 (plus VAT).

Quad 50E

Power amplifier. Output: 50W per channel. THD: 0.1% at 1kHz. FR: (unbalanced input) -1dB at 30Hz and 20kHz, (balanced input) -2dB at 30Hz and 20kHz (Ref. 1kHz). Inputs/imp: 0.5V RMS., (unbalanced) 14-50K depending on pre-set gain, (balanced) >14K in parallel with 50H. Damping factor: source 0.5 ohms in series with 2.5 μ H for 17V output. S/N ratio: -80dB. Controls: continuously variable screwdriver pre-set gain. Features/facilities: input bridging for monitoring 600 ohms lines; output adjustable for any load 4-200 ohms; unconditional stability. Dimensions: 12 x 32.4 x 15.9cm. Price: £82.00 (plus VAT).

■ REVOX

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

A78

Stereo amplifier. Output: 40W RMS per channel into 4-8 ohms. THD: less than 0.1% at 1kHz, 0.3% 40Hz-15kHz. FR: 20Hz-20kHz



Revox A740



Revox A750

\pm 1dB. Inputs: mag PU 3mV, ceramic PU 250mV, tape 100mV, aux 100mV, radio 100mV, tape monitor 250mV. Treble control: \pm 12dB at 12kHz. Bass Control: \pm 12dB at 60Hz. Mains: 110, 130, 150, 220, 240, 250V AC 50-60Hz. Size: 6 $\frac{1}{4}$ x 16 $\frac{3}{8}$ x 9 $\frac{5}{16}$ in. Weight: 18lb. Price: £299.00 (plus VAT).

A722 ★

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

A740 ★

Stereo power amplifier, 175W/channel into 4 ohms. THD: less than 0.1% up to rated output. FR: 20Hz-20kHz + 0-0.7dB. THD: zero. S/N ratio better than 100dB. (ref. 175W/4 ohms). Price: £740.00 (plus VAT).

A750 ★

Integrated amplifier with output 60W into 4 ohms. THD: >0.2%. FR: 20Hz-20kHz \pm 0.5dB. Inputs: phono (2), tuner, aux, tape (2), power amp in. Damping Factor: 75. Controls: bass, treble, presence. Dimensions: 45.2 x 34.8 x 15.1cm. Features: tape copy facility, pre-amp/power amp are electronically separable. Price: £365.00 (plus VAT).

■ ROGERS

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

A75 Series 2 ★

Integrated amplifier with output 45W per channel. THD: <0.08% at 1kHz <0.3% 40Hz-20kHz. FR: $\pm 1\text{dB}$ 25 Hz-20kHz, $\pm 2\text{dB}$ 20Hz-50kHz. Inputs sensitivity: Disc: RIAA 2.7mV 47K ohms. Tuner, cassette, tape 180mV into 100K. Damping factor: 30 at 50Hz. Controls: bass, treble variable low pass filter, speaker selection, input selection and tape dubbing. Dimensions: 26 x 28.5 x 11.5cm. Features: DC coupled units. Darlington output devices. Price: £169.50 (plus VAT).

■ **ROSS ELECTRONICS**

32 Rathbone Place, London W1P 9AD.
Tel: 01-580 7122.

Stereo preamplifier ★

Permits use of magnetic cartridges with amplifiers providing inputs for ceramic or crystal only. Shielded case. Phono input and output. FR: 30Hz-20kHz. Input impedance: 50K. Gain: 10mV to 0.5V output. Maximum input: 30mV. Price: £7.90 (plus VAT).

■ **ROTEL**

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

RA 1412

Integrated amplifier with output of 110W 20-20,000Hz. THD: 0.05%. FR: 3-100,000Hz. Inputs: 2: 4.8mV, 25: 50: 100V. Dimensions: 54 x 43 x 18cm. Full tape dubbing, mic mixing. Price: £489.10 (plus VAT).

RA 1312

Integrated stereo amplifier with output of 110W. THD: 0.1%. FR: 3Hz-100kHz. Inputs sensitivity: 2, 4, 8mV, 30, 50, 100K. Damping factor: 80. Controls: 1 mic, mic mixing, mixing level, 2 tape monitors, muting, loudness, mode, high and low filters, turnover, 3 prs speakers, 2 phones, bass, volume, balance, treble. Dimensions: 54 x 43 x 18cm. Features: 2 aux, tuner, 2 phono. Twin direct reading watt meters. Subsonic filter. Price: £376.50 (plus VAT).

RA 313

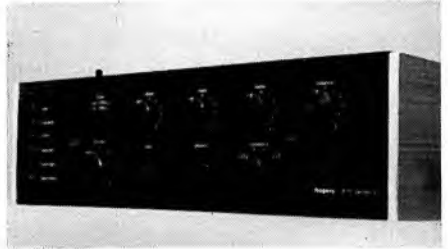
Power amplifier with output 25W. THD: 0.2%. FR: 10Hz-15,000Hz $\pm 3\text{dB}$. Inputs: 2.5mV, 50K. Controls: speakers A/B, bass, treble, filters, mode, loudness, volume, balance, monitor, function. Dimensions: 43 x 26 x 14cm. Features: high and low filters, loudness, tape monitor. Price: £87.39 (plus VAT).

RA 413

Same as RA 313 but with output of 35W. Price: £122.69 (plus VAT).

RA 713

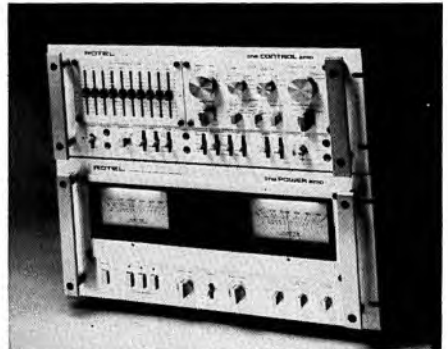
Amplifier with output 45W. THD: 0.1%. FR: 10-70,000Hz $\pm 3\text{dB}$. Inputs: 2.5, 50K. Controls: power, speakers, bass, treble, filters, loudness, muting, volume/balance, mode, monitor, function. Dimensions: 43 x 30.4 x 14cm. Features: high and low filters, tape monitor, muting. Price: £148.74 (plus VAT).



Rogers A75 Series 2



Ross Elec Stereo pre-amp



Rotel RB5000 and RC5000

★ Indicates entry is illustrated

RA 913

Amplifier with 60W output. THD: 0.05%. FR: 5-100,000Hz \pm 3dB. Inputs 2.0, 50K. Controls: power, speakers, bass, treble, function, volume, tone defeat, filters, monitor, mode, balance, muting, loudness. Dimensions: 48 x 37.5 x 15cm. Features: high, low and subsonic filters, full tape dubbing, muting, loudness, tone defeat. Price: £210.08 (plus VAT).

RC 5000 ★

Preamplifier. THD: 0.002%. Inputs: 2-8mV 30 ohms-100K. Controls: Octave equalisers, impedance, filters, tone, muting, loudness, mode, mic, mix level, phono selector, phono (1), balance, volume, tape, input selector. Dimensions: 48.2 x 41 x 19cm. Price: £708.88 (plus VAT).

RB 5000 ★

Power amplifier with output of 500W. THD: 0.009%. FR: DC-100,000Hz \pm 3dB. Dimensions: 48.2 x 43 x 24.3cm. Controls: speakers A, B or C, left level, right level, input, filter, meter sensitivity, power limiter. Price: £1,344.54 (plus VAT).

■ SANSUI

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

■ SHARP OPTONICA

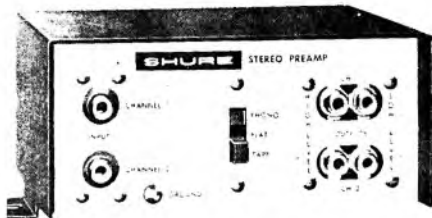
Sharp Electronics (UK) Ltd, Sharp
House, 107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

SM 1515

Preamplifier with direct coupled equaliser circuit; power amplifier all stage direct coupled ITL/CTL/OCL circuitry. Output: 33W into 8 ohms. THD: 0.2%. FR: 15Hz-60kHz +1dB-3dB. Inputs: 150mV/40K. Damping Factor: 40. Controls: Left right output power meters, tape dubbing, audio muting, low cut filter, loudness control. Dimensions: 40.8 x 25.3 x 14.4cm. Features: 41 click stop positions on volume control, independent bass and treble. Speaker balance. Price: £115.46 (plus VAT).

SM 3636

Pre-amp direct coupled equaliser circuit. Power amp all stage direct coupled complementary OCL circuitry. Output: 45W. THD: 0.05%. FR: 10Hz-100kHz +0dB-2dB. Inputs: 800mV/47K. Damping Factor: 40. Controls: audio muting, tape dubbing, high/low cut filter, frequency selectors, bass/



Shure M64-2E

treble. Dimensions: 44.2 x 36.3 x 14.4cm. Features: double protection circuitry, turn-over frequency selectors, tone defeat switches, 32 positions. Price: £213.24 (plus VAT).

SM 4646

Pre-amp and power amp. Output: 70W. THD: 0.05%. FR: 10Hz-100K +0dB-2dB. Inputs: 650mV/47K. Damping Factor: 50. Controls: double protection circuit. Turnover frequency selectors, treble tone control. 4-gang volume control. Audio muting switch. Dimensions: 44.2 x 36.3 x 14.4cm. Features: tape dubbing, high/low cut filter. Price: £239.41 (plus VAT).

■ SHURE ELECTRONICS

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

M64-2E ★

Stereo preamplifier 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 2dB. Input imp: 50K at 1kHz. Load imp: (high) 22K minimum; (low) 600 ohms optimum. Separation: 50dB at 1kHz. H and N: 71dB minimum below 10mV input from 20Hz-20kHz. Optional battery power unit. Price: £48.60 (plus VAT).

■ SONY (UK) LTD

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

TA E88★

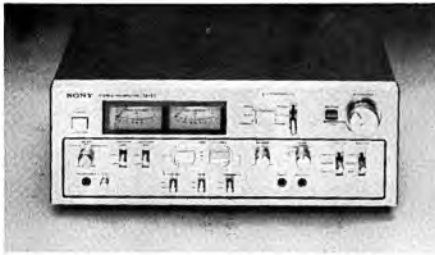
Stereo preamplifier with THD: <0.002% (10V output). FR: DC — 500kHz +0-1dB tuner tape aux. Inputs: phono 1 & 2, head amp, tuner, tape 1, 2, aux. Controls: power



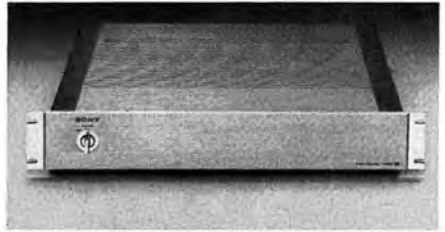
Sony TA-E88



Sony TA-N7



Sony TA-E7



Sony TA-N88

attenuator, output level, balance, mode monitor. Dimensions: 48 × 37 × 8cm. Features: rugged classic construction. Price: no rec. retail price.

TA N88 ★

Stereo power amplifier with 160W output per channel. THD: <0.5%. FR: 5Hz-40kHz +0.5dB-1dB. Inputs: 1.4V-50K. Damping Factor: 20. Controls: power on/off. Dimensions: 48 × 36 × 8cm. Features: professional pulse width modulation amplifier which combines high power in a compact cabinet weighing only 11kg. Price: no rec. retail price.

TA F6

Details on application.

TA E7 ★

Stereo preamplifier with THD less than 0.003%. FR: 1Hz-150kHz +0-1dB tuner, aux, tape. Inputs: phono 1, 2, head amp, tuner, aux 1, 2, tape 2. Controls: volume, muting, bass, treble, balance, mode, tape and tape copy, high and low filters. Dimensions: 43 × 32 × 17cm. Features: Amplifier adjustable to suit most moving coil cartridges. Price: no rec. retail price.

TA N7 ★

Stereo power amplifier with output of 100W

per channel both channels operating into 8 ohms at 20Hz-20,000Hz. THD: <0.01% at rated output 20Hz-20,000Hz. FR: DC — 100kHz +0dB-1dB direct. Inputs: 1.3V-50K. Controls: power on/off. Dimensions: 43 × 34 × 17cm. Features: two toroidal transformers. Price: no rec. retail price.

TA 11

Integrated amplifier with output of 30W per channel at 0.3% distortion both channels operating into 8 ohms at 20Hz-20,000Hz. THD: 0.2% at 1kHz rated output power, 0.1% at 1W. FR: 10Hz-10,000kHz ±2dB. Inputs: phono- mic- aux, tuner, tape. Damping Factor: 25 (8 ohms) at 1kHz. Controls: volume, muting, balance, bass, treble, mic, mix, functions, loudness, tape monitor. Dimensions: 41 × 25 × 15cm. Feature: power meters. Price: no rec. retail price.

TA F7

Integrated amplifier with output of 70W per channel at 20Hz-20kHz into 8 ohms. THD: <0.015% at rated output. FR: 5Hz-10kHz +0-1dB. Inputs: Aux, tuner, tape. Damping Factor: 60 (8 ohms) at 1kHz. Controls: volume, muting, function, bass, treble, balance, tape monitor and copy, mode, low, high filters. Dimensions: 43 × 42 × 17cm. Features: high power V-Fet output stage. Price: no rec. retail price.

★ Indicates entry is illustrated

■ SPENDOR

Spendor Audio Systems Ltd,
Station Road Industrial Estate, Hailsham,
Sussex BN27 2EN.
Tel: Hailsham 843474.

D40 ★

Integrated amplifier with output of 40W. THD: <0.1%. FR: 30Hz-20kHz \pm 0.5dB. Inputs: RIAA 3.6mV @ 1kHz, aux 1-3 60mV. Damping factor: >25 @ 40Hz. Controls: volume, input select, balance/mono. Dimensions: 33 x 22 x 9.6cm. Price: on application.

■ J. E. SUGDEN

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

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. Controls: bass \pm 14dB at 40Hz, treble \pm 14dB at 10kHz, volume \pm 1dB per channel, balance \pm 6dB 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 x 3½ x 7in. Price: £96.00 (plus VAT).

A48 Series Two ★

Integrated stereo amplifier. Inputs: mag PU 2.5mV 47K, radio 100mV 200K, two tapes 100mV 200K. Noise level: (PU input) -70dB, (other inputs) -82dB. Overload capability: (PU input) 100mV, (other inputs) infinite. Output: 45W into 8 ohms. Controls: bass \pm 14dB at 40Hz, treble \pm 14dB at 10kHz, balance \pm 6dB at 180° rotation, fade out at full rotation, volume, input selectors, LF filter 18dB/octave from 70Hz, HF filter at 4, 7 or 10kHz, pushbutton selection of slope (steep 18dB/octave, gradual 6dB/octave), quiet button (-16dB loudness compensated), mono/stereo, stereo reverse. HD: <0.1%. FR: 30Hz-20kHz \pm 1dB at all output levels. Size: 16. x 5¾ x 11½in. Finish: Nextel with brushed aluminium panel. Special output stage. Price: £168.00 (plus VAT).

P51 ★

Mono or stereo power amplifier. 21 transistors, 20 diodes. Input: 500mV 300K. Noise level: -90dB. Output: 50W RMS into 8 or 4 ohms, or with mono connection 100W into 8 ohms. Mono/stereo switch. HD: 0.05% at 8 ohms, 0.1% at 4 ohms. FR: 30Hz-20kHz \pm 0.75dB at all power levels. Finish: case finished in embossed PVC with matt PVC facing on aluminium panel. Price: £120.00 (plus VAT).



Spendor D40



J. E. Sugden C51



J. E. Sugden A.48



J. E. Sugden P.51

■ TANDY

Tandy Corporation (Branch UK), Bilston Road, Holyhead Road, Wednesbury, Staffs WS10 7JN.
Tel: 021-556 6101/2.

SA 800

Price: £99.95 (plus VAT).

SA 1500

Price: £139.95 (plus VAT).

SA 2000

Price: £189.95 (plus VAT).

All details on application.

■ TECHNICS

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR.
Tel: Slough 27516.

SU-8600

Integrated amplifier. Output: $2 \times 85W$ (4 ohms) $2 \times 76W$ (8 ohms) at 1kHz. $2 \times 80W$ (4 ohms), $2 \times 73W$ (8 ohms) at 20Hz-20kHz. THD: 0.08%. FR: 20Hz-20kHz $\pm 0.3dB$. Inputs: main, phono, tuner aux, tape deck. Damping factor: 25, 50. S/N: rated power phono 60dB aux 85dB. 50mW power output phono 55dB aux 55dB. Tone controls: bass and treble. Dimensions: $45 \times 17.3 \times 35.2cm$. Price: £319.95 (inc. VAT).

SU-8080

Integrated amplifier. Output: $2 \times 92W$, $2 \times 74W$. THD: 0.02%. FR: 20Hz-20kHz +0dB -0.1dB. Damping Factor: 35, 70. Inputs: main in phono, tuner, aux, tape deck playback, tape deck rec/play. Dimensions: $45 \times 14 \times 37.1cm$. Price: £269.95 (inc. VAT).

SU-7700

Integrated amplifier. Output: $2 \times 70W$, $2 \times 53W$. THD: 0.08%. FR: 20Hz-20kHz $\pm 0.5dB$, 10Hz-40kHz $\pm 1dB$. Damping Factor: 25, 50. Inputs: tuner, aux, tape deck playback, tape deck rec/play. Dimensions: $41 \times 13.9 \times 33.4cm$. Price: £169.95 (inc. VAT).

SU-7300

Integrated amplifier. Output: $2 \times 55W$, $2 \times 43W$. THD: 0.08%. FR: 20Hz-20kHz $\pm 0.5dB$, 15Hz-40kHz $\pm dB$. Damping Factor: 20, 40. Inputs: tuner, aux, tape (1 & 2). Dimensions: $41 \times 13.9 \times 33.4cm$. Price: £134.95 (inc. VAT).

SU-7100

Integrated amplifier. Output: $2 \times 40W$, $2 \times 37W$. THD: 0.1%. FR: 30Hz-15kHz $\pm 0.5dB$,

15Hz- $\sim 40^{\circ}H \geq \pm 1dB$. Damping Factor: 20, 40. Inputs: tuner, aux, tape (1 & 2). Dimensions: $41 \times 13.9 \times 32.9cm$. Price: £104.95 (inc. VAT).

■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Girling Way, Great South West Road, Feltham, Middlesex.
Tel: 01-751 1281.

SB-230

Integrated amplifier with output of $27W \times 2$ into 8 ohms. THD: 0.2%. FR: 40Hz-30kHz. Inputs: phono, tuner, tape. Damping Factor: 25. Controls: bass, treble, balance. Dimensions: $42 \times 28 \times 14cm$. Features: power output meters, full mic mixing. Price: to be announced.

SB-235

Integrated amplifier with output of $28W \times 2$ into 8 ohms. THD: 0.1%. FR: 10Hz-50kHz $\pm 2dB$. Inputs: phono, tuner, tape. Damping Factor: 25. Controls: bass, treble, balance. Dimensions: $42 \times 24 \times 9.6cm$. Features: power output meters, full mic mixing. Price: to be announced.

SC 530

Power amplifier with output of $60W \times 2$ into 8 ohms. THD: 0.1%. FR: 5Hz-80kHz $\pm 1dB$. Inputs: main input only 1V at 47K. Controls: input level controls, speaker selector. Features: power output meters. Price: to be announced.

SC-335

Power amplifier with output of $42W \times 2$ into 8 ohms. THD: 0.1%. FR: 5Hz-80kHz $\pm 1dB$. Inputs: main input only 1V at 47K. Controls: input level controls. Dimensions: $42 \times 24 \times 9.6cm$. Features: power output meters. Price: to be announced.

SC-330

Power amplifier with output $40W \times 2$. THD: 0.1%. FR: 5Hz-60kHz $\pm 1dB$. Inputs: main input. Damping Factor: 25. Controls: input level. Dimensions: $54 \times 24.8 \times 92.5cm$. Features: output level meters. Price: £89.50 (plus VAT).

SY-330

Preamplifier. THD: 0.1%. FR: 20Hz-40kHz $\pm 1dB$. Inputs: phono, tuner, aux/tape, mic. Controls: pre-out 1V, tape out 150mV. Dimensions: $45 \times 24.5 \times 9.7cm$. Features: mic mixing with auto fade control. Price: £59.50 (plus VAT).

★ Indicates entry is illustrated

SY-335

Preamplifier with output of 1V. THD: 0.1%. FR: 20Hz-40kHz \pm 1dB. Inputs: phono, tuner/aux, tape. Controls: bass, treble, balance. Dimensions: 42 x 24 x 9.6cm. Features: mic mixing. Price: to be announced.

SY-530

Preamplifier with output of 1V. Specs as per SY-335. Price: to be announced.

■ TRIO

B. H. Morris & Co. (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middlesex.
Tel: 01-902 9422.

Model 600

Integrated amplifier with output 130+130 W from 20-20,000Hz. THD: 0.08% at rated power. 0.03% at 1W. FR: DC to 70,000Hz. S/N: 115dB input shorted. Controls: bass, treble, loudness, volume, low filter, high filter, presence. Dimensions: 44 x 38 x 15cm. Features include direct coupling FET amps. DC power amplifier, separate power supplies for each channel. Price: £537.77 (plus VAT).

KA 7100 ★

Integrated amplifier with output 60W from 20Hz-20kHz. THD: 0.02% at rated power. FR: DC-100kHz + 0dB-1.5dB. Inputs as per KA 1500. Damping Factor: 50. Controls: volume, bass, treble, balance, loudness, mode, filters, attenuator, tone defeat. Dimensions: 43 x 38 x 15cm. Features: DC response, two step loudness, tone defeat, dual power supplies. Price: £191.11 (plus VAT).

KA 9100

Integrated amplifier with output 90W from 20Hz-20kHz. THD: 0.03% at rated power. FR: DC-100kHz + 0dB-1dB. Inputs sensitivity: phono (2) 2.5/0.8 @ 50K/600 ohms, tuner 150 @ 50K, aux 150 @ 50K, tape (2) 150 @ 50K. Damping factor: 50. Controls: volume, balance, bass, treble, 2 step loudness, filters, mode. Dimensions: 43 x 38 x 15cm. Features: DC response, power meters, triple power supplies, tone defeat, phono gain switch. Price: £351.11 (plus VAT).

L-07M

Power amplifier (mono) with output 150W from 20Hz-20kHz. THD: 0.008% at rated power. Inputs sensitivity: 1V @ 50K. Damping factor: 120. Dimensions: 20 x 39 x 16cm. Designed to mount on or under speaker. Price: £251.11 (plus VAT).



Trio KA 7100



Trio KA 3700



Trio KA 6100

L-07C

Preamplifier. Output: max 10V into less than 10 ohms. THD: 0.003%. FR: 10Hz-200kHz + 0dB-0.5dB. Inputs sensitivity: phono (2) 2/0.2 @ 50K/600 ohms, tuner 140 @ 50K, aux 140 @ 50K, tape (2) 140 @ 50K. Controls: gain att, bass, treble, master volume, tape, subsonic, output. Dimensions: 48 x 33 x 10cm. Suitable for both MM and MC cartridges. Price: £400.00 (plus VAT).

★ KA 3700

Integrated amplifier with output of 25W. THD: 0.08%. FR: 10Hz-50,000Hz. Inputs: phono,



Videotone Sirac 50.

aux, tape, tuner. Damping Factor: 30. Controls: bass, treble, volume, balance, monitor. Dimensions: 38 × 29 × 14cm. Features: direct coupled low noise phono pre-amp. Price: £66.66 (plus VAT).

KA 5700

Integrated amplifier with output of 40W. THD: 0.04%. FR: 10Hz-40,000Hz. Inputs: phono, aux, tape (A + B), tuner. Damping Factor: 30. Controls: bass, treble, volume, balance, 2 × monitor — dB. Dimensions: 38 × 29 × 14cm. Features: power output meters, 2 tape units. Price: £112.23 (plus VAT).

★ KA 6100

Integrated amplifier with output of 50W. THD: 0.04%. FR: 10Hz-45,000Hz. Inputs: phono, aux, tape (A + B), tuner. Damping Factor: 40. Controls: volume, bass, treble, balance,

monitor A + B. Dimensions: 43 × 36 × 15cm. Dual power supply system, output meters. Price: £147.83 (plus VAT).

KA 8100

Integrated amplifier with output of 75W. THD: 0.03%. FR: 5Hz-50,000Hz. Inputs: phono (1 + 2), aux, tape (A + B), tuner. Damping Factor: 50. Controls: volume, balance, treble, bass, monitor (A + B). Dimensions: 43 × 38 × 15cm. Features: DC amplifier, gain switch for dual power supplies. Price: £253.33 (plus VAT).

LO9M

Single channel power amp with output 300W. THD: 0.003%. FR: DC — 10,000Hz. Inputs: pre-amp in 1V 50K. Damping Factor: 200. Controls: gain, speaker selector. Dimensions: 48 × 40 × 15cm. Features: DC response, dynamic power output 1kW @ 4 ohms. Price: £439.11 (plus VAT).

■ VIDEOTONE

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

Sirac 50 ★

Power amplifier with output of 20W. THD: 0.15% at 50W or 0.025% at 10W. FR: 10Hz-20kHz. Damping Factor: 50. Dimensions: 17¼ × 14¾ × 7in. Price: £528.00 (plus VAT).

Here you see the KX-1030, the pride and joy of Trio's engineering division, and the cause of some embarrassment to the Trio Financial Director.

The pride and joy comes from the fact that this is one of the only cassette decks on the market with three heads. This allows you to hear what you're recording while you're recording it. (With lesser decks, you have to wait till afterwards.)

Our Financial Director was far from impressed.

"Do you realise what this kind of thing costs?" he said.

"Do you seriously think people are going to spend that kind of money on a cassette deck?"


There was a brief argument. Our engineers won. They usually do.

For more details, including the price, write to the address below.

And arrange to take your bank manager out to lunch.

IS IT WORTH AN OVERDRAFT?



 **TRIO** Sadly, it's not cheap.



Cassette Decks and Recorders

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ AIWA

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

AD 6500 ★

Front loading Dolby cassette deck. Features include: Dolby noise reduction system, motor driven cassette tape loading mechanism, 3-step tape selector (LH, CrO₂ and FeCr), 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. FR: 30Hz-16kHz (FeCr tape). S/N ratio: (FeCr tape, Dolby on) 58dB DIN. W and F: 0.07% (WRMS). Separate bias and equalisation switching. VU indicators + 3dB and +7dB peak lights. Inputs for mic, line, Rec/PB. Dimensions: 45 × 30 × 15.5cm. Price: approx. £240.77 (plus VAT).

AD 1250

Stereo cassette deck with Dolby noise reduction system. W and F: 0.09% WRMS. FR: 30-16000Hz CrO₂. 3 position tape selector. Twin VU meters, LED peak/indicator. Inputs: line 50mV/50K ohms, DIN 0.1mV/K ohm/3K ohms, mic 0.3mV/200-10K. Outputs: line 0.775V/50K (0VU); DIN 0.0775V/50K (0VU); headphones 1mW/8 ohms. Mains voltage: 120/240V 50/60Hz. Dimensions: 38.8 × 27.5 × 14.5cm. Price: £154.23 (plus VAT).

AD 6300

Stereo cassette deck with Dolby noise reduction system. W and F: 0.09% WRMS. FR: 30-16000Hz ±3dB FeCr tape (DIN). Bias switch. Twin VU meters. LED peak indicator. Inputs: Line 50mV/50K ohms; DIN 0.1mV/5K, ohms, mic 0.25mV/200-10K. Outputs: line 0.775/10K (0VU); DIN 0.775/10K

ohms (0VU); headphones 1mV/8 ohms. Mains voltage: 240V, 220-240V. Dimensions: 42 × 30 × 16cm. Price: £167.01 (plus VAT).

AD 6800 ★

Stereo cassette deck with Dolby system. W and F: 0.05%. FR: 25Hz-17,000Hz. 3 position tape selector. VU and peak meters. Inputs: mic, line, DIN. Outputs: line, DIN. Mains: 120/240V 50/60Hz. Dimensions: 45 × 33.5 × 16.2cm. Features: Fine bias adjustment for all tapes with three head flat frequency response tuning system. Double needle meters for VU and peak indication with peak hold facility. Record limiter. Automatic loading. Price: £369.60 (plus VAT).

AD 6400

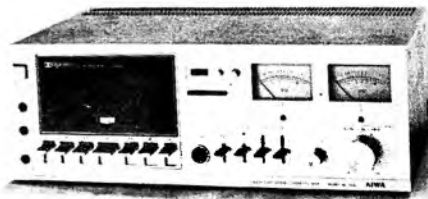
Stereo cassette deck. W and F: 0.05%. Dolby NR system. FR: 25Hz-16,000Hz CrO₂ tape. Three position tape selector. VU, peak lights. Inputs: mic, line, DIN. Outputs: DIN and line. 38 pulse FG servo motor. Mains: 120/240V 50/60Hz. Dimensions: 42 × 33 × 15cm. Bias fine tuning for LH (normal) tape. Separate three step bias and equalisation selector, quick review/cue, full auto-stop, ferrite guard head. Price: £216.39 (plus VAT).

AD 6550

As above with memory wind. Left VU meter can be used as 'remaining tape time meter'. Price: £253.63 (plus VAT).

■ AKAI

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



Aiwa AD6500



Aiwa AD 6800

★ Indicates entry is illustrated



Akai GXC 740D



Alpha CD 601

CS 34 D

Stereo cassette deck with Dolby noise reduction. W and F: less than 0.13%. S/N: better than 52dB. FR: 40 to 13,000Hz \pm 3dB, 40-15,000Hz using chrome. Bias switch for low noise and chrome. Inputs for mic and line. Dimensions: 14.9 \times 4.3 \times 8.9in. Price: £113.42 (plus VAT).

GXC 740 D ★

Stereo cassette deck with Dolby noise reduction. W and F: better than 0.07%. S/N: better than 50dB, with Dolby improves up to 10dB. FR: 30-18,000Hz. Inputs for mic and line. Dimensions: 17.3 \times 5.6 \times 12in. Price: £344.53 (plus VAT).

CS 7020

Stereo cassette deck. W and F: <0.08%. Dolby system. FR: 40Hz-15kHz (chrome). Switch for low noise/chrome. Two VU meters. Inputs: mic, line. Outputs: line, phono. Load Imp: >20K. DC electronically speed controlled motor. Dimensions: 38 \times 28.7 \times 15.7cm. Price: £132.76 (plus VAT).

CS 7070

Stereo cassette deck. W and F: <0.08%. Dolby system. FR: 35Hz-16kHz (ferri-chrome). Switch for LN/LH/FeCr. Two VU meters, peak level indicator. Inputs: mic, line. Outputs: line, phono. DC electronically speed controlled. Dimensions: 44 \times 30.4 \times 16.5cm. Price: £184.80.

GXC 709 D

Stereo cassette deck. W and F: <0.06%.

Dolby system. FR: 35Hz-16kHz (FeCr). Switch for LN/LH/CrO₂/FeCr. Two VU meters. Two peak level indicators. Inputs: mic, line. Outputs: line, phone. Load Imp: >20K. DC electronically controlled motor. Dimensions: 44 \times 28.5 \times 16.5cm. Price: £235.20 (plus VAT).

GXC 7300

Stereo cassette deck. W and F: <0.08%. Dolby system. FR: 30Hz-17kHz (FeCr). Switch for LN/CrO₂/FeCr. Two VU meters, peak level indicator. Inputs: mic, line. Outputs: line, phono. Load Imp: >20K. 4-pole hysteresis synchronous motor. Dimensions: 44 \times 30.2 \times 17.5cm. Price: £302.44 (plus VAT).

GXC 725 D

Stereo cassette deck. W and F: <0.06%. Dolby System. FR: 35Hz-17kHz (FeCr). Switch for LN/LH/CrO₂/FeCr. Two VU meters, peak level indicator. Inputs: mic, line. Outputs: line, phone. Load Imp: >20K. DC electronically controlled motor. Dimensions: 44 \times 28.5 \times 16.5cm. Price: £268.80 (plus VAT).

GXC 5700

Stereo cassette deck. W and F: <0.06%. Dolby system. FR: 30Hz-19kHz (FeCr). Switch for CrO₂/LN/FeCr. Two VU meters, peak level indicator. Inputs: mic, line. Outputs: line, phone. DC electronically controlled motor. Dimensions: 44 \times 22.5 \times 22.5cm. Price: £568.09 (plus VAT).

■ ALPHA

Highgate Acoustics Ltd,
38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4936.

CD 101

Stereo cassette deck. W and F: 0.2%. FR: 40Hz-12kHz. Bias switch for chrome/ferro chrome. VU meters. Outputs: 500mV. Mains: 240V AC. Dimensions: 40 \times 27.5 \times 13cm. Price: £69.00 (plus VAT).

CD 601 ★

Stereo cassette deck. W and F: 0.09%. Dolby B noise reduction system. FR: 30Hz-16,000Hz. CrO₂ Dolby off. Bias switch for chrome/ferro chrome. VU meters. Inputs: mic 0.5mV-Line 100mV, mic 10K-Line 100K. Outputs: 580mV with load imp less than 10K. Mains: 240V AC. Dimensions: 42 \times 25 \times 13.5cm. Price: £115.00 (plus VAT).

CASSETTE DECKS/RECORDERS



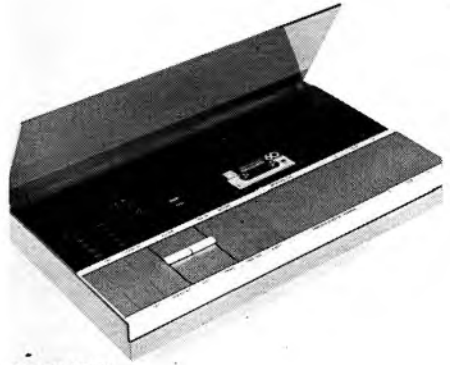
Amstrad 7060



Amstrad 7050



BASF 8200 CrO₂



Beocord 5000

■ AMSTRAD

Amstrad Consumer Electronics Ltd,
1-7 Garman Street, London W17 0UF.
Tel: 01-801 4431.

7050 ★

Stereo cassette deck with Dolby noise reduction system. W and F: 0.1% WRMS. FR: 40Hz-15kHz. Bias switch for chrome and ferro-chrome cassettes. 2 meters. Inputs: mic 0.5mV/100K; line 100mV/250K; DIN 10mV/27K. Outputs: line: 0.7 variable/10K; DIN 0.7 variable/10K; Headphones 8 ohms. Mains voltage: 240V. Dimensions: 37 × 22 × 8.5cm. Price: £98.70 (plus VAT).

7070

Stereo cassette deck with Dolby noise reduction system. W and F: 0.085% WRMS. FR: 25Hz-17kHz. Bias switch for chrome and ferro-chrome cassettes. 2 meters. Inputs: mic 0.5mV/100K; line 50mV/100K; DIN 10mV/27K. Outputs: line 0-1 variable/10K; DIN 0-1 variable/10K; headphones 8 ohms. Mains voltage: 240V. Dimensions: 42 × 25.5 × 14.5cm. Price: £118.61 (plus VAT).

7060 ★

Stereo cassette deck. W and F: 0.1%. Dolby noise reduction system. FR: 60Hz-14,000Hz. Bias switch for chrome and ferro-chrome cas-

ettes. Two meters. Inputs: mic, line, DIN. Outputs: 0-600mV-600 ohms DIN, 600mV 600 ohms line. Mains: 240V AC. Dimensions: 42 × 25.5 × 14.5cm. Price: £103.45 (plus VAT).

■ BASF

BASF United Kingdom Ltd,
Audio/Video Tape Division,
2-4 Fitzroy Street, London W1P 5AD.
Tel: 01-637 8971.

8200 CrO₂ ★

Stereo cassette deck. W and F: less than 0.14%. Fitted with both Dolby and DNL noise reduction. S/N: better than 53dB (ferric oxide, NR out), better than 55dB (CrO₂ NR out). FR: 20Hz-14kHz (ferric oxide) 20Hz-16kHz (CrO₂) NAB. CrO₂ switch alters bias and record/replay equalisation. Two VU meters. Inputs: mic, 2 × Stereo, DIN, Phono. Outputs: line 0.5-2V 2.5K, phones 8 ohms. Mains: 110/220-240V. Size: 40.7 × 14.7 × 27cm. Price: £180.00 (plus VAT).

■ BEOCORD

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

5000 ★

Stereo cassette deck with Dolby B noise reduc-

★ Indicates entry is illustrated

tion system. W and F: $\leq \pm 0.15\%$ DIN. FR: 30Hz-15,000Hz DIN. Auto switch ferric or CrO₂ only. Peak programme meters. Inputs: radio, mic, aux. Outputs: amplifier 940mV/23K, headphones max 2.7V/22 ohms. Two motors, drive system servo controlled. Mains: 110-130-220-240V AC/50Hz. Dimensions: 47 × 28 × 8cm. Price: £298.50 (plus VAT).

1900

Stereo cassette deck with Dolby. W and F: $\leq \pm 0.2\%$. FR: 30Hz-14kHz. Bias switch for chrome and ferro-chrome. VU meter. Inputs: radio, mic. Outputs: Amplifier. Mains: 110-220. Dimensions: 40 × 25 × 8cm. Price: £170.00 (plus VAT).

■ CROWN

York Electronics Ltd,
73 Grosvenor Street, London W1.
Tel: 01-629 8368.

CTR 375

This portable cassette tape recorder has automatic CrO₂/normal tape selection, an automatic level control, which guarantees optimum recording results, and a built in condenser microphone, which facilitates instant recording. An indicator lamp is illuminated during the recording operation, and a 3 digit tape counter facilitates locating the exact portion of recorded tape. The auto-stop mechanism automatically stops the tape and cuts off power at the end of the tape. Price: on application.

CTR 300

A compact cassette tape recorder with a built in microphone, it can be powered by either batteries or a 240V AC mains source. The recorder has an auto-stop mechanism, and push button controls. Price: on application.

■ DECCA

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

DC 2000 ★

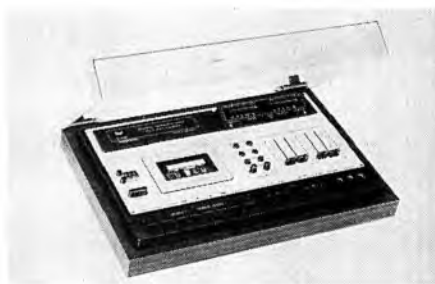
Stereo cassette deck with Dolby B. Tape speed 1 $\frac{7}{8}$ i/s. FR: (playback) ± 2 dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left and right). Pushbutton controls: mains on/off, CrO₂ on/off, Dolby noise reduction on/off, memory rewind 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 out-



Decca DC 2000



Decca DC 1100



Dual C 939

puts, DIN outputs. Mains: 240V 50Hz. Power consumption: 6W. Size: 350 × 240 × 110mm. Finish: teak. Price: on application.

DC 1100 ★

Stereo cassette deck. Tape speed: 1 $\frac{7}{8}$ i/s. FR: (playback) ± 2 dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left to right). Pushbutton controls: mains on/off, CrO₂ on/off tape counter reset. Piano key controls: record, rewind, fast forward, play, pause, stop/eject. Input 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: on application.

■ DUAL

Audiodecks Ltd, PO Box 7,
Sandback Way, Wetherby,
West Yorks LS22 4YS.
Tel: Wetherby 5477.

C 919

Stereo deck with Dolby noise reduction system. W and F: weighted RMS $< \pm 0.07\%$, DIN reproduction only $< \pm 0.10\%$, DIN record play $< \pm 0.14\%$. FR: standard Fe tape 20Hz-15,000Hz, CrO₂ tape 20Hz-16,000Hz, FeCr tape 20Hz-17,000Hz. Bias switch for chrome and ferro-chrome cassettes. VU meters. Inputs: mic, receiver/amplifier DIN jacks, RCA jacks. Outputs: receiver/amplifier DIN jack 750mV/3.3K, RCA jacks 0-750mV/4.7K adjustable. Mains: 110-125/220-240V. Dimensions: 42 × 12.8 × 26.5cm. Price: £206.20 (plus VAT).

C 939 ★

Stereo cassette deck. W and F: $< 0.07\%$. Dolby 'B' noise reduction system. FR: Fe: 20Hz-15kHz; Cr: 20Hz-16kHz; FeCr: 20Hz-17kHz. Push button switch for chrome and ferro-chrome cassettes. LED strip readout, switchable characteristic, peak or VU. Inputs: mic, amp. Outputs: DIN socket, phono, headphones. Mains: 110-120V, 220-240V. Dimensions: 44 × 30 × 15cm. Price: Walnut £294.87, Black £300.64 (all plus VAT).

■ EUMIG

Eumig (UK) Ltd,
14 Priestley Way, London NW2 7TN.
Tel: 01-450 8070.

Metropolitan Concert ★

Stereo cassette deck. W and F: 0.08% DIN, 0.04% RMS. Dolby noise reduction system. FR: ferric 30Hz-16,000Hz, CrO₂ and FeCr: 30Hz-18,000Hz. Switchable ferro-chrome automatic CrO₂ switching. LED peak level display. Inputs: mic, DIN, line. Outputs: 0.3 DIN. Two motors. Mains: 110/130/220/240/250V. 50/60Hz. Dimensions: 43.4 × 30 × 13.8cm. Price: £443.10 (plus VAT).

■ FERGUSON

Thorn Consumer Electronics Ltd,
284 Southbury Road, Enfield, Middlesex.
Tel: 01-366 1155.

3280 ★

Stereo cassette deck with Dolby system. FR: CrO₂: 60Hz-12kHz, Ferric 60Hz-10kHz. W and F: 0.2%. S/N: 45dB or 50dB with Dolby. Twin VU meters, slider record level controls,

left and right channels, manual or auto recording. LED function indicators, digital tape position indicator, mechanical auto stop. Sockets for 5 pin DIN and phono. Stereo mic and headphones. Finish in black and silver with teak effect base. Dimensions: 7.7 × 32.7 × 20cm. Price: on application.

3287 ★

Stereo cassette deck with Dolby system. W and F: 0.2% RMS. FR: 40Hz-15kHz (CrO₂), 40Hz-12kHz (Fe). Bias switch for chrome. Two illuminated VU meters. Inputs sensitivity: 50mV/47K phono, 2.2mV/10K DIN. Outputs: 500mV/8K DIN and phono. Mains:



Eumig Metropolitan Concert



Ferguson 3280

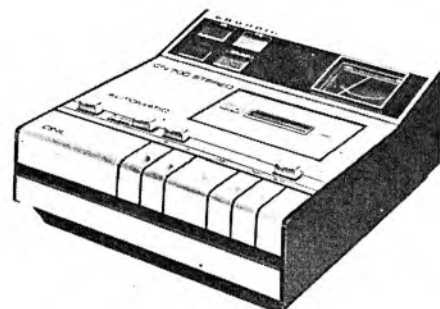


Ferguson 3287

★ Indicates entry is illustrated



Garrard GC 350 (left) GC 300



Grundig CN730

240V. Dimensions; 39.8 × 9.4 × 23.3cm. Memory rewind facility, rotary controls, LED indicators for Dolby and record, auto stop, sockets for 5 pin DIN and phono connection, sockets for stereo microphone and headphones. Finish: black, silver and teak effect. Price: on application.

■ GARRARD

Garrard Engineering Ltd,
Newcastle Street, Swindon, Wilts SN1 2LH.
Tel: Swindon (0793) 35381.

GC 300 ★

Top-loading stereo deck with lever and slider controls. W and F: 0.17%. Dolby NR. FR Standard: 30Hz-12.5kHz. FR Chrome: 30Hz-15kHz. Finish: matt-black casing with wood-finish base. Dimensions: 48 × 10 × 24.6cm. Price: £139.95 (plus VAT).

GC 350 ★

Front-loading stereo deck operated by push-button controls with fully illuminated cassette loading-well for ease of operation. Auto-rewind, cue and review facility. W and F: 0.2%. Dolby NR: FR Standard: 30Hz-12.5kHz. FR Chrome: 30Hz-15kHz. Finish: grey casing with brushed aluminium fascia. Dimensions: 36.6 × 14 × 27.4cm. Price: £171.95 (plus VAT).

■ GOODMAN'S LOUDSPEAKERS LTD

Downley Road, Havant, Hants PO9 2NL.
Tel: Havant 4863444.

SC 4000

Stereo front loading cassette deck with Dolby. W and F: 0.1% DIN (peak weighted). FR: 30Hz-16kHz. Bias switch for chrome and ferro-chrome cassettes. Twin meters and overload LED. Inputs: mic, DIN, line. Outputs: 750mV into 470K. Mains: 240V. Dimensions: 44.6 × 31 × 13cm. No rec. retail price.

■ GRUNDIG

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

CN 730 ★

Stereo cassette deck with CrO₂ facility. Fitted with Dolby B and DNL. W and F: ±0.2%/o. S/N ratio: (Fe₂O₃) 46dB, (CrO₂) 56dB. FR: (CrO₂) 30Hz-14kHz ±3dB, (Fe₂O₃) 30Hz-12kHz. Automatic switching. Two recording level meters, CrO₂ lamp, tape pilot and auto/manual recording lamps. Inputs: mic 1mV 33K, radio diode 1mV 33K, phono 60mV 2.2M. Outputs: 0.5-1.5V 20K adjustable high imp. One motor. Mains: 110-240V. Dimensions: 23.7 × 10.3 × 26.1cm. No rec. retail price.

CN 930

Stereo cassette deck with Dolby system. W and F: < ±0.15%. FR: 30Hz-14kHz. Bias switch for Fe/ferrochrome/CrO₂. VU meter, Dolby lamp, tape pilot, record lamp. Inputs sensitivity: mic/radio/diode, phono. Outputs: 0.5-1.5V adjustable approx. 22K. Mains: 110, 127/220-240V AC 50-60Hz. Dimensions: 46 × 11 × 27cm. No rec retail price.

CN 830

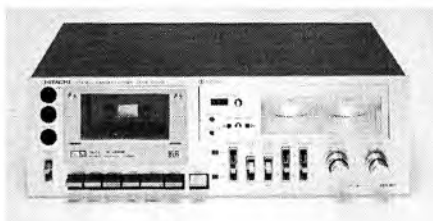
Stereo cassette deck. W and F: < ±0.15%. Dolby system. FR: 30Hz-14,000Hz. Bias switch for chrome and ferrochrome cassettes. Level indicator. Inputs: mic, radio, phono. Outputs: 0.5-1.5V adjustable. Load Imp: 22K. Mains: 110-240V. Dimensions: 23 × 13 × 32cm. No rec. retail price.

■ HITACHI

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

D 220

Stereo cassette deck with Dolby. W and F: 0.2% DIN. FR: 30Hz-12,500Hz, 30Hz-14,000Hz CrO₂. Bias and equalisation tape selector switch. Twin VU meters and Dolby on and record lights. Inputs: mic, DIN, line. Load Imp: line 50K DIN, phones 8 ohms to 2K. Dimensions: 39 × 14.3 × 25.4cm. Price: £99.00 (inc. VAT).



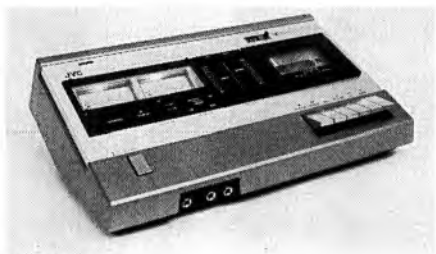
Hitachi D555



ITT 8021



ITT ST 720



JVC KD 720

D 550

Cassette deck. W and F: 0.2% DIN. FR: 30Hz-12,000Hz, 30Hz-14,000Hz both CrO₂ and FeCr. Inputs: mic, line, DIN. Load Imp: line 50K, phones 8 ohms-2K. Dimensions: 39 × 14.3 × 25.4cm. Price: £135.00 (inc. VAT).

D 555 ★

Stereo cassette deck. W and F: 0.2% DIN. FR: 30Hz-15,000Hz, 20Hz-15,000Hz both CrO₂ and FeCr. Inputs: mic, line, DIN. Load Imp: line 50K, phones 8 ohms-2K. Dimensions: 43.5 × 14.3 × 25.4cm. Price: £159.00 (inc. VAT).

D 800

Cassette deck. W and F: 0.15% DIN. FR: 20Hz-15,000Hz, 25Hz-16,000Hz FeCr, 25Hz-18,000Hz CrO₂. Inputs: mic, line, DIN. Load Imp: line 50K, DIN 50K, phones 8 ohms-2K. Dimensions: 44.4 × 12.7 × 33cm. Price: to be announced.

■ ITT CONSUMER PRODUCTS (UK) LTD

Maidstone Road, Footscray, Sidcup, Kent DA14 5HT.
Tel: 0-300 7733.

ST 720 ★

Stereo cassette deck. W and F: ±40dB. FR: 60-10000Hz (ferric) or 60-12,500Hz (chromium

dioxide). Bias switch for CrO₂. Level meters displaying recording level for each channel and battery condition. Inputs: mic, direct recording. Dimensions: 25 × 27 × 85cm. No rec. retail price.

8021 ★

Stereo cassette deck. W and F: 0.2%. Dolby system. FR: 40Hz-12,500Hz Fe203, 40Hz-15,000Hz for fe/Cr and CrO₂. Separate Bias and EQ switches. Twin recording-level meters with LED peak indicator. Inputs: mic, aux. Outputs: 580mV. Load Imp: greater than 1K. DC FG Servo motor. Dimensions: 48 × 35 × 14cm. No rec. retail price.

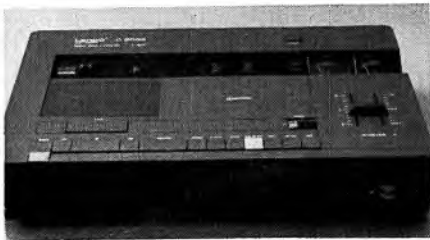
■ JVC

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

KD-720 ★

Stereo cassette deck with Dolby NR. W and F: 0.07% WRMA, 0.20% (DIN). FR: 40Hz-15,000Hz typical chrome, 40Hz-14,000Hz typical normal. Bias switch for ferric, chrome, and ferrichrome tapes. Electronic governor DC motor. Mains: 120/220/240V, 50/60Hz. Dimensions: 39 × 12.8 × 25cm. Price: £99.50 (inc. VAT).

★ Indicates entry is illustrated



Lenco C2003



Marantz 5010, 5025, 5030

■ Lenco

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

C2003 ★

Stereo cassette deck. W and F: 0.07%. Noise reduction: 4-times Dolby in IC technique. FR: 30Hz-18kHz depending on tape, 30Hz-16kHz with multiple filter. Automatic bias switch for CrO₂, manual for three other types. Peak valve level indicators. Inputs: mic (DIN) 350mV 1K ohm, DIN-plug input: 8mV 22K, line input phono 60mV 180K. Special spooling motor ensuring constant tape tension. Dimensions: 46 × 28.5 × 8.5cm. Price: £358.00 (plus VAT).

C1102

Stereo cassette deck. W and F: 0.08% WRMS, 0.18% DIN; Dolby and DNL. FR: Distortion at 0dB < 3%. Switch for CrO₂. VU meters plus LED peak indicator. Inputs: mic, radio, line. Outputs: radio/line, headphones. Two motors. Mains: 200/40V. Dimensions: 42.4 × 26.8 × 10.7cm. Price: £195.00 (plus plus VAT).

Logic circuitry with zero stop, manual or auto recording levels with separate switches for music and speech.

KD-95

Stereo cassette deck. W and F: 0.20% (DIN). FR: 30Hz-16,000Hz chrome typical. Dimensions: 21.1 × 42 × 32cm. Price: on application.

KD-75

As above. Dimensions: 16.1 × 42 × 33.3cm. Price: on application.

KD-35

Stereo cassette deck with Dolby NR system. W and F: 0.20% (DIN). FR: 30Hz-15,000Hz or more with Dolby on. Dimensions: 15.1 × 39 × 32.6cm. Price: on application.

KD-21D

As above. Dimensions: 39 × 15.7 × 25.9cm. Price: on application.

KDS-200II

Stereo cassette deck. W and F: 0.20% (DIN). FR: 30Hz-16,000Hz chrome typical. Dimensions: 15.8 × 50.1 × 32.1cm. Price: on application.

CD-1770

Stereo cassette deck. W and F: 0.18% (DIN). FR: 30Hz-16,000Hz chrome typical. Dimensions: 8.8 × 42 × 27.7cm. Price: on application.

■ MARANTZ

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

5420

Stereo cassette deck. W and F: 0.07%. Dolby noise reduction. FR: 30Hz-17kHz (FeCr), 30Hz-16kHz (CrO₂), 45Hz-14kHz(LH). VU meters, LED lamps. Inputs: line 70mV 80K, mic 0.25mV 10K. Outputs: line variable 900mV 8K, headphones 0.75mV 8 ohms. DC servo motor. Mains: 110-240. Dimensions: 44 × 32 × 15.2cm. Price: £238.22 (plus VAT).

5010 ★

Stereo cassette deck. W and F: 0.1%. Dolby noise reduction system. FR: FeCr 35Hz-15kHz; CrO₂ 40Hz-14kHz; normal 40Hz-13kHz. Bias switch for chrome and ferrochrome cassettes. VU meter. DC servo motor. Mains: 240/110V. Dimensions: 44 × 14.6 × 29cm. Price: £170.67 (plus VAT).

5025 ★

Stereo cassette deck. W and F: 0.08%. Dolby noise reduction meter. FR: FeCr 35Hz-16K; CrO₂ 40Hz-15kHz; normal 40Hz-13.5kHz. Bias switch for chrome and ferrochrome cassettes. DC servo motor. Mains: 110/240V.

Dimensions: 44 × 29 × 14.6cm. Price: £245.33 (plus VAT).

5030 ★

Stereo cassette deck (three heads). W and F: 0.08%. Dolby noise reduction system. FR: FeCr 35-15kHz; CrO₂ 40-15kHz; normal 40-13.5K. Bias switch for chrome and ferrochrome cassettes. VU meter and LED peak. Mains: 110/240V. Dimensions: 44 × 29 × 14.6cm. Price: £361.78 (plus VAT).

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough, Berks.
SL1 3DR.
Tel: Slough 27516.

RS 612 US

Stereo cassette deck with Dolby 'B'. W and F: 0.12%. FR: 40Hz-12kHz, 40Hz-14kHz CrO₂. Separate bias and equalisation switches. Two VU meters. Inputs: line, mic, DIN. Outputs: line, DIN, headphone. Electronically controlled DC motor. Mains: 240V 50Hz. Dimensions: 41 × 21.4 × 13.6cm. Price: £98.62 (plus VAT).

■ NEAL

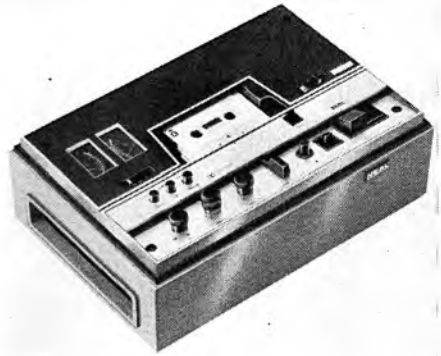
North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NK.
Tel: South Shields 566321.

Model 102 Mk II/Mk IV ★

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). Inputs: mic 500μV 2K, high level line 50mV 200K, DIN 2.5mV 10K. Outputs: Line and DIN 600mV 5K, phones variable to 2.5V 10 ohms. S/N ratio: CrO₂ (Dolby off) 55dB, CrO₂ (Dolby on) 63dB, ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 61dB. Price: £271.00 (plus VAT).

Model 103

Transcription cassette recorder. Dolby B with 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). Inputs: mic 200μV 2K, high level line 80mV 2M, DIN 5mV



Neal Model 102

10K. Replay amp distortion: less than 0.1% at 0dB. Inputs: mic 200μV 2K, high level line 80mV 2M, DIN 5mV 10K. Outputs: monitor 600mV 5K, DIN 600mV 5K, phones variable to 2.5V, 10 ohms. FR: (ferric tape) 35Hz-12kHz + 1dB -3dB, CrO₂ tape 35Hz-15kHz + 1dB -3dB. S/N ratio: CrO₂ (Dolby off) 55dB, CrO₂ (Dolby on) 64dB, ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 62dB. Price: £300.00 (plus VAT).

Model 104

Replay only machine. Dolby B. 3M Wollensak deck. Chrome and Ferric equalisation. Outputs: line and phone 2V variable, load 10 ohms. W and F: less than 0.09% RMS. (DIN weighted). FR: from DIN Test Tape (455 13/6) corrected to 3,180μS, ± 1dB. S/N ratio CrO₂ (Dolby off) 55dB, CrO₂ (Dolby on). 64dB, ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 62dB. Price on application.

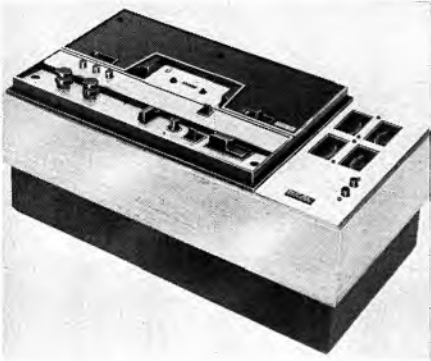
Model 110

Audio visual format cassette recorder. Mono audio with synchronising track. 3M Wollensak deck. Dolby B. Two illuminated peak reading meters. Chrome and ferric equalisation and bias. Separate recording/replay on each track. W and F: less than 0.09% RMS. (DIN weighted). Inputs: audio 100mV 10K sync 100mV 10K. Outputs: audio, line 600mV 100 ohms fixed, headphone 2.5V 10 ohms variable, sync, phono 600mV 100 ohms fixed, line 2.5 10 ohms variable. FR: (audio) ferric tape 35Hz-12kHz + 1 -3dB, CrO₂ tape 35Hz-15kHz + 1 -3dB; sync) 100Hz-5kHz + 1 -3dB. S/N ratio CrO₂ (Dolby off) 55dB, CrO₂ (Dolby on) 63dB ferric low noise (Dolby off) 53dB, ferric low noise (Dolby on) 61dB. Price: on application.

Model 102AV

Stereo audio visual format cassette recorder.

★ Indicates entry is illustrated



Neal Model 140



Neal 302 recorder

Audio details as for 102 Mk IIV above. Sync/Audio tracks can be recorded/replayed separately. Fully compatible with mono audio visual format and with standard stereo cassette format. Sync track details: Inputs, line 100mV 10K, DIN 100mV 10K. Outputs line 600mV fixed 200 ohms, DIN 600mV fixed 200 ohms. FR: 100Hz-5kHz +1 -3dB. Price: on application.

Model 103AV

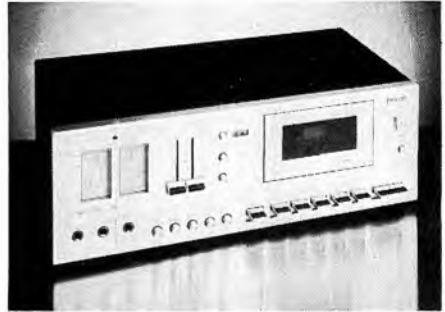
Stereo audio visual format cassette recorder. Audio details as for 103 above. Sync/Audio tracks can be recorded/replayed separately. Fully compatible with mono audio visual format and with standard stereo cassette format. Sync track details: Inputs, line 100mV 10K, DIN 100mV 10K. Outputs line 600mV fixed 200 ohms, DIN 600mV fixed 200 ohms. FR: 100Hz-5kHz +1 -3dB. Price: on application.

Model 140 ★

4 channel cassette recorder. 4 tracks can be recorded simultaneously or in two stereo pairs. Performance as 102 Mk II above except: DIN inputs and outputs omitted; headphone level fixed 1V; four peak reading meters; crosstalk 1-2, 3-4 40dB, others 50dB. Price: on application



Philips N2534



Philips N2538

Professional Options

An extensive range of professional variants of these machines is available. Facilities and options to special order include: 3³/₄ ips tape speed, remote pause, balanced inputs and outputs, four channel operation. Details and prices on application.

302 ★

Stereo cassette deck with Dolby B, W and F: less than 0.09% (DIN). FR: 35Hz-12kHz +1 -3dB normal; 35Hz-15kHz +1 -3dB special tape. Full variable metered bias in both normal and special positions. Varitape system. Two large illuminated peak reading meters. Inputs: mic, high level line, low level line. Outputs: line, headphone. Three AC motors — full logic control. Mains: 95-130/200-250. Dimensions: 44.6 × 22.6 × 15.5cm. Horizontal or vertical position. Full logic control, remote control facility. Dolby calibration tone, Bias metering. Price: £328.00 (plus VAT).

■ PHILIPS

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

N 2521

Stereo cassette deck with Dolby 'B' and DNL.

W and F: <0.15%. FR: CrO₂: 25Hz-14,000Hz (DIN 45500), Fe₂O₃: 25Hz-12,000Hz (DIN 45511). Bias switch for chrome and ferro-chrome cassettes. Record level meters (L and R). Inputs sensitivity: mic 0.25mV/2K, line 0.25mV/2K or 100mV/1m ohm. Outputs: 1V (adjustable), load imp 10K. DC tachometer controlled motor. Mains: 110, 127, 220 or 240V AC 50/60Hz. Dimensions: 36 × 15.5 × 30.8cm. Price: on application.

N 2534 ★

Front loading cassette deck with Dolby. W and F: <0.2%. FR: 40Hz-14kHz chromium 40Hz-12kHz ferro. Mains: 240V. Dimensions: 38 × 14.2 × 27.1cm. Price: on application.

N 2538 ★

Front loading cassette deck with Dolby. W and F: <0.15%. FR: 40Hz-15kHz chromium 40Hz-17kHz ferro-chrome 40Hz-14kHz Ferro tape. Dimensions: 38 × 14.2 × 26cm. Price: on application.

■ PIONEER

Shriro (UK) Ltd, Shriro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652222/7.

CTF 9191

Stereo front access cassette deck. W and F: 0.07% WRMS. Fitted with Dolby noise reduction. S/N ratio: 52dB (Dolby off); 62dB (Dolby on). FR: (LH tape) 35Hz-13kHz ± 3dB (Chrome) 30Hz-14kHz ± 3dB. Switchable bias and EQ for LH and Chrome tape. Two VU meters (±40dB) and + 3dB LED peak indicator. Inputs: mic 2 × 0.22mV/100mV/30K. Line 4 × 65mV/100K DIN standard. Outputs: Headphone 40mV/65mV at 8 ohms. Line 4 × 315mV/530mV/50K DIN standard. Electronically controlled DC motor. One DC torque motor. Mic and line mixing. Switchable MPX filter. Auto tape selector for CrO₂ tape. Full memory rewind start function. Memory markers. Mains: 220-240 volts switchable. Dimensions: 45.7 × 31.5 × 19.7cm. Price: on application.

CTF 4040

Stereo front access cassette deck. W and F: No more than 0.08% WRMS, fitted with Dolby noise reduction. S/N (Dolby off) more than 52dB (over 5kHz standard and LH tape) more than 62dB (Dolby on over 5kHz standard and LH tape). FR: (LH tape) 40Hz-13,000Hz ± 3dB (Ferric and Chrome) 40Hz-15,000Hz ± 3dB switchable bias and equalisation for LH Chrome and Ferrichrome tapes. Two by VU meters. Inputs: mic 0.2mV/45mV/10K line × 2

50mV/25 volts/100K DIN. 9mV/2V/2.2K. Outputs: Line × 2 450mV/50K DIN 450mV/50K. Electronically controlled DC Motor. Mains: 220/240V switchable. Dimensions: 38 × 32.5 × 15cm. Weight: 7.2kg. Price: on application.

CTF 1000

Stereo front access cassette deck. W and F: no more than 0.05% WRMS. Fitted with Dolby noise reduction system. S/N (Dolby off) more than 54dB over 5kHz (Dolby on) more than 64dB (over 5kHz). FR: (Ferric) 30Hz to 15,000Hz ± 3dB. (Chrome) 30Hz to 17,000Hz ± 3dB. Switchable two position bias and three position equalisation for LH, Chrome and Ferrichrome tapes. Dolby noise reduction calibration with built in test tone oscillator. Two by VU meters and plus 5dB LED peak indicator. Inputs: mic × 2 0.22mV/100mV/30K. Line × 4 60mV/25V/100K DIN 10mV/5 volts/2.2K. Outputs: Line × 4 450mV/680mV/50K DIN 450mV/680mV/50K. 2 motors 1 electronically controlled DC motor and 1 high torque DC motor. Mic and line mixing. MPX Filter. Auto tape selector for CrO₂ tape adjustable pitch control (playback only). Memory stop and memory play functions. Mains: 220/240 volts switchable. Dimensions: 42 × 36.2 × 18.7cm. Weight: 11.8kg. Price: on application.

■ PLUSTRON

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs ST5 0SW.
Tel: Newcastle 615131.

CD-1000D

Stereo cassette deck. W and F: less than 0.25%. VU meter. Mains: 240V. Dimensions: 33 × 7.5 × 21cm. Price: £71.70 (plus VAT).

CD-1000R

Stereo cassette deck. W and F: 0.25%. VU meters. Load Imp: 4 ohms. Mains: 240V. Dimensions: 33 × 7.5 × 21cm. Price: £99.11 (plus VAT).

■ ROTEL

Rank Audio Visual, PO Box 70,
Great West Road, Brentford, Middlesex.
Tel: 568 9222.

RD 10 F

Stereo cassette deck with Dolby. W and F: 0.08%. FR: 30Hz-15kHz. High and low bias switch and equalisation switch. Two VU meters. Inputs: 25mV/50K (RCA jack) 2mV/27K (DIN jack). Outputs: 420mV/1K (RCA jack)

★ Indicates entry is illustrated

420mV/90K (DIN jack) EG DC motor. Dimensions: 43 × 26 × 14cm. Price: £123.53 (plus VAT).

RD 30 F

Stereo cassette deck with Dolby. W and F: 0.07%. FR: 25Hz-15kHz. Bias and equalisation switches for CrO₂ and FeCr or normal. Two VU meters and peak level light. Inputs: 63mV/50K (RCA jack) 10mV/10K (DIN jack). Outputs: 550mV/5K (RCA jack) 550mV/50K (DIN jack). EG DC motors. Dimensions: 48 × 30 × 19cm. Price: £195.80 (plus VAT).

■ SANSUI

Vernitron Ltd, Thornhill,
Southampton SO9 5QF
Tel: Southampton 44481.

No details received at time of going to press.

■ SHARP OPTONICA

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

RT 1155 ★

Stereo cassette deck with Dolby 'B'. W and F: 0.10%. FR: Fe₂O₃ 40Hz-10kHz, CrO₂ 40Hz-12kHz. Bias switch for chrome and ferrochrome cassettes. VU meter × 2 (L and R). LED record indicator, LED peak level indicator, APSS auto programme search system DC high torque motor. Dimensions: 40.8 × 24.5 × 15.7cm. Price: £119.95 (plus VAT).

RT 3838

Stereo electronic tape processor, with Dolby. W and F: ±0.15% (DIN). FR: 30Hz-13,000Hz normal, 30Hz-16,000Hz FeCr, 30Hz-15,000 CrO₂. Bias switch for chrome and ferrochrome. Processor indicator VU meters (L/R). Inputs: line-in, record/playback. Outputs: 775mV/50K. Mains: AC 110/220/240V. Dimensions: 44.2 × 35.7 × 14.4cm. Price: £195.47 (plus VAT).

RT 3535

Stereo front loading cassette deck, with Dolby. W and F: 0.15%. FR: 30Hz-17,000 FeCr, 30Hz-16,000 CrO₂, 30Hz-15,000Hz normal. Separate bias equaliser. Level indicator, record indicator APLD selector. Inputs: 70mV/50K, 0.1mV/K. Outputs: 580mV, 58mV. Price: £222.13 (plus VAT).

RT 2050

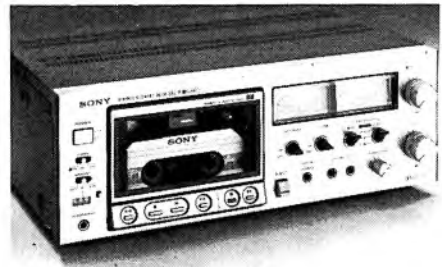
Stereo front loading cassette deck. W and F:



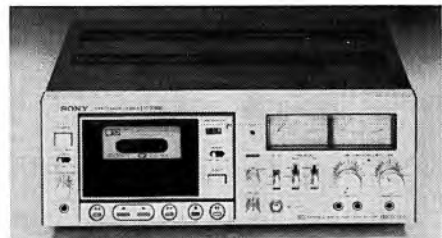
Sharp RT 1155



Sony TC 118 SD



Sony EL 5



Sony TC 229 SD



Sony TC 15A SD

0.18%. Dolby system. FR: 30Hz-14,000Hz FeCr, 30Hz-14,000Hz CrO₂, 30Hz-13,000Hz normal. Separate bias equaliser. Inputs: 70mV 70K. Imp: 1mV, 10K. Price: £177.69 (plus VAT).

■ SONY (UK) LTD

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

TC 177 SD

4-track, 2 channel stereo cassette deck with Dolby system. W and F: 0.07% WRMS, ±0.18% DIN. S/N: 53dB normal, 55dB (FeCr, CrO₂). FR: 30-13,000Hz normal, 30-17,000Hz FeCr, CrO₂. Bias switch: low, medium, high. 2 × VU meter and peak level indicator. Inputs: mic, line, DIN. Dimensions: 43.5 × 32.5 × 15.5cm. No rec. retail price.

TC 118 SD ★

Four-track two channel stereo cassette deck with Dolby system. W and F: 0.18%. FR: 40Hz-13,000Hz (FeCr), 63Hz-11,000Hz (FeCr) DIN. Equalisation switch for normal, FeCr and CrO₂, automatic bias switch for chrome. 2 × VU meters. Inputs: line 60mV 100K, mic 0.2mV low. Outputs: line 435mV. Load imp: more than 10K. DC servo-controlled motor. Mains: 240V, 50Hz. Dimensions: 36 × 24 × 11cm. No rec. retail price.

TC 525

Four-track, two channel stereo cassette deck. W and F: 0.25%. FR: 45Hz-10,000Hz (Std tape), 45Hz-13,000Hz (chrome tape). 2 × VU meters. Inputs: mic 20mV low imp, line 0.06V imp 560K. Outputs: line 0.44V at 100K. Mains: 240V 50Hz or 4 × HP11 batteries. Dimensions: 28 × 25 × 9cm. No rec. retail price.

EL 5 (Elcaset) ★

Stereo four track two channel cassette deck with Dolby 'B'. W and F: 0.06%, 0.12% DIN. FR: 20Hz-20kHz. Bias and equalisation switch for tape types. VU indicator. Inputs sensitivity: mic 95mV imp 100K. Mic 0.3mV low imp. Outputs: line 775mV imp: more than 10K, DIN 775mV imp 50K. Mains, 110, 127, 220, 240V 50Hz. Dimensions: 43 × 32 × 17cm. No rec. retail price.

EL 7 (Elcaset)

Details as per EL 5 except: W and F: 0.04%, ±0.12% DIN. FR: 25Hz-20kHz. Three motors. No rec. retail price.

TC K5

Details on application.

TC 229SD ★

Stereo cassette deck four-track, two channel with Dolby. W and F: 0.06% ±0.12% DIN. FR: 30Hz-13,000Hz ±3dB normal; 30Hz-13,000Hz DIN; 30Hz-16,000Hz ±3dB FeCr; 30Hz-16,000Hz DIN FeCr; 30Hz-15,000Hz ±3dB CrO₂; 30Hz-15,000Hz DIN CrO₂. Mains 110, 120, 220, 240V 50/60Hz. Dimensions: 17 × 43 × 31cm. Price: no rec. retail price.

TC 158 SD ★

Mains-battery Stereo cassette deck, four track, two channel with Dolby. W and F: 0.08% ±2% DIN. FR: 30Hz-13,000Hz ±3dB normal; 30Hz-12,000Hz DIN; 30Hz-15,000Hz ±3dB FeCr; 30Hz-15,000Hz DIN FeCr; 30Hz-15,000Hz ±3dB CrO₂; 30Hz-15,000Hz DIN CrO₂. Mains: 240V AC or 6V DC battery. Optional rechargeable battery pack. Dimensions: 35 × 10 × 24cm. Price: no rec. retail price.

■ TANDBERG

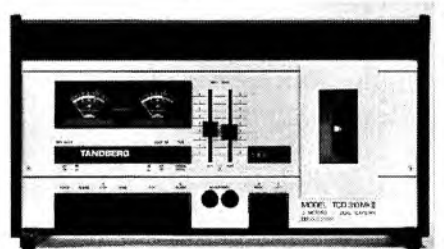
Tandberg (UK) Ltd. 81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds 35111.

TCD 330 ★

Stereo cassette deck with Dolby. W. and F: 0.1% or 0.15% DIN. FR: 30Hz 18,000Hz. Two position switch. Peak Meters. Inputs: mic, line, radio, line headphones. Three motors. Dimensions: 43 × 9.4 × 105cm. Price: £464.44 (plus VAT).



Tandberg 330



Tandberg TCD 310 Mk 2

★ Indicates entry is illustrated



Teac A 103



Teac A 150

TCD 310 Mk II ★

Stereo cassette deck with Dolby. W and F: 0.15% or 0.2% DIN. FR: 40Hz. Two position switch. Peak meters. Inputs: mic, line, radio. Outputs: radio/line, headphone. Three motors. Price: £223.00 (plus VAT).

■ TANDY

Tandy Corporation (Branch UK),
Bilston Road, Holyhead Road,
Wednesbury, Staffs WS10 7JN.
Tel: 021-556 6101/2.

SCT 10

Price: £74.95.

SCT 14

Price: £99.95.

SCT 15

Price: £129.95.

SCT 11

Price: £149.95.

All details on application.

■ TEAC

Teledyne Acoustic Research, High Street,
Houghton Regis, Dunstable, Beds.
Tel: 0582 603151.

A 103 ★

Stereo cassette deck with Dolby. W and F: 0.08%. FR: 30Hz-13kHz, CrO₂ 30Hz-16kHz. Bias switch for chrome/normal. VU meters. Inputs: 0.25mV 600 ohms. Outputs: 2 line 0.3 load. Imp: 50K, 1 stereo headphones jack 1mW, imp. 8 ohms. FG servo-controlled DC motor. Mains: 220V 50Hz. Dimensions: 41 × 29.2 × 16cm. Price: £110.00 (plus VAT).

A 150 ★

Four-track two channel stereo cassette deck with Dolby. W and F: 0.07%. FR: 30Hz-13kHz, 20Hz-16kHz CrO₂. Bias switch for chrome/normal. VU meters, peak level indicator. Inputs: 0.25mV. Outputs: 2 line 0.3V/Load Imp. Imp 50K, 1 stereo headphones jack. Imp: 8 ohms. FG servo controlled DC motor. Dimensions: 41 × 32.2 × 16cm. Price: £140.00 (plus VAT).

A 303 ★

Four-track, two channel stereo cassette deck with Dolby. W and F: 0.07%. FR: 30Hz-14kHz, CrO₂ 30Hz-16kHz. Bias switch for chrome Fe 2/normal. DB meters peak reading. Inputs: 0.25mV 600 ohms. Outputs: 2 line, 1 stereo headphone jack. FG servo-controlled DC motor. Dimensions: 41 × 31 × 16.4cm. Price: £190.00 (plus VAT).

A 480

Four-track, two channel stereo cassette deck with Dolby. W and F: 0.07%. FR: 30Hz-16kHz, CrO₂ tape; 30Hz-16kHz FeCr tape, 30Hz-13kHz Hi-Fi tape. Bias switch for normal/CrO₂/FeO₂. VU meters and peak level indicator. Inputs: 0.25mV - 72dB. Outputs: 2 line, 1 stereo headphones jack. FG servo-controlled DC motor. Dimensions: 47 × 28.9 × 18cm. Price: £182.00 (plus VAT).

■ TECHNICS

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough
Berks SL1 3DR.
Tel: Slough 27516.

RS-676 USD

4-track 2-channel recorder and playback. W and F: 0.063% (WRMS) ±0.15% (DIN) S/N: Dolby NR out: 52dB (signal level = 250 nWb/m); Dolby NR in: 62dB at 10kHz. Noise reduction system: Dolby. Inputs: MIC: sensitivity 0.3mV; imp: 600 ohms-20K. Line: sensitivity 60mV/110K; Tuner: sensitivity 100mV/75K. DIN: sensitivity 0.34mV/2.2K. Output: line; output level 0.42V/load imp 50K over; headphone: output level 65mV/8 ohms; DIN: output level 0.42mV/load imp: 50K over. 2-motor system with electronic speed controlled motor for capstan drive × 1, DC motor for reel table drive × 1. Consumption: 25W. Dimensions: 41 × 14 × 36cm. Price: £309.95 (inc. VAT).

RS-671 ★

As RS-676 except in inputs spec. MIC: sensitivity 0.3mV/Applicable microphone imp 600 ohms-20K. Line; sensitivity 60mV/68K.

CASSETTE DECKS/RECORDERS



Teac A303

DIN: sensitivity 0.34mV/2.2K. Price: £239.95 (inc. VAT).

RS-640 USD ★

4-track 2-channel stereo recorder and playback. W and F: 0.07% (WRMS) $\pm 0.15\%$ (DIN). S/N: Dolby in: 51dB, Dolby out: 61dB above 5kHz. Input: MIC: sensitivity 0.3mV/applicable microphone imp 600 ohms-20K ohms. Line: sensitivity 60mV/68K. DIN: sensitivity 0.34mV/2.2K. Output: line: Output level 0.42V/load imp 50K over. Headphone: output level 65mV/8 ohms. DIN: Output level 0.42V/load imp 50K over. Motor: electronic speed controlled DC. Dimensions: 43.2 \times 13 \times 301cm. Price: £209.95 (inc. VAT).



Technics RS-615

RS-678 US

Four-track two-channel stereo recorder with Dolby. W and F: 0.06% $\pm 0.15\%$ (DIN). Inputs: mic, line, DIN. Outputs: line, DIN, headphones. Two-motor system. Mains: 240V 50Hz. Dimensions: 45 \times 17.3 \times 34.1cm. Price: £299.95 (inc. VAT).



Technics RS-640

RS-646 DS

Four-track two-channel stereo recorder with Dolby. W and F: 0.10% $\pm 2\%$. FR: 40Hz-14kHz (DIN), 50Hz-14kHz ± 3 dB. Inputs: mic, line DIN. Outputs: line, DIN, headphone. Electronic speed controlled DC motor $\times 1$. Mains: 240V 50Hz. Dimensions: 36.3 \times 10.6 \times 28cm. Price: £209.95 (inc. VAT).

RS-615 US ★

Four-track two-channel stereo recorder with Dolby. W and F: 0.10% $\pm 20\%$ DIN. FR: 30Hz-14kHz, 30Hz-13kHz DIN. CrO₂ tape: 30Hz-16kHz, 30Hz-14kHz DIN. Inputs: mic, line, DIN. Outputs: line, DIN, Headphones. Electronic speed controlled DC motor $\times 1$. Mains: 240V 50Hz. Dimensions: 41 \times 14.0 \times 30.5cm. Price: £129.95 (inc. VAT).



Technics two part deck RS-9900

RS-630 TUS

Four-track, two-channel stereo recorder with Dolby. W and F: 0.09% $\pm 0.2\%$ DIN. FR: 20Hz-14kHz, 30Hz-13kHz DIN; CrO₂ tape: 20Hz-16kHz, 30Hz-14kHz DIN. Inputs: mic, line, DIN. Outputs: line, DIN, headphones. Electronic speed controlled DC motor $\times 1$. Mains: 240V 50Hz. Dimensions: 41 \times 14.2 \times 32.1cm. Price: £157.95 (inc. VAT).

RS-9900 ★

Four-track two-channel two part stereo recorder with Dolby. W and F: 0.04% $\pm 0.1\%$ DIN. FR: 20Hz-18kHz DIN, 25Hz-18kHz ± 3 dB; CrO₂ tape: 20Hz-20kHz DIN, 25Hz-

★ Indicates entry is illustrated

20kHz \pm 3dB. Inputs: mic, line, aux, DIN. Output: line, through out, aux, DIN headphones. 3-motor closed loop double capstan system. Direct-drive DC brushless capstan motor \times 1 DC coreless motor for reel table drive \times 2. Mains: AC 110/125/220/240V 50/60Hz. Dimensions: 48.3 \times 19.3 \times 37.5cm transport unit and 48.3 \times 17.3 \times 37.5cm amplifier unit. Price: £999.95 (inc. VAT).

■ TELEFUNKEN

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

Magnetophon C 3300 Hi-Fi

Stereo cassette deck (DIN 45 500) with Dolby system. Electronic CrO₂ 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. Headphones socket. Magnetic movement control with electronic touch buttons. Illuminated signals for record, playback, forward, rewind, stop, pause, Dolby and CrO₂. FR: 30Hz-15kHz (CrO₂). S/N: \geq 57dB. W and F: \leq \pm 0.18%. 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. Finish: plastic, black and silver. Size: 17 \times 4 $\frac{1}{4}$ \times 12in. Price: £325.00 (inc. VAT).

MC 2400

Stereo cassette recorder with Dolby. W and F: $<$ \pm 0.2% record/playback, $<$ 0.12% playback only. FR: 30Hz-14kHz. 2 illuminated VU meters. Dimensions: 39 \times 30 \times 8.5cm. Price: £219.00 (inc. VAT).

■ TOSHIBA

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

PC 4030 ★

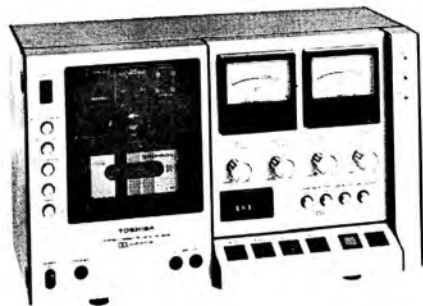
Stereo cassette deck with Dolby. W and F: 0.09%. S/N: 55dB normal. Equalisation/bias switches. dB meter. Inputs: line in, mic, DIN. DC servo motor with AC generator. Dimensions: 40 \times 30 \times 13.5cm. Price: £115.11 (plus VAT).

PC 6030 ★

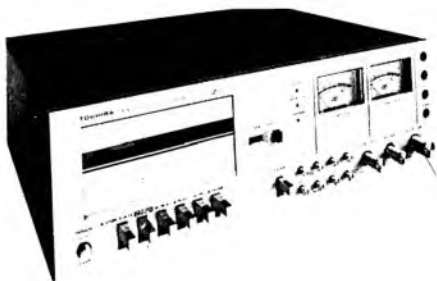
Stereo cassette deck with Dolby. W and F: 0.07%. S/N: 58dB normal. Separate bias/equalisation switches. Peak reading met-



Toshiba PC 4030



Toshiba PC 6030



Toshiba PC 5060



Toshiba PC 4020

ers. Inputs: line in, mic, DIN. Dimensions: 40.3 × 19.9 × 25.2cm. Price: £337.33 (plus VAT).

PC 3060

Stereo cassette deck with Dolby. W and F: 0.09%. S/N: 50dB normal. Separate bias/equalisation switch, dB meter. Inputs: line in, mic, DIN. Bridge servo DC motor. Dimensions: 40 × 30 × 14.5cm. Price: £124.00 (plus VAT).

PC 5060 ★

Stereo cassette deck with Dolby. S/N: 56dB normal. Separate bias/equalisation switch, dB meter. Inputs: line in, mic, DIN, DC servo motor with AC generator. Dimensions: 45 × 33.3 × 15cm. Price: £150.67 (plus VAT).

PC 3110

Stereo cassette deck. W and F: 0.25%. S/N: 42dB normal. VU meter. Inputs: line in, mic, DIN, DC servo motor. Price: £66.22 (plus VAT).

PC 4020 ★

Stereo cassette deck with Dolby system. W and F: 0.09%. S/N: 52dB normal. dB meter. Inputs: line in, mic, DIN. DC servo motor. Dimensions: 40 × 30 × 13.5cm. Price: £106.22 (plus VAT).

PC 230

Stereo cassette deck with Dolby. W and F: 0.1%. FR: 70Hz-10kHz. Two step selector switch. 2 × dB meter. Inputs: mic, line, DIN. Outputs: Headphones, line, DIN. Bridge servo DC motor. Mains: 240V 50Hz. Dimensions: 42 × 28 × 16.6cm. Price: to be announced.

PC 335

Stereo cassette deck with Dolby. W and F: 0.065%. FR: 40Hz-14kHz. Three-step selector. 2 × dB meter. Inputs: mic, line, DIN. Outputs: headphone, line, DIN. Bridge servo DC motor. Mains: 240V 50Hz. Dimensions: 42 × 28 × 14.6cm. Price: to be announced.

PC 530

Stereo cassette deck with Dolby. W and F: 0.065%. FR: 40Hz-14kHz. Three-step bias and equalisation. dB meters with peak LED. Inputs: mic, line, DIN. Outputs: headphone, line, DIN. Bridge servo and DC motor for torque. Mains: 240V 50Hz AC. Dimensions: 42 × 28 × 15cm. Price: to be announced.

PC 5460

Stereo cassette deck with Dolby. W and F:



Trio KX 620



Trio KX 720

0.065%. FR: 25Hz-15kHz. Three-step bias and equalisation. dB meters with peak/peak hold/VU. Inputs: mic, line, DIN. Outputs: headphone, line DIN. Bridge servo and DC motor for torque. Mains: 240V 50Hz. Dimensions: 42 × 28 × 15cm. Prices: to be announced.

■ TRIO

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex HA0 1SU.
Tel: 01-902 9422.

KX 620 ★

Stereo cassette deck with Dolby. W and F less than 0.09%. S/N: 61dB Dolby. Separate bias and equalisation switching permitting six permutations. Two VU meters. Inputs: line, DIN, mic, DC servo motor. Dimensions: 43 × 30 × 14cm. Price: £146.66 (plus VAT).

KX 520

Stereo cassette deck with Dolby. W and F: 0.09%. FR: 40Hz-12,000Hz CrO₂ tape. Bias switch for chrome and ferro-chrome cassettes. VU meters. Inputs sensitivity: line: 77.5mV, DIN 0.4mV, mic 0.2mV. Imp: line 180K, DIN 4K, mic 8K. Outputs: line 490mV, DIN 490mV. Load imp: line 100K, DIN 100K. DC servo motor. Mains: 240V AC. Dimensions: 38 × 28 × 14cm. Same size as amplifier KA 1500, KA 3500, KA 5500. Price: £120.88 (plus VAT).

KX 720 ★

Stereo cassette deck with Dolby. W and F:

★ Indicates entry is illustrated



Trio KX 1030



Uher CR 240



Uher CG 330

KX 920
Stereo cassette deck with Dolby. W and F: 0.08%. FR: 30Hz-14kHz normal, 30Hz-16kHz CrO₂. Bias switch for chrome and ferro-chrome cassettes. Peak level indicator, VU meters. Inputs Sensitivity: line 77.5mV, DIN 0.45mV, mic 0.24mV. Imp: line 340K, DIN 1.3K, mic 10K. Outputs: fully variable 0-490mV, load imp: 100K. DC servo motor. Mains: 240V AC. Dimensions: 40 × 25 × 12cm. Price: £195.55 (plus VAT).

KX 830

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 35Hz-16,000Hz ±3dB. Bias switch. VU and peak lamp. Inputs: line, mic, DIN. Outputs: line, DIN, headphones. Electronically controlled DC motor. Mains: 240V. Dimensions: 43 × 33 × 16cm. Price: £164.44 (plus VAT).

KX 1030 ★

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 35Hz-18,000Hz ±3dB. Fully variable bias system. VU and peak lamp. Inputs: line, mic, DIN. Outputs: line, DIN, head-

phones. Electronically controlled DC motor. Mains: 240V. Dimensions: 43 × 33 × 16cm. Price: £231.11 (plus VAT).

UHER

Uher Ltd, 28 Spencer Street, St. Albans, Herts. AL3 5EG.
Tel: St. Albans 30236/7.

CG 362

Stereo cassette deck with Dolby, W and F: 0.2%. FR: 20Hz-18,000Hz (CrO₂ and FeCr), 20Hz-14,000 (Fe₂O₃). Manual switching for tapes. Twin peak reading record level meters. Inputs: mic 0.2mV 100mV/3.3K. Tun/rec 2mV-600mV/22K. PU 150 mV-3V/1 Megohm, dubbing 150 mV-3V/1 megohm. Outputs: Tuner/rec 0-900mV/16K, dubbing 900mV/470 megohms, headphones 0.75V at 8 ohms. Motors: 3. Mains: 220/110V at 50, 60Hz. Dimensions: 40 × 29.5 × 10.4cm. Price: £375.12 (plus VAT).

CR 210

Stereo cassette deck. W and F: 0.2% DIN. FR: 30Hz-15kHz CrO₂ (DIN). Auto switch for tapes. Moving B or level indicator. Inputs: mic 0.2 mV-200mV/500 ohms, car radio 500mV/15K, external speaker 2 × 2V/40 ohms. Outputs: battery operated 2 × 1W, mains operated 2 × 1.3W, built-in mono speaker. 1 non commutator DC motor. Dimensions: 18.5 × 18 × 5.7cm. Price: £399.14 (plus VAT).

CR 240 ★

Stereo portable cassette deck. W and F: 0.15%. Dolby system. FR: 30Hz-16,000Hz. Bias switch for chrome and ferrochrome. Twin peak reading meters. Inputs: mic, tuner, aux. Outputs: tuner, car radio. Dimensions: 23.5 × 18.5 × 59cm. Price: £415.00 (plus VAT).

CG 330 ★

Stereo cassette deck with Dolby. W and F: 0.13%. FR: 40Hz-18,000Hz. Bias switch. VU meter. Inputs: mic, tuner, line. Outputs: tuner, line. Mains: 220V/50Hz/25W. Dimensions: 40 × 10 × 25.8cm. Price: £180.00 (plus VAT).

CG 340

Stereo cassette deck with Dolby. W and F: 0.18% DIN. FR: 40Hz;16,000Hz. Bias switch, VU meter. Price: £178.00 (plus VAT).

CG 350

Stereo cassette deck with Dolby. FR: 30Hz-17,000Hz. Bias switch. VU and peak meters. Three motor — full logic. Price: £255.00 (plus VAT).

Constructional Kits

★ Indicates entry is illustrated
Abbreviations used in this section are given on page 140.

■ 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: 15W RMS. Imp: 8 or 15 ohms. Recommended cabinet size: 20 × 12 × 9in. Design based on Richard Allan Chaconne series II enclosure. Price: £17.75 (plus VAT).

Triple-8 Assembly

Speaker kit comprising CF8L bass driver, CF5 mid-range unit, CB4 treble unit, 1/4-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: 20W RMS. Imp: 8 or 15 ohms. Recommended cabinet size: 20 1/2 × 13 × 8 1/2in. Design based on Richard Allan Flamenco series II enclosure. Price: £27.00 (plus VAT).

Triple-12 Assembly

Speaker kit comprising CG12 bass driver, CP8 mid-range unit, CB4 treble unit, 1/4-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: 30W RMS. Imp: 8 or 15 ohms. Recommended cabinet size: 25 × 15 1/2 × 12 1/2in. Design based on Richard Allan Pavane series II enclosure. Price: £33.30 (plus VAT).

Super-12 Assembly

Speaker kit comprising CG12 Super bass driver, CP8 mid-range unit, CB4 treble unit, 1/2-section crossover network. FR: 30Hz-17kHz. HC: 45W RMS. Imp: 8 or 15 ohms. Recommended cabinet size: 25 × 15 1/2 × 12 1/2in. Design based on Richard Allan Sardana enclosure. Price: £38.85 (plus VAT).

RA8 Assembly ★

Speaker kit comprising: LP8B bass/mid unit, DT20 dome treble, CN 820 crossover, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 80Hz-20kHz ± 3dB. HC: 20W RMS 30W programme. Imp: 8 ohms. Recommended enclosure 40 × 27 × 25cm. Based on RA8 enclosure. Price: £25.00 (plus VAT).

RA82 Assembly

Speaker kit comprising HP8B bass/mid unit, DT20 dome treble, CN35L/H filters with control, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 50Hz-20kHz ± 3dB. HC: 45W RMS, 70W programme. Imp: 8 ohms. Recommended enclosure: 55 × 28 × 25cm. Based on RA82 enclosure. Price: £40.00 (plus VAT).

RA82L Assembly

Speaker kit comprising HP8B bass/mid unit, DT20 dome treble unit, CN35L/H filters with control, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR: 40Hz-20kHz ± 3dB. HC: 45W RMS, 70W programme. Imp: 8 ohms. Recommended Labyrinth enclosure: dimensions 73 × 35 × 29cm. Price: £41.00 (plus VAT).



Richard Allan RA 8 Assembly

★ Indicates entry is illustrated

■ BADGER

Badger Sound Services Ltd,
46 Wood Street, Lytham St. Annes,
Lancs FY8 1QG
Tel: St. Annes 729247.

Loudspeaker Kits:

The following kits contain drive units, crossover networks, wool or wadding, felt panels as appropriate, duct tubes as appropriate, T-Nuts, grille fixing studs and input panels to make a pair. Cabinet details available on request. Woodwork not supplied.

System A

14 litre bookshelf system 17in. H × 10in. W × 8in. D. LF unit Sonaudax HD17B25-H, HF unit Sonaudax HD129D25, suitable for amplifiers 15-30 watts under domestic conditions. 8 ohms imp.

System B

21 litre bookshelf system 18½in. H × 11in. W × 9in. D. LF unit Sonaudax HD20B25-J-4, HF unit Sonaudax HD129D25, suitable for amplifiers 15-35 watts under domestic conditions. 8 ohms imp.

System C

42 litre reflex system 25in. H × 12½in. W × 12in. D. LF unit Sonaudax HD20B25-H-4, HF unit Sonaudax HD129D25, suitable for amplifiers 15-40 watts under domestic conditions. 8 ohms imp.

System D

84 litre floor standing reflex system 33in. H × 17in. W × 14in. D. LF unit Sonaudax HD24S45, MF Sonaudax HD17B25-H, HF unit Sonaudax HD129D25, suitable for amplifiers 15-50 watts under domestic conditions. 8 ohms imp.

System G

35 litre bookshelf system 23in. H × 12½in. W × 11in. D. LF unit Peerless KP825WF, HF unit Peerless K010DT, suitable for amplifiers 10-60W. 8 ohms imp.

System H

25 litre bookshelf system 20in. H × 12in. W × 9in. D. LF unit Peerless K0825WG, HF unit Peerless MT24 HFC, suitable for amplifiers 10-40 watts. 8 ohms imp.

System 107

High efficiency high power (100 watt) 90 litre system. Uses two bass units per speaker. 29in. H × 17in. W × 14½in. D. Bass units 2 × Peerless KP100WF, MF unit Peerless

K040MRF, HF unit Peerless K010DT. 4 ohms imp.

B110/T27 Monitor Quality Compact

Small monitor system comparable in all essential respects with similar commercial types. 12in. H × 7½in. W × 9in. D. LF unit KEF B110, HF unit KEF T27. Sophisticated crossover networks (at time of going to press in kit form only). Imp 8 ohms. Cabinet/crossover details not available separately.

System 104

30 litre bookshelf system 22in. H × 12in W × 10in. D. LF unit KEF B200, HF unit Isophon KK8. Imp 8 ohms.

System 108

As for system 104 but with Sonaudax HD129D25 tweeter.

System 68

As for system 104 but with Peerless K010DT tweeter.

NOTE

For improved bass response systems 104, 108 and 68 could be constructed in the system C enclosure and additional items would be included on request.

Magazine Designs

Kits available for most current magazine designs. Particulars on request.

Prices: On application.

■ CATRONICS

Catronics Ltd, Communications House, 20 Wallington Square, Wallington, Surrey.
Tel: 01-669 6700.

Matrix H Quadrophonic Kit

Based on the design appearing in the June 1977 issue of *Wireless World*. The decoder enables a stereo FM tuner to receive the Matrix H quadrophonic transmissions being broadcast by the BBC. The kit contains the integrated circuits, printed circuit boards, capacitors, resistors, transistors, diodes. (Power supply and cabinet not included.) Price: £34.65 (plus VAT).

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 712142.

BDI Turntable Kit

Description and specification as for BDI motor

unit (See Record Decks section). Easy one-hour assembly. No soldering. Only tools required are a small screwdriver and pliers. Fitted with press button speed change. Price: £21.43 (including VAT).

Plinth and cover for BDI:

£17.47 (plus VAT), plinth only;

£11.10 (plus VAT), cover only;

£6.37 (plus VAT).

■ **EAGLE**

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

SK 210

Speaker kit (two-way) complete with crossover and terminals. No soldering required. HC: 10W RMS at 8 ohms. FR: 150Hz-14kHz ± 5 dB. Drive units: 165mm bass and high-range. Price: £7.60 (plus VAT).

SK 215

Speaker kit (two-way) complete with crossover and terminals. No soldering required. HC: 15W RMS at 8 ohms. FR: 120Hz-20kHz ± 4 dB. Drive units: 203mm bass and high-range. Price: £14.00 (plus VAT).

SK 320

Speaker kit (three-way) complete with crossover and terminals. No soldering required. HC: 20W RMS at 8 ohms. FR: 90Hz-20kHz ± 4 dB. Drive units: 203mm bass mid and high-range. Price: £18.50 (plus VAT).

SK 325

Speaker kit (three-way) complete with crossover and spring terminals. No soldering required. HC: 25W RMS at 8 ohms. FR: 80Hz-20kHz ± 4 dB. Drive units: 254mm bass mid and high-range. Price: £32.50 (plus VAT).

SK 335 ★

Speaker kit (three-way) complete with crossover and spring terminals. No soldering required. HC: 35W RMS at 8 ohms. FR: 75Hz-20kHz ± 4 dB. Drive units: 305mm bass mid and high-range. Price: £44.15 (plus VAT).

■ **FALCON ACOUSTICS**

Falcon Acoustics Ltd, Tabor House, Norwich Road, Mulbarton, Nr. Norwich, Norfolk NR14 8J1.

Tel: Mulbarton 78272

Construction Kits

A range of Son-Audax kits are being prepared and will be released during Autumn 1978.



Eagle SK 335



Heathkit AR 1219

■ **HEATHKIT**

Heath (Gloucester) Ltd, Bristol Road, Gloucester GL2 6EE. Tel: 0452 29451.

AR 1219 Stereo Receiver

Amplifier FR: 7Hz-100kHz ± 1 dB. Distortion: less than 0.5% full power, less than 0.2% at 1W. Hum and noise: phono 60dB, tape -65dB. FM: Sensitivity 2μ V. Selectivity 60dB. Stereo separation 40dB typ, 35dB minimum. AM Section: Sensitivity 100μ V, Selectivity 40dB. Mains: 120/240V 60-50Hz. Dimensions: $3\frac{1}{8} \times 17 \times 13$ in. Price: £124.27 (inc. VAT).

AA 1219 Stereo Amplifier ★

FR: 7Hz-100kHz ± 1 dB. Distortion: less than 0.5% at full power, less than 0.2% at 1W. Hum and noise: -65dB. Power: 120/240V AC. Dimensions: $3\frac{1}{8} \times 12\frac{1}{2} \times 12$ in. Price: £120.86 (inc. VAT).

AJ — 1219 AM/FM Stereo tuner

FM Sensitivity: 2μ V. Selectivity 60dB. AM Suppression: 50dB. Power: 120/240V 60/50Hz. Dimensions: $3\frac{1}{8} \times 13 \times 11$ in. Price: £191.87.

★ Indicates entry is illustrated

■ JORDAN WATTS

Jordan Watts Ltd, Benlow Works,
Silverdale Road, Hayes,
Middlesex UB3 3BW.
Tel: 01-573 6928.

H.F. Unit Kit

Wide angle dome tweeter, moving coil. Capacity for up to 35W systems. FR: 1500-22,000Hz. Rec. cross-over frequency: 1500Hz. Supplied complete with 50 ohms wirewound vars resistance, capacitor and connector block. Price per kit: £8.90 (plus VAT).

■ MAPLIN

Maplin Electronic Supplies Ltd,
PO Box 3, Rayleigh Essex SS6 8LR.
Tel: Southend 715155.

Musical Projects

Maplin also have available full construction details of an electronic organ which can be built in stages, from a very simple start up to a full-scale unit with auto-chording, rhythm generator, etc. Also available: advanced design synthesisers; a touch-sensitive electronic piano using GI's latest chip; a very attractive touch-switched rhythm generator and other musical projects. Prices: Organ: from £100; Synthesisers: up to £460; Rhythm Generator: approx. £60; Piano: available June 1978. (All prices plus VAT.)

10-Channel Graphic Equaliser

This quality hi-fi graphic equaliser features ten controls spaced one octave apart, with centre frequencies from 31-25Hz to 16kHz per stereo channel. With controls flat the frequency response is an amazing 10Hz to 20kHz $\pm 1/2$ dB, and distortion with 2V out a tiny 0.02% at 1kHz. Controls give a ± 13 dB range which is more than adequate. A first class unit with a very nice appearance. Leaflet gives full construction details. Price: Approx. £62.00 (plus VAT). Leaflet 25p.

Audio Mixer

This 16-channel professional quality high fidelity stereo mixer features: two separate group mixing sections both fully stereophonic and switchable to any input module; pre-fade listen on inputs and group mix; foldback; talkback; up to 16 input channels (mono or stereo); tone controls on all channels; modular construction. Designed for professional recording studios, FM radio stations, etc., it offers a remarkable performance at a fraction of the cost of comparable mixers. Price: From £200-£600 approx. (plus VAT).



Peerless Kit 1060



Peerless Kit 1070

100W Stereo Disco

A stereophonic discotheque capable of delivering simultaneously 100W continuous rms sine wave power into two 4 ohms loads. The unit features an automatic voice operated fader, extensive monitor facilities and a very high quality light show. An attractive hinged sloping front panel and a hard wearing cabinet is included in the price. Price: £250 approx. (plus VAT).

Clock/Timer

Don't miss your favourite programmes any more; this little clock with switch on any mains or battery cassette recorder (or any electrical appliance) at the precise second you've set it

CONSTRUCTIONAL KITS

for — and it will switch off again at the exact set time. It is far more accurate than any ordinary analogue timer and is also a smart digital clock. Price: Available April 1978.

■ 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 operate over their optimum frequency ranges through specially designed dividing networks. All Peerless kits contain: speaker fixing clamps, sealing strip,



Peerless Kit 1120



SEAS 203 Kit from Radio Components

solderless connecting cables, and comprehensive instructions on system connection and cabinet construction. All kits have an input imp of 8 ohms.

Kit 1060 ★

8 $\frac{1}{4}$ -in. woofer with foam roll surround. 1in. dome tweeter. HC: 50W. FR: 30-22,000 Hz. Crossover: 1600Hz. Rec. cabinet vol: 20litres. Price (per pair): £70.65 (plus VAT).

Kit 1070 ★

2 \times 7in. woofer with foam roll surround. 4in. enclosed midrange. 1in. dome tweeter. HC: 60W. FR: 25-22,000 Hz. Crossover: 500 and 4000 Hz. Rec. Cabinet vol: 30 litres. Price (per pair): £62.57 (plus VAT).

Kit 1120 ★

2 \times 10in. woofer with foam roll surround. 4in. enclosed midrange. 1in. dome tweeter. HC: 100W. FR: 20-22,000 Hz. Crossover: 500 and 4000Hz. Rec. cabinet vol: 60litres. Price (each kit): £70.65 (plus VAT).

Kit 2050

8 $\frac{1}{4}$ -in. woofer with foam roll surround and 2 $\frac{1}{8}$ -in. tweeter. HC: 50W. FR: 50 to 20,000Hz. Crossover: 1500Hz. Rec. cabinet volume: 20 litres. Price (per pair): £49.50 (plus VAT).

Kit 2060

8 $\frac{1}{4}$ -in. woofer with foam roll surround, 4 $\frac{1}{2}$ -in. midrange and 2 $\frac{1}{8}$ -in. cone tweeter. HC: 50W. FR: 50-20,000Hz. Crossover: 700 and 4000Hz. Rec. cabinet volume: 20 litres. Price (per pair): £66.75 (plus VAT).

■ SEAS

Radio Components Ltd, 12 High Oakes,
St. Albans, Herts.
Tel: St. Albans 51108.

Mini Kit Speaker

Two drive units 6 $\frac{1}{2}$ in. and 2in. tweeter; Crossover frequency: 5,000Hz. FR: 60Hz-20,000Hz. Suitable for amplifiers 6-25W per channel. Price: £10.00 (plus VAT).

Kit 203 Speaker ★

Three drive units: 8in. high compliance, 4in.

★ Indicates entry is illustrated



SEAS 303 Kit from Radio Components

midrange 2in. tweeter. Crossover frequency: 1,500Hz and 4,000Hz. FR: 50Hz-20,000Hz. Suitable with amps of 10-70W per channel. Price: £19.33 (plus VAT).

Kit 302 Speaker

Two drive units: 10in. with Neoprene surround and 1in. dome. Crossover frequency: 1,500Hz. FR: 35Hz-20,000Hz. Suitable with amps of 10-70W per channel. Price: £23.88 (plus VAT).

Kit 303 Speaker ★

Three drive units: 10in. high flux, 4in. mid, 1in. dome. Crossover frequency: 800Hz, 4,500Hz. FR: 35Hz-20,000Hz. Suitable for use with amps of 8-80W per channel. Price: £40.75 (plus VAT).

Kit 503 Speaker

Three drive units: 13in. high flux, 5in. mid, 1in. dome. Crossover frequency: 700Hz and 3,500Hz. FR: 25Hz-20,000Hz. Suitable for use with amps of 6-120W per channel. Price: £61.88 (plus VAT).

Cabinet Kits

Mini £11.93, 203 £17.54, 302 £17.54, 303 £20.94, 503 £24.80 (plus VAT).



Teleradio THD Analyser



Teleradio THD AD 113

All kits complete with wiring diagrams and detailed cabinet plans. Cabinet kits can also be obtained complete with flux damping material and grille cloth.

■ TELERADIO

The Teleradio Co. (Edmonton) Ltd,
325 Fore Street, London N9.

Kits

Suppliers of kits and modules for high specification amplifiers and instrumentation.

AO 113 ★

Very low distortion signal generator for checking Hi-Fi systems. Price: from £24.00 (assembled) (plus VAT).

Distortion Analyser ★

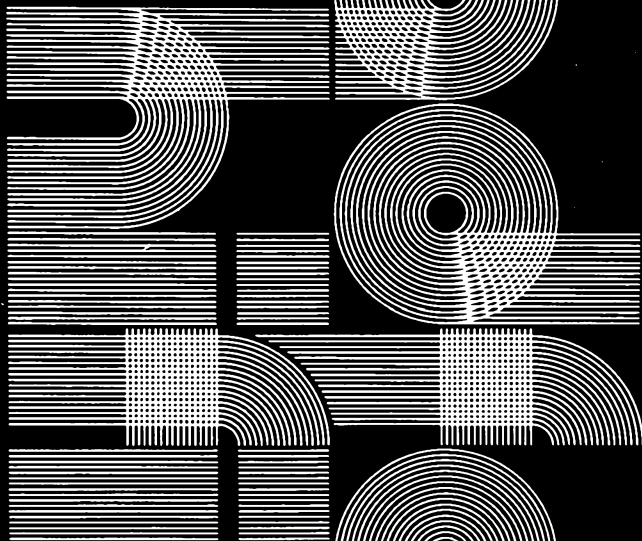
THD analyser. Low cost device as a kit or assembled. Price: from £19.50 (plus VAT).

ACOUSTIC RESEARCH
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SENNHEISER
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SHURE
SIGNET
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SONY
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VIDEOTONE
WATTS
WHARFEDALE
YAMAHA
ZEROSTAT

Radford

Radford Hi-Fi Limited
52/54 Gloucester Road
Bristol BS7 8BH

Tel: (0272) 422709/44593
Telex: 449315

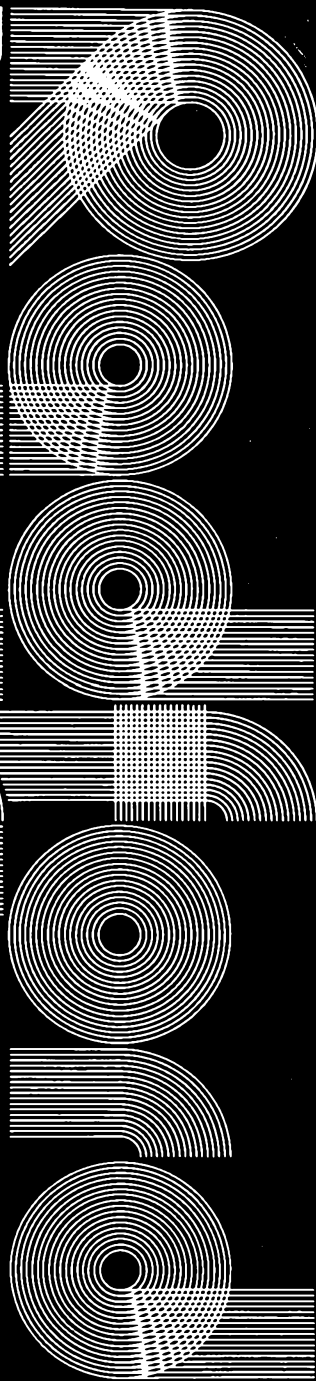


Radford Hi-Fi is reputed for offering professional advice from experts.

We provide unequalled demonstration facilities enabling you to compare and select the equipment best suited to your taste and budget.

Intelligent purchasing allows us to offer very competitive prices. We can arrange part exchange, credit facilities, and Access and Barclay cards are welcome.

Mail Order Service anywhere in the UK and exports throughout the world.





Without Compromise.

Choosing stereo headphones to suit the audio enthusiast's individual requirements has now become much easier, thanks to three models recently introduced by AKG.

They are „made in Vienna“, the city of music, for people who judge the quality of headphones, not only by outward appearance, but who also appreciate comfort and the wide and smooth

frequency response provided by the unique AKG large diaphragm systems.

The K 240, with 14 diaphragms, offers an extremely wide stereo image: the K 140, through functional design, adapts itself automatically to the shape of

any head, and finally the K 40, a sweet sounding but robust and economically priced model with soft foam earpads, for maximum comfort.

Available from your local AKG hi-fi dealer in 104 countries throughout the world.

AKG acoustics



Headphones and Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

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

H7

Mono headphones. Imp: 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: £12.60 (plus VAT).

H6

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. Power handling capacity: 0.5W. Supplied with 10ft coiled cord lead fitted with jack plug. Price: £13.20 (plus VAT).

H21

Stereo moving coil headphone. FR: 20Hz-23kHz. Imp: 4-16 ohms. Weight: 0.55kg. Finish: black headbands, moulded ear housing. Features: 3 metre self-coiling lead, 0.5W power handling. Controls: slide tone and volume on each earphone. Price: £11.40 (plus VAT).

H22

Stereo moving coil headphone. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 0.30kg. Finish: black leather stitching. Features: open back earpieces. Price: £12.60 (plus VAT).

H25★

Stereo moving coil headphone. FR: 15Hz-20kHz. Imp: 4-300 ohms. Weight: 0.40kg. Finish: black stitched leather. Features: self-coiling lead. UVD system. 3W power handling. Price: £21.00 (plus VAT).

H61 Three-Way Junction Box

Providing headphone/loudspeaker/both listening. Two tone grey casing can be wall mounted or free standing. Features: stereo jack sockets, slide switch selection. Rating: 20W. Price: £1.65 (plus VAT).

H62 Remote Control Unit (Stereo)

With variable balance and gain controls, headphone/loudspeaker switching, in free standing case. Price: £3.89 (plus VAT).

H65 Stereo Headphone Adaptor

Instant switching between headphone and loudspeaker listening. DIN plug connections to speaker. Jack plug entry for two headphones. Price: £4.32 (plus VAT).

■ AIWA

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

HP 30

Dynamic stereo headphone. FR: 20Hz-20kHz. Imp: 4-32 ohms. Weight: 350g Price: £17.43 (plus VAT).

HP 500

Omni-dynamic stereo headphones. FR: 15Hz-25,000Hz. Imp: 4-50 ohms. Weight: 410g Price: £42.79 (plus VAT).

■ AKAI

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

ASE 7

Headphone. FR: 30Hz-20kHz. Imp: 16 ohms. Weight: 22.5kg with cord. Lightweight, left



Adastra H25

★ Indicates entry is illustrated

and right units marked, padded earpieces. Standard controls. Price: £13.33 (plus VAT).

ASE14

High velocity headphone. FR: 30Hz-20kHz. Imp: 4-32 ohms. Weight: 210 gm. Price: £17.96 (plus VAT).

ASE24

Dynamic open air headphone. FR: 20Hz-20kHz. Imp: 4-60 ohms. Weight: 300 gm. Price: £23.96 (plus VAT).

ASE80C

Electret condenser headphone. FR: 20Hz-22kHz. Imp: 4-16 ohms. Weight: 58 gm. Price: £67.15 (plus VAT).

■ AKG

AKG Acoustics Ltd, 191 The Vale, London W3.
Tel: 01-749 2042.

K 40 ★

Dynamic moving coil. FR: 50Hz-13,000Hz. Imp: 200 ohms. Weight: 145g. Features: large diaphragm, open dynamic stereo headphones,



AKG K 40



AKG A240

detachable ear pads, lightweight. Price: £14.00 (plus VAT).

K 80

Dynamic moving coil. FR: 20Hz-20,000Hz. Imp: 200 ohms. Weight: 180g. Features: large diaphragm, open dynamic stereo headphones, soft contact ear pads, lightweight. Price: £22.00 (plus VAT).

K 140

Dynamic moving coil. FR: 20Hz-20,000Hz. Imp: 600 ohms. Weight: 175g. Features: large diaphragms, open dynamic stereo headphone, lightweight, soft contact earpieces, self adjusting headband, 14 diaphragms. Price: £25.00 (plus VAT).

K 160

Dynamic moving coil. FR: 16Hz-20,000Hz. Imp: 600 ohms. Weight: 330g. Features: closed dynamic stereo headphones, flexible double headband, detachable earpieces. Price: £32.00 (plus VAT).

K 240 ★

Dynamic moving coil. FR: 16Hz-20,000Hz. Imp: 600 ohms. Weight: 295g.

K 14 TV

Dynamic moving coil. FR: 50Hz-13,000Hz. Imp: 100 ohms. Weight: 295g. Features: large earcups each contain 1 transducer, 6 passive diaphragms to improve frequency response. Open and closed stereo headphone. Price: £42.00 (plus VAT).

K 14 TV

Dynamic moving coil. FR: 50Hz-13,000Hz. Imp: 100 ohms. Weight: 145g. Features: large diaphragm, mono headphone, detachable earpads. Volume control. Price: £16.00 (plus VAT).

K 10

Dynamic moving coil. FR: 100Hz-13,000Hz. Imp: 400 ohms. Weight: 90g. Features: extremely light-weight mono headphone. Price: £16.00 (plus VAT).

K 158

Dynamic moving coil. FR: 30Hz-20,000Hz. Imp: 600 ohms. Weight: 470g. Features: Dynamic headphone, microphone combination. Price: £38.00 (plus VAT).

■ AMSTRAD

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



Amstrad HPS 6A

HPS 6 A ★

Stereo headphones, FR: 20Hz-25kHz. Imp: 8 ohms. Weight: 500g. Finish: chrome metal-work. Features: Mylar cones, air cooled reinforced headband, padded earcups with press-studs for easy detachment. Controls: Independent variable volume for left and right earpieces, mono/stereo slide switch. Price: £12.95 (plus VAT).

■ **ARNOLD ELECTRONICS**

Janorhurst Ltd, Century House, Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

Six-way Headset Switch

Designed as a headset comparator with compact styling to enable its use in the home where several may wish to enjoy listening with headsets. Dimensions: 13 x 9 x 4.5cm. Easy to connect. Silver brushed aluminium case. Suitable for language laboratories. Switch to disconnect speakers. Price: £9.95 (plus VAT).

Audio Switch Units

Various switch units for selecting different combinations of speakers and headsets. With 'S' denoting speaker outputs, 'H' headphone outputs and 'C' control. Finished in silver brushed aluminium. Prices range from £6.00 to £9.75 (plus VAT).

■ **AUDIO TECHNICA**

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

ATH-1 Planar

Wave Dynamic Headphones. Frequency Range: 30Hz-20kHz. Max. Input Power 1,000mW. Weight: 175g. Voice Coil: Photo-etched aluminium swirl 8µm.

ATH-3

Velocity Dynamic Headphones. Frequency Range: 50Hz-20kHz. Max. Input Power 250mW. Weight: 240g. Voice Coil: 40m Wire Bobbinless/Low Mass.

ATH-4

Velocity Dynamic Headphones. Frequency Range: 25Hz-20kHz. Max. Input 250mW. Weight: 260g. Voice Coil: 40µm Wire Bobbinless/Low Mass.

ATH-5

Velocity Dynamic Headphones. Frequency Range: 25Hz-20kHz. Max. Input: 250mW. Weight: 260g. Voice Coil 40µM Wire Bobbinless/Low Mass.

ATH-7

Monopolar Electret Condenser Headphones. Frequency Response: 10Hz-25kHz. Max. Input Power 5000mW. Weight: 275g. Harmonic Distortion 0.3%.

ATH-8

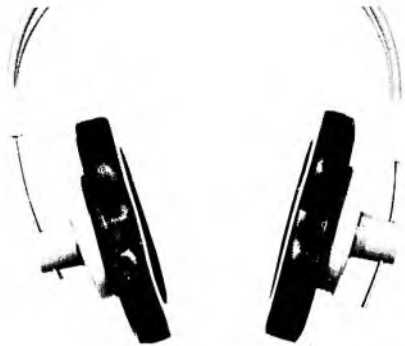
Bipolar Electret Condenser Headphones. Frequency Response: 10Hz-25kHz. Max. Input Power: 10W. Weight: 275g. Harmonic Distortion 0.1%.

All prices on application.



Bang and Olufsen U70

★ Indicates entry is illustrated



Beyer DT96



Beyer DT100

■ BANG & OLUFSEN

Bang & Olufsen UK Ltd, Esthrook Road,
Gloucester GL4 7DE.
Tel: Gloucester 21591.

U70 ★

Orthodynamic semi-open headphones. FR: 16Hz-20kHz. Imp: 140 ohms. Weight: 300g. Finish: leather/aluminium. Features: adjustable headband, adjustable cups. Price: £28.00 (plus VAT).

■ BEYER

Beyer Dynamic (GB) Ltd,
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath 51003.

DT96A ★

Lightweight moving coil stereo headphones. FR: 30Hz-17kHz. Imp: 50 ohms or 400 ohms per earpiece. Max power: 100mW. Various cable lengths and terminations available. Also available with coiled cable. Price: £22.63 (plus VAT).

DT100 ★

Moving coil stereo headphones. Sensitivity: 110dB. FR: 30Hz-20kHz. Various impedances and cable terminations available. Price: £25.65 (plus VAT).

DT48

Moving coil stereo headphones. FR: 16Hz-20kHz. Imp: 8 ohms, 25 ohms, 200 ohms per earpiece. Rated input: (8 ohms) 80mV, (25 ohms) 150mV, (200 ohms) 450mV. Cable: 6½ft open end. Price: £80.48 (plus VAT), O/E lead £79.22.

DT480

Moving coil stereo headphones. FR: 20Hz-20kHz. Various impedances available. Rated input: 350mW, max 1W. Cable: 10ft. Various terminations offered. Price: £50.30 (plus VAT), without lead.

DT49

Telephone type handset with coloured replaceable ear pads. FR: 30-13,000Hz. Imp: 15 ohms. Weight: 220gm. Finish in black, red, grey. Price: £21.38 (plus VAT).

D109

Dynamic headphones-microphones combination. FR: 30Hz-20,000Hz headphone and 40-12,000Hz microphone. Hypercardioid mic available as DT109V fitted with induction loop receiver. On-off switch and separate volume controls for phone and mic. Price: £49.50 (plus VAT), without lead.

DT202

Stereo dynamic transducer. FR: 20-2,000Hz. Imp: 400 ohms. Weight: 360gm. Straight or coiled leads available with choice of terminations (extra). Price: £33.32 (plus VAT).

DT204

Quad/stereo moving coil. FR: 20-20,000Hz. Imp: quad 200 ohms, stereo 100 ohms. Weight: 435gm. Quad/stereo switch and two volume controls for front to rear balance. Price: £66.02 (plus VAT).

DT302

Stereo moving coil. FR: 20-20,000Hz. Sensitivity: 110dB. Imp: 600 ohms. Weight: 66gm. Price: £12.96 (plus VAT).

DT440

Open high velocity dynamic transducer. FR: 20-20,000Hz. Imp: 600 ohms. Weight: 260g. Suitable for connection to source impedances from 4-1,000 ohms. Complete with lead. Price: £25.58 (plus VAT).

HEADPHONES AND ACCESSORIES



Goodmans OHP 10



Grundig GDHS 221

Accessories

Monitoring units/voltage divider/passive simulator unit when connected stereo system gives surround effect/headphone output transformer for DT48. Prices: on application.

ET1000

Electrostatic. FR: 10Hz-25kHz. Weight: 370g. Black/silver finish. Used with power pack No. N 1000 AC which offers outlets for two pairs of headphones. Price: £119.46 (plus VAT).

DT220

Moving coil. FR: 20Hz-20kHz. Imp: 400 ohms. Weight: 250g. Black finish. Closed type stereophone. Price: £25.58 (plus VAT).

DT441

Moving coil. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 260g. Black finish. Open type stereophone. Price: £32.00 (plus VAT).

■ EAGLE

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

SE 560

Polymer-film. FR: 20Hz-18,000Hz. Imp: 8 ohms. Black finish. Padded headband and earpieces. Controls: volume L & R, mono/stereo. Price: on application.

SE 620

Polymer-film transducer. Black/brushed metal finish. Fully adjustable leather effect headband with nylon covered earpads, moulded plug. Price: on application.

SE 640

Polymer-film transducer. Black/brushed metal finish. Fully adjustable leather effect padded headband, felt covered earpads, lightweight coiled lead with moulded plug. Price: on application.

SE 660

Polymer-film transducer. Black/brushed metal. Fully adjustable leather effect padded headband, felt covered earpads. Lightweight. Coiled lead with moulded plug. Volume controls. Price: on application.

■ GOODMANS

Goodmans Loudspeakers Ltd, Downley Road, Havant, Hants. PO9 2NL. Tel: Havant 486344.

OHP10 ★

Ortho dynamic headphones. FR: 16Hz-20kHz. Imp: 140 ohms. Weight: 21kg. Black finish. Sensitivity: >90dB for 1mV. No rec. retail price.

■ GRUNDIG

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

221 ★

Moving coil stereo headphones. FR: 20Hz-20kHz. Imp: 220-426 ohms. Distortion Factor: 0.5% at 120 phon. Fitted with stereo plug (DIN 45 327). Weight: 550gm. Finish: black. No rec. retail price.

216

Moving coil headphones. FR: 20Hz-20kHz. Imp: 400 ohms. Padded. No rec. retail price.

★ Indicates entry is illustrated

219

Moving coil headphones. FR: 20Hz-20kHz.
Imp: 400 ohms. Padded. No rec. retail price.

■ HITACHI

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



Howland - West CIS 1100



Howland - West CIS 550

HD 70

Moving coil headphone. FR: 20Hz-20kHz.
Price: £18.00 (inc. VAT).

HD 80

Moving coil headphone. FR: 20Hz-20kHz.
£24.00 (inc. VAT).

■ HOWLAND-WEST

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

CIS 7000

Moving coil headphone. FR: 20Hz-20kHz.
Imp: 8 ohms. Weight: 7.2oz. Black and White
finish. Stretch cord, standard jack plug. Price:
£21.50 (plus VAT).

CIS 1100 ★

Moving coil headphone. FR: 18Hz-20,000Hz.
Imp: 4-150 ohms. Weight: 4.6oz. Anodised
aluminium finish. Light-weight, super thin 25
micron diaphragm. Price: £24.00 (plus VAT).

CIS 1500

Moving coil headphone. FR: 18Hz-20,000Hz.
Imp: 4-150 ohms. Weight: 5.5oz. Black and
silver finish. Light-weight, stretch cord, stan-
dard jack plug. Price: £30.00 (plus VAT).

CIS 550 ★

Moving coil headphone. FR: 20Hz-18kHz.
Imp: 8 ohms. Weight: 10.7oz. White with black
headband and earpads. Stretch cord, standard
jack, left and right volume controls, mono-
/stereo switch. Price: £11.00 (plus VAT).

CIS 660

Moving coil headphone. FR: 20Hz-20kHz.
Imp: 8 ohms. Weight: 12.7oz. White with black
headband and earpads. Stretch cord and stan-
dard jack-plug. Separate right and left volume
and tone controls. Mono/stereo switch. Price:
£16.50 (plus VAT).



CIS 250

Moving coil headphone. FR: 20Hz-18kHz. Imp: 8 ohms. Weight: 13oz. Black finish. Special stretch cord, standard jack plug. Price: £13.50 (plus VAT).

CIS 300 ★

Moving coil headphone. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 14oz. White with black earpads and head band. Supplied complete with stretch cord and alternative remote control cable, right and left channel control, mono-/stereo switch. Price: £6.60 (plus VAT).

■ **JVC**

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

5944

Four channel/two channel stereo headphones. Moving coil type. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 600g. Price: on application.

HP-20

Two channel stereo headphones. Moving coil type. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 400g. Price: on application.

HM-200E

Binaural headphone/mic combination. Electret condenser type mix with FR: 40Hz-18kHz. S/N ratio 45dB. Headphone of dynamic enclosed type. Imp: 8 ohms. Weight: 600g. Price: on application.

■ **KOSS**

Tape Music Distributors Ltd, 114 Ashley Road, St Albans, Herts AL1 5JR. Tel: St Albans 64337.

K/125

Moving coil dynamic stereo headphone. FR: 10Hz-16,000Hz. Imp: 100 ohms at 1kHz. Weight: 365gms. THD: less than 1% at 1kHz, 100dB-SPL. Pneumalite ear cushions. Adjustable headband with stainless steel bands, forked slide bars and soft vinyl cover. Price: £17.20 (plus VAT).

K/135

Moving coil stereo headphones. FR: 10Hz-18,000Hz. Imp: 100 ohms at 1kHz. Weight: 425gms. THD: less than 1% at 1kHz, 100dB-SPL. Pneumalite ear cushions. Adjustable headbands with stainless steel bands, self-adjusting yokes, soft vinyl cover. Finish in



Koss K/145

ebony teak with brown cushions. Price: £21.25 (plus VAT).

K/145 ★

Moving coil dynamic stereo headphone. FR: 20Hz-20,000Hz. Imp: 90 ohms at 1kHz. THD: less than 5% at 1kHz, 100dB-SPL. Weight: 454gms. Pneumalite ear cushions. Adjustable headband with stainless steel bands, self-adjusting yokes, soft vinyl cover. One rotary volume balance control on each earcup. Price: £28.25 (plus VAT).

K 6

Moving coil dynamic headphones. FR: 10Hz-16kHz. Imp: 100 ohms. Designed to operate from outputs with source impedances of 3.2 to 600 ohms. Weight: 446gms. Bronze finish. Washable foam-filled vinyl cushions. Extendable headband with pivoted, self-adjusting yokes and sponge cushioned cover. Price: £15.70 (plus VAT).

K 6D

Moving coil dynamic headphones. FR: 10Hz-16kHz. Imp: 100 ohms. Weight: 446gms. Bronze finish. Washable foam-filled vinyl cushions. Extendable headband with pivoted, self-adjusting yokes and sponge cushioned cover. Domino plug connection. Price: £15.70 (plus VAT).

K 6 LC

Moving coil dynamic headphones. FR: 10Hz-

★ Indicates entry is illustrated

16kHz. Imp: 94 ohms. Weight: 507gms. Bronze finish. Washable foam-filled vinyl cushions. Extendable headband with pivoted, self-adjusting yokes and sponge cushioned cover. One slide-type volume balance control on each earcup. Price: £18.60 (plus VAT).

PRO 4AA

Moving coil (dynamic) headphone. FR: 10Hz-22kHz. Imp: 230 ohms. Weight: 580gms. Mushroom finish with black cushions. Extendable stainless steel headband with self-adjusting pivoting yokes and sponge cushioned cover. Koss Pneumalite cushions. Boom mount. Price: £39.00 (plus VAT).

PRO 5 LC

Moving coil dynamic headphones. FR: 10Hz-20kHz. Imp: 185 ohms. Weight: 685gms. Beige with black cushions. Ext. stainless steel headband with self-adjusting pivoting yokes and sponge cushioned cover. Koss Pneumalite cushions. Boom mount. One rotary volume balance control on each ear cup. Price: £41.15 (plus VAT).

Phase 2

Moving coil dynamic headphones. FR: 10Hz-22kHz. Imp: 299 ohms. Weight: 627gms. Bronze finish with black cushions. Ext. Stainless steel headband with self-adjusting pivoting yokes and sponge cushioned cover. Koss Pneumalite cushions. Book mount. One rotary Panoramic source control on each ear cup. Slide ambience expander located on right cup, momentary slide comparator switch on left cup. Price: £45.00 (plus VAT).

Technician 2

Moving coil dynamic headphones. FR: 10Hz-22,000Hz. Imp: 245 ohms. Weight: 450gms. Brown finish with brown cushions. Ext. stainless steel headband with self-adjusting yokes and extra-wide glove-soft vinyl cover. Koss Pneumalite cushions. Brown "Y" shaped coil cord. Boom mic mount on left earcup. Price: £39.95 (plus VAT).

Technician VFR

Moving coil dynamic headphones. FR: 10Hz-22kHz. Imp: 245 ohms. Weight: 475gms. Black finish with black cushions. Wide extendable steel headband with self-adjusting yokes and stitched vinyl cover. Koss Pneumalite cushions. Boom Mount. One slide variable frequency response control on each earcup. Price: £43.35 (plus VAT).

HV2 ★

Moving coil dynamic headphones velocity



Koss HV-2



Koss Easy Listener



Koss Phase/2+2

operated. FR: 20Hz-20kHz. Imp: 172 ohms. Weight: 0.340kg. Black finish with grey cushions. Flexible Acetal headband with padded sponge and self-adjusting pivoting yokes. Soft acoustical sponge ear cushions. High velocity lightweight open-back stereophone. Price: £17.40 (plus VAT).

Easy Listener ★

Moving coil dynamic headphones, velocity operated. FR: 20Hz-20kHz. Imp: 168 ohms. Weight: 0.283kg. Blue denim finish with grey cushions. High velocity lightweight open-back phone supplied complete with mono adaptor. Ext. headband with self-adjusting pivoting yokes and soft denim cover. Soft acoustical sponge ear cushions. Price: £27.55 (plus VAT).

HV 1A

Moving coil dynamic headphones, velocity operated. FR: 15Hz-30kHz. Imp: 157 ohms. Weight: 285gms. Finished in ebony teak with champagne gold highlights. Rosewood grained inlays. Ext. headband with self-adjusting pivoting yokes and soft padded vinyl cover. Soft acoustical sponge ear cushions. High velocity lightweight open-back phone. Price: £30.10 (plus VAT).

HV 1 LC

Moving coil dynamic headphones velocity operated. FR: 15Hz-30kHz. Imp: 132.5 ohms. Weight: 306gms. Styled in ebony teak with champagne gold highlights. Rosewood grained inlays. Ext. headband with self-adjusting pivoting yokes and soft padded vinyl cover. Soft acoustical sponge ear cushions. High velocity lightweight open-back phones. Price: £34.00 (plus VAT).

Phase 2+2 ★

Moving coil dynamic headphones, velocity operated quadraphone FR: front 20Hz-20kHz, back 15Hz-15kHz. Imp: front 310 ohms, back 263 ohms. Weight: 492gms. Black finish with black cushions. Can be used with both 2 channel and 4 channel material. Incorporates 150mm dia Decilite and 38mm high velocity element per cup. Ext. headband with pivoting self-adjusting yokes, soft acoustical sponge cushions. "V" cord 1m from headset to programmer. Coil cord 2.75m extended from programmer. 127 listening perspectives. Controls: palm size programmer. £96.00 (plus VAT)

Continental adaptor leads

For use with amplifiers having DIN output sockets instead of jack sockets. Comprises: two DIN speaker plugs with lead and stereo



Koss - Pro 4 Triple A

jack socket. Two 100-ohm resistors inserted for attenuation. Price: £1.50 (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: £4.00 (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: £4.00 (plus VAT).

T5D

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: 3/8 x 3/8 x 2 5/16. Weight: 10 1/2oz. Price: £8.50 (plus VAT).

T10A

Chairside listening station. Comprises control box with separate volume controls for two sets of stereo headphones, plus on/off switch for speakers. Wire directly to amplifier. Seven-core flat connecting cable suitable for under carpet installation. Tinted plastic cover. Price: £11.50 (plus VAT).

★ Indicates entry is illustrated

PRO4 Triple A ★

Moving coil dynamic headphones. FR: 10Hz-22kHz. Imp: 220 ohms. Weight: 440g. Beige finish. Exclusive direct contour Pneumalite ear cushions virtually eliminate pressure against head. Extendable Pneumalite headband, coiled cord. Controls: boom, microphone mount. Price: £42.75 (plus VAT).

K6LCQ

Moving coil quadrophone. FR: 20Hz-18,000Hz. Imp: front 94 ohms, back 99 ohms. Weight: 607g. Beige finish. Foam filled cushions, extendable headband, coiled cord. Will operate with either matrix or discrete systems. 2 to 4 channel selector switch. Level control on ear-cup. Price: £53.75 (plus VAT).

ESP10

Electrostatic headphone. FR: 10Hz-22kHz. Imp: 3 ohm min at 20Hz and 20kHz, 180 ohm max at 800Hz. Weight: 450g. Black finish. Special safety feature is that ESP 10 takes its supply from a small transformer which provides protective circuitry preventing audio signals from overloading the input circuit. Adjustable headband. Pneumalite ear cushions. Semi-vented earcups. Coiled cord, energizer unit. Price: £190.00 (plus VAT).

LEAK

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

3000

Isodynamic headphones. FR: 20Hz-20kHz \pm 3dB. Imp: 60 ohms. Weight: 340gms. Black finish. Unique styling with hidden headband adjusting. Price: £34.98 (inc. VAT).

LENCO

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane,
Byfleet, Surrey.
Tel: Byfleet 51051

K100

Moving coil stereo headphone. FR: 30Hz-18kHz. Tone and volume separately adjustable in each ear. Imp: 4-16 ohms. Price: £12.00 (plus VAT).

K115

Moving coil stereo headphone. FR: 16Hz-22kHz. Open type ear cushion. Imp: 32 ohms. Price: £21.00 (plus VAT).

K106

Moving coil stereo headphone. FR: 16Hz-



Pioneer SE-700

22kHz. Imp: 4-16 ohms. Sensitivity: 110dB.
Price: £17.00 (plus VAT).

PICKERING

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

OA-3

Stereo moving coil headphones. FR: 20Hz-20kHz. Sensitivity: 100dB SPL at 0.10V input at 1kHz each channel. Imp: 15 ohms. Power handling: 0.2W per channel. Weight: 0.215kg. Finish: brown. Price: £22.50 (plus VAT).

PH-4955

Stereo moving coil headphones. FR: 10Hz-22kHz. Sensitivity: 100dB SPL at 0.10V at 1kHz. Imp: 8 ohms. Power handling: 0.15W. Weight: 0.785kg. Finish: brown. Price: £33.00 (plus VAT).

OA-7

Moving coil headphones. FR: 20Hz-22kHz. Imp: 100 ohms. Weight: 170gm. Brown finish. Features: power handling 0.2W per channel. Price: £36.00 (plus VAT).

PIONEER

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

SE-505

Dynamic headphones. Imp: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Sensitivity: 108dB at 300mV. Weight: 690gm. Cord length: approximately 60in. Jack plug. Two-way speaker volume/tone controls. Price: on application.

SE-305

Dynamic headphones. Imp: 4-16 ohms. Max-

HEADPHONES AND ACCESSORIES

imum power input: 500mW. FR: 20Hz-20kHz. Sensitivity: 10dB at 300mV. Weight: 435gm. Cord length: 60ins. Jack plug. Price: on application.

SE-205

Dynamic headphones. Imp: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Weight: 450gm. Cord length: 84in. Jack plug. Price: on application.

SE-700 ★

Piezoelectric headphones. Imp: 4-16 ohms. Static capacity: 0.1 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: more than 30V. Weight: 295g. Price: on application.

SE-500

Piezoelectric headphones. Imp: 4-16 ohms. Static capacity: 0.08 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Weight: 315gm. Price: on application.

SE-300

Piezoelectric headphones. Imp: 4-16 ohms. Static capacity: 0.08 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Weight: 280g. Price: on application.

Monitor 10

Moving coil stereo headphones. FR: DIN 20-20,000Hz. Sensitivity: 100dB/mW. Imp: 4-16 ohms. Power handling: 700mW per chan-



Plustron 2500



Plustron 5000

nel. Finish in black leather. Low sound leakage design. High efficiency drive units. Head band has click stop locking adjustment. Weight: 530g. Price: on application.

■ PLUSTRON

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW. Tel: Newcastle 615131.

2500

FR: 18Hz-24,000Hz. Imp: 4-8 ohms. Twin tone volume controls. Price: £19.03 (inc. VAT).

7700

FR: 18Hz-24,000Hz. Imp: 4-8 ohms. Compact headphone unit with rotating volume controls. Price: £19.32 (inc. VAT).

5000 ★

FR: 18Hz-24,000Hz. Imp: 4-8 ohms. Price: £19.55 (inc. VAT).

■ PWB

QED Audio Products Ltd, 112 Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HD. Tel: Sunbury 87344/5.

MCX

Ultimate low mass moving coil headphone with good bass response, and efficient design. Imp: 120 ohms. Weight: 364g. 12 micron diaphragm. Price: £19.50 (plus VAT).

★ Indicates entry is illustrated



P.W.B. Dyna-X

Electrostatic

Electrostatic headphone with separate transformer, matching box. Connects to any amplifier loudspeaker terminals. Weight: 364g. Permanently polarised diaphragm. Requires no outside polarising voltage. Price: £35.00 (plus VAT).

Dyna-X ★

Ortho-dynamic headphone. Imp: 120 ohms. Weight: 364g. Aluminium etched flat coil on polyester film diaphragm. Price: £22.50 (plus VAT).

■ QED

QED Audio Products Ltd,
112 Windmill Road, Sunbury-on-Thames,
Middlesex TW16 7HD.
Tel: Sunbury 87344/5.

Headphone Control 5/2 ★

Suitable for connecting an additional pair of headphones to amplifiers not having that facility or to expand on present facilities. The headphones controls allow volume to be adjusted and speakers to be switched on or off. Dimensions: 6.5 × 10 × 5cm. Price: £8.10 (plus VAT).

■ REVOX

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



Q.E.D. Headphone control 5/2

RH 31 ★

Stereo headphones. FR: 20-20,000Hz. Imp: 600 ohms. Power handling: 50mW per channel. Weight: 200gm. Soft foam earpads, lightweight PVC headband with soft cushioning. Price: £21.31 (plus VAT).

RH 310

Dynamic headphone. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 260g. Black finish with soft foam earpads. Cushioned headband. Price: £26.00 (plus VAT).

■ ROSS ELECTRONICS

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

RE-260

Two-way stereo headphones employing a 35mm woofer and 15mm tweeter with dividing network in each earcup. Finished matt black and satin silver with softly padded headband and ear muffs. With 3-metre spiral cord and jack plug. FR: 20Hz-20kHz. Impedance: 4-32 ohms. Sensitivity: 100dB/mW at 1,000Hz. Price: £23.10 (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: £3.50 (plus VAT).

HEADPHONES AND ACCESSORIES



Hevox HH31

RE-202 Stereo Headphone Extension Lead

Spiral lead fitted with stereo jack plug one end, jack socket at other. Lead extends to 25ft. Price: £2.00 (plus VAT).

RE-251

High velocity, professional series dynamic headphones. Fitted with advanced design drive units providing wide-range response with negligible distortion, and ported earcups for fatigue-free listening. Slim, lightweight construction with padded, adjustable headband and softly padded ear muffs. FR: 20Hz-22,000Hz. Imp: 8 ohms. 3-metre spiral cord. Price: £14.30 (plus VAT).



Ross RE-238

RE-257

Professional series, high-velocity dynamic stereo headphones, employing advanced design drive units with specially curved and tapered diaphragms, wide-range voice coils, and specially developed magnets. Features include: wide frequency response with negligible distortion, ported acoustic chambers that ensure fatigue-free listening without eardrum pressure, and centrally located volume controls that permit direct setting for perfect sound balance. FR: 20Hz to 20,000Hz. Imp: 8 ohms. With 3-metre lightweight spiral cord. Price: £16.70 (plus VAT).

RE-238 ★

High-velocity stereo headphones employing ultra-thin, specially curved diaphragms and powerful magnets. Leather grain adjustable headband with specially designed yokes that tailor to any headshape. Open back. All black finish with 2-metre twin ribbon lead and moulded jack plug. FR: 16Hz-22kHz. Sensitivity: 100dB. SPL at 1mW. Weight: 160gm. Matching Imp: 8-1000 ohms. Price: £12.30 (plus VAT).

RE-248 ★

Orthodynamic headphones having a near linear frequency characteristic with low distortion, even at high sound levels. Leather grain adjustable headband and foam padded



Ross RE-248

★ Indicates entry is illustrated



Ross RE-258



Huss HE-268

ear muffs. Open back. With 2-metre curly cord and stereo jack plug. FR: 16Hz-20kHz. Sensitivity: 90dB SPL at 1mW. Weight: 240gm. Matching Imp: 8-150 ohms. Price: £13.20 (plus VAT).

RE-258 ★

Slim, lightweight professional series headphones employing Rare-earth metal supermagnets and specially curved diaphragms only 12.5µm. Softly padded leather grain adjustable headband with silky faced ear cups on spe-

cially designed yokes that tailor to any headshape. Open back. Black and silver finish. Earcups only 13mm thick. With 2-metre ribbon cable and moulded jack plug. FR: 10Hz-25kHz. Sensitivity: 125dB SPL at 1mW. Weight: 150gm. Matching Imp: 8-1000 ohms. Price: £17.20 (plus VAT).

RE-268 ★

Superlightweight — 120 grams, superslim — only 10mm thick. Fitted with advanced technology drive units that outperform bulkier, more expensive headphones. Leather grain finish, adjustable twin headband. Aluminium backed earcups with supra aural foam ear pads. Open back. With 2-metre ribbon cable and moulded jack plug. FR: 18Hz-22kHz. Sensitivity: 100dB SPL at 1mW. Weight: 120gm. Matching Imp: 4-150 ohms. Price: £22.40 (plus VAT).

■ ROTEL

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

RH-930

Stereo electret condenser microphone with no speaker cone and magnet like conventional types. FR: 20Hz-30kHz. Sensitivity: more than 104dB. Impedance: 1K ohms. Weight: 0.24kg. Tan colour, leather covered headband and ear plug. Three setting impedance switch. No need for external adaptor. Price: £43.70 (plus VAT).

RH-640

Moving coil headphones. FR: 15Hz-25kHz. Imp: 4-16 ohms. Weight: 290g. Black headband and ear cushions. Adjustable headband. Price: £13.45 (plus VAT).

RH-740

Moving coil headphones. FR: 15Hz-25kHz. Imp: 4-16 ohms. Weight: 270g. Black headband and ear cushions. Adjustable headband. Price: £18.49 (plus VAT).

■ SANSUI

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

Details not available at time of going to press.

■ SENNHEISER ELECTRONIC

Distributors: Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.



Sennheiser HD 414

HD414 ★

Stereo headphones. Wired for mono or stereo. Lightweight robust design. Removable washable sponge ear pads. FR: 20Hz-20kHz. Imp: 2000 ohms per capsule. Weight: 5oz. Price: £23.50 (plus VAT).

HMD414

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/μ bar. Imp: 200 ohms. Price: £31.15 (plus VAT).

HD44

Ultra light stereo headphones with volume control on each capsule. Can be used mono. FR: 40Hz-15kHz. Imp: 640 ohms. Weight: 33gm. Price: £13.50 (plus VAT).

HD424 ★

Stereo headphones (can be used mono) with good low frequency response. FR: 16Hz-20kHz. Imp: 2K. Weight: 170gm. Price: £33.50 (plus VAT).

HD412

Stick type headphone designed for use in record booths, etc. FR: 20Hz-20kHz. Imp: 2K. Price: £28.45 (plus VAT).

HD 400

Moving coil stereo headphone. FR: 20-18,000Hz. Imp: 600 ohms. Price: £14.60.



Sennheiser HD 424

Infra-Red Headphone Transmission System

Mono system consisting of: Mono transmitter S1406. Small compact mains powered unit which can be placed at any convenient point in a room and radiates infra red light. Frequency modulated by any suitable audio signal. Technical data: Powering 220V, 50/60Hz. Power consumption: 3W. Carrier frequency: 95kHz. Wavelength of infrared light: 930nm. Modulation: FM. Deviation: ± 50kHz. Pre-emphasis: 50μs. Audio frequency response: 40 to 15,000Hz. Distortion: <2%. Dynamic range: as source material. Dimensions: 200 × 80 × 17mm. Finish: flat black, plastic housing. Price: £49.00.

S1434

S1434 compact two channel infra red transmitter mains powered, designed to operate with domestic Hi-Fi systems. The modulation level is indicated by an LED. The area covered by the transmitter can be increased by connecting an additional power radiator. Short technical data: Colour: dull black. Dimensions: approx. 200 × 80 × 17mm. Power supply: 220V, 50-60Hz, approx. 10W. Modulation: FM. Carrier frequencies: left channel I = 95kHz, right channel II = 250kHz. Pre-emphasis: 50μs. Nominal deviation at IV input: ± 35kHz. Peak deviation at 1.5V input: ± 50kHz. Audio connector: 5-pin DIN-headphone connector. Sync-output socket: 3.5mm jack socket. Audio frequency response: 20Hz-20,000Hz. Price: £79.00.

★ Indicates entry is illustrated

HD 1434

Lightweight open ear headphones with built-in infra red stereo receivers. Individual volume controls. Provision for stereo, and left or right signal to be fed to both headphones. The receiver is powered by a 9V dry cell. Short technical data: Modulation: FM. Deviation: max. ± 50 kHz. Receiving frequencies: left channel 95kHz, right channel 250kHz. Frequency response: 20Hz-20,000Hz. Max. SPL: approx. 108dB. THD at 1000Hz: $< 1\%$. Weighted signal to noise ratio: approx. 60dB. Powering: 9V, approx. 4mA, level dependent. Operating time: approx. 100h, level dependent. Colour: black-silver. Weight: approx. 380gm. Price: £94.00.



Sennheiser HD 224X



Sennheiser Unipolar



Sharp HP400

HD 1406

Lightweight mono stethoset receiver for use with the SI406, consisting of an infra-red receiver, volume control and stethoset headphones. The power for this comes from a small plug-in unit containing rechargeable battery and charger. In order to re-charge the battery it is necessary to plug it in to a 240V shaver socket. (19hrs for complete re-charge.) A full charge will power the HD1406 for 5hrs. Extra battery plugs are available. Technical data: Battery voltage: 2.3 to 2.6V. Wavelength of light carrier: 930nm. Modulation: FM. Carrier frequency: 95kHz. Deviation: ± 50 kHz. De-emphasis: 50 μ s. Acoustical system: dynamic driver, sound tubes to ears. Distortion at max. deviation: less than 3%. Audio frequency response: 100Hz-10kHz. Max. loudness: 104dB SPL. S/N ratio at 4m distance in normally lit room, facing transmitter 60dB. Facing opposite wall: 52dB. Weight: 65gm. Price: £49.00.

HD 224X ★

Moving coil headphone. FR: 16Hz-20kHz. Imp: 200 ohms. Weight: 252g. Black finish. Mono/stereo, enclosed. Price: £46.00 (plus VAT).

Unipolar ★

Electrostatic headphone. FR: 16Hz-22kHz. Imp: 4.8 ohms. Black finish. Electret. Fitted control unit. Price: £122.00 (plus VAT).



Sony ECR 400

■ SHARP

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

HP400

Stereo headphones. Fully adjustable slide fittings. Extra thick padding for comfort. Twin units in each earpiece. Independent volume controls. FR: 30Hz-20kHz. Complete with lead and jack-plug. Price: £20.00 (plus VAT).

■ SONY

Sony (UK) Ltd, London Showroom,
Consumer Information,
134 Regent Street, London W1R 6DJ
Tel: 01-439 3874.

DR9

Stereo headset with slider controls. Imp: 8 ohms. FR: 30-18,000Hz. Max. input: 0.3W. Weight: 520gm. No rec. retail price.

ECR 400 ★

Electret condenser stereo headphone. FR: 20Hz-20kHz. Imp: 30 ohms. Power handling: max. input to adaptor 12 VRMS. Finish in black and chrome. Weight: 430gm, adaptor 970g. Adaptor includes switch for headphone or speakers. No rec. retail price.

ECR 500

Electret condenser stereo headphone. FR:



Sony DR 25



Sony DR 6 M

20Hz-20kHz. Imp: 30 ohms at 1kHz. Power handling: max. input 12V 1kHz. Weight: 350gm, adaptor 1kg. Adaptor includes switch for headphone or speakers. No rec. retail price.

DR 6 M ★

Moving coil headphone. FR: 20Hz-20kHz. Imp: 1kHz, 20 ohms. Weight: 350gm. Black finish. Collapsible, polyester diaphragm, sealed unit. No rec. retail price.

DR 35 ★

Moving coil open air headphone. FR: 28Hz-18,000Hz. Imp: 25 ohms. Weight: 370gm. Black finish. No rec. retail price.

DR 45 ★

Moving coil open air microphone. FR: 20Hz-20kHz. Imp: 25 ohms. Weight: 370 gm. Black finish. No rec. retail price.

★ Indicates entry is illustrated



Sony DR 35



Stax SR 44

DR 25 ★

Moving coil headphone. FR: 50Hz-18,000Hz. Low impedance. Weight: 220gm. Black finish. Lightweight. No rec. retail price.

■ STAX

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

SR5/SRD 6SB

Stereo electrostatic headphones. FR: 30Hz-25kHz. Sensitivity: 96dB at 100V RMS input. Imp: 130K at 10kHz. Power handling: 8W continuous. Weight: 390gm. Finish: white, black leather, stainless steel. Supplied with SRD 6SB self energiser. Controls: switch on SRD6 headset or loudspeakers. Price: £88.75 (plus VAT).

SR44 ★

Stereo electret headphones. FR: 25Hz-25kHz. Sensitivity: 95dB at 100V RMS. Impedance: 150K at 10kHz. Power handling: 5W continuous, 30W momentary. Weight: 250gm. Finish: black. Supplied complete with SRD4 adaptor box for connection to loudspeaker output on amplifier. Controls: switch on SRD4 to select between headset and loudspeaker. Price: £68.50 (plus VAT).

SRX3

Stereo electrostatic headphones with SRD 65B self energiser. FR: 30Hz-27kHz. Sensitivity: 97dB at 100V RMS. Imp: 130K at 10kHz. Power handling: 8W continuous. Weight: 380gm. Finish: black/stainless steel. Supplied with SRD 65B self energiser. Controls: switch on SRD 65B for speakers or headset. Price: £147.25 (plus VAT).

■ TANDBERG

Tandberg (UK) Ltd, Farnell House, 81
Kirkstall Road, Leeds LS3 1HR.
Tel: Leeds 351111.

HD424

Light headphones supplied with 3m lead and DIN plugs or a 1/4in stereo jack. Imp: 2000 ohms. FR: 16Hz-20,000Hz. Price: £37.69 (inc. VAT).

HD414

Light headphones supplied with 3m lead and DIN plugs or a 1/4in stereo jack. Imp: 2000 ohms. FR: 20Hz-20,000Hz. Price: £26.44 (inc. VAT).

■ TANDY

Tandy Corporation (Branch UK),
Bilston Road, Holyhead Road,
Wednesbury, Staffs WS10 7JN.
Tel: 021-556 6101/2.

Tandy 14

Price: £10.95 (plus VAT).

Tandy 30

Price: £14.95 (plus VAT).

Custom Pro

Price: £17.95 (plus VAT).

Optimus Pro

Price: £21.95 (plus VAT).

Pro 10

Price: £26.95 (plus VAT).

Pro 1

Price: £39.95 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd, 107-109
Whitby Road, Slough, Berks. SL1 3DR.
Tel: Slough 27516.

EAH 300

New headphone design based on waveform fidelity and sound image location. Ergonomically designed for comfortable, fatigue-free fit. FR: 20Hz-20,000Hz. Sensitivity: 95dB/mW. Imp: 125 ohms. Weight: 260gm. Price: £43.95 (inc. VAT).

■ **TOSHIBA**

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

HR710

Electrostatic stereo headphones. FR: 20-35kHz. Sensitivity: 8-500 ohms. Power handling: 100V RMS. Weight: 240gm. Extra light-weight headset, electrostatic without need for power supply. Price: £22.00 (plus VAT).

HR811

Electret headphones. FR: 20Hz-30kHz. Imp: 8-600 ohms. Weight: 240gm. Black/silver finish. Adjustable impedance control for deck or amplifier. Price: to be announced.

HR-X1

Electret condenser type. FR: 20Hz-20kHz. Imp: 8-600 ohms. Weight: 160gm. Black/silver finish. Adjustable impedance control for deck or amplifier. Price: to be announced.

HR-D3

Moving coil headphones. FR: 20Hz-20kHz. Imp: 8 ohms. Weight: 240gm. Black/silver finish. Price: to be announced.

■ **TRIO**

B. H. Morris & Co. (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middx. HA0 1SU.
Tel: 01-902 9422.

KH 33

Moving coil polyester transducer. FR: 20Hz-20kHz. Imp: 30 ohms. Weight: 320gm. Black ABS finish. Slide-lock band adjusters. Price: £14.77 (plus VAT).

KH 53

Moving coil polyester transducer. FR: 20Hz-20kHz. Imp: 30 ohms. Weight: 320gm. Black ABS finish. Individual compress controls for each earpiece. Price: £22.37 (plus VAT).

■ **UHER**

Uher 28 Spencer Street,
St. Albans, Herts.
Tel: St. Albans 30236/7.

W674

Stereo moving coil headphones. FR: 20Hz-20kHz. Fitted with DIN loudspeaker plugs. Price: £23.77 (plus VAT).

W675

Stereo moving coil headphones. FR: 20Hz-20kHz. Fitted with DIN 5-pin headphone plug. Price: £23.77 (plus VAT).

W676

Moving coil headphones. FR: 20Hz-20kHz. Fitted with standard 1/4in stereo jack plug. Price: £23.77 (plus VAT).

W775

Multi-membrane. FR: 16Hz-20kHz. Imp: 600 ohms. Weight: 330gm. Black finish. Half open, 1 active 6 aux. membranes per system. Price: £46.33 (plus VAT).

**BADGES — CONTROL
PANELS — ENGRAVING —
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DESCRIPTIONS IN MOST
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METAL, INJECTION
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I. MARKOVITS LTD.

Cobbold Mews London W12
Telephone 01-743 1131/2 01-743 1313

★ Indicates entry is illustrated



Videotone HP 80



Videotone HP 90

■ VIDEOTONE

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

HP 80 ★

Moving coil with closed earpieces. FR: 16Hz-22kHz. Imp: 8 ohms. Weight: 350gm. Black finish. Price: £11.90 (plus VAT).

HP 90 ★

Moving coil with open earpieces. FR: 15Hz-25kHz \pm 5dB. Imp: 120 ohms \pm 10 ohms. Weight: 250gm. Black finish. Price: £17.00 (plus VAT).

Hi Fi Cabinets

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ ACCUPHASE

Pyser A/V Ltd, Fircroft Way,
Edenbridge, Kent. Tel: Edenbridge 86411.

A2

Walnut cabinet for Accuphase models C200 pre-amp, P300 power amp. Price: £37.50 (plus VAT).

A3

Walnut cabinet for Accuphase models E202 amp, T101 tuner. Price: £37.50 (plus VAT).

■ ADASTRA

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

B11 Plinth and Cover

General purpose plinth with special cut out to receive most Garrard and BSR McDonald player decks. Plinth is moulded with textured black base and simulated wood top. Lift-off styrene lid in smoke-tinted finish. Overall size: 14¼ × 13¾ × 7in. Clearance above board: 4½in. Clearance below board: 2in. Price: £7.32 (plus VAT).

R120/R121 Wood storage cabinet

To take 32 compact cassettes or 24 8-track cartridges (R121). Lift off/hinged smoked cover, moulded compartment tray and rubber protective feet. Finish: rosewood, teak or white. Price R120 £9.52 (plus VAT). R121 teak only. Price: £10.08.

R104 Cabinet

Holding a total of 69 compact cassettes in slide drawer and top compartment with removable cover. Teak finish with silver trim. Price: £17.25 (plus VAT).

R108 Storage Cabinet

Combined record and cassette storage cabinet offered in kit form. Will hold 69 cassettes in upper compartment and up to 150 LP's plus additional storage for audio accessories. Teak finish. Lift-off hinged lid. Price: £33.00 (plus VAT).

■ A/R/D

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

4000

Contemporary table top cabinet designed to match the A/R/D amplifier and tuner. Accommodates most player decks, lift up or lift off lid. Finish brush-anodised aluminium. Price: £40 (plus VAT).

■ BIB

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts HP2 4RQ.
Tel: Hemel Hempstead 61291.

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 (inc. VAT).

■ CAMBRA

Cambra International Ltd,
260 Church Road,
Leyton, London E10 7JQ.
Tel: 01-556 1916.

Model 88

Record and cassette storage unit taking up to 69 tapes and 100 LP records. In self-assembly form. Further details on request.



Cambra 84

★ Indicates entry is illustrated

Model 84 ★

Record and cassette storage unit taking up to 84 tapes and 100 LP records. In self-assembly form. Further details on request.

Model 82 ★

Record and cassette storage unit taking up to 84 cassettes and 200 LP records. In self-assembly form. Further details on request.

Model 25

Revolving cassette home storage unit holding 40 tapes in individual compartments. Available in choice of finishes: teak, white, rosewood and walnut. Further details on application.

No. 13

Domestic cassette storage cabinet taking 32 tapes. In teak, white, rosewood or walnut. Translucent hinged lift-off lid. Further details on application.

No. 69

Deluxe cassette cabinet holding 69 tapes firmly in separate divisions. Top section takes 36 and a further 33 are held in the drawer. Teak-effect with translucent hinged lift-off lid. Also available in walnut-effect. Further details on application.

■ **CLICK SYSTEMS LTD**

Low Moor Road,
Kirkby-in-Ashfield, Notts NG17 7LH.
Tel: Mansfield 754012.

Shelving Systems ★

Click shelving systems are ideal for carrying Audio equipment. They are easy to install and there are no slots to line up. The strong rigid brackets click-in at any height, and cables are carried inside the uprights. Lamps and switches can be fixed wherever needed. Click claims that wall-mounted shelves provide better insulation from vibration. They are infinitely adjustable for height, provide lamps and switches as part of the range. Prices and leaflets on application.

■ **CROWN MERTON**

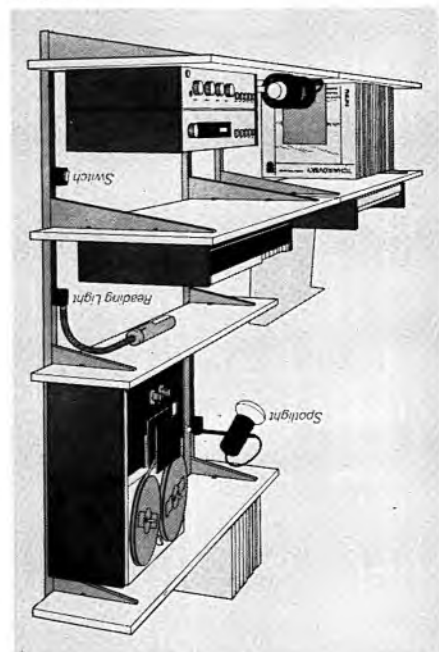
T.1. Crown Merton Ltd,
Station Road, Merton Abbey,
London SW19 2NJ.
Tel: 01-542 1012.

Cassette 72 Ref 5135

Cassette cabinet featuring six separate drawers holding 12 cassettes each — total 72. Each drawer pulls out for easy access of tapes. Specially designed for multi-stacking. Price: £18 00 (plus VAT)



Cambra 82



Click Shelving

■ **CURB HI-FI**

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

Hi-Fi Equipment Desk ★

Swedish design available in five wood veneers — teak, dark oak, walnut, rosewood, jacaranda and black and white. Dimensions: 40 × 48.5 × 99cm. Price: £98.67, rosewood, £70.78 other finishes (plus VAT).

Hi-Fi Equipment Desk ★

As above but in 140cm length. Price: £107.25 rosewood, £77.22 other finishes (plus VAT).

RT/03 Record storage trolley

A stove enamelled strong welded steel frame, having real wood veneers inlaid each end and on the base. A wood veneer top, two divider panels and castors complete the unit. Various finishes. Size: 19 x 13 x 17 1/4 in. Price: £34.50 (plus VAT).

MS/1 Music Centre Stand

Strong welded steel section stand. Universal fitting, adjustable for various sizes. Padded support brackets and finished in black. Castors included. Price: £16.45 (plus VAT).

DESIGNCRAFT

Q.E.D. Audio Products Ltd,
112 Windmill Road, Sunbury-on-Thames,
Middlesex TW16 7HD.
Tel: Sunbury 87344/5.

12/S ★

Hi-Fi storage system finished in real polished teak and specifically designed for housing Hi-Fi equipment and LP records. The method of construction allows additional shelves to be added as and when required. Suitable for housing a receiver, record player deck and space for 100 LP's. Dimensions: 66 x 60 x 50.5cm. Price: £59.00 (plus VAT).

12/M

Similar to 12/S except that it is suitable for storing 100 LP's and will house a record deck, tuner-amp and cassette deck. Dimensions: 100.5 x 60.5 x 50.5cm. Price: £86.07 (plus VAT).

ENCORE

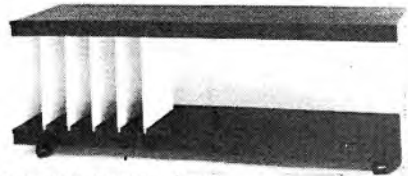
Artifact Designs Ltd,
35 Queen Street, Henley-on-Thames,
Oxfordshire RG9 1AR.
Tel: Henley (049 12) 6037/8.

Record Storage ★

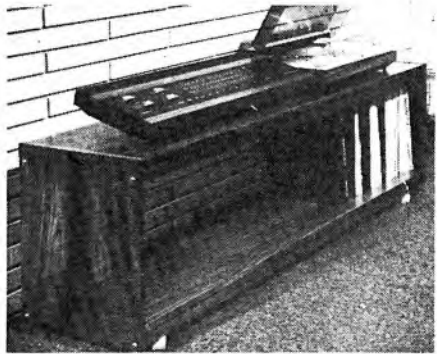
Encore keeps records vertical and easy to classify. Made of injection moulded 4mm polystyrene in smoke grey with white toughened polystyrene spacers. Each bay holds up to 20 LP's and if you start with the 5 bay set additional pairs of extensions can be added as needed. Encore can be stacked up to three tiers high or converted into an audio trolley by means of optional castors. Comes in easy-carry carton for self-assembly. Dimensions: 36.5 x 33 x 40cm. Price: £16.20 (plus VAT).

Cassette Holders ★

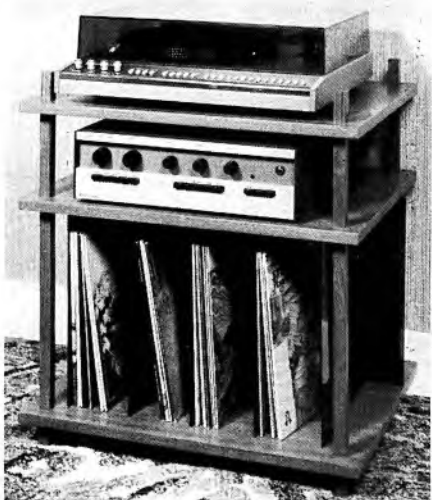
Sleek, durable aluminium holder for cassettes in their library cases. Finish is brushed and anodised with smoke grey plastic fins holding



Curb Hi-Fi Equipment Desk



Curb Hi-Fi Equipment Desk

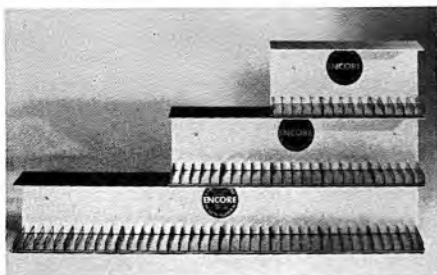


Designcraft



Encore Cassette Holders

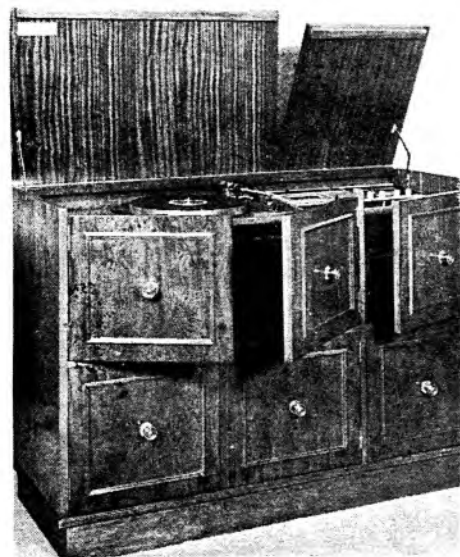
★ Indicates entry is illustrated



Encore Record Storage



Holder Pearce Vulcan



Holder Pearce The Berwick

15, 25 and 40 cassettes. A no. 8 c/sunk screw will fit the two drilled holes provided for wall-mounting. If used free standing, rubber feet prevent surface scratching. Dimensions: 13.5 x 7 x width (31, 52 or 82) cm. Prices: £5.83, £8.38, £11.58 (plus VAT).

■ 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.

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.

Berwick ★

In rich yew tree veneers, Berwick has full width continuous top shelf to house record-player and tape recorder side by side, space below for amplifier and tuner units and two lift-up lids above shelf for easy access to both units. Bottom section has record divisions in right hand cupboard and one removable adjustable shelf at left, although this space may be used alternatively for record storage if required.

Mayfield ★

For comprehensive Hi-Fi equipment. Mayfield is an extended version of Alfriston model, but in this case allows record player and tape recorder to be placed side by side on one level. Finished in yew tree veneers, special features include two lift-up lids and double pull-down flaps below which provide access to front controls. The lower section has two adjustable, removable shelves for housing



Holder Pearce The Mayfield



Holder Pearce Queen Anne I



Holder Pearce Queen Anne II

amplifiers and tuner units, or record storage. Right hand lower cupboard is fitted with three record divisions with useful accessory storage shelf above. Price: on request.

Queen Anne I ★

Compact cabinet suitable for housing music centre in selected Burr walnut veneers. Hand carving to top and bottom rail and to legs. Lift-up lid and fall flap. Made to special order and required sizes.

Queen Anne II ★

Larger version of Queen Anne I with two lift-up lids, two fall flaps and record storage in lower cupboard. Made in selected Burr walnut or Curl Mahogany veneers, hand carving to top and bottom rail and to legs. Made to special order and individual sizes.

■ **ITT**

ITT Consumer Products (UK) Ltd,
Chester Hall Lane, Basildon,
Essex SS14 3BW.
Tel: Basildon 3040.

Rack

Teak veneered rack suitable for housing 2 or 3 units of the ITT 80 range. Glass door to record storage compartment which has capacity for 100 records and 30 cassettes. No rec. retail price.

■ **MARANTZ**

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

This new series of walnut cabinets has been developed for use with new Marantz components and are designed to give Marantz units a fresh modern look complementing their dramatic new styling. Because of the knock-down aspect of the design, these cabinets can be produced at a significantly lower price, increasing their marketability as accessory items.

The cabinet is composed of 3 basic parts. One top panel and 2 side panels — all mounting hardware is included. The unit can be easily assembled and is finished in genuine hand-rubbed oiled walnut veneer.

The new cabinets and the models they are designed for are as follows:

WC-110

1090, 1122DC, 1152DC, 1180DC, 1260DC, and 170DC.

WC-116

2216, 2216B, this unit will also fit Model 2215B.

★ Indicates entry is illustrated

WC-121
2140

WC-122
2226, 2226B, 2238, 2238B, 2252, 2252B, 2265, 2265B, 2285, 2285B. This unit will also fit older stereo receivers 2220B-2275 and Quadradial receivers 4230-4270.

WC-123
2330, 2330B. This unit will also fit Models 2325, 4300 and 4400.

WC-124
2385 and 2500.

WC-136
3250, 2100 and 2120

WC-153
5010, 5020 and 5030.
2215B, 2220-B-2275, 4230-4270, 4400 units have walnut grained metal cabinets, whereas all new components have a black metal finish.

■ **NATIONAL PANASONIC**
National Panasonic (UK) Ltd,
107-109 Whitby Road,
Slough, Berks SL1 3DR.
Tel: Slough 27516.

HFS 24
Upright rack-type stand with record rack. Finished in black and simulated rosewood and mounted on castors. Height: 99.7cm, width 45.7cm, depth 39.4cm. Price: £39.96 (plus VAT).

MS 50
Trolley type music centre stand with record rack. Finished in black and simulated rosewood, castor mounted. Price: £20.40 (plus VAT).

■ **PAGEENTRY RADIO & TV CO LTD**
104 Felsham Road, London 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 cabinets including prices and delivery available on request.



Pageentry Cabinet



Pioneers RMS 1

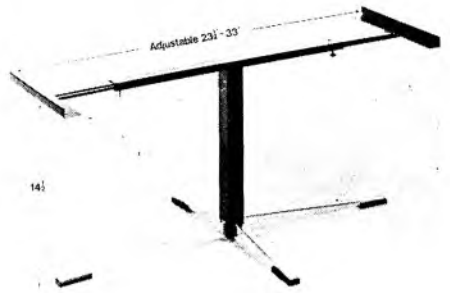
■ **PIONEER**
Shiro (UK) Ltd,
Shiro House, The Ridgeway,
Iver, Bucks.
Tel: Iver 652222

RMS 1 Rack Mounting Units ★
Simple and economical rack mounting unit capable of housing a Hi-Fi system of turntable, amplifier, tuner and cassette unit. It is flexible and allows for many combinations of equipment with easy access to both front and rear of all units.

■ **REVOX**
F.W.O. Bauch Ltd,
49 Theobald Street, Boreham Wood,
Herts WD6 4RZ.
Tel: 01-953 0091.

Audio Rack

Designed to accept individual system components of the A and B series. Rigid Nextel coated steel construction, oak veneered cabinet with smoke-tinted glass doors and separating panels for storing tapes and discs. Adjustable shelf spacing, interconnecting cables concealed in the upright struts. Each component connects directly to the rack with only one power cord. Price: £99.00 (plus VAT).



Sonic Stand from Selmor

■ **SELMOR**

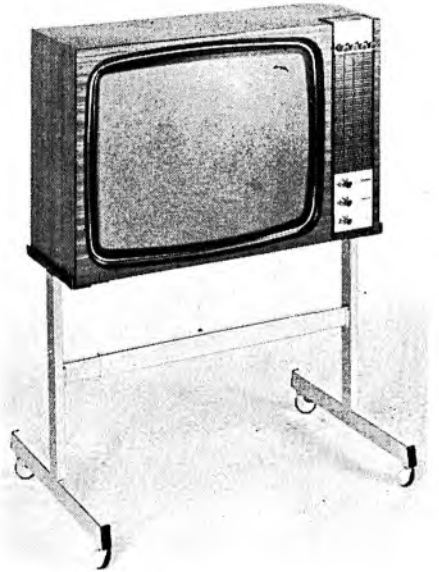
Selmor Engineering Industries Ltd,
24 Mulberry Street, Tower Hamlets,
London E1 1EH. Tel: 01-247 3344.

Hi-Fi Trolley Stand

Mounted on castors with shelves and fitted dividers for record storage. Teak finished shelves and five removable metal dividers. Price: £10.00 (plus VAT).

Sonic Stand ★

With long low look for added stability and smarter appearance, designed to take full range of width and weight of modern Music Centres and larger Hi-Fi Units. Made of high grade steel with ribbed plastic edging and legs of polished chrome. Easily assembled. Price: £5.90 (plus VAT).



Merlin Stand

Merlin Adjustable Stand ★

For TV or Hi-Fi equipment. Steel with silver finish to simulate brushed aluminium. Stand consists of three parts, two uprights and adjustable crossbar. Height: 40 cm. Price: £5.00 (plus VAT).

SL Audio Hi-Fi Stand

Aluminium base on castors. Width adjustable 45.7-71.1cm. Height 43.1cm. Assembled without tools. Supplied in knock-down form. Upright and top in black epoxy powder. Price: £6.00 each (plus VAT).

SU 100

Attractive audio stand and storage unit for records and cassettes. Slanted cassette rack for easy identification. Will hold up to 36 cassettes. Adjustable record dividers hold up to 100 LP records and dividers are also supplied for 45 rpm records. Finish: silver coloured record and cassette dividers. Black support arms and legs fitted with easy glide castors. Table surface finished in teak effect wood-grain. Dimensions: 52 x 86 x 41cm. Price: £12.00 (plus VAT).



Solus Profile Cassette Cabinet

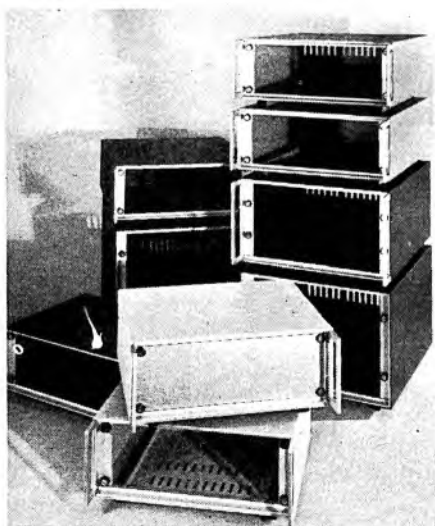
★ Indicates entry is illustrated



Sony TAC 16 side panels



Sony SU 775



Vero Equipment Cases

■ SOLUS

Solus Products, Post Office Lane,
Market Harborough,
Leicester LE16 7EA.
Tel: 0858 66242.

Profile ★

Cassette cabinet holds 36 cassettes.

■ SONY (UK) LTD.

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

TAC 16 ★

Set of wooden side panels designed for use with TC209, 229, EL5, 7. Dimensions: 17×31 cm. No recommended retail price.

SU 2700

Teak finished cabinet suitable for mounting a range of Sony Hi-Fi equipment. Dimensions: 94 × 75 × 49cm. No rec. retail price.

SU 358

Glass and chrome trolley unit suitable for mounting Sony Hi-Fi separates. No rec. retail price.

SU 775 ★

An audio stand specially designed for the HMK55 and HMK77 music centres. Teak finish. No rec. retail price.

■ VERO

Vero Electronics Ltd, Industrial Estate,
Chandler's Ford, Eastleigh, Hants SO5 3ZR.
Tel: Chandler's Ford 2956.

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 catalogue of Vero 'D' series cases.

C.H.B. SUPPLIES LTD

SPARES ARE IMPORTANT

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GLENBURN
A. D. C.**

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their ears!**

Wireless World

**for people who read
and think as well as listen**

The leading UK journal
on audio Hi-Fi and electronics technology

Abbreviations

A	- - ampere	LW	- - long waves (approx 1100-2000m)	VAT	- - Value added tax
A-B	- - comparison test	m	- - metres	VHF	- - very high frequency (VHF radio approx 88-108MHz, VHF TV approx 174-216MHz)
AC	- - alternating current	M	- - megohms (millions of ohms)	V	- - volts or voltage
AFc	- - automatic frequency control	mA	- - milliamps (0.001A)	VA	- - volt/ampere
AGC	- - automatic gain control	mag	- - magnetic	vci	- - voice coil impedance
AM	- - amplitude modulation	ME	- - magic eye	VU	- - volume units
ASA	- - Acoustical Society of America	MC	- - moving coil		
aux	- - auxiliary	mg	- - milligram	W	- - watts
		MHz	- - megahertz (see Hz)	W and F	- - wow and flutter
BAF	- - bonded acetate fibre	mic	- - microphone		
		MOS	- - metal oxide semiconductor	xtl	- - crystal (pickup or microphone)
CCIR	- - International Radio Consultative Committee	mpx	- - multiplex		
char	- - characteristic	mV	- - millivolts (0.001V)	Z	- - impedance
cm	- - centimetre	MW	- - medium waves (approx 185-570m)		
c/o	- - cut-off frequency			Miscellaneous	
coax	- - coaxial	N	- - newton (SI unit of force).	%	- - per cent
		NAB	- - National Association of Broadcasters (see also NARTB)	<	- - greater than
dB	- - decibel	NARTB	- - National Association of Radio and Television Broadcasters (USA)	>	- - less than
dBm	- - decibel/milliwatt	NL	- - noise level	±	- - plus or minus
DC	- - direct current	PA	- - public address	≧	- - equal to or greater than
deg	- - degrees	Pat	- - power available for tuner	≦	- - equal to or less than
det	- - detector	pF	- - picofarad (10 ⁻¹² farad)	μ	- - mu (micro or millionth)
DIN	- - Deutscher Industrie Normen (German audio standards)	PPM	- - peak programme meter	μA	- - microamp.
disc	- - discriminator	Psn	- - power supply needed	μV	- - microvolt
FET	- - field effect transistor	PU	- - pickup cartridge	μbar	- - microbar (air pressure equal to 1 dyne/cm ²)
ffss	- - 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		
		Replay char	- - replay characteristic		
gm	- - gramme	RIAA	- - Record Industry Association of America		
HC	- - handling capacity	RMS	- - root mean square (0.707 peak value of AC)		
HD	- - harmonic distortion	rpm	- - revolutions per minute		
HF	- - high frequency	sec	- - second (time)		
H & N	- - hum and noise	sel	- - selector switch		
Hz	- - hertz (cycles per second)	S/N	- - signal-to-noise ratio		
		SW	- - short waves (approx 10-60m)		
IC	- - integrated circuit	THD	- - total harmonic distortion		
IEC	- - International Electro-technical Commission	thou	- - thousandths of an inch (0.001 in)		
IF	- - intermediate frequency	tpi	- - turns per inch (screw threads)		
IHFm	- - Institute of High Fidelity (USA)	UHF	- - ultra high frequency (approx 470-854MHz)		
imp	- - impedance				
in	- - inches				
ind	- - indicator				
i/s	- - inches per second				
K	- - kilohms (thousands of ohms)				
kgm	- - kilogramme				
kHz	- - kilohertz (see Hz)				
lb	- - pound (weight)				
L/C	- - inductance/capacitance				
LED	- - light emitting diode				
LP	- - long play (records or tape)				

Magnetic Tape

★ Indicates entry is illustrated
Abbreviations used in this section are given on page 140.

■ AGFA-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 £3.43; 15cm 360m £3.94; 18cm 540m £5.67; 26cm 1280m £14.76; 26cm 1280m £16.98. All prices plus VAT.

PE46

Low-noise, triple-play tape supplied in plastic library case. 13cm 360m £4.06½; 15cm 540m £5.67; 18cm 720m £7.03. All prices plus VAT.

PE66

Low-noise, triple-play tape supplied in plastic library case. 13cm 540m £5.89; 15cm 720m £7.90½; 18cm 1080m £8.83. All prices plus VAT.

PEM368 ★

Low-noise, long-play, matt-backed tape supplied in plastic library case. Metal spools: 13cm 270m £4.97½; 18cm 540m £7.95; 26cm 1100m £18.58½; Plastic spools: 13cm 270m £4.10½; 18cm 540m £6.81; 26cm 1100m £15.37½. All prices plus VAT.

PEM268 ★

Low-noise, double-play, matt-backed tape supplied in plastic library case. Metal spools:



Agfa 368 & 268

13cm 320m £5.84½; 18cm 640m £9.82; 26.5cm 1280m £21.24. Plastic spools: 13cm 320m £4.87½; 18cm 640m £8.41; 26.5cm 1280m £17.71. All prices plus VAT.

Compact Cassettes

Ferro colour. C60 (2 × 30min) £1.09; C90 (2 × 45min) £1.48½; C120 (2 × 60min) £2.23. All prices plus VAT.

Cassette Album

Three C60 plus three C90 cassettes £7.51½. 10-pack (10 × C60) in case £9.20½. 10 pack (10 × C90) in case £12.24. All prices plus VAT.

Stereochrom ★

Chromium dioxide tape cassette. C60 (2 × 30min) £2.03½; C90 (2 × 45min) £2.54½; C120 (2 × 60min) £3.05½. All prices plus VAT.

Carat

Carat C48 £1.64½, C60 £2.42, C90 £3.05½.

Super Ferro Dynamic ★

C60 + 6 £1.48½. C90 + 6 £1.99 C120 £2.62. All prices VAT.



Agfa Stereo Chrom



Agfa Super Ferro Dynamic

★ Indicates entry is illustrated

■ AMPEX GREAT BRITAIN LTD

Acre Road, Reading, Berks RG2 0QR.
Tel: Reading 85200.

Magnetic recording tape for every domestic and professional application, in various cassette, open-reel and cartridge configurations. Prices and details of specifications on request.

■ AUDIO MAGNETICS

AMSA Magnetics Ltd, Loverock Road,
Reading, Berks. RG3 1JZ.
Tel: Reading (0734) 598036.

Plus ★

High quality at low price for use on many cassette decks, including most portables. Built in head cleaner. C 60 — 75p; C 90 — 95p. C 120 — £1.30.

Extra Plus ★

High quality at low price with exclusive jam-proof mechanics and built in head cleaner. 10% extra time. C 66 — 90p; C 99 — £1.20.

Super

High density ferric oxide cassette. Suitable for use on most low/medium biased cassette decks. Exclusive jamproof mechanics. Built-in head cleaner. C 60 — £1.15; C 90 — £1.55; C 120 — £2.05.

XHE★

Extra high energy ferric oxide cassette. Suit-

able for use on most medium/high biased cassette decks. Exclusive jamproof mechanics. Instant start recording. C 45 — £1.50. C 60 — £1.70. C 90 — £2.25. C 120 — £2.95.

Cartridges

Audio 45 minute — £1.76. Audio 90 minute — £2.27. XHE 45 minute — £2.39. XHE 90 minute — £2.88.

Reel to Reel

SP 1200ft — £6.81. LP 1800ft — £8.46. DP 2400ft — £10.97.

■ BASF UNITED KINGDOM LTD

Audio/Video Tapes Division,
2-4 Fitzroy Street, London W1P 5AD.
Tel: 01-637 8971.

LP35 LH Long Play Tape

Long play, low noise, high output. In plastic swivel box: 5in. 900ft £3.78; 5³/₄in. 1200ft £4.62; 7in. 1800ft £6.06. All prices plus VAT.

DP26 LH Double Play Tape

Double play, low noise, high output. In plastic swivel box: 5in. 1200ft £4.62; 5³/₄in. 1800ft £6.30; 7in. 2400ft £7.70. All prices plus VAT.

TP18 LH Triple Play Tape

Triple play, low noise, high output. In plastic swivel box: 5in. 1800ft £6.54; 5³/₄in. 2400ft £8.04; 7in. 3600ft £10.10. All prices plus VAT.



Audio Magnetics range

LP35 LH Super Long Play Tape

Super low noise, high output, long play. In plastic swivel box: 5in. 900ft £4.08; 5³/₄in. 1200ft £4.88; 7in. 1800ft £6.88. All prices exclude VAT.

DP26LH Super Double Play Tape ★

Super low noise, high output, double play. In plastic swivel box: 5in. 1200ft £5.28; 5³/₄in. 1800ft £7.68; 7¹/₂in. 2400ft £9.48. 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 £5.88. In soft plastic box, metal spool 7in. 1770ft £8.64; 10¹/₂in. 3610ft £16.70. All prices plus 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 £10.16; 8³/₄in. 3000ft £12.94; 10¹/₂ 4200ft £19.70. All prices plus VAT.

LH SM Compact Cassettes

BASF LH tape with special mechanics in snap pack box: C30 82p; C60 £1.02; C90 £1.38; C120 £1.92. All prices plus VAT.

LH Super SM Cassettes

Incorporates BASF special mechanics for smooth winding and avoidance of jamming, in snap pack box: C60 £1.32; C90 £1.76; C120 £2.32. All prices exclude VAT.

Chrom Dioxide Cassettes

Incorporated BASF special mechanics, CrO₂ tape. better dynamic range, lower background noise. when used with suitable machines, in snap pack box: C60 £1.94; C90 £2.42; C120 £3.14. All prices exclude VAT.

8-track Cartridges (unrecorded)

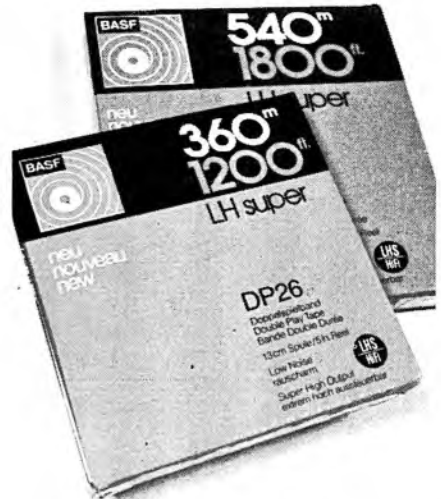
45min £1.98; 64min £2.18; 90min £2.48. All prices exclude VAT.

Ferrochrom Cassettes ★

Dual oxide cassette in snap pack. C60 £2.20, C90 £2.86.

Ferro Super LH I Cassettes ★

High bias cassette for widest possible range of Japanese recorders. Very low noise level and improved HF response. With BASF special mechanics in snap pack. C60 £1.66; C90 £2.22; C120 £2.90. All prices plus VAT.



BASF DP 26 LH Super



BASF Ferrochrom



BASF Ferro Super LH 1

★ Indicates entry is illustrated



Contek LN



Fuji FX

■ **CONTEK MAGNETICS LTD**

32 Eveline Road, Mitcham, Surrey.
Tel: 01-648 5156.

Contek Collection

Contek LN + high quality, low noise cassettes available in: C. 60 £1; C. 90 £1.37; C. 120 £1.93. All prices plus VAT.

Contek UHE

Ultra High Energy ferric oxide cassettes available in: C. 60 £1.38; C. 90 £1.67; C. 120 £2.65. All prices plus VAT.

Contek CrO₂

Chromium dioxide cassette available in: C. 60 £1.65; C. 90 £2.08. All prices plus VAT.

Contek Audiogold International Low Noise Cassettes ★

Available in: C. 60 75p; C. 90 £1; C. 120 £1.25. All prices plus VAT.

■ **FUJI**

Pyser Ltd, Fircroft Way,
Edenbridge, Kent TN8 6HA.
Tel: Edenbridge 864111.

FL Super Low Noise

FL C30 57p; FL C60 79p; FL C90 £1.13; FL C120 £1.52.

FX Pure-Ferrix-Wide Range ★

FX C46 95p; FX C60 £1.19; FX C80 £1.49; FX C90 £1.66.

8-Track Cartridge

FX C90 £1.76; FX C90 £2.16.

FM Low Distortion Ferric Oxide

FM900 £2.48; FM 1200 £2.99; FM 1800 £3.87.

FG High Sensitivity High Output Ferric Oxide

FG 1200 £3.43; FG 1800 £4.46; FG 3600 £14.54.

FB 151 Master Recording Tape Back Coated

FB 1200 £4.31; FB 1800 £6.14; FB 3600 £17.46. All prices include VAT.

■ **GRUNDIG INTERNATIONAL LTD**

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

GDR 18 Hi-Fi

640m on 18cm metal spool.

GDR 18 Hi-Fi Studio

640m on 18cm metal spool.

GDR 22 Hi-Fi Studio

900m on 22cm metal spool.

C60 LHS

Compact cassette. 60 minutes playing time.

C90 LHS

Compact cassette. 90 minutes playing time.

C60CR

Compact cassette. 60 minutes playing time.

C90CR

Compact cassette. 90 minutes playing time.
Price list on request.

■ **HITACHI**

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

Low Noise

C60-81p; C90-£1.24; C120 £1.62.

Ultra Dynamic

UDC 60 £1.33; UDC 90 £1.62; UDC 120 £1.90.

■ **LEDA**

Leda Tapes, 75 Holloway Road,
London N7 8JZ.
Tel: 01-607 4420.

Cassette Tapes

Super low noise blank cassette tapes: C60-89p,
C90-£1.09.

■ **MAXELL**

Natural Sound Systems, 10 Byron Road,
Wealdstone, Harrow Middx. HA3 7TL.
Tel: 01-863 8622.

Super Low Noise

SLN C60 0.95p; SLN C90 £1.25; SLN C120
£1.70.

Ultra Dynamic Cassettes

UDC 46 £1.27; UDC 60 £1.43; UDC 90 £1.87;
UDC 120 £2.42; UDXL C60 £1.87; UDXL C90
£2.34.

Ultra Dynamic Open Reel Tape Matt-Black

UD35-90B £5.08; UD 50-120B £10.80; UD
35-180B £11.60.

Ultra Dynamic Open Reel Tape

UD 35-90 £4.60; UD 50-120 £8.95; UD 35-180
£9.90. All prices plus VAT.

■ **MEMOREX**

Memorex (UK) Ltd, Hoechst House,
50 Salisbury Road, Hounslow West,
Greater London. Tel: 01-570 7716.

MRX₂ Cassettes ★

C45 £1.38; C60 £1.46; C90 £2.02; C120 £2.76.
All prices plus VAT.

CrO₂ Cassettes ★

CC45 £1.88; CC60 £2.00; CC90 £2.86. All
prices plus VAT.



Memorex MRX₂ cassettes



Memorex Chromium Dioxide Cassettes



Memorex Open Reels



Musonic

Open Reels ★

7in. x 1200ft £5.44; 7in. x 1800ft £6.36; 7in. x
2400ft £8.58. All plus VAT.

Quantum Open Reels

90-7in. x 1800ft £8.28; 120-7in. x 2400ft
£11.14; 180-10½in. x 3600ft £19.86.

Blank 8-Track

45 min £2.44; 60 min £2.64; 90 min £2.80. All
plus VAT.

■ **MUSONIC**

S. & B. Trading, Stylus House,
34-38 Verulam Road, St. Albans,
Herts AL3 4DF.
Tel: St. Albans 50611.

★ Indicates entry is illustrated

MT1 ★

C60 Professional low noise cassette. No rec. retail price.

MT2 ★

C90 Professional low noise cassette. No rec. retail price.

MT3 ★

C120 Professional low noise cassette. No rec. retail price.

MT4

8-track cartridge. 80 minutes. No rec. retail price.

■ ORPHEUS

SGM Electronics, 4a Lenten Street,
Alton GU34 1HG.
Tel: Alton 82882.

Chrome

CD 60 75p; CD 90 99p.

High Energy

HE60 54p; HE90 69p; GE120 84p.

Low Noise

LN 60 44p; LN 90 62p; LN 120 74p.

■ PHILIPS

Philips Electrical Ltd, Video Division,
19 Commerce Way, Purley Way,
Croydon, Surrey.
Tel: 01-688 7766.

Long Play (Red) in library case

Coercivity 26A/m, retentivity 950G, tensilised polyester base, S/N at 3³/4i/s better than -58dB, print-through less than 55dB, relative frequency response 333Hz-12.5kHz. Price: 5in. 900ft £4.00; 5³/4in. 1200ft £4.94; 7in. 1800ft £6.36. All prices include VAT.

Double Play (Blue) in library case

Coercivity 26A/m, retentivity 950G, tensilised polyester base, S/N at 3³/4i/s 58dB, print-through less than -55dB, relative frequency response 333Hz-12.5kHz. Price: 5in. 1200ft £4.94; 5³/4in. 1800ft £6.36; 7in. 2400ft £8.00. All prices include 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) £1.18, C90 (1½ hours

playing time) £1.62; C120 (2 hours playing time) £2.17. All prices include VAT.

CrO₂ 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) £2.05. C90 £2.59. All prices include VAT.

LGH 2000 Endless Loop cassette CE. 10

Approximate playing time: 40 minutes at 1⁵/₄i/s. Approximately 195ft. Price: £4.33 (including VAT).

Hi-Ferro

Polyester base. Bias adjustment. 0dB maximum output level (MOL) at 333Hz +2.5dB. Maximum output level (MOL) at 8kHz -9dB. Relative frequency response (RFR) at 10kHz +1.0dB. Relative tape sensitivity (RTS) at 333Hz 0dB S/N 55dB. Prices: C60 £1.47; C90 £1.85; C120 £2.46. All prices include VAT.

■ PROFESSIONAL TAPE MARKETING ASSOCIATES LTD

Cassette House, 57 Manor Park Crescent,
Edgware, Middlesex HA8 7LY.
Tel: 01-951 0488.

New Style for High speed duplication

New style cassette specially designed for high speed duplication. Non-jamming with PTFE type foils, it can be custom made to any required length from C3 to C96. Each cassette carries an unconditional 10 year guarantee against any manufacturing fault and is precisely loaded to -0 seconds/+10 seconds. Screwed assembly allows tape salvage in the event of accidental damage. This custom-made service normally takes no more than 3 days helping In-Cassette duplicators, Studios and A/V Companies who can now buy tape — without paying for more than they actually need. In fact these cassettes, which are of exceptionally high quality, are probably the lowest priced available on the market. They are also available in 11 standard lengths from stock, from C5 to C90.

Professional Cassettes

In C60 and C90 lengths complete with side labels, in-lay cards and library cases. The cassettes are packed in a special storage rack, holding 8 cassettes, which interlocks with other racks to form a storage/library unit. The same cassettes can also be supplied separately

with the PIMA brand label or the customer's own brand. The minimum quantity for private brand cassettes is only 250.

Broadcast Cartridges

Broadcast cartridges at competitive prices meet the new NAB type 'AA' standards. They are also compatible with 'A' transports. Although new to the UK they are already in use in hundreds of radio stations around the world.

Endless Loop Cassettes

A new line of Endless Loop cassettes at what is believed to be the lowest price in Europe. They are available at £1.95 for 3 minutes and £2.25 for 6 minutes.

■ **REVOX**

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

Low-Noise 621

Professional sound recording tapes featuring low-noise oxide with high signal output. Wide dynamic range. Antistatic backing. 42073, 601 Novodur £12.19 (plus VAT), 42092, 601 Metal Black £14.41, 42094, 601 Metal Silver £14.41, 42074, 621 Novodur £12.19, 42093, 621 Metal Black £14.41, 42095, 621 Metal Silver £14.41.

■ **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: LC30 38p; C60 50p; C90 72p; C120 88p. (All prices plus VAT).

Ross 66, MC.40 Microcassette

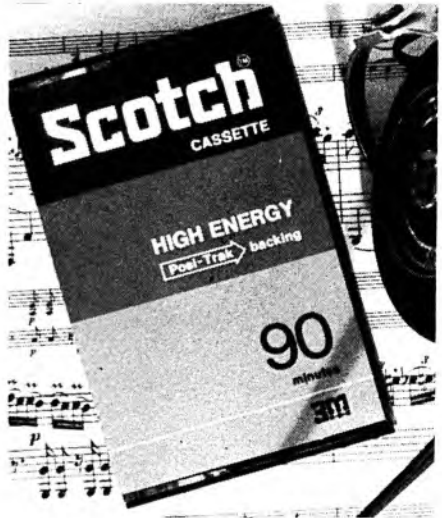
With clear plastic library case and index card. Playing time 20 minutes each side. PriceG £1.24 (plus VAT).

Ross 33 Series Superpacks ★

Ross 33 Series superpacks each contain six 33 Series cassettes plus a free add-on storage rack; six-hour superpacks contain six C60 cassettes, nine-hour superpacks contain six C90 cassettes. Ross 33 Series high-output, low-noise cassettes feature high-grade mechanics, 5-screw fixing and hard window, and a special case design that minimizes the possibility of tape escape and jamming. Each is finished in white plastic and supplied in a white library case with clear window with index card. Ross



Ross Series 33 Superpacks



Scotch High Energy

33 Series cassettes complement, and in no way supersede, Ross 66 Series cassettes. Price: Six-hour Superpack £2.88 (plus VAT); nine-hour Superpack £3.96 (plus VAT).

■ **SCOTCH**

3M United Kingdom Ltd, 3M House, Wigmore Street, London W1A 1ET.
Tel: 01-486 4522.

Cassette:

Low Noise Dynarange

C60 £1.10; C90 £1.56; C120 £2.18 (plus VAT).

High Energy 'Super Ferric' ★

C45 £1.23; C60 £1.54; C90 £1.86 (plus VAT).

Chrome

C45 £1.42; C60 £1.80; C90 £2.25; C120 £2.94 (plus VAT).

★ Indicates entry is illustrated



Sony Cassette tapes



Sony Tapes

Classic Ferrichrome

C45 £1.62; C60 £2.01; C90 £2.68 (plus VAT).

Reel to Reel:

207 Professional Backcoated

10½in. 3600ft for £15.44 (plus VAT).

LP215

Long Play. 3in. £1.90; 4in. 450ft £2.18; 5in. 900ft £3.78; 5¾in. 1200ft £4.74; 7in. 1800ft £5.84 (plus VAT).

Hi-Fi Range in Library Box:

SP222

Standard Play. 5in. 600ft £3.74; 5¾in. 900ft £4.88; 7in. 1200ft £6.42 (plus VAT).

LP223

Long Play. 5in. 500ft £4.34; 5¾in. 1200ft £5.32; 7in. 1800ft £7.00 (plus VAT).

DP224

Double Play. 5in. 1200ft £5.32; 5¾in. 1800ft £7.00; 7in. 2400ft £8.80 (plus VAT).

Classic back coated

7in. 1200ft £8.19; 7in. 1800ft £9.12; 7in. 2400ft £3.13; 10½in. 2400ft £19.48; 10½in. 3600ft £21.52; 10½in. 4800ft £29.74 (plus VAT).

Cartridge:

High Output—low noise

8 Track. 45 mins £2.05; 90 mins £2.43 (plus VAT).

Classic

45 mins £2.30; 90 mins £2.78 (plus VAT).

Video/cassette (compatible with Philips System)

VC30 £13.31; VC45 £17.54; VC60 £20.57 (plus VAT).

Start Pack

5 × C90 High Energy plus free head cleaner and cassette recording guide booklet. Price: £9.40 (plus VAT).

■ SONY (U.K.) LTD.

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

Low-Noise Cassettes

Low noise ferric oxide tape. May be used on all types of cassette recorder for general use. C60, C90K, C120K. No rec. retail price.

HF series Compact cassettes ★

High performance ferric oxide tape. May be used on all types of cassette recorder. Particularly recommended for music recording. C60HF, C90HF, C120HF. No rec. retail price.

CR series Compact Cassettes ★

Chromium dioxide tape for improved treble response. For cassette recorders having a 'chrome' position select switch. C60CR, C90CR. No rec. retail price.

FeCr series Compact Cassettes ★

Top performance dual layer ferri-chrome tape. Combines the brightness in the high frequency range attributable to chromium dioxide, and the depth and steadiness in the low and middle frequency range inherent in ferric oxide. C60FeCr, C90FeCr. No rec. retail price.

Open Reel Tapes ★

SLH5-275BL Super low-noise high output tape — 275 min spool. FeCr5-275 — ferrichrome tape — 275 min 5in. spool. FeCr11 — 1100 ferrichrome tape — 1100 min 10½in. pool. LC 60 SLH — super low noise — 60 min. LC 90 FeCr — ferrichrome — 60 min. LC 90 SLH —

super low noise — 90 min. LC 90 FeCr — ferrichrome 90 min.

■ **SYNCHROTAPE**

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 7 1/2 i/s 1/2-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 20C -58dB.

Standard Play ★

PVC base. 5in. 600ft £1.56; 5 3/4 in. 900ft £1.92. 7in. 1200ft £2.46. All prices exclude VAT.

Long Play

PVC base. 5in. 900ft £1.92; 5 3/4 in. 1200ft £2.46; 7in. 1800ft £3.18. All prices exclude VAT.

Syncassettes

Compact cassettes. C60 72p; C90 £1.02; C120 £1.20. All prices exclude VAT.

R27 C.60 Twinpack'

2 high quality British-made C6p cassettes in top pack presentation. Tensilized polyester base, screw body construction. 96p per pair (plus VAT).

R28 C.90 'Twinpack'

2 high quality British-made C90 cassettes in top pack hanging presentation. Tensilized polyester base, screw body construction. £1.26 per pair (plus VAT)

■ **TANDBERG**

Tandberg (UK) Ltd, Farnell House,



Synchrotape



TDK range

81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds 35111.

XD60 £2.92 (inc. VAT); XD90 £3.60 (inc. VAT).

■ **TDK**

TDK Tape Distributor (UK) Ltd, 11th Floor, Pembroke House, Wellesey Road, Croydon, Surrey. Tel: 01-688 7372.

Cassettes ★

New Acoustic Dynamic range — C45, C60, C90, C120. Dynamic cassettes available in C45, C60, C90, C120, C180. Super Avilyn cassettes — C45, C60, C90.

8 Track Cartridges (Blank)

Available in two lengths — AD 8T45, AD 8T90.

Open Reel

AUDUA L1800, L3600 and the newly introduced matt back AUDUA LB1800, LB3600.

Endless Loop Cassettes

Available in EC30S, EC1M, EC3M, EC6M.

Accessories

HCI Cassette Head Cleaner, 7in. metal spool, 10 1/2 in. metal spool.

All prices on application.

■ **TECHNICS**

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR. Tel: Slough 27516.

Elcaset Tape

RT 60 XDLC Low Noise £4.95. RT 60 EXLC ferrichrome £7.95. RT 60 XALC chrome bias/EG £7.95.

A REALLY PROFESSIONAL MICROPHONE

THE EAGLE PRO M90

A tough cardioid mike for stage use.
Voice or music. Indoors or out.



A mike with really good feedback control and an amazing 40 to 16000 Hz frequency response. Three layer windshield. XLR connector. Custom-built clip for stand use. A mike that will never let you down.

That's why the real professionals use it.

The PRO M90 is only one from the Eagle range of 20 microphones for recording, public address or stage use. Write or phone for full details.

EAGLE

EAGLE INTERNATIONAL Precision Centre,
Heather Park Drive, Wembley HA0 1SU, Middlesex. Tel: (01) 902 8832.

Microphones and Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

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

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. Imp: 600 ohms. Sensitivity: -70dB. Price: £21.00 (plus VAT).

M.25

Electret microphone, cardioid pattern. FR: 20Hz-18kHz. Imp: 50K, 600 ohms. With 'U' bracket for stand/boom mounting. Features: on/off switch, 20ft lead, internal battery, windshield. Price: £21.00 (plus VAT).

M.26

Electret microphone, cardioid pattern. FR: 10Hz-18kHz. Imp: 50K. With 'U' bracket for stand/boom mounting. Features: 20ft lead, windshield, internal battery. Price: £22.20 (plus VAT).

M.30

Moving Coil microphone, cardioid pattern. FR: 50Hz-15kHz. Imp: 50K. With 'U' bracket for stand/boom mounting. On/off switch. Price: £24.30 (plus VAT).

M.48

Electret microphone, cardioid pattern. FR: 100Hz-10kHz. Imp: 600 ohms. On own base, swan stem. Features: paging mic with call and hold push button facility. Windshield. Price: £22.80 (plus VAT).

M.130 Floor Stand/Curved Boom Arm

British made low-level stand base with stem/boom arm adjustable through 360 deg. Spring-loaded locking. Screw-in solid tripod legs with ferruled ends. Height: 5ft. Price: £18.00 (plus VAT):

M.131 Portable Floor Stand

Two section stem with unique polypropylene base to receive tubular legs — horizontal for use, vertical for transportation/storage. Height: 5ft. Price: £12.00 (plus VAT).

M.150 Mic Cradle Suspension

Studio type anti-shock suspension unit accepting most stick mics. With van-angled bracket able to fit most stands and booms. Price: £11.40 (plus VAT).

M.132 Floor Stand with Boom Arm

Similar to M.131 with unique portability, but additional 3in. boom arm adjustable through 360 deg. High quality tubing chrome plated. Two-section stem provides normal height to 5ft, extending to 7ft 2in. with boom upright. Price: £19.80 (plus VAT).

Gooseneck Stems

Range of fully-flexible gooseneck stems from hollow tubing covered with grey PVC in three lengths — 10in., 15in., 20in. Flange adaptor for permanent wall or desk fixing is also available. 10in. size. £2.00, 15in. £2.60, 20in. £3.30. Flange adaptor £1.60 (all plus VAT).

■ AIWA

Aiwa Sales and Service (UK) Ltd, 30-32 Concord Road, Westwood Park Trading Estate, London W2 0TH. Tel: 01-993 1672.

CM-2000A

One-point stereo electret condenser microphone. Directivity: Uni-directional. Semi-conductors: 1FET. Output imp: 250 ohms. Sensitivity: -74dB ±3dB (0dB 1V/μbar). Frequency response: 50-17,000Hz. Channel balance 2dB. Dimensions: 50 × 215mm. Price: £25.60 (plus VAT).

DM-68N

Dynamic microphone. Directivity: Uni-directional. Imp: 250 ohms or 10K. Sensitivity: -73dB (250 ohms), -59dB (10K). Frequency response: 50-15,000Hz. Switch: Built-in tone selection switch. Price: £44.96 (plus VAT).

CM-1016

Electret microphone. Uni-directional. FR: 50Hz-15kHz. Imp: 600 ohms. Stand. Sen-

★ Indicates entry is illustrated

sitivity 73dB, cord length 5m. Tone selector, windscreen. Price: £36.54 (plus VAT).

■ AKAI

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

ACM 100

Electret. FR: 40Hz-16,000Hz. Supplied with two different coloured mufflers. FR: 30Hz-20kHz. Price: £31.82 (plus VAT).

■ AKG

AKG Acoustics Ltd,
191 The Vale, Acton, London W3.
Tel: 01-229 3695.

D 120E

Moving Coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting — stand adaptor included. Comes with cannon connector complete with cable. Price: £35.00 (plus VAT).

D 120C

Moving coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting — stand adaptor included. Comes with DIN connector and complete with cable. Price: £35.00 (plus VAT).

D 120HL

Moving coil microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: adjustable 40K and 600 ohms. Hand held or stand mounting — stand adaptor included, cable attached. Price: £40.00 (plus VAT).

D 140E

Moving coil, microphone, cardioid pattern. FR: 100Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting — stand adaptor included. Features: built-in bass cut switch serves to reduce rumble and handling noise. Built-in wind/pop screen with cannon connector. Price: £60.00 (plus VAT).

D 140C

Moving coil microphone, cardioid pattern. FR: 30Hz-17kHz. Imp: 200 ohms. Features as D 140E but with DIN connector. Price: £40.00 (plus VAT).

D 170E

Moving coil microphone, cardioid pattern. FR: 30Hz-15kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Built-in wind/pop screen suitable for close



AKG D190E

mouth vocals, with cannon connector. Price: £65.00 (plus VAT).

D 160E1

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: specially insensitive to vibration and handling noise, with cannon connector. Price: £60.00 (plus VAT).

D 160C1

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 200 ohms. As D 160E1 but with DIN connector. Price: £60.00 (plus VAT).

D 190E ★

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: Sintered bronze cap, with cannon connector. Price: £48.00 (plus VAT).

D 190C

Moving coil, cardioid pattern. FR: 30Hz-16kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. Features: Sintered bronze cap with cannon connector. Price: £48.00 (plus VAT).

D 190ES

Same as D 190E plus on/off switch. Price: £52.00 (plus VAT).

MICROPHONES AND ACCESSORIES

D 190CS

Same as D 190C with on/off switch. Price: £52.00 (plus VAT).

D 190ES/Hi

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features as D 190E. Price: £56.00 (plus VAT).

D 190 CS/Hi

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190C. Price: £56.00 (plus VAT).

D 190E /Hi

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190E. Price: £52.00 (plus VAT).

D 190C/Hi

Moving coil microphone, cardioid pattern. FR: 30Hz-16kHz. Imp: 50K. Features: as D 190C. Price: £52.00 (plus VAT).

D 200E

Moving coil microphone, cardioid pattern. FR: 30Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Uses two way technique, with cannon connector. Price: £72.00 (plus VAT).

D 200C

As D 200E with DIN connector. Price: £72.00 (plus VAT).

D 202ES

Moving coil microphone, cardioid pattern. FR: 20Hz-18kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Uses two way technique continuously variable. Bass cut switch (0.20dB at 50Hz) and on/off switch with cannon connector. Price: £86.00 (plus VAT).

D 202CS

As D 202ES with DIN connector. Price: £86.00 (plus VAT).

D 202E1

Moving coil microphone, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Mounting as D 202ES. Features: uses two way technique. Two position bass cut switch (-7, -20dB at 50Hz) and on/off switch. Individual frequency response plot with cannon connector. Price: £88.00 (plus VAT).

D 222E

Moving coil microphone, cardioid pattern. FR: 20Hz-18kHz. Imp: 200 ohms. Hand held on

stand mounting. Stand adaptor included. Features: two way technique two position bass cut switch (-6, -12dB at 50Hz). With cannon connector. Price: £80.00 (plus VAT).

D 222C

As D 222E with DIN connector. Price: £80.00 (plus VAT).

D 224E

Moving coil microphone, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. Features: uses two way technique built-in two position bass cut switch (-7, -12dB at 50Hz). Individual frequency response plot with cannon connector. Price: £116.00 (plus VAT).

D 224C

As D 224E with DIN connector. Price: £116.00 (plus VAT).

D 510B

Moving coil microphone, omni-directional. FR: 100Hz-15kHz. Imp: 200 ohms. Goose neck mic. Price: £41.00 (plus VAT).

D 590

Moving coil microphone, cardioid pattern. FR: 150Hz-15kHz. Imp: 200 ohms. Goose neck mic. Price: £41.00 (plus VAT).

D 590

Moving coil microphone, cardioid pattern. FR: 150Hz-17kHz. Imp: 200 ohms. Goose neck mic. Price: £40.00 (plus VAT).

D 591

Moving coil microphone, cardioid type. FR: 250Hz-17kHz. Imp: 200 ohms. Hand held or stand mounting. Stand adaptor included. Features: lockable push button switch (Start/stop function for remote control of tape recorder or radio set). Price: £38.00 (plus VAT).

D 900E

Moving coil microphone, lobar pattern. FR: 60Hz-12kHz. Imp: 200 ohms. Hand held or stand mounting, stand adaptor included. 'Shotgun' microphone, narrow angle pickup even at great distance from sound source. Built-in bass cut switch (-7, -20dB at 50Hz), with cannon connector. Price: £92.00 (plus VAT).

D 900C

As D 900E with DIN connector. Price: £92.00 (plus VAT).

★ Indicates entry is illustrated

D 1200E

Moving coil microphone, cardioid type. FR: 25Hz-17kHz. Imp: 200 ohms. Stand or hand held, stand adaptor included. Features: Built-in pop screen, selectable sound pattern by adjustable frequency response characteristic (bass-medium-sharp) with cannon connector. Price: £60.00 (plus VAT).

D 1200C

As D 1200E with DIN connector. Price: £60.00 (plus VAT).

D 1200E/HL

As D 1200E except Imp: Dual 45K/60 ohms. Price: £60.00 (plus VAT).

D 1200C/HL

As D 1200C except Imp: 45K/60 ohms. Price: £60.00 (plus VAT).

D 2000E

Moving coil microphone, cardioid pattern. FR: 25Hz-15kHz. Imp: 200 ohms. Stand or hand held, stand adaptor included. Built-in wind/pop screen, adjustable frequency response characteristic (bass-medium switch), also built-in on/off switch with cannon connector. Price: £70.00 (plus VAT).

D 2000C

As D 2000E with DIN connector. Price: £70.00 (plus VAT).

SE 5E

Supply unit for CE1, 2, 5, 8, 10 capsules. Battery container for 5.6V battery. On/off switch, integral circuitry for universal phantom powering (9-52V). FR: 20Hz-20kHz. Imp: 200 ohms. Features: cannon connector. Price: £32.00 (plus VAT).

SE 5C

As SE 5E with DIN connector. Price: £32.00 (plus VAT).

CE1

Electret capsule, cardioid pattern. FR: 30Hz-20kHz. Imp: 200 ohms. For use with SE5 power supply unit. Price: £28.00 (plus VAT).

CE2

As CE1 but omni-directional. Price: £28.00 (plus VAT).

CE5

Electret capsule, cardioid type. FR: 30Hz-20kHz. Imp: 200 ohms. Integral shock mount and windscreen for use with SE5 power supply unit. Price: £36.00 (plus VAT).



AKG C 505C

CE8

Electret capsule, Hypercardioid 'shotgun'. FR: 70Hz-20kHz. Imp: 200 ohms. Designed to minimise ambient noise and room reverberation. For use with SE5 power supply unit. Price: £54.00 (plus VAT).

CE 10/1

Electret capsule, omni-directional. FR: 20Hz-18kHz. Imp: 200 ohms. Features: Tie clip Lavalier microphone for use with SE5 power supply unit. Price: £66.00 (plus VAT).

C 501E

Electret microphone, cardioid type. FR: 30Hz-20kHz. Imp: 200 ohms. Hand held or stand mounting, adaptor included. Features: microphone consists of CE1 capsule and SE5 supply unit, with cannon connector. Price: £58.00 (plus VAT).

C 501C

As C 501E with DIN connector. Price: £58.00 (plus VAT).

C 505E

Electret Microphone, cardioid pattern. FR: 30Hz-20kHz. Imp: 200 ohms. Stand or hand held, stand adaptor included. Features: microphone consists of CE5 capsule and SE5 supply unit, with cannon connector. Price: £72.00 (plus VAT).

C 505C ★

As C 505E with DIN connector. Price: £72.00 (plus VAT).

C 510E/11

Electret microphone, omni-directional. FR: 20Hz-18kHz. Imp: 200 ohms. Lavalier tie clip. Microphone consists of CE10-1 capsule and CE5 supply unit with H16 belt mounting clip and two W6 windscreens, cannon connector. Price: £98.00 (plus VAT).

C 510C/11

As C 501E/11 with DIN connector. Price: £98.00 (plus VAT).

C 451E

Fet-pre amplifier, for universal phantom powering (9-51) power consumption (dependent on source resistance and operating voltage=5.5mA. FR: 5Hz-30kHz. Imp: 200 ohms. Features: for use with CK range of capsules, cannon connector. C 451C has DIN. Price: £57.00 (plus VAT).

C 451EB

Same as C 451E but with built-in two-position bass-cut switch (-7, -20dB) at 50Hz at cut off frequencies of 75 and 150Hz. C 451CB as DIN connector. Price: £70.00 (plus VAT).

C 452EB

Same as C 451EB but adapted for 48V phantom power supply, with cannon connector. Price: £70.00 (plus VAT).

CK1

Condenser Capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. For use with C451/452 FET pre amps. Price: £37.00 (plus VAT).

CK15

Condenser capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Presence boost at approx. 100,000Hz of about 6dB for use with C451/452 Fet pre amps. Price: £37.00 (plus VAT).

CK2

Condenser capsule, omni-directional. FR: 20Hz-20kHz. Imp: 200 ohms. For use with C451/452 Fet pre amps. Price: £37.00 (plus VAT).

CK5

Condenser capsule, cardioid pattern. FR: 20Hz-20kHz. Imp: 200 ohms. Elastically suspended system with built-in windscreen. For use with C451/452 Fet pre-amps. Price: £70.00 (plus VAT).

CK8

Condenser capsule, Hypercardioid 'Shotgun' pattern. FR: 30Hz-20kHz. Imp: 200 ohms. Short shotgun for use with C451/452 Fet pre-amps. Price: £70.00 (plus VAT).

CK9

Condenser capsule, Hypercardioid 'shotgun' type. FR: 30Hz-18kHz. Imp: 200 ohms. Long shotgun for use with C451/452 Fet pre-amps. Price: £85.00 (plus VAT).

C24/Comb

Stereo condenser microphone — two capsule systems. 9 remotely controllable polar patterns for each system. Upper system may be rotated by 180 deg. for adaption to XY or MS recording operations. SA swivelling additionally through 90 deg. FR: 30Hz-18kHz. Stand mounting. Included accessories: individual response curve M24 stand adaptor, 20 metres 9 core cable plug. N24 power supply unit with built-in polar pattern selector. Price: £850.00 (plus VAT).

C 414EB

Studio condenser microphone. Switchable 4 patterns cardioid omni-directional figure of eight, Hypercardioid. FR: 20Hz-20kHz. Imp: 150 ohms. Stand, stand adaptor included. Features: two position bass cut switch (-7, -20dB at 50Hz). Two position sensitivity pre-attenuator (-10, -20dB) individual response curve. Price: £286.00 (plus VAT).

B 46E

Battery power supply unit for C 451E or C 414EB. Price: £38.00 (plus VAT).

N 66E

Power supply unit for feeding up to six C451 series microphones or C414EB. 110 or 220V. Price: £107.00 (plus VAT).

■ AMSTRAD

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

DM 701 ★

Dynamic. FR: 80Hz-13,000Hz. Imp: 300 ohms. Finish: aluminium handle with spherical mesh windshield. Features: complete with stand and 3.5mm to 11/84in. adaptor. Price: £14.83 per pair (plus VAT).

■ AUDIO TECHNICA

Shriro (UK) Ltd,
The Ridgeway, Iver, Bucks.
Tel: Iver 652222.

★ Indicates entry is illustrated

AT 801

Electret condenser omni-directional microphone. FR: 40Hz-18kHz. Imp: 600 ohms. Weight: 5.6oz. Price: on application.

AT 802 ★

Dynamic moving coil omni-direction microphone. FR: 50Hz-16kHz. Imp: 600 ohms. Weight: 5oz. Price: on application.

AT 811

Electret condenser cardioid microphone. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 6oz. Price: on application.

AT 812 ★

Dynamic moving coil cardioid microphone. FR: 20Hz-20kHz. Imp: 600 ohms. Weight: 7.6oz. Price: on application.

AT 813 ★

AT 813 ★

Electret condenser cardioid microphone. FR: 70Hz-15kHz. Imp: 600 ohms. Weight: 6oz. Price: on application.

AT 815

Electret condenser line cardioid microphone. FR: 20Hz-20kHz. Imp: 600 ohms. Price: on application.

■ **BEYER**

Beyer Dynamic (GB) Ltd,
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath 51003.

M55LM

Mono moving coil omni-directional. FR: 70Hz-16kHz ± 4 dB. Sensitivity: (low Z) 0.17mV; (high Z) 1.5mV. Imp: (low Z) 500 ohms; (high Z) 50K. Rec. load: (low Z) 2K, (high Z) 200K. Hand mic with plastic table stand and clamp. Polished metal finish. Price: £22.64.

M57

Mono moving coil omni-directional. FR: 300Hz-4kHz. Sensitivity: — 146dBm. Imp: 600 ohms. Hand mic waterproof and shock resistant. Price: £30.19 (plus VAT).

M69 N (C)

Mono moving coil uni-directional cardioid. FR: 50Hz-15kHz ± 3 dB. Sensitivity: 144dBm. Imp: 200 ohms. Rec. load: 1K. Hand mic with optional speech-off-music switch. Steel case



Amstrad DM 701



Audio Technica AT802



Audio Technica AT812



Audio Technica AT813

MICROPHONES AND ACCESSORIES

finished blue stove enamel. Price: £56.96 (plus VAT).

M81 I.M

Mono moving coil cardioid. FR: 15Hz-16kHz. Imp: 500 ohms. Supplied complete with plated table stand and clamp. Price: £29.37 (plus VAT).

M88 N (C) ★

Mono moving coil hypercardioid. FR: 30Hz-20kHz. Sensitivity: 144dBm. Imp: 200 ohms. Hand mic available with Cannon plug. Price: £117.71 (plus VAT).

M101N (C)

Mono moving coil omni-directional. FR: 40Hz-20kHz ± 2.5 dB. Sensitivity: 150dBm. Imp: 200 ohms. Rec. load: 1K. Hand mic with windshield. Anodised aluminium case. Price: £77.34 (plus VAT).

M111N

Mono moving coil omni-directional. FR: 60Hz-15kHz. Sensitivity: -155dBm. Imp: 200 ohms. Lavalier mic. Anodised aluminium case. Price: £84.88 (plus VAT).

M160N (C)

Mono double-ribbon super cardioid. FR: 40Hz-18kHz ± 2.5 dB. Sensitivity: 152dBm. Imp: 200 ohms. Price: £154.99 (plus VAT).

M411N (C) S

Mono moving coil uni-directional cardioid. FR: 200Hz-12kHz. Sensitivity: -149dBm. Imp: 200 ohms. Rec. load: 1K. Hand Gooseneck mic. Designed for close-talking applications. Price: £45.90 (plus VAT).

M500N (C)

Mono ribbon hypercardioid. FR: 40Hz-18kHz. Sensitivity: -153dBm. Imp: 200 ohms. Price: DIN £79.97; Cannon £85.02 (plus VAT).

M818 I.M

Stereo moving coil cardioid. Comprises pair of matched M81HL. FR: 15Hz-16kHz. Imp: 500 ohms. Price: £65.90 (plus VAT).

M810N ★

Cardioid moving coil. FR: 50Hz-16kHz. Sensitivity: -148dBm. Imp: 500 ohms. Supplied complete with case, windscreen, spring mic clamp, detach. cable. Price: £45.90 (plus VAT).

M201NC

Hypercardioid moving coil. FR: 40Hz-18kHz. Sensitivity: -149dBm. Imp: 200 ohms.

Hand-held or stand-mounted type. Price: DIN £68.66; Cannon £70.92 (plus VAT).

M412NT (T) S

Moving coil cardioid. FR: 200Hz-12,000Hz. Imp: 200 ohms. Sensitivity: -149dBm. Hand or gooseneck mounting. PA mike with flexible rubber housing. Price: £48.41 (plus VAT).

M260 NCS

Mono ribbon hypercardioid. FR: 50Hz-18kHz. Sensitivity: -153dBm. Imp: 200 ohms. Price: £69.63 (plus VAT).



Beyer M 88 N (C)



Beyer M 810 N

★ Indicates entry is illustrated

MC 715

Condenser lapel lavalier microphone, omnidirectional. FR: 40Hz-20kHz. Imp: 800 ohms. To be used with pocket transmitter. Price: £163.48 (plus VAT).

M 680N

Moving coil microphone, cardioid type. FR: 100Hz-12kHz. Mounted on gooseneck. Ready wired with on/off switch. Price: £53.44 (plus VAT).

MC 711 & 712

Condenser microphone, omni-directional. FR: 40Hz-20kHz. Imp: 200 ohms. Hand and stand. Features: 48V phantom power pack. Price: MC711 £150.90 (plus VAT). MC712 £163.48 (plus VAT).

MC 713 & 714

Condenser microphone, cardioid type. FR: 40Hz-20kHz. Imp: 200 ohms. Hand and stand. Features: 48V phantom power pack. Price: MC713 £166.62 (plus VAT). MC714 £179.20 (plus VAT).

■ CALREC

Calrec Audio Ltd, Hangingroyd Lane, Hebden Bridge, West Yorks HX7 7DD. Tel Hebden Bridge 2159.

CM 602D

Omni-directional for all applications where feedback or separation are not important. Price: £32.20 (plus VAT).

CM 652D ★

Full range cardioid ideal for high quality home recording. Price: £35.20 (plus VAT).

CM 654D

Acoustically compensated vocal cardioid designed to give ultimate in vocal quality commensurate with good anti-feedback properties, complete with reticulated foam windshield. Price: £37.07 (plus VAT).

CM 656D

As CM 654D but with chromium plated spherical mesh head containing reticulated foam windshield. Price: £44.00 (plus VAT).

■ EAGLE INTERNATIONAL

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

PRO-M20 ★

Mono uni-directional capacitor microphone. FR: 30Hz-17kHz. Sensitivity: -60dB. Sub-miniature FET circuit built into mic capsule.



Calrec CM 652 with power supply and accessories



Eagle PRO-M20

Imp: 600 ohms balanced (floating). Hand or stand type. Supplied with stand adaptor. Built-in switch, windshield. Price: £37.30 (plus VAT).

CO96

Mono electret condenser microphone. Powered by single cell. Cardioid response: better than 20dB. Imp: 600 ohms. FR: 30Hz-16kHz. Sensitivity: -70dB. Price: £21.90 (plus VAT).

Prom 70

Capacitor microphone. Cardioid. FRL 40Hz-16kHz. Imp: 600 ohms. Hand mounting but supplied with mic holder for stand. Studio quality. Brushed gold finish. Heavy-gauge windshield mesh. Price: £34.20 (plus VAT).

SME 900

Stereo capacitor mic, two elements. Omnidirectional. FR: 40Hz-20kHz. Imp: 600 ohms. Hand mic but supplied with holder for table or floor stands. Stereo head with two mic capsules angled at 120 deg. for optimum stereo image. Price: £24.00 (plus VAT).

PRO M90

Moving coil mic, cardioid 10dB front to back. FR: 40Hz-16kHz. Imp: 600 ohms. Hand mic supplied with hold for stands. Studio quality, heavy diecast body. Three-layer windshield. Price: £43.90 (plus VAT).

PRO M80

Moving coil mic, cardioid 10dB front to back. As M90 but finished in all gold. Price: £37.60 (plus VAT).

PRO M40

Capacitor super-directional 'gun' type, super cardioid pattern. FR: 20Hz-18kHz. Imp: 600 ohms. Hand held, or adaptor for stand use. 'Rifle' barrel, on/off switch, detachable windshields, high sensitivity, high directionality. Price: £29.75 (plus VAT).

PRO M60

Capacitor, miniature tie-clip type, omnidirectional. FR: 35Hz-18kHz. Imp: 600 ohms. Supplied with tie-clip and tie-pin. Features: 7 x 7 miniature capsule, remote power supply, spring-reinforced signal lead. Price: £32.30 (plus VAT).

PRO M50

Electret super-directional 'gun' type, super cardioid pattern. FR: 30Hz-16kHz. Imp: 600 ohms. Hand held, pistol-grip (supplied), screws into integral shock-mount. Features: 'Rifle' barrel, detachable windshield. Extremely directional. Price: to be announced.

■ GARDNERS

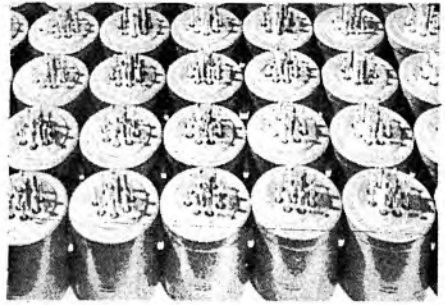
Gardners Transformers Ltd,
Christchurch, Dorset BH23 3PN.
Tel: Christchurch 2284.

Audio Transformers ★

Wide range of miniature microphone transformers, standard microphone and A.F. line matching transformers, wide band microphone and A.F. line matching transformers, extra wide band microphone and A.F. line matching transformers, super fidelity wide band microphone and line matching transformers, high-voltage-proof A.F. line matching transformers, high-level A.F. line matching transformers, sub-miniature A.F. matching transformers, miniature open-type microphone transformers and miniature open A.F. line matching transformers. Specifications and prices on request.

■ GRUNDIG

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



Gardners Mic transformers



Grundig GDM 308 Report



Grundig GCM 319

GDM 308 Report ★

Moving coil microphone. Omni-directional. FR: 80Hz-15kHz. Imp: 700 ohms. Hand held. Motor stop/start switch. No rec. retail price.

GCM 319 ★

Capacitor mic. 60Hz-18kHz. Imp: 100 ohms. Hand/desk stand. Built-in FET amplifier. No rec. retail price.

GCSM 332 ★

Capacitor mic. FR: 60Hz-18kHz. Imp: 1000



Shure Microphones- Sound of the Professionals.



Shure Electronics Limited • Eccleston Road • Midsrone ME 15 6AU • Telephone: Midsrone (0622) 59881

ohms. Desk/stand. Built-in FET amplifiers. No rec. retail price.

■ **MELODIUM**

Amdio Ltd,
26-30 Reading Road South, Fleet,
near Aldershot, Hants.
Tel: Fleet 20567.

C121

Moving coil, cardioid. Noise-cancelling miniature. FR: 150Hz-14kHz \pm 3dB. Sensitivity: -89dB (0.036mV). Removable head for fitting to swan neck for use as stick mic. With 3-pin DIN connector. Price: £32.30. Lead and plug £5.40 extra.

C133

Moving coil, cardioid. Stick type mic. FR: 50Hz-15kHz \pm 3dB. Sensitivity: -83dB (0.072mV) at 30 ohms, -71dB (0.28mV) at 600 ohms. Built-in pop shield. Melodium or 3-pin DIN screened plug. Price: £42.60 (plus VAT), with on/off switch £46.50. Lead and plug £5.40 extra.

C133SU

Same with on/off switch, cannon LXR connection.

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.

M4

Moving coil microphone, cardioid pattern. FR: 40Hz-18kHz. Imp: 200 ohms. Hand held, supplied with clamp. Specially designed for PA use. Price: £37.27 (plus VAT).

M1

Moving coil microphone, omni-directional. FR: 100Hz-6kHz. Imp: 200 ohms. Hand held. Special hand held with rubber casing for use in mobile PA, vehicles, etc. Price: £22.08 (plus VAT).

M097D

Moving coil microphone, cardioid pattern. FR: 60Hz-18kHz. Imp: 200 ohms. Hand or with clamp. Ideal for PA or recording. Price: £54.95 (plus VAT).

M300

Moving coil microphone, cardioid pattern. FR: 40Hz-18kHz. Imp: 200 ohms. Hand or with clamp. High quality — very flat response. Price: £78.53 (plus VAT).

M121E

Electret microphone. FR: 80Hz-14kHz. Imp: 200 ohms. Hand held/stand. Built-in amplifier (power batteries). Price: £42.12 (plus VAT).

Model MS/M

Heavy duty floor stand, 3 screw in legs, adjustable height 42in. to 72in. Chrome or in colours: red, yellow, white, grey, black, dark and light blue. R.R.P.: £20.37.

Model BA/M

Heavy duty boom arm to operate with MS/M. Finishes also the same. Unique 1 action. R.R.P.: £11.23.

Model MS/L

Studio version with 4 screw in legs, adjustable height 44in. to 74in. Chrome finish. With 14in. legs. R.R.P.: £26.88. With 22in. legs R.R.P.: £32.38.

Model BA/L

Studio boom arm to operate with MS/L with unique 1 action. 42in. length with 2lb counterweight. R.R.P.: £15.31. 72in. length with 4lb counterweight. R.R.P.: £22.79.

EXT/1

Extension tube to operate with BA/L boom arm to extend boom arm further 36in. R.R.P.: £7.07.

MS/CT/2

Cast base stand with 14lb base. R.R.P.: £21.06.

BS/1/B

Banqueting stand with 4lb weight, unique 2 angles. R.R.P.: £14.56.

BS/2/B

Banqueting stand with 7lb weight, unique 2 angles. R.R.P.: £18.67.

MS/W

Studio stand with 4 castor wheels and brake. R.R.P.: £55.23.

MS/F2

Portable floor stand with folding legs. Black. R.R.P.: £21.65.

MS/P

Toggle stand, unique action. Black. R.R.P.: £27.07.

DB/1

Drum boom. 53m to 96m. R.R.P.: £11.32.

DB/2

Drum boom. 905m to 1,625m. R.R.P.: £14.25.

★ Indicates entry is illustrated

SB/1

Stereo bar with $\frac{3}{8}$ in. thread. R.R.P.: £3.73.

SC/1

Side clamp with $\frac{3}{8}$ in. R.R.P.: £4.04.

Wide range of further accessories including goosenecks, clamps, speaker stands. Details available on request.

■ NEUMANN GMBH

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

KM83

FET condenser. Omni-directional. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Imp: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price: on application.

KM84

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Imp: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price: on application.

KM86

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Imp: 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. Imp: 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. Imp: 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-directional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Sensitivity across 1K: 2mV/microbar. Imp: 50 or 200 ohms. Built-in transformers. Pressure-gradients. Price: on application.

U47 FET ★

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.8mV/ μ bar. Imp: 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.

KMA

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV open circuit. Imp: 800 ohms balanced. Recommended load: \geq 2.7K. Lavalier type. Tie-clip fitting. Low sensitivity to noise of clothing, etc. Finish: dark satin nickel plate. Price: on application.

KMS 84

Capacitor microphone, cardioid pattern. FR: 40Hz-18kHz. Imp: 150 ohms. Hand or stand-clip. Features: soloist condenser microphone for vocal or instrumental requirements. Price: on application.

■ PHILIPS

Pye Business Communications Ltd,
Cromwell Road, Cambridge CB1 3HE.
Tel: Cambridge 45191.

LBB 9005/06

Cardioid microphone. FR: 50Hz-16kHz. Imp: 200 ohms. Front-to-back ratio: 20dB. Complete with on/off switch and quick release fixed angle adaptor. Hum compensation coil. 2-core screened cable, 3m. Price: £47.50 (plus VAT).

LBB 9007/06

Cardioid microphone. FR: 50Hz-16kHz. Imp: 200 ohms. Front-to-back: 20dB. Complete with on/off switch and 3m cable. Price: £49.50 (plus VAT).

LBB 9018/06

Cardioid microphone. FR: 50Hz-16kHz. Imp: 200 ohms. Front-to-back ratio: 20dB. 3m cable. Price: £48.00 (plus VAT).

LBB 9018/05

Noise-cancelling microphone. FR: 200Hz-12.5kHz. Imp: 250 ohms. Front-to-back ratio: 16dB. Supplied with 4-core and screened cable and complete with on/off button and suspension bracket. Cable length 0.6m coiled, 2.6m extended. Price: £42.80 (plus VAT).

LBB 9100/05

Moving coil microphone, cardioid pattern. FR: 50Hz-16kHz. Imp: 200 ohms. Hand/stand. Low hand sensitivity. Price: £63.50 (plus VAT).

LBB 9101/05

Moving coil microphone, omni-directional.

FR: 50Hz-18kHz. Imp: 200 ohms. Hand/stand. Low hand sensitivity. Price: £59.50 (plus VAT).

LBB 9020/15

Moving coil microphone, cardioid pattern. FR: 40Hz-17kHz. Imp: 200 ohms. Hand/stand. Artist use, speech/music filter switch, on/off side switch, low hand sensitivity. Price: £54.50 (plus VAT).

■ ROSS ELECTRONICS

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

RE-315 ★

Single draw telescope microphone floor stand with heavy collapsible legs providing an extremely rigid base. With friction lock and universal microphone holder. Height extended: 1.7 metres. All chrome finish. Price: £22.00 (plus VAT).

RE-362

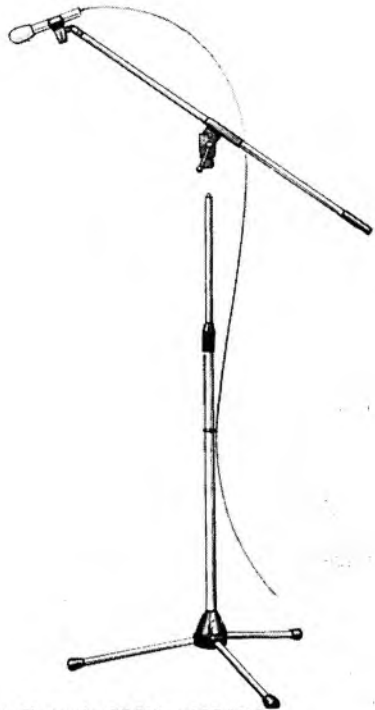
Slimline, electret condenser cardioid microphone in brushed metal case with low profile on/off switch. The unique generating element operates in conjunction with an integral FET amplifier to provide high output at the highest possible signal to noise ratio. Imp: 600 ohms. FR: 30Hz-16kHz. Sensitivity: -66dB at 1kHz. Signal/noise ratio: greater than 44dB. With stand and holder, foam windshield and 6-metre lead. Price: £20.00 (plus VAT).

RE-363 ★

Electret condenser, cardioid microphone finished in matt anodized silver with wiremesh grille and chrome bezel. Generating element operates in conjunction with an integral battery operated FET amplifier. Imp: 600 ohms. FR: 30Hz-16kHz. Sensitivity: -66dB at 1kHz. Signal/noise ratio: greater than 44dB. Price: £20.00 (plus VAT).

RE-364 ★

Slimline, dual-impedance electret condenser cardioid microphone suitable for studio or stage work. Elegantly styled and finished in matt black. Electret element with FET amplifier housed in microphone barrel with battery and dual impedance transformer. Imp: 600 ohms and 50K. FR: 30Hz-18kHz. Sensitivity (1000Hz): -65dB at 600 ohms; -48dB at 50K. Fitted with built-in on/off switch and supplied with stand holder, foam windshield, and detachable 6-metre cable fitted with standard jack plug. Price: £21.00 (plus VAT).



Ross Electronics RE-315 and RE-315B



Ross RE-363 Electret condenser



Ross RE-364 Electret condenser



Ross Electronics RE-366 Electret condenser

★ Indicates entry is illustrated

RE-365

Cardioid, dual impedance electret condenser microphone. Superslim, matt finish stainless steel construction. Electret condenser elements with FET preamplifier operates from battery housed in microphone body. With built-in on/off switch and dual imp transformer. FR: 20Hz-18kHz. Sensitivity: -68dB at 600 ohms (1kHz), -52dB at 50K (1kHz). SPL -130dB Max. Price: £21.70 (plus VAT).

RE-366 ★

Professional quality electret condenser cardioid microphone, employing a specially developed generating element combined with an IC imp convertor. Machined, light alloy case finished matt black with stainless wiremesh grille. Imp: 600-750 ohms. FR: 30Hz-16kHz. Sensitivity: -68dB at 1kHz. S/N ratio: greater than 44dB. Output imp: Low Z. In fitted, hinged vinyl case. Supplied with 6-metre lead with self lock Cannon plug and moulded jack plug, stand holder and foam windshield. Price: £26.20 (plus VAT).

RE-211A

115mm diameter diecast, anodized base with solid metal centre pillar threaded externally to accept all Ross Electronics microphone holders and most other types. Height: 85mm. Price: £2.40 (plus VAT).

RE-312

Adjustable microphone desk stand with weighted plastic base and single-draw telescopic centre pillar with friction lock. Chrome finish. Threaded to accept all Ross Electronics microphone holders and most others. Height: 305mm closed, 500mm extended. Price: £5.40 (plus VAT).

RE-312A

Microphone desk stand. Heavy cast horseshoe base finished black crackle with angled chrome steel centre pillar. Threaded to fit all Ross Electronics microphone holders and most others. 100mm high. Price: £4.12 (plus VAT).

RE-315B ★

Counterbalanced boom with swivel mount fitted with friction clamp. Boom end threaded to fit standard microphone holder; mount threaded to fit Ross Electronics RE-315 floor stand and most others. Chrome finish. 850mm long. Price: £7.20 (plus VAT).

RE-316

Detachable microphone windshields in controlled density foam that suppresses explosive breath sounds, squeals and booming effects.

Nominal internal diameter of 20mm fits most Electret condenser and slimline dynamic microphones. In red and black. Price (per pair): £1.30 (plus VAT).

RE-318

Universal microphone holder. Rigid black plastic construction with powerful spring-loaded microphone clamp. Accepts microphone diameters from 13mm to 28mm. Fits all Ross Electronics microphone stands and most others. Price: £2.70 (plus VAT).

RE-391

Sheathed, low-loss shielded microphone extension cable fitted with standard jack plug at one end and standard, inline jack socket at other. 6 metres long. Price: £2.04 (plus VAT).

RE-393

Microphone connecting lead. 6 metre sheathed, low-loss shielded cable terminates in 4-pin, dual-impedance type socket and standard, jack plug. Price: £3.04 (plus VAT).

RE-394

Microphone connecting lead. 6-metre sheathed, low-loss shielded cable terminates in a universal microphone connector at one end and a standard jack plug at other. Price: £1.76 (plus VAT).

RRE-396

Universal microphone connecting lead. 7.5 metre sheathed, low-loss shielded cable has a universal microphone connector at each end and is supplied with additional screw-on adapters to connect either end to a standard 1/4in. plug or standard inline jack socket. Price: £3.50 (plus VAT).

■ SENNHEISER ELECTRONIC

Distributors: Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, SL9 9EW. Tel: Gerrards Cross 88447.

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 \pm 3dB. Sensitivity: 0.2mV/ μ bar \pm 3dB. Imp: 200 ohms. Rec. load: 1K. Light alloy case finished hammer stove enamel. Windshield MZW421 optional extra. Price: on application.

MD211N ★

Omni-directional moving coil miniature studio microphone. Hand or stand use. FR: 30Hz-20kHz ± 2.5 dB. Sensitivity: $0.13\text{mV}/\mu\text{bar}$ ± 2.5 dB. Imp: 200 ohms. Rec. load: 1K. Metal case with satin chrome finish. Windshield MZW201 optional extra. Price: on application.

MD214 ★

Omni-directional moving coil lavalier microphone. Built-in 'natural voice' equaliser to studio standards. FR: specially designed for lavalier operation. Sensitivity: $0.10\text{mV}/\mu\text{bar}$ ± 2.5 dB. Imp: 200 ohms. Rec. load: 1K. Metal case finished special 'non-glare' enamel. Price: on application.

MD408N

Super cardioid moving coil microphone with flexible shaft. Specially suitable for PA applications. FR: 50Hz-15kHz ± 3 dB. Imp: 200 ohms. Sensitivity: $0.13\text{mV}/\mu\text{bar}$ ± 3 dB. Case of light gauze woven wire cloth. Price: on application.

MD402LM ★

Mono moving coil super cardioid microphone. FR: 80Hz-12.5kHz. Sensitivity: $2.3\text{mV}/\mu\text{bar}$. Imp: 750 ohms. Rec. load: 4K. Hand mic with stand and clip. Rugged construction. Frequency response tailored for domestic applications. Finish: satin chrome. Price: on application.

MD409N

Mono moving coil super cardioid. FR: 50Hz-15kHz. Sensitivity: $0.18\text{mV}/\mu\text{bar}$. Imp: 200 ohms. Rec. load: 200 ohms or greater. Stand mounted musicians' microphone. Finish: black and gold. Price: on application.

MD421

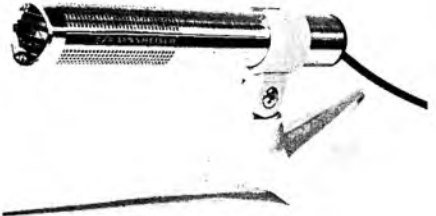
Mono moving coil cardioid microphone. FR: 30Hz-17kHz. Sensitivity: $0.2\text{mV}/\mu\text{bar}$ at 1kHz. Imp: (HL series) 200 ohms and 24K; (N, U and 2 series) 200 ohms. Rec. load: (high Z version of HL series) 50K (all others) 1K. Hand/stand microphone $\frac{3}{16}$ in. thread fitting. Built-in bass cut switch. Low handling noise. Finish: (standard versions) grey plastic body with chrome grille. Price: on application.

MD441 ★

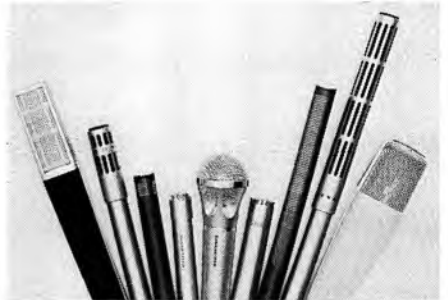
Mono moving coil super cardioid microphone. FR: 30Hz-20kHz. Sensitivity: $0.2\text{mV}/\mu\text{bar}$ ± 3 dB. Imp: 200 ohms. Rec. load: 1K. Hand microphone, with optional mounting clip available. Choice of ten switchable frequency responses. Low handling noise. Polar diagram constant over frequency range. Finish: shock



Sennheiser MD 214



Sennheiser MD 402LM



Sennheiser range, L-R: MD 441, MKE 402, MKH 406, MKH 110, MD 416, MD 211, MKH 416, MKE 802, MD 421

resistant metal case. Silver-plated metal grille on matt black body. Price: on application.

MKH106T/TU

Mono capacitor omni-directional microphone. FR: 20Hz-20kHz. Sensitivity: $2\text{mV}/\mu\text{bar}$. Imp: 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: on application.

MKH124

Mono capacitor omni-directional. FR: 40Hz-20kHz. Sensitivity: $0.32\text{mV}/\mu\text{bar}$. Imp: 150 ohms. Rec. load: 200 ohms or greater. Lapel or lavalier microphone with clip or lanyard. Small

★ Indicates entry is illustrated

size: flat frequency response. Presence lift. Finish: matt grey enamel. Price: on application.

MKH125

Mono capacitor omni-directional microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Imp: 10 ohms. Rec. load: 200 ohms. Lapel/lavalier microphone with lanyard or clip. Small size. Flat frequency response. Presence lift. Finish: matt grey enamel. Price: on application.

MKH416T/TU

Mono capacitor super cardioid microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Imp: 20 ohms. Rec. load: 200 ohms. Hand or stand microphone. Table stand MZT415 available. Low self noise. Good wind noise rejection. Windshield MZW415. Finish: satin chrome on brass. Price: on application.

MKH816T/TU

Mono capacitor uni-directional (narrow beam) microphone. FR: 50Hz-20kHz. Sensitivity: 4mV/ μ bar. Imp: 20 ohms. Rec. load: 200 ohms. Gun microphone. Fittings: boom MZS-805 or pistol grip MZP805. Low self noise. Very narrow beam. Windshield: MZW804 and MZW815. Finish: satin chrome on brass. Price: on application.

MD412LM ★

Moving coil super cardioid mono microphone. FR: 50Hz-12.5kHz. Imp: 800 ohms. Sensitivity: 0.2mV/ μ bar \pm 3dB. Built-in roll-off filter. With desk stand. Price: on application.

MD416NU ★

Moving coil mono microphone. Cardioid polar diagram. Insensitive to handling or mechanical vibration. Designed for vocal or instrumental soloists. FR: 50Hz-15kHz. Sensitivity: 0.13mV/ μ bar \pm 3dB. Imp: 200 ohms. Hand or stand microphone. Low sensitivity to pop and wind noises. Price: on application.

MKH416P/48

Capacitor microphone super cardioid. FR: 40-20,000Hz. Phantom powered 48V cannon or tuchel versions available. Price: on application.

MKH816P/48

Capacitor microphone super directional. FR: 50-20,000Hz. Phantom powered 48V cannon or tuchel versions available. Price: on application.

MKE802 ★

Electret microphone super cardioid. FR: 50-

15,000Hz. Imp: 200 ohms. Cannon or tuchel plug versions available. Price: on application.

MKH406P/48

Capacitor microphone. FR: 40-20,000Hz. Cannon or tuchel plug versions available. Price: on application.

MKE402 ★

Electret cardioid microphone. FR: 50-15,000Hz. Imp: 200 ohms. Cannon or tuchel plug versions available. Price: on application.

MKE2002 ★

Electret mic. FR: 40Hz-20kHz. Imp: 4.7K ohms. SM connection, 1K ohm. SL connection. Dummy head mic for binaural recordings using your own head or with artificial head supplied. Complete with battery power supply. Price: on application.

MKH126P48

Capacitor mic. Omni-directional. FR: 40Hz-20kHz. Imp: 200 ohms. Miniature Lavalier mic in two parts. Capsule and electronic unit available in two finishes, satin nickel or matt grey. Tuchel or cannon XKR version available. Price: on application.

Proffipower

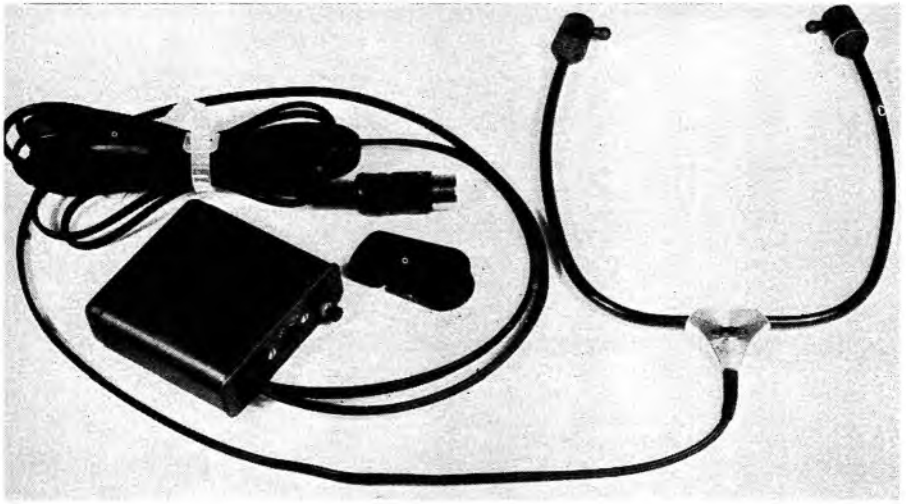
Moving coil microphone, super cardioid pattern. FR: 40Hz-16kHz. Imp: 200 ohms. Hand/stand. Designed for the musician and includes built-in pop filter and on/off switch which is silent in operation. Microphone element is suspended within the housing to eliminate handling noise. Price: on application.

MKE10

Electret microphone, omni-directional. FR: 50Hz-20kHz. Imp: 4.7K unbalanced or 200K balanced depending on battery adaptor. Lavalier type mounting with clothing clip. Miniature electret Lavalier mic which operates in conjunction with battery adaptor. Three types available: MZA 10 giving unbalanced output to work into load $>$ 4.7K. MZA 10N giving balanced 200 ohms output and has facilities for battery check, and MZA 10U which is same as MZA 10N but with XLR output connector. Price: on application.

MD430-2

Moving coil microphone, super cardioid. FR: 200Hz-10kHz. Imp: 200 ohms. Hand/stand. Designed for close speaking in noisy surroundings. Range consists of MD 430-2-T with integral on/off switch, MD 430-18T with integral switch and separate connections to switch, and ND 430-9 which is the shortened version. Price: on application.



Sennheiser MKE 2002

MD418

Moving coil microphone, super cardioid. FR: 200Hz-10kHz. Imp: 50 ohms. Stand/desk mount. Designed for conference and talkback use and can be used both as loudspeaker and microphone, complete with integral gooseneck. Price: on application.

able low end roll off. Price: £132.30 (plus VAT).

SM51

Omni-lavalier microphone. FR: 70-12,000Hz. Low imp with sensitivity: -82dB. Small size. Price: £63.18 (plus VAT).

MD408

Moving coil microphone, super cardioid. FR: 50Hz-15kHz. Imp: 200 ohms balanced. Stand/desk mount. Designed for talkback use, complete with integral gooseneck and on/off switch. Price: on application.

MKH406 ★

RF capacitor, cardioid pattern. FR: 40Hz-20kHz. Imp: 200 ohms balanced. Hand/stand mount. Studio quality capacitor microphone with cardioid directional pattern. Requires 12V B-B powering. Price: on application.



Shure SM 33

■ SHURE ELECTRONICS LTD

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

SM 11

Moving coil microphone, omni-directional. FR: 50Hz-15kHz. Imp: 150 ohms. Lavalier or special applications. Miniature dynamic. Price: £42.12 (plus VAT).

SM33 ★

Ribbon microphone. Super cardioid. FR: 40-15,000Hz. Imp: 50 and 150 ohms. Stand mounted. Smooth warm response with switch-

★ Indicates entry is illustrated

SM54

Cardioid microphone. FR: 70-16,000Hz. Imp: 150 ohms. Sensitivity: -81dB. Hand, stand or boom. Versatile with switchable low end roll-off. Price: £143.10 (plus VAT).

SM58

Cardioid microphone. FR: 50-15,000Hz. Imp: 50 and 150 ohms. Sensitivity: -84 and -77dB. Rugged construction with built-in windshield. Price: £83.70 (plus VAT).

SM57

Cardioid microphone. FR: 40-15,000Hz. Imp: 50 and 150 ohms. Sensitivity: -82 and -76dB. Good feedback suppression. Price: £65.34 (plus VAT).

SM62

Cardioid microphone. FR: 100-10,000Hz. Imp: 150 ohms. Sensitivity: -82dB. Price: £66.42 (plus VAT).

300

Ribbon microphone with polar patterns figure of 8. FR: 40-15,000Hz. Imp: 50, 150 and high. Switchable low end roll off. Price: £91.26 (plus VAT)

515SA

Cardioid microphone. FR: 80-13,000Hz. Imp: High, but low version available. Price: £23.76 (plus VAT).

545 ★

Cardioid microphone. FR: 50-15,000Hz. Imp: low/high. Slim style, true cardioid. Price: £49.68 (plus VAT).

548

Cardioid microphone. FR: 40-15,000Hz. Imp: low/high. Price: £60.48 (plus VAT).

565 ★

Cardioid microphone. FR: 50-15,000Hz. Imp: low/high. Built-in windshield. Price: £56.16 (plus VAT).

579SB

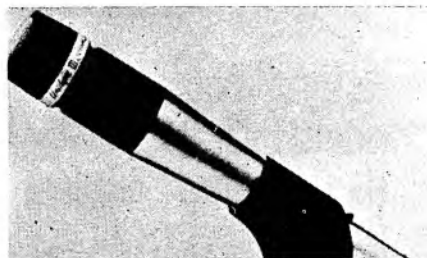
Omni-microphone. FR: 50-15,000Hz. Imp: low. Price: £40.50 (plus VAT).

588SA

Cardioid microphone. FR: 80-13,000Hz. Imp: High, but low version available. Built-in windshield. Price: £34.56.

589S

Cardioid microphone. FR: 90-13,000Hz. Imp: low/high. Price: £40.50 (plus VAT).



Shure 545



Shure 565

A95U

High quality series line transformer making it possible to connect low imp (25-50 ohms and 150-250 ohms) lines to a high impedance amplifier input. Comes complete with all connectors. Size: 2½in. × ¾in. Price: £12.42.

A97A

As above but designed to match 150-600 ohm microphone outputs to medium imp (1-10K ohm) devices, such as those frequently used in cassette recorders. Price: £11.34 (plus VAT).

A15 Series

Attenuators, equalizers and adaptors. In-line plug-in components to solve sound problems without rewiring. Connections are made via professional three-pin audio connectors. Nine models available. Price: £12.42 (plus VAT).

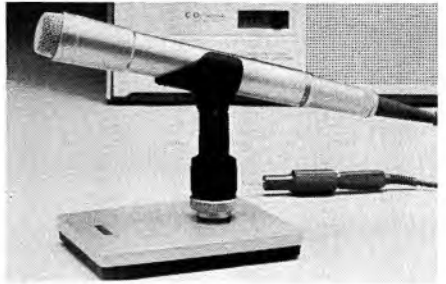
S33 Series Stands

Low silhouette heavy duty desk stand for any Shure microphone. Satin black or dark grey to

match Shure 'SM' series microphones. Size: 1 7/16in. x 5 3/4in. x 6in. Price: £9.18 (plus VAT).

S55P

Low profile microphone stand for distant microphone pickup. Holds the microphone a fraction of an inch above the floor for better sound quality by minimizing reflections. Ideal for 'footlight' recordings of choral, orchestral or ensemble musical events and dramatic presentations. Effectively isolates mechanical noise from floor vibrations. Height: 4 3/4in. Price: £14.58 (plus VAT).



Sony ECM 170

516 EQ

Moving coil mic. Cardioid. FR: 50Hz-15kHz. Imp: 150 ohms. Hand or stand, adaptor supplied. Four built-in filters to 'tailor' your recordings. Price: £55.62 (plus VAT).



Sony ECM 150

■ **SONY (UK) LTD**

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

ECM 170 ★

Electret omni-directional. FR: 20-16,000Hz. Imp: 200 ohms. Sensitivity: -560dB. Hand mounting. A16 table stand available. Bass roll off switch. No rec. retail price.

ECM 220

Electret unidirectional. FR: 50-12,000Hz. Imp: 200 ohms. Built-in wind screen. On/off talk switch. No rec. retail price.

ECM 270

Electret uni-directional. FR: 40-16,000Hz. Imp: 200 ohms. Removable wind screen. No rec. retail price.

ECM 280

Electret unidirectional. FR: 30-18,000Hz. Imp: 200 ohms. Removable wind screen, bass roll-off switch. No rec. retail price.

ECM 150 ★

Electret mic, omni-directional. FRL 40Hz-13kHz. Imp: 600 ohms. Lavalier — supplied with wind screen, holder clip and stand. Smallest in Sony range, rod antenna type stand, dual purpose case. No rec. retail price.

ECM 250

Electret mic, uni-directional. FR: 50Hz-14,000Hz. Imp: 200 ohms unbalanced. Hard mounting. A16 stand available. No rec. retail price.



Sony SAD 101



Sony microphone adaptors

★ Indicates entry is illustrated

ECM 16

Electret, omni-directional. FR: 40Hz-13,000Hz. Imp: 250 ohms unbalanced. Lavalier microphone tie clip supplied. No rec. retail price.

ECM 99/A

Electret, unidirectional. FR: 50Hz-12,000Hz. Imp: 250 ohms unbalanced. Hard mounting — A15 stand available. No rec. retail price.



Sony PBR 330



Sony B 401 Boom stand

Microphone Accessories:

A16

Stand suitable for use with ECM99A, ECM170, ECM220, ECM250, ECM270 and ECM280.

SAD101 ★

Stereo arm suitable for coincident microphone recording — microphone stand mounting PF 1/2in. 14 thread and U 5/16in. 18 thread. Microphone mounting using PF 1/2in. 14 thread.

SAD 24 ★

Stand screw adaptor. To adapt camera stand (11/8in.) to PF 1/2in. 14 thread.

SAD25

Stand screw adaptor. PF 1/2in. 14 thread. U 5/16in. 18 thread.

SAD26

Microphone stand pole. Microphone stand mounting PF 1/2in. 14 thread. Microphone connection U 5/16in. 18 thread of PF 1/2in. 14 thread. Height: 120mm.

SAD27

Microphone holder — grip 22-24mm. Microphone stand mounting PF 1/2in. 14 thread.

SAD28

Microphone shock mount adaptor to prevent vibrations being transmitted to microphone. Microphone stand mounting PF 1/2in. 14 thread. Microphone connection PF 1/2in. thread, or U 5/16in. 18 thread.

B401 ★

A portable matt black boom stand supplied with its own carrying case. Boom: 690mm. Stand: (2 stage) 593mm. Weight: 3.9kg. Microphone connection: U 5/16in PF 1/2in. 14 thread.

PBR330 ★

A parabolic microphone reflector — diameter 330mm — can be hand held or stand mounted. Any 15-30mm diameter microphone can be accepted.

■ TANDBERG

Tandberg (UK) Ltd, Farnell House, 81 Kirkstall Road, Leeds LS3 1HR. Tel: Leeds 351111.

TM 6

Spherical omni-directional moving coil microphone. FR: 50Hz-15,000Hz +3 -6dB. Imp: 250 ohms. Comes complete with table stand and fixture for mounting on floor stand. Bigger



Uher M634



Uher M154

table stand available as optional extra. Price: £21.00 or with table stand £30.50 (inc. VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3DR.
Tel: Slough 27516

RP-3200E

Single point stereo microphone. FR: 50Hz-15,000Hz. Sensitivity: -72dB (0dB = 1V/1μbar). Price: £43.95 (inc. VAT).

RP-3850E

Slimline uni-directional microphone. FR: 20Hz-16,000Hz. Sensitivity: -72dB (0dB = 1V/1μbar). Price: £37.95 (inc. VAT).

RP-3830E

Slimline uni-directional stick microphone with removable windscreen. FR: 50Hz-15,000Hz. Sensitivity: -74dB (0dB = 1V/1μbar). Price: £51.95 (inc. VAT).

RP-3550E

Compact uni-directional electret condenser microphone. FR: 50Hz-15,000Hz. Sensitivity: -74dB (0dB = 1V/1μbar). Price: £65.95 (inc. VAT).

■ **TELEFUNKEN**

AEG-Telefunken (UK) Ltd,
217 Bath Road, Slough,
Berks SL1 4AW. Tel: Slough 872101.

TC600 Hi-Fi

Low-voltage condenser microphone. Cardioid

characteristic. Cylindrical metal case. FR: 30Hz-20,000Hz. Wind shield supplied. Price: £60.00 (inc. VAT).

■ **UHER LTD**

28 Spencer Street, St. Albans, Herts.
Tel: St. Albans 30236/7.

M154 ★

Dynamic microphone with remote control switch providing: record, stop, start, rewind. FR: 50Hz-20kHz. Imp: 200 ohms. For use with Uher 5000 tape recorder. Price: approximately £31.29 (plus VAT).

M517

Dynamic cardioid microphone for use with Uher battery portable. Remote stop/start switch. Speech/music switch. FR: 70Hz-14kHz. Price: £31.29 (plus VAT).

M534

Dynamic cardioid microphone with speech/music switch. Sensitivity: 0.23mV/μbar. FR: 50Hz-16kHz. Imp: 500 ohms. For recording under adverse acoustic conditions. Pressure diecast case. Includes table stand (M923). Plug wiring: unbalanced 3/2. Price: £25.96 (plus VAT).

M634 (stereo) ★

Dynamic cardioid stereo microphone system. Sensitivity: 0.23mV/μbar. FR: 50Hz-16kHz. Imp: 500 ohms. Comprises two M534 microphones, one M925 stereo bar and one M923 table stand. Speech/music switch. Price: £51.46 (plus VAT).

M640

Dynamic stereo microphone. Omni-directional characteristic, also suitable for mono recordings. Sensitivity: 0.25mV/μbar. FR: 70Hz-15kHz. With stop/start switch for Uher cassette recorders. Price: £36.06 (plus VAT).

M645

Electret microphone, cardioid pattern. FR: 30Hz-20kHz. Imp: 280 ohms. Supplied with table stand and wind shield. Powered by internal primary battery from tape recorder via microphone cable, with 8 pole plug. Price: £52.78 (plus VAT).

■ **UNISOUND**

Condor Electronic Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

Range of microphones — Details on application.

STACKS OF POWER!



Toshiba's Superb 330 System

SR-F330 Fully Automatic Belt-Drive Turntable

2-speed unit powered by a DC Servo motor. 31.5cm (12³/₈") platter, static balance S-shaped tone arm. Cueing control, and anti-skating device. Wow and flutter of 0.05% WRMS; S/N ratio 55dB. Cartridge - optional extra.

ST-330 Stereo FM/AM Tuner

High sensitivity 1.9 μ V (IHF). Harmonic distortion 0.3% S/N ratio 68dB. Power consumption 6W.

SC-330 Stereo Power Amplifier

Continuous power output: 20Hz-20,000Hz, 40 watts x 2 both channels driven, 8 ohms.T.H.D. less than 0.1% at rated output. Frequency response 5Hz-60,000Hz (\pm 1dB).

SY-330 Stereo Pre-Amplifier

Built-in MIC mixing and tape dubbing facilities. 41-position mechanical click-stop volume control. S/N ratio: Phono 70dB, Aux 90dB.

PC-330 Stereo Dolby Cassette Deck

Wow and Flutter 0.09%. S/N ratio of 57dB (CRO₂ tape). DC servo motor, wide range peak level meters. Direct-load cassette System. Full auto stop.

Ask your local Toshiba dealer for full details or write to; Toshiba (UK) Ltd., Toshiba House, Frimley Road, Frimley, Camberley, Surrey GU16 5JJ. Telephone Camberley (0276) 62222.

TOSHIBA

...In Touch with Tomorrow

Music Centres

(see also Unit Audio sections)

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ AIWA

Aiwa Sales and Service (UK) Ltd, 30 and 32 Concord Road, Westwood Park Trading Estate, London W3 0TH.
Tel: 01-993 6172.

AF 5050

Stereo music centre with Dolby noise reduction unit. Record Deck: Aiwa belt driven, auto turntable, speeds 33½ and 45 rpm, moving magnet cartridge. Amplifier: 15W+15W into 4 ohms. FR: 20Hz-20kHz. Radio Tuner: VHF, L, M, S. Tape Deck: W and F: 0.1%. Speakers: 2-way bass reflex 4 ohms, woofer 16cm, tweeter 5cm. Cross-over frequency: 3kHz. Dimensions of speakers: 21 × 22 × 33cm. Dimensions of main unit: 59 × 43 × 16cm. Features: Three step selector, oil damped cassette eject and controls, unique record synchronisation. Price: £368.26 (plus VAT).

AF 5090 ★

Stereo music centre with Dolby. Record Deck: Aiwa, belt driven, semi-automatic, speeds 33½ and 45 rpm, moving magnet cartridge. Amplifier: 25W+25W into 8 ohms. FR: 20Hz-30kHz. Radio Tuner: band coverage VHF, L, M, S. Tape Deck: W and F: 0.09%. Speakers not included in price. Dimensions of main unit: 59.3 × 43.5 × 23.5cm. Features: similar to AF 5050, speaker switching, microphone mixing. Price: £408.76 (plus VAT).

■ AKAI

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

AC 3800L ★

Musicentre with Dolby. Record Deck with piezo cartridge. Amplifier: 25W into 8 ohms.

FR: 30Hz-15kHz (mono), THD: 0.5%. Radio Tuner band coverage: 88MHz-108MHz. Tape Deck: W and F: 0.08%. Speakers not supplied. Main Unit: 55 × 46.7 × 22cm. Features: metallic silver with brushed aluminium fascia. Price: £394.93 (plus VAT).

■ ALBA (RADIO AND TELEVISION) LTD

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

9072

Music centre with BSR P182 record deck. Amplifier: 10W, THD: less than 0.2%. Radio Tuner covers VHF, L, M. Tape deck incorporates dynamic hiss filter. Speakers measure: 26 × 16.5 × 36cm. Main unit in simulated teak measures: 76.3 × 38.6 × 15.4cm. No rec. retail price.

9073

Music centre with BSR P182 tuner. Amplifier: 10W. Radio tuner covers VHF, L,



Aiwa AF 5090



Akai AC 3800L

★ Indicates entry is illustrated

M. Dimensions of speakers: 23 × 17 × 37cm.
Main Unit measures: 55 × 41 × 18.5cm.
Black finish. No rec. retail price.

■ DECCA RADIO & TELEVISION LTD

Neachells Lane, Willenhall,
West Midlands WV13 3RW.
Tel: Willenhall 67367.

DS 5365

Music centre with Garrard SP25 Mk V record deck, Shure M75/6S cartridge. Amplifier: 25W into 8 ohms. FR: 20Hz-25kHz-3dB, THD: 0.25%. Radio Tuner: FM, L, M. Tape Deck with Dolby, W and F: <0.3%. Speakers: ALO 450 floor standing: 8in. bass, 2½in. tweeter. Dimensions: 30 × 25 × 60cm. Main Unit in black measures: 65.5 × 39.5 × 19cm. Features: two room stereo, FeCr tape selector, Mute/AFC switch, Osc shift switch, electronic autostop on all functions. Price: on application.

DS 5340

Music centre with BSR P182 deck and BSR ceramic cartridge. Amplifier: 12W into 8 ohms. FR: 20Hz-25kHz. Radio Tuner: FM, L, M. Tape Deck: W and F: <0.3%. Speakers: ALO160, 6in. bass, 2½in. tweeter, dimensions: 24 × 14.4 × 42cm. Main unit in black measures 65.5 × 39.5 × 19cm. Features: two room stereo, mute/AFC switch, osc shift switch, electronic autostop on all functions. Price: on application.

DS 5350

Music centre with Garrard SP25 Mk V record deck, Acos M7 cartridge. Amplifier: 12W into 8 ohms, FR: 20Hz-25kHz-3dB, THD: 0.2%. Radio Tuner: FM, L, M. Speakers: ALO160, 6in. bass, 2½in. tweeter, dimensions 24 × 14.4 × 42cm. Main Unit: 65.5 × 39.5 × 19cm. Black and silver finish. Features: two room stereo, mute/AFC switch, osc shift switch, electronic autostop on all functions. Price: on application.

DS 5359

Music centre with Garrard SP 25 Mk V deck and Acos M7 cartridge. Similar to DS 5350.

DS 5356

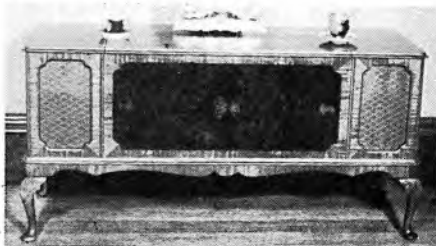
Music centre with Garrard SP25 Mk V deck and Shure M75/6S cartridge. Amplifier: 25W into 8 ohms, FR: 20Hz-25kHz-3dB, THD: 0.25%. Radio Tuner covers FM, L, M. Tape Deck. W and F: <0.3%. Speakers: ALO450 floor standing 8in. bass, 2½in. tweeter, dimensions: 30 × 25 × 60cm. Main Unit



Dynatron MC 142 0CR



Dynatron GC 1410 PW



Dynatron GC 1310 PW

measures 65.5 × 39.5 × 19cm, black finish. Features: two room stereo, mute/AFC switch, osc shift switch, electronic autopost on all functions. Price: on application.

■ DYNATRON

Dynatron Radio Ltd, Ditton Walk,
Cambridge CD5 8QD.
Tel: Teversham 2781.

MC 142 OCR ★

Music centre with Philips GA 437 record deck and Philips GP 401 Mk 2. Amplifier: 30W, FR: 20Hz-30kHz, THD: 0.1%. Radio Tuner covers VHF/FM, L, M. Tape deck with Dolby, W and F: 0.18%. High specification, easy to operate and adjust with sensitive tuner. Facility for four-speaker sound simulation. Finish in San Domingo Rosewood, contemporary cabinet. Price: £525.00 (plus VAT).

GC 1410 PW ★

Period style cabinet — Queen Anne. Record deck is the Garrard 35 SB with Vernitron V100 cartridge. Amplifier: 10W, FR: 20Hz-30kHz, THD: less than 0.1% at 0.5dB. Radio Tuner covers: VHF/FM, L, M. Tape Deck with Dolby, W and F: 0.18%. Speakers: crossover frequency 2,500Hz. Finish in walnut veneers, speakers incorporated into pedestals of desk. Price: £600.00 (plus VAT).

GC 1510 PM

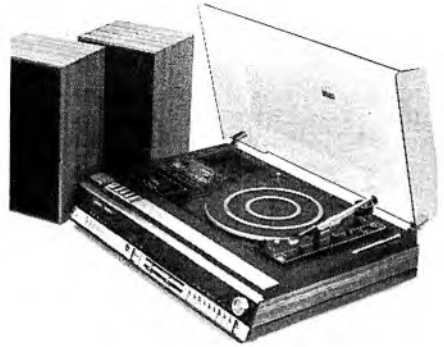
As above in Regency style cabinet, kneehole desk, mahogany veneers.

GC 1310 PW ★

Period style — Queen Anne with Garrard 35SB record deck and Vernitron V100 cartridge. Amplifier: 10W, FR: 20Hz-30kHz-3dB, THD: less than 0.5%. Radio tuner covers VHF/FM, L, M. Tape deck with Dolby, W and F: 0.18%. Walnut finish. Speakers specially matched and incorporated into unit. Price: £700.00 (plus VAT).

MC 1010CR/MC1610T

Contemporary styling music centres with Garrard 35 SB deck and Vernitron V100 cartridge. Amplifier: 10W, FR: 20Hz-30kHz-3dB, THD: less than 0.5%. Radio tuner covers VHF/FM, L, M. Tape deck with Dolby, W and F: 0.18%. Speakers with crossover frequency: 2,500Hz. Main unit: 82.2 × 38.7 × 17.8cm. Finish in rosewood (1010 CR) or teak (1610 CT). Price: £380.00 (plus VAT).



Ferguson 3494

GC 1010PW/GC 1110PM/GC 1210 PK

All period styling with specs similar to above. 1010 size is 97.5 × 42.2 × 63.9 cm and styling is in walnut, Queen Anne. Price: £520.00 (plus VAT). 1110 measures 97.3 × 42.2 × 64.5cm and is in Regency mahogany. Price: £510.00 (plus VAT). 1210 measures 97.5 × 42.2 × 62.2 cm and is in Jacobean Oak. Price: £480.00 (plus VAT).

■ FERGUSON

Thorn Consumer Electronics Ltd, 284
Southbury Road, Enfield, Middx.
Tel: 01-366 1155.

3494 ★

Record deck: BSR C173. Magnetic cartridge with diamond stylus. Amplifier: Output: 10W RMS. FR: 25-30,000Hz. THD: <0.5%. Radio tuner band coverage: FM/L/M/S. Tape deck: W and F: 0.3%. S/N: 50dB. FR: 40-14,000Hz (ferric). Speakers: Imp: 8 ohms. Drive units: 6 1/2in. Teak finish. Main unit: 62 × 49 × 19.5cm. Finish in black with teak surround. Features: single play or automatic record deck, switched AFC, switched external tape socket automatic switching for CrO₂ tape, auto stop, auto or manual record with two VU meters. FM stereo beacon, noise suppressor. Price: on application.

3923 ★

Garrard 125 SB deck with Goldring G850 cartridge. Amplifier output 15W. FR: 40Hz-15kHz. THD: 0.5%. Tuner bands VHF, L/M/S. Dolby noise reduction system. W and F: 0.3%. Crossover frequency: 3000Hz. Speaker drive units: 2 × 5in. and 3 1/2in. tweeter in each enclosure which measures 24 × 21 × 36cm. Main unit measures 62 × 49 × 19.5cm and is finished in black and silver with teak effect finish ends. No rec. retail price.

★ Indicates entry is illustrated



Ferguson 3923



Ferguson 3971

3971 ★

BSR P182 deck with ceramic SC12H sapphire cartridge. Amplifier output: 6W. FR: 40Hz-18,000Hz. THD: <1%. Radio tuner: FM/L/M. Tape deck with Dolby noise reduction system. W and F: $\pm 0.3\%$. Speakers: 6½in. drive unit. Dimensions of speaker: 22 × 18.5 × 37cm. Mains unit dimensions: 56 × 34.5 × 17cm. Finish in black/silver with teak surrounds. Switchable AFC. FM stereo beacon. Auto stop on all cassette functions. No rec. retail price.

3922

Music centre with BSR P163 deck and Shure M75 cartridge. Amplifier: 25W. FR: 40Hz-30kHz. THD: <1%. Radio tuner with band coverage FM, L, M, S. Tape Deck with Dolby 'B', W and F: 0.3% to DIN 45507. Speakers: crossover frequency: 3kHz. Drive Units: 2 × 5in. and 1 × 3½in. Dimensions of speakers: 24 × 20 × 46cm. Main unit measurements: 62.3 × 41 × 19.3cm, teak finish. Features: VHF touch tuning with 6 presets. Dolby 'B' noise reduc-

tion. Ambiophony. tape memory. Belt drive record deck. Price: on application.

3924

As above but with Garrard SP 25 Mk VI deck and Shure cartridge. Features: digital frequency readout and touch tuned presets on all bands. Dolby 'B'. belt drive record deck. Price: on application.

3920

Music centre with Thorn SP202 deck and Veritron V100 cartridge. Amplifier: 10W. FR: 40Hz-18kHz. THD: <1%. Radio tuner with band coverage of FM, L, M. Tape deck with Dolby 'B', W and F: <0.3% to DIN 45507. Speakers: 6½in. unit and capacity fed 3½in. tweeter effective above 4K. Dimensions of speaker: 20 × 18 × 37cm. Main unit measurements: 56 × 34 × 16cm. Finish: teak and brushed. Price: on application.

3921

Music centre with Thorn SP 203 deck and Veritron cartridge. Amplifier: 15W. FR: 40Hz-18kHz. THD: <1%. Radio tuner with band coverage of FM, L, M. Tape deck with Dolby 'B', W and F: <0.3% to DIN 45507. Speakers: 6½in. unit and capacity fed 3½in. tweeter effective above 4kHz. Dimensions of speaker: 23 × 17 × 41cm. Main unit measures 56 × 34 × 16cm. Black and chrome finish. Belt drive die-cast turntable with stroboscope. Price: on application.

■ FIDELITY

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

MC 5 ★

Music centre with BSR P146 deck and stereo ceramic cartridge with turnover stylus. Amplifier: 8W per channel into 4 ohms. FR: 50Hz-12kHz \pm 3dB THD: 10%. Radio tuner with band coverage of VHF/FM, L, M: Tape Deck: W and F: less than 0.4%. Speakers with drive units 8 × 5in. and dimensions 20.5 × 12.5 × 31cm. Main unit measures 54 × 38 × 16.6cm, and has a teak look. Features: AFC, stereo broadcast indicator light, cueing device, bias compensator, Automatic record level, tape position indicator. Price: £148.00 (plus VAT).

System 4-40 ★

Music centre with BSR P182 deck, ADC magnetic cartridge with diamond stylus. Amplifier: 20W per channel into 8 ohms, FR:



Fidelity MC5



Garrard GA 200



Fidelity System 4-40



Garrard GA 155



Garrard GA 150

50Hz-13kHz \pm 3dB, THD: 1%. Radio tuner with band coverage: VHF/FM, L, M, S. Tape deck with W and F: less than 0.4%. Speakers with drive units 8in. woofer and 3 $\frac{3}{4}$ in. tweeter and dimensions: 27.8 x 21 x 47.5cm. Main unit measures 80.8 x 37.7 x 15.9cm, and is finished in teak veneer. Features: auto CrO₂ switching, auto or manual recording, AFC, stereo indicator light, Meters for tuning and record level, four speaker sockets for remote or ambiophony, 'S' shaped pick-up arm for superior tracking. Price: £241.33 (plus VAT).

■ GARRARD

Garrard Engineering Ltd. Newcastle Street, Swindon, Wilts SN1 2LH.
Tel: Swindon (0793) 35381.

GA200 ★

British designed and built Hi-Fi Music Centre.
Amplifier: Output: 2 x 25W. FR: 20Hz-25kHz.

THD: 0.06%. Controls Range: Bass 50Hz \pm 14dB. Treble 15kHz \pm 14dB. Inputs: Aux. mic. Stereo separation: 55dB. Radio: FM. L. M. Sensitivity FM: 2 μ V. Distortion: 0.25%. FR: 20Hz-16kHz. Stereo separation 40dB. Record Deck: Belt drive with speeds 33 $\frac{1}{3}$, 45 \pm 1%. W and F: 0.12%. Stereo magnetic cartridge. FR: 20Hz-20kHz. Cassette Recorder: FR Chrome: 20Hz-16kHz. FR: Low Noise: 20Hz-14kHz. S/N: 55dB or 64dB Dolby. Stereo separation: 45dB. Loudspeakers: FR: 40Hz-20kHz. Drive Units 155mm Bass. 65mm Mid. 65mm Treble. Imp: 8 Ohms. Price: (inc. speakers) £372.28 (plus VAT).

GA 155 ★

A more sophisticated and powerful version of the GA150.

Amplifier: Output 2 x 15W. FR: 25Hz-20kHz. THD: 1.0%. Control range: Bass 50Hz \pm 14dB.

★ Indicates entry is illustrated

Treble 15kHz±13dB. Inputs: Aux, Mic. Stereo separation: 40dB. Radio: FM, L, M. Sensitivity FM: 4.5µV. Distortion: 1%. FR: 50Hz-14kHz. Stereo separation: 26dB. Record Player: Belt drive with speeds of 33½ and 45 rpm ± 1.5%. W and F: 0.2%. Stereo magnetic cartridge. FR: 25Hz-20kHz. Cassette Recorder: FR Chrome: 40Hz-12.5kHz. FR Low Noise: 40Hz-11kHz. S/N: 48dB or 56dB Dolby. Stereo separation: 30dB. Loudspeakers: FR: 45Hz-22kHz. Drive Units: 130mm Bass, 60mm Mid, 45mm Treble. Imp: 4 Ohms. Price: (inc. speakers) £293.29 (plus VAT).

GA 150★

Amplifier: 2 × 10W. FR: 25Hz-20kHz. THD: 1.0%. Control range: Bass 50Hz +8 -15dB. Treble 15kHz +10 -20dB. Inputs: Aux, mic. Stereo separation: 40dB. Radio: FM, L, M. Sensitivity FM: 4.5µV. Distortion: 2%. FR: 40Hz-12kHz. Stereo separation: 22dB. Record Player: Belt drive with speeds 33½, 45 rpm ± 1.5%. W and F: 0.2%. Stereo magnetic cartridge. FR: 45Hz-20kHz. Cassette Recorder: FR Chrome: 50Hz-12kHz. FR Low Noise: 50Hz-10kHz. S/N: 42dB. Stereo separation: 25dB. Loudspeakers: FR: 50Hz-16kHz. Drive Units; full range 130mm. Imp: 4 Ohms. Price: (inc. speakers) £244.00 (plus VAT).

■ GEC (RADIO AND TELEVISION) LTD

Langley Park, Slough SL3 6DP.

Tel: Slough 22201.

A5019H ★

Combined AM/FM radio, cassette recorder and record-player. Record deck: BSR C129R2 three-speed auto/manual record changer with ceramic cartridge. Jack socket for headphones. Amplifier: 10W speech and music power per channel. Radio: 4-band AM/FM with stereo decoder and AFC. Tape deck: stereo cassette tape unit with ALC on record, automatic chromium dioxide/ferrous oxide tape switching, pause control and auto stop. Speakers: two in teak finish. Finish: black moulded cabinet with silver finish end pieces and satin finish aluminium trim. Smoked record deck cover. No rec. retail price.

A 5026H ★

Music centre with BSR P182, auto deck, 4-pole motor, 'S' pick-up arm with viscous damped cueings, and magnetic cartridge with diamond stylus. Amplifier: 2 × 30W speech and music-power, 2 × 20W continuous sine wave. FR: 30Hz-25kHz-2dB. THD: better than 0.3%. Radio tuner covering FM with auto muting, switched AFC and signal strength meter, 3 AM

bands. Tape Deck: with twin meters, slider control for record level, tape counter with re-set button and auto stop. W and F: 0.18%. Speakers: with imp of 8 ohms, driver units 20cm, 7.5cm tweeter. Dimensions of speakers: 34.8 × 20 × 46.3cm. Mains unit measures 68 × 40 × 20.9cm, and is finished in black moulding with satin finish endpieces and aluminium trim. Features: Jack sockets for mics and headphones. No rec. retail price.



GEC A5019H



GEC A5026 H



GEC A5022 H

A 5022H ★

Music centre with BSR P182 three speed single play deck, tubular 'S' arm, ceramic cartridge with diamond stylus. Amplifier: 30W+30W speech and music power, 15W+15W sine wave. Radio tuner with 4-band AM/FM, switched AFC and stereo decoder. Tape deck with automatic record level, bias switching for tape, pause control, auto stop, tape position indicator. Three beacons to indicate function CrO₂, record and tape running. Speakers 16.5cm round twin concentric cone, low resonance system. Imp 8 ohms. Dimensions of speakers: 3.1 × 2 × 4cm. Main unit measures 66 × 42 × 17.8cm and is finished in satin grey. Features: jack sockets for mics and headphones, switched outputs for main or remote loudspeakers. No rec. retail price.

■ GOODMANS

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

MCD 100

AM/FM stereo receiver. Record deck: two speed, belt driven. Amplifier: 35 + 35W, FR: 35Hz-20kHz ± 1.5dB. THD: less than 1% at full output. Radio tuner: VHF/FM 88-108MHz, SW 5.9-10MHz, Med 530-1605kHz, Long 150-350kHz. Tape deck with Dolby noise reduction system. W and F: 0.2% (DIN). Speakers: Goodmans RB35 (See under Speaker Enclosures). Dimensions: 77.2 × 38.1 × 20.8cm. Five pre-sets on FM radio. No rec. retail price.

MCD 100-2 ★

Same facilities and performance as MCD 100 but with strobe turntable and speed control, selector for ferri-chrome tape bias and equalisation, AFC. No rec. retail price.

■ GRUNDIG

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

Studio 3010

AM/FM stereo receiver in cabinet with Dual 1225 record deck with magnetic cartridge, cassette deck and two separate speakers. Range: FM 87.5-108MHz, LW 2069-857m, MW 588-185m, SW 51.3-18.5m. Stereo decoder with beacon. Variable tuning with five pre-set stations (FM) and AFC. Tuning meter. Output: 15W RMS per channel into 4 ohms. Accepts compact cassettes up to C120, 1 7/8 i/s. FR: 60Hz-12.5kHz. Automatic switching for CrO₂.



Goodmans MCD 100-2

W and F: ±0.25%. S/N ratio: 46dB. Three digit tape position indicator. Size: 63.5 × 21 × 52cm. No rec. retail price.

RPC 500

Dual 1228 record deck with Shure M95 cartridge. Amplifier output: 2 × 30W (4 ohms). FR: 40Hz-20kHz. Radio tuner covers VHF/L/M. Tape deck CN 830 with Dolby noise reduction system. Main unit dimensions: 69 × 21 × 48cm. Black finish. Ten pre-tuned stations selected by pressure switches with LED indicators. Frequency meter, signal strength meter, electronic tuning on VHF/AM.

RPC 300

Music centre with Dual 1226 deck and Shure M75-D cartridge. Amplifier output 30W. FR: 40Hz-20kHz. THD: 0.2%. Radio tuner covering VHF, L, M, S. CN 500 tape deck. Main unit measures 69 × 20 × 43cm. Features: 8 pre-tuned stations on VHF selected by sensor plates, LED indicators, frequency meter, tuning meter. No rec. retail price.

RPC 100

Music centre with Dual 1225 deck and Shure cartridge. Amplifier output 15W. Radio tuner covering VHF, L, M, S. CB 200 tape deck. 8 pre-tuned stations on VHF selected by touch sensors with LED indicators, frequency meter. No rec. retail price.

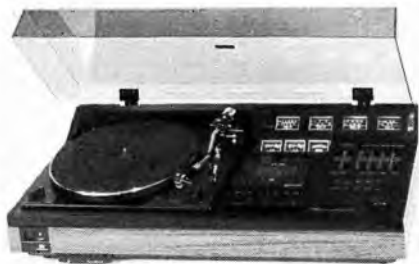
■ HACKER SOUND LTD

Norreys Drive, Cox Green,
Maidenhead, Berks SL6 4BP.
Tel: Maidenhead 22261.

MC 600 A

Music centre with Garrard 125 SB deck and Shure 75/6 cartridge. Amplifier output 20W+20W or 18W+18W (RMS) into 8 ohms.

★ Indicates entry is illustrated



Hitachi 7675



Hitachi SDT 7785

FR: 20Hz-20kHz. THD: 0.1% at 1kHz. Radio tuner with hand coverage FM, L, M. Tape deck with Dolby. W and F: 0.2%. Main Unit dimensions: 67 × 43 × 20cm. teak and walnut finish. Features: sockets for rear speakers for ambiphonic reproduction, rumble filter, contour, scratch filter, oscillator shift, microphone, headphones, memory rewind and CrO₂ switch. Price: on application.

■ HITACHI

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

SDT 7620

Stereo music centre. Output 40W. FR: 30Hz-20kHz. Radio Tuner with hand coverage of FM, L, M. Slider controls for volume, bass, treble, and balance. Tape deck features digital counter, auto stop. CrO₂/normal tape, noise limiter and mono/stereo select. Record deck features Garrard 6200 CP/620 SP with cue device, ceramic cartridge with diamond stylus. Simulated teak finish. Size of speakers: 25.5 × 43 × 18cm. Main unit measures: 59.5 × 19 × 41cm. Price: £225.00 (inc. VAT).

SDT 7640

Stereo music centre with Garrard 35 SB 2 deck, belt driven with single and repeat play facilities, oil damped cueing, anti-skate device, adjustable stylus pressure. Amplifier output: 28W per channel RMS. Radio Tuner with hand coverage of FM, L, M, S. Cassette deck with full auto shot-off, pause button, noise limiter, CrO₂/normal tape. Speaker system with foam edge 8in. bass, 3/8in. tweeter with 3 element cross-over. Speaker dimensions: 25.5 × 43 × 18cm. Main unit measures 60 × 17.8 × 39.5cm. Price: £275.00 (inc. VAT).

SDT 7765

Stereo music centre with belt driven player,

Dolby cassette deck, front loading, twin level meters. FeCr/CrO₂/normal tape switches, equaliser, bias switches and full auto stop. Two-way speakers with 8in. bass and 3/8in. tweeter. Speaker sizes: 25.5 × 43 × 18cm. Radio tuner with hand coverage FM, L, M, S. Main unit measures 60 × 17.8 × 39.5cm. Price: £349.00 (inc. VAT).

SDT 7675 ★

Stereo music centre with Hitachi two-speed belt driven player, anti-skate device, oil damped cueing. Amplifier 30W RMS. Radio covers FM, L, M, S. Dolby cassette deck with auto stop and pause button. Speakers each have 8in. bass and 1in. HF dome radiator. Speakers measure 47 × 27 × 26.5cm. Teak or rosewood simulated finish. Main unit measures 77.2 × 19.3 × 38.1cm. Price: £399.00 (inc. VAT).

SDT 7785 ★

Stereo music centre with direct drive uni-torque record player with auto return, oil damped cueing, anti-skate device, stroboscope speed and pitch control. Amplifier output: 30W+30W. Dolby front loading cassette deck, bias equalisation tape selector. Tuning meter, 2VU meters, 6 pre-set buttons on FM. Rosewood Teak finish. Main unit measures 67 × 19.7 × 40cm. Price: £415.00 (plus VAT).

SDT 7680 R

Stereo music centre with belt driven auto return record player with stroboscope. Output: 30W+30W. Radio tuner covering FM, L, M, S. Dolby cassette deck. Speakers measure 47 × 27 × 26.5cm. Main unit measures 65.1 × 18.5 × 41.6cm. Rosewood or Teak finish. Price: £455.00 (inc. VAT).

■ ITT CONSUMER PRODUCTS (UK) LTD

Maidstone Road, Footscray, Sidcup.
Kent DA 14 5HT. Tel: 01-300 7733.

MC 5080

Record deck with BSR P163 and Shure M75/6 magnetic cartridge. Amplifier output: 15W. THD: 10%. Tuner FM stereo/L/M with 5 FM presets. Tape deck with Dolby noise reduction system. Finish in black/silver. Main unit dimensions: 62 × 41 × 19.2cm. Manual/auto record level, twin VU motors, full auto stop, cassette storage. Belt-driven deck. No rec. retail price.

MC 5042/LS 21

Music centre with BSR P182 deck and Acos M7 magnetic cartridge. Amplifier 15W-3dB. THD: 10%. FR: 65Hz-28kHz. Radio tuner covers FM, L, M. Tape Deck: W and F: less than 0.35%. Speakers 6½in. round dual cone or 25 × 40 × 18cm. Main unit in black/teak measures 58 × 41 × 16cm. Features: 'S' arm, auto stop, stereo beacon, friction hinged-lid, cassette storage, equaliser switch. No rec. retail price.

MC 5036/LS 16

Music centre with BSR P182 deck and ceramic SC 12M cartridge. Amplifier output 7.5W-3dB. FR: 55Hz-40kHz. THD: 10%. Radio tuner covers FM, L, M. Tape deck: W and F: less than 0.3%. Speakers 8 × 5 in. elliptical cone measuring 23 × 18 × 38cm. Main unit in aluminium/teak measures 56 × 38 × 19cm. Features: cue/review, 'S' tone arm, front-mounted sockets, friction hinged-lid, mono button, front mounted push-button controls and rotary knobs. No rec. retail price.

■ JVC

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

MF-45DI.

Music centre with turntable speeds 33½, 45 rpm, moving magnet cartridge and diamond stylus. Amplifier: 15W per channel at 1kHz. Radio tuner covers FM, L, M. Cassette deck with Dolby. Main unit measures: 50 × 19.3 × 43.8cm. No rec. retail price.

MF-55LS

Music centre with belt-driven motor, moving magnet cartridge. Radio tuner covers FM, L, M, S. Cassette deck. Dimensions: 15 × 70 × 38cm. No rec. retail price.

■ Lenco

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey. Tel: Byfleet 51051.

*Lenco 3500**National Panasonic SG 3090***L3500 ★**

Lenco L84 record deck. Amplifier output: 2 × 12W into 4 ohms. FR: 25Hz-40kHz. THD: 20%. Radio tuner: FM/L/M. Tape cassette — W and F: ± 0.3%. Speakers in matching modern style. Price: £295.00 (plus VAT). Speakers £50.00 per pair extra.

L4000

Lenco L65 record deck. Amplifier output: 2 × 22W into 4 ohms. FR: 20Hz-40kHz. Radio tuner with decoder: FM/L/M/S. Speakers in modern matching style 25W. Main unit dimensions: 66 × 34 × 1.68cm. Price: £395.00 (plus VAT). Speakers £90.00 per pair extra.

■ NATIONAL PANASONIC

National Panasonic UK, 308 Bath Road, Slough, Berks. Tel: Slough 34522.

★ Indicates entry is illustrated

SG-3090 ★

Music centre. Amplifier output: 35W per channel. Radio tuner: FM/L/M/S. Cassette recorder with oil-damped ejection. Belt-driven platter. Seven preset stations on FM. Dolby noise reduction system, two recording level controls, recording level meters, peak indicator, separate selection switches. Price: £419.95 (inc. VAT). Recommended National Panasonic speakers are SB 61 price £69.95 per pair (inc. VAT).

Large range of music centres including speakers — details on request.



Period High Fidelity PHF 17



Period High Fidelity PHF 6



Period High Fidelity PHF 4

■ NORDMENDE

Vessco Vision and Radio Ltd, Unit 4, Blackwater Way, Ash Road, Aldershot, Hants GU12 4DL.
Tel: Aldershot 312661.

8025 SCP

Hi Fi stereo combination. Dual 1225 record deck with Shure magnetic cartridge. Amplifier output: 2 × 40W. Tuner: FM/L/M/S with five preset stations. Built-in cassette recorder. Sockets for four speakers. Styling in aluminium colour/black. Dimensions: 67.5 × 17.5 × 35cm. Price: £376.50 (inc. VAT).

■ PERIOD HIGH FIDELITY

Period High Fidelity Ltd, Clivemont Road, Cordwallis Trading Estate, Maidenhead, Berks.
Tel: Maidenhead 21221/2.

PHF 1: 4: 6: 8: 9: 10: 12: 14: 15: 16: 17: 18 ★

All models in a wide range of period reproduction cabinets covering Regency, Queen Anne, Louis XV, etc. All have the same specifications: Garrard 125SB record deck. Amplifier with output of 20W and FR: 20Hz-20kHz. THD: 0.15% at 1kHz. Radio tuner covers VHF, M, L. Tape deck with Dolby noise reduction unit, W and F: 0.3% DIN. Speaker drive units 1 × 8in. and 1 × 3in. with crossover frequency 1500Hz. Dimensions of each speaker: 35 × 29 × 56cm. Prices: £440.00 to £1,132.00 (plus VAT).

■ PHILIPS ELECTRICAL LTD

City House, 420-430 London Road, Croydon CR9 3QR
Tel: 01-689 2166.

AH 985

Stereo music centre with two-speed record player, GP 400 II Super M magneto dynamic cartridge and diamond stylus. Amplifier output: 2 × 20W. FR: 25Hz-25kHz. THD: <1%. Radio tuner covering FM, L, M. Tape deck with Dolby. Main unit measures 67.3 × 17 × 46cm. No rec. retail price.

■ PYE

Pye Ltd, 137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham 2781.

TAPC6000 ★

Hi-Fi Music centre.
Amplifier section: Output of 30W per channel. Distortion: <1% harmonic distortion, <1.5% intermodulation. FR: 30Hz-20,000Hz ± 1.5dB.



Pye TAPC 6000



Sanyo G2811

Controls for contour, bass, treble, high filter. Sockets for 2 mics, tape in/out, 2 × 2 loudspeakers, 2 headphones. Tuner section: FM tuner with wave range 87.5-108MHz. THD: 0.6%. Sensitivity: 2.5µV for 26dB. AM tuner with L, M, S bands. Sensitivity: 90µV for 26dB. Selectivity: 30dB. Cassette Deck: chromium and ferro tape. W and F: <0.2%. Record Player: Philips GCO 37 with speeds 33½, 45 rpm and GP 400 Super M II cartridge. W and F: <0.15%. Rumble: <-38dB DIN A, <-58dB DIN B. Stylus force: 0.4 gm adjustable. GP 400 Super M cartridge. General: Dimensions 60 × 20 × 40cm. Price: £334.22 (plus VAT).

■ REALISTIC

Tandy Corporation (Branch UK), Bilston Road, Holyhead Road, Wednesbury, Staffs WS10 7JN.
Tel: 021-556 6101.

Clarinette 300A.

Price: £199.50 (plus VAT).

5900 D

Price: £299.95 (plus VAT).
Full details on application.

■ ROTEL

Rank Audio Visual, PO Box 70, Great West Road, Brentford TW8 5PW.
Tel: 01-994 6491.

RM 5010 ★

Output: 25W per channel. Three waveband tuner with tuning meter and stereo beacon, belt driven turntable with speed adjustment and stroboscope. Dolby cassette deck with mic line mixing and twin VU meters. A combination of the RX 402 receiver and RP 1500 turntable. Price: £445.38 (plus VAT).



Rotel RM 5010

■ SANYO

Sanyo Marubeni (UK) Ltd, 8 Greycaine Road, Watford, Herts WD2 7UD.
Tel: Watford 46363.

GXT 4580

Music centre with Sanyo deck. Amplifier: 20W × 2 into 8 ohms. FR: 20Hz-20kHz ± 3dB. Radio tuner covers FM, L, M, S. Tape deck with Dolby. W and F: 0.15%. MC3 speakers comprising 20cm bass, 10.4cm mid and 6.8cm HF unit. Main unit measures 47 × 27 × 22cm and is of teak finish. Features: radio touch controls, FM pre-setting, piano keys, full auto stop, memory counter, FeCr/CrO₂/normal tape. Price: £349.95 (plus VAT).

G 2811 KL ★

Music centre with Sanyo deck. Amplifier 18W × 2 into 8 ohms. FR: 30Hz-30kHz. Radio tuner with band coverage FM, L, M, S. Tape deck with Dolby. W and F: 0.1%. Speakers: 20cm bass, 10.4cm mid, 6.8cm. HF unit measuring 4 × 27 × 22cm. Main unit measures 68.6 × 17.5 × 35.8cm. Metal finish. Features: 3 digit tape

★ Indicates entry is illustrated



Sanyo DTX 5502



Sanyo G 2711 Super 2

counter, radio with colour console and 7 pre-select stations. Price: £309.50 (plus VAT) but not inc. speakers.

DX1 5502 ★

Music centre with Sanyo deck. Amplifier 15W × 2. FR: 30Hz-40kHz ± 3dB. Radio tuner covers FM, L, M. Tape deck with Dolby. W and F: 0.15%. Speakers with drive units 16.5cm bass/mid and 6.8cm HF, crossover frequency 3.5kHz. Speakers measure 43 × 26 × 18cm. Main unit in teak measures 55 × 20 × 40cm. Features: cassette deck with push button controls, two speed record deck, anti skate device and diamond stylus, piano keys, auto, stop. Price: £280.00 (plus VAT) but without speakers.

G 2711 Super 2 ★

Music centre with Sanyo deck, two-speeds, magnetic cartridge with diamond stylus. Amplifier output 10W × 2. FR: 30Hz-20kHz ± 6dB. Radio Tuner with band coverage FM, L, M. Tape deck with Dolby. W and F: 0.15%, twin recording level meters, tape counter, auto stop. Main unit measures 59.1 × 19.6 × 40.2cm. Finish in teak. Price: £268.50 (plus VAT) inc. speakers.

G 2422 KL Super

Music centre with Sanyo deck. Amplifier 8W × 2. FR: 30Hz-20kHz ± 6dB. Radio tuner covering FM, L, M. Tape deck. W and F: 0.2%. Main unit measures 55 × 18.6 × 40cm. Finish: teak. Price: £225.00 (plus VAT) inc. speakers.

SHARP ELECTRONICS (UK) LTD

107 Hulme Hall Lane, Manchester
M10 8HL.
Tel: 061-205 7321.

SG 400/CP 400 ★

Record deck with IM cartridge. Amplifier output: 25W at 4 ohms. FR: 35Hz-20kHz-1.5dB. THD: 1%. Tuner: VHF/FM, L/M/S. Tape deck with Dolby "D" noise reduction system. W and F: 0.2%. Speaker dimensions: 26 × 25.5 × 48cm. Main unit dimensions: 75.3 × 35.1 × 18cm. Five preset stations on FM. Price: £331.11 (plus VAT).

SG 450

Music centre with record deck with universal plug-in leadshell and IM cartridge. Amplifier: 25W into 4 ohms. FR: 35Hz-20kHz. THD: 1%. Radio tuner covers FM, L, M, S. Four-track two-channel tape recorder with Dolby. W and F: 0.2%. Main unit in black finish measures 84 × 39.5 × 17.4cm. Features: DIN spec, APSS on tape, 6 preset sensors. Price: £399.96 (plus VAT).

SG 320/CP 315

Record deck: Two-speed rim driven, ceramic cartridge, sapphire stylus. Amplifier: 15W into 4 ohms. FR: 30Hz-35kHz-3dB. THD: 5%. Radio tuner covers FM, L, M, S. Four-track, two-channel tape deck with W and F: 0.35% DIN. CP 315 speakers measuring 26.5 × 43 × 17.6cm. Main unit in matt black measures 71.1 × 38.1 × 16.4cm. Features: APSS, auto CrO₂/normal tape change-over, mechanical pause. Price: £262.18 (plus VAT).

SG 500

Music centre with Dolby. Radio covers FM, L, M, S. APSS on tape, remote control as option extra (£84.95), sensor touch tuning on FM. Full details to be released at a later date. Price: £577.73 (plus VAT).

SKANTIC

Skantic (UK) Ltd, Station Road, Edenbridge, Kent TN8 6EY.
Tel: Edenbridge 5231.

1053 Music Centre ★

Output: 20W RMS. Ready for connection to ambiphonic box for simulated four-channel reproduction. FM stereo radio with four pre-

Have a close look at Sanyo - everyone else has!

For instance, Hi-Fi Choice magazine; which recommended these Sanyo products and voted them best buys. Take a closer look at Sanyo - it's worth it!

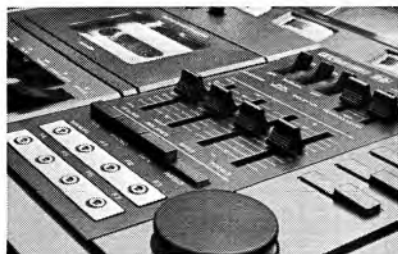
DCA 1001 Stereo Pre-main Amplifier provides 50 watts of continuous power at 8ohms with both channels driven.



TP 1100 Direct Drive 2 speed stereo turntable. Direct driven platter is operated by a brushless DC Motor. Recessed stroboscope, cueing and anti-skate devices.



G2711 Super 2 Music Centre. Features 2-speed turntable, MW, LW, FM and FM Stereo waveband radio. Versatile built-in Dolby cassette recorder/player.



G2811KL Music Centre. Features belt driven 2-speed turntable, magnetic cartridge and diamond stylus. LW, MW, SW and FM wavebands can be sensor touch pre-selected.



Hi-Fi 1 Speakers. Strongly recommended by Hi-Fi Choice these speakers, give excellent reproduction from the compact teak enclosure and like all Sanyo products, offer quality with value for money.



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Regd. office Dorset House, Stamford Street, London SE1 9LU



Sharp SG 400/CP400



Skantic 1053



Skantic 2065



Skantic 1753

set programmes. Switchable AFC. Semi-auto record player with Excel ES 70S magnetic cartridge. Adjustable stylus pressure device. Cassette recorder/player with auto CrO₂ switch. Sockets for mics, stereo headphones, tape recorder. DNL noise suppression and auto stop. Digital tape counter. Loudness compensation control. Pair of speakers each with 13cm bass and 6.5cm treble. Acrylic dust cover. Price: on application.

1753 Music Centre ★

Output 34W RMS. Ready for connection to ambiophonic box for simulated four-channel reproduction. FM stereo radio with five pre-set programmes. Skantic record player with Pickering V15/AT-2 magnetic cartridge. Adjustable anti skating and stylus pressure devices. Stereo cassette recorder/player. DNL noise suppression, auto stop, auto and manual recording level indicator, tape counter. Auto switching between standard and CrO₂ tapes. Sockets for stereo headphones, microphones, tape recorder. Loudness compensation con-

trol. Pair of speakers each 30W handling capacity and each with 20cm bass and 2.5cm dome tweeter. Acrylic dust cover. Price: on application.

2065 Music Centre ★

Output: 40W RMS. Modular construction with built-in facility for simulated four channel reproduction. FM and Medium Wave radio with stereo decoder and five pre-set programmes. Skantic record player with Excel ES 70F magnetic cartridge. Single lever operation. Anti skating and adjustable stylus pressure devices. Cassette deck with auto CrO₂ switch, DNL noise suppression, auto stop, digital counter, pause control. AFC. Sockets for mic, stereo headphones, tape recorder. Loudness compensation control. Auto and manual recording level controls. Pair of bass reflex speakers with 16.5cm bass speaker and 2.5cm dome tweeter. Acrylic dust cover. Available in white or black with speakers in white or black lacquer, teak, walnut or rosewood finish. Prices: on application.

★ Indicates entry is illustrated

3063 Music Centre ★

Output: 60W RMS. Built-in facility for simulated four-channel reproduction. FM stereo radio with four sensor control programme selectors and pointer instrument tuning indicator. Record player with Pickering magnetic cartridge and single lever action. Anti skating and adjustable stylus pressure devices. New three motor Dolby stereo cassette recorder/player with DNL noise suppression. Auto stop, digital counter, pause control. AFC. Sockets for mics, tape recorder, stereo headphones. Loudness compensation control. Accepts standard, CrO₂ and ferrous oxide tapes. Auto and manual recording level controls. Bass reflex speakers each with 16.5cm bass, 10cm middle and 2.5cm dome tweeter. Dust cover. Available in black with speakers in choice of teak, walnut, rosewood, white finish. Price: on application.

■ SONY (UK) LTD

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

HMK 55 ★

Sony belt drive with VL 32G cartridge. Amplifier output: 18W. Radio tuner: VHF, L, M, S. Tape Deck with Dolby 'B' system. W and F: 0.2%. Speakers: SS51 with 160mm woofer and 50mm tweeter. Speaker dimensions: 25 × 18 × 46cm. Dimension of main unit: 66 × 50 × 18cm. Finish: silver or black (HMK 55B). Features: supplied with stereo headset and stereo mic. Can accept FeCr tape. No rec. retail price.

HMK 77 ★

Sony direct drive using VL 32G cartridge. Amplifier: 35W with THD: less than 1%. Radio tuner as for HMK 55. Tape deck with Dolby 'B' system. W and F: 0.1%. Speakers: SS2030 with 200mm woofer and 100mm midrange and 50mm tweeter. Dimensions of speakers: 28 × 30 × 50cm. Dimensions of main unit: 66 × 50 × 18cm. Finish: silver or black (HMK 77B). Features: Supplied with stereo headset and stereo mic. Can accept FeCr tape. Hi-filter and loudness buttons. No rec. retail price.

■ STEREOSOUND

Stereosound Productions Ltd, 12-14
Wakefield Road, Brighouse, Yorks.
Tel: Brighouse 714355.

1515 ★

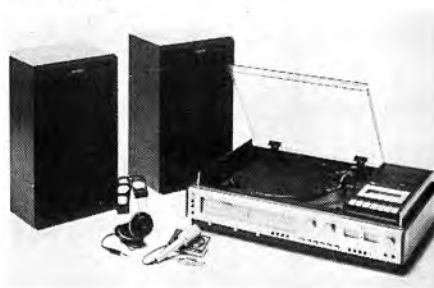
Comprises P182 single play turntable with V100 magnetic cartridge. AM/FM tuner, cassette recorder with CrO₂. Output: 20W.



Skantic 3063



Sony HMK 55



Sony HMK 77



Stereosound 1515

Speakers: 6in. woofers and 4in. tweeters. Rec. Price: £208.89 (plus VAT).

8080

Comprises P182 single play turntable with ceramic cartridge. Output: 8W per channel. AM/FM radio tuner. Cassette recorder with CrO₂. Speakers: 8 × 5in. Dimensions of main unit: 16.7 × 76.7 × 35.6cm. Dimensions of speakers: 35.5 × 22.9 × 18.1cm. Finish in black or walnut. Price: £177.73 (plus VAT).

■ TANDBERG

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

TR 220 GC ★

Dual record player 1225 with dual cartridge. Each speed can be adjusted by about 6%. Visual check by stroboscope. FM stereo tuner and stereo amplifier. Output: 2 × 25W. FR: 30 Hz-30 kHz. THD: 0.2%. Cassette tape recorder has manual level controls for recording, peak indicating level meters, high quality heads, auto end stop, and Dolby B noise reduction system. Speakers: 16½ in., 8¾ in., 10½ in. Dimensions of main unit: 56.7 × 18.6 × 33.9cm. Teak or rosewood finish. Features: Pre-set stations, tape monitor mounting, filters. Price: £431.00 (plus VAT).

■ TELEFUNKEN

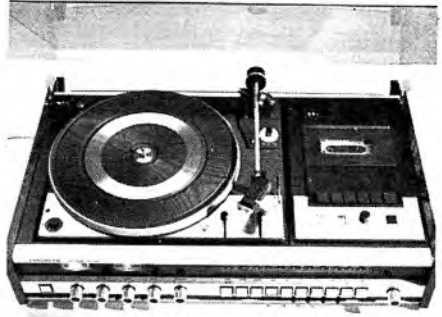
AEG-Telefunken (UK) Ltd, 217 Bath Road, Slough, Berks SL1 4AW.
Tel: Slough 872101.

Electronic Centre 6001 hi-fi

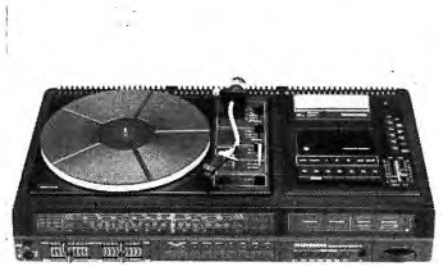
4 wavebands: FM, MW, LW, SW, 7 FM pre-selectors. Sensor switches for all functions (16). 7 rocker switches. Incorporates S500 record player. 2 × 35W. 6 loudspeaker sockets 4 ohms. 2 headphone sockets. Input: phono (mag) 2.5mV/47K. Input: ceramic (200mV/600K). Input: tape recorder 200mV/600K. FR: 22Hz-20,000kHz ±5dB. Distortion factor: ≤0.2%. Price: £519.00 (including VAT).

Studio Center 5030 ★

Compact hi-fi system which includes a sensitive receiver, a high quality belt drive turntable and a cassette recorder. Receiver output: 2 × 30W (cont sine) into 4 ohms. Frequency response: 20-20,000Hz ± 1.5dB. 4 wavebands, VHF, long, medium and short wave. 4 slider controls. Cassette section: Electronic servo control of motor. Dolby noise reduction. Tape select button. LED recording level display + LED tape motor indicator. Price: £499.00 (inc. VAT).



Tandberg TR 220GC



Telefunken Studio Centre 5030

■ TOSHIBA (UK) LTD

Toshiba House, Frimley Road, Camberley, Surrey.
Tel: Camberley 62222.

SM-2950

Music centre with Toshiba belt drive 30C/M T/T, semi-auto, magnetic cartridge, cueing lever. Amplifier: 15W × 2 into 4 ohms. FR: 20Hz-40kHz. THD: 1% max. Radio tuner covering FM, L, M, S. Tape deck with DC servo motor, two rec meters, tape counter, Dolby, W and F: 0.25%. Speakers: 17cm, 9.7cm, measure 24.5 × 18.4 × 42.5cm. Main unit: 62 × 39 × 18cm. Finish in silver and simulated wood. Price: to be announced

SM-3350

Toshiba belt-drive, semi-auto, cueing, magnetic cartridge. Amplifier: 20W × 2 into 4 ohms. FR: 20Hz-40kHz, THD: 1%. Radio tuner with FM pre-sets covers; FM, L, M, S. Compact cassette with Dolby, two meters, three step tape select. DC servo motor, W and F: 0.25%. Speakers: 17cm bass, 9.7cm HF, crossover frequency: 5000Hz, dimensions 25.7 × 18.4 × 46cm. Main unit in silver and simulated wood measures 62 × 39 × 18cm. Features: Free stop, dust cover. Price: to be announced.

★ Indicates entry is illustrated

SM-3650

Toshiba belt drive, semi-auto, cueing, magnetic cartridge. Amplifier: 25W × 2 into 4 ohms. FR: 20Hz-40kHz, THD: 1%. Radio tuner covers FM, L, M, S, with presets on FM. Tape deck: compact cassette with Dolby, two level meters. DC servo motor. W and F: 0.2%. Speakers: 20cm bass and 9.7cm HF, dimensions: 28.5 × 21.8 × 500cm. Main unit in silver and simulated wood measures 81 × 43.5 × 18.5cm. Features: stand by timer with LED display for auto recording, electric clock, free stop dust cover. Price: to be announced.

SM-3750

Toshiba fully auto belt drive with stroboscope, FG servo, Magnetic cartridge. Amplifier: 28W × 2 into 4 ohms. FR: 40Hz-40kHz. THD: 1%. Radio tuner with 6 FM presets covers FM, L, M, S. Tape deck: compact cassette with Dolby, three step tape select, two level meters, auto rec with timer. Speakers: 20cm bass, 9.7cm HF, crossover frequency: 5000Hz, dimensions: 28.5 × 21.8 × 500cm. Main unit: 69.2 × 43 × 10.9cm. Features; electronic clock with LED display for auto recording. Free stop cover. Price: to be announced.



ULTRA

Thorn Consumer Electronics Ltd, 284 Southbury Road, Enfield, Middlesex. Tel: 1-363 5353.

6922

Music centre with BSR P163 deck and Shure M75 cartridge. Amplifier: 25W. FR: 40Hz-20kHz. THD: < 1%. Radio tuner covers FM, L, M, S. Tape deck with Dolby 'B'. W and F: < 0.3% to DIN 45507. Speakers: 2 × 5in., 1 3/4in. Crossover frequency: 3kHz, dimensions: 24 × 20 × 46cm. Main unit measures 62.3 × 41 × 19.3cm. Finish in teak and black. Features: VHF touch tuning with 6 presets. No rec. retail price.

6971

Music centre with BSR P182 deck. Amplifier: 6W. FR: 40Hz-18kHz. THD: < 1%. Radio tuner covers FM, L, M. Tape deck with Dolby 'B', W and F: < 0.3% to DIN 45507. Speakers: 6 1/2in. round, dimensions 22 × 18.5 × 37cm. Main unit in black and silver with teak surrounds measures 56 × 34.5 × 17cm. Features: switchable AFC, FM stereo beacon, auto stop on all cassette functions. No rec. retail price.

6920

Music centre with Thorn SP 202 Vernitron V100 cartridge. Amplifier: 10W. FR: 40Hz-



Van Der Molen Avelley

18kHz. THD: < 1%. Radio tuner: VHF, L, M. Tape deck with Dolby 'B', W and F: < 0.3% to DIN 45507. Speakers: 6 1/2in. unit and capacity fed tweeter effective above 4kHz. Dimensions: 20 × 18 × 37cm. Main unit all black measures 56 × 34 × 16cm. Features: belt drive record deck. No rec. retail price.

■ VAN DER MOLEN

Van Der Molen, 101 Hainault Road, Romford, Essex. Tel: Romford 22018.

T25 SCW

Garrard 35 SB record deck with Shure M75-6 cartridge. Amplifier output: 20W. FR: 20Hz-20kHz ± 2dB. Tuner: VHF/L/M. Tape deck — W and F: better than 0.25%. Speakers: 6 1/2in. bass, 2in. tweeter. Dimensions: 25.4 × 19.05 × 40.64cm. Main unit dimensions: 82.55 × 18.41 × 39.37cm. All wood cabinet with latching cover. Price: £335.00 (inc. VAT).

Lambourne

Garrard 35SB record deck with Shure M75-6 cartridge. Amplifier output: 20W. FR: 20Hz-20kHz ± 2dB. Tuner: VHF/L/M. Tape deck — W and F: better than 0.25%. Speakers: 6 1/2in. bass, 2in. tweeter. Dimensions: 28 × 20.32 × 52.7cm. Main unit: 97.8 × 67.3 × 41.9cm. Burr walnut inlaid, period styling. Price: £402.00 (inc. VAT).

Havering

Garrard 35 SB/record deck with Shure M75-6 cartridge. Amplifier output: 20W. FR: 20Hz-

20kHz \pm 2dB. Tuner: VHF/L/M. Tape deck — W and F: better than 0.25%. Speakers: 6 $\frac{1}{2}$ in. bass, 2in. tweeter. Dimensions: 28 \times 20.3 \times 52.7cm. Main unit: 78.7 \times 73.7 \times 43.2cm. Burr walnut inlaid, period style. Storage for: 150 LP's. Price: £443.00 (inc. VAT).

Aveley ★

Garrard 35 SB record deck with Shure M75-6 cartridge. Amplifier output: 20W. FR: 20Hz-20kHz \pm 2dB. Radio tuner: VHF/L/M. Tape deck — W and F: better than 0.25%. Speakers: 6 $\frac{1}{2}$ in. bass, 2in. tweeter. Dimensions: 28 \times 20.3 \times 52.7cm. Main unit dimensions: 68.6 \times 43.2 \times 88.9cm. Walnut period style. Storage for 80 LP's. Price: £443.00 (inc. VAT).

Stereo 40 MC

Music centre with Garrard belt drive and Veritron V101 cartridge. Amplifier: 15W. FR: 20Hz-20kHz. THD: $>$ 0.2%. Radio tuner with coverage of FM, L, M. Tape deck with Dolby, W and F: \geq 0.25%. Speakers: 6 $\frac{1}{2}$ in., dimensions 24.75 \times 15.25 \times 40.65cm. Main unit in teak or rosewood measures 64.75 \times 34.90 \times 16.5cm. Features: LED flywheel tuning indicators, audio output meters. Price: on application.

■ WALTHAM

Waltham Electronics (UK) Ltd.
155-159 Queens Road, Watford,
Herts. WD1 2QH.
Tel: Watford 24543.

STM 15 ★

Four wave band radio music centre. BSR deck. Amplifier output: 8W per channel. Radio tuner: VHF, L, M, S. Cassette tape recorder. Speakers: 23 \times 15 \times 35.5cm. Main unit dimensions: 52 \times 38 \times 18cm. Finish: teak. Features: Slide controls for volume, balance, and tone. Rotary controls for tuning and pushbuttons for wave band, tape recorder, on/off, and function controls. Acrylic dust cover. Built-in storage compartment for cassettes. Headphone socket. No rec. retail price.

STM 35 ★

Same as STM15 but front loading cassette tape recorder. Output 16W. Speaker dimensions: 15.2 \times 22.9 \times 35.5cm. Main unit dimensions: 41.3 \times 58.4 \times 20.5cm. Finish: teak. No rec. retail price.

■ WIFONA

Paul Spring Electronics Ltd. 19-23 Masons Hill, Bromley, Kent.
Tel: 01-464 0823.



Waltham STM 15



Waltham STM 35

Columbia de luxe

Music centre with BSR P182 deck and ADC cartridge. Amplifier: 15W. FR: 50Hz-14kHz. THD: 1%. Radio tuner covers FM, L, M, S. Tape deck: W and F: 0.2%. Speakers cross-over frequency 2000Hz, dimensions: 20.5 \times 16.5 \times 30cm. Main unit measures: 72 \times 34 \times 18cm. Features: slider controls, storage space for cassettes. CrO₂ switch, tape counter. Price: £186.00 (plus VAT).

■ WYE ELECTRONICS LTD

27 Station Road, Birmingham, Chesterfield, Derbyshire. Tel: 0246 70297.

808

BSR 129 R2 record deck. Amplifier output: 10W. FR: 60Hz-20kHz \pm 3dB. THD: 10%. Tuner: VHF/L/M. Tape deck — W and F: 0.15%. Speakers: 8 \times 5in. Dimensions: 20.6 \times 15 \times 35cm. Main unit dimensions: 61 \times 46 \times 18cm. Teak finish. Auto stop, pause, ALC. No rec. retail price.

★ Indicates entry is illustrated



Wye 902

902 ★

BSR 123 R2 record deck. Amplifier output: 10W. FR: 60Hz-20kHz \pm 3dB. THD: 10%. Tuner: VHF/L/M. Tape deck with noise reduction. W and F: 0.15%. Speakers: 8 \times 5in. Dimensions: 20.6 \times 15 \times 35cm. Main unit dimensions: 61 \times 46 \times 18cm. Teak finish. CrO₂. Auto stop, pause, separate level controls and VU meters. No rec. retail price.

■ YORK

York Electronics Ltd, 73 Grosvenor Street, London W1.
Tel: 01-629 8368.

DN 5000M ★

FM-AM-MW stereo decoder radio. Fitted with BSR autochanger and sensitive cassette record/playback deck. This unit has 2 \times 7 watts output and is supplied complete with good sized high quality loudspeakers. Housed in a good looking wooden cabinet with aluminium trim and fitted with all over hinged dust cover.

SHC 3330

Music centre with BSR deck, cue lever. Amplifier: 2 \times 12W. THD: 1%. Radio tuner covers VHF, L, M. Tape deck with auto stop for record and playback, auto chrome

(CrO₂)/normal tape selection. Speakers measure 24 \times 15 \times 35.5cm. Main unit measures 61.2 \times 39.5 \times 22.2cm. Features: Solid state circuitry, facility for 4-speaker stereo. No rec. retail price.

SHC 5100

Music centre with record deck incorporating auto return and stop, cue lever. Amplifier: 2 \times 9W. Radio tuner covers VHF, L, M. Tape deck with auto shut off, tape selector. Main unit measures 58.4 \times 37 \times 10.3cm. Features: three way recording: radio, phono, mic; rotary controls, osc switch, stereo indicator lamp. No rec. retail price.

SHC 3350

Music centre with BSR auto-return player. Amplifier: 2 \times 30W. THD: 1%. Radio tuner covers VHF, L, M, S. Tape deck with Dolby, W and F: less than 0.3%. Main unit measures 61.2 \times 39.5 \times 22.2cm. Features: 4-speaker stereo facility, stereo lamp. No rec. retail price.



York 5000

Pickup and Record Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 62889.

D.50 Discoduster

A comprehensive record cleaning kit with balanced aluminium arm, impregnated cylinder and superfine groove brush. The weighted base can be permanently fixed or used free standing, and the two pivots with choice of arm location enable the Discoduster to be used with a wide variety of automatic, or transcription type decks. Supplied with two replacement treated cylinders; and fluff removing brush. Price: £2.50 (plus VAT).

A.114/E.1306

Completely cabinetted 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, crosstalk: -40dB, noise ratio -45dB. Input: 60mV max. Output: 2V. Price: £10.90 (plus VAT).

■ ADC

BSR (ADC Europe), Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

Low Mass magnesium headshell

Price: £5.00 (plus VAT).

ADC Sound Level meter

With pink noise frequency test record. Accessory for ADC frequency equalisers. Price: £60.00 (plus VAT).

Stabiliser Weight

Low frequency 500gm. Price: £8.40 (plus VAT).

Slide Adaptor

Diecast SME type. Price: £17.11 (plus VAT).

Extra headshell

Carbon fibre extra headshell for ADC LMF-2 Carbon fibre tonearm. Price: £8.91 (plus VAT).

■ AUDIO PACKS

Tape Recorder Spares Ltd,
206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844.

Trade Catalogues available on request.

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

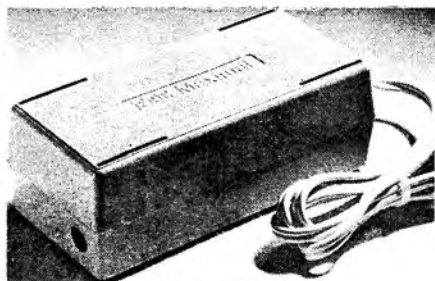
Plugs, sockets, chassis mounted components, fuses and audio accessories. Pre-packed for counter or showroom display.

Mains units ★

Five different 4.5-12V battery eliminators complete with connecting leads for use with all standard battery-operated tape recorders and radios. Full specifications on request.

Sound selector units ★

A range of five units for routing signals to phones, speakers and amplifiers. Four of the units provide for the 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 show-



Audio Packs 441 Mains Unit

★ Indicates entry is illustrated

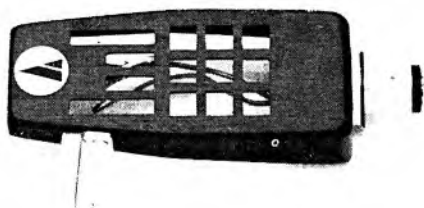
rooms and for comparative tests. Prices on request.

■ AUDIO TECHNICA

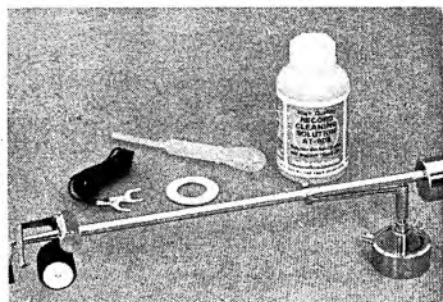
Shriro (UK) Ltd, Shriro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652227.

AT 6008 Rotary Disc Cleaner

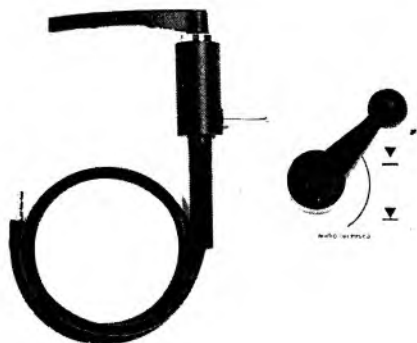
Complete with cleaning solution reservoir with special double layered padding construction which enables you to apply cleaner evenly over entire record. Price: on application.



Audio Technica ATS.



Audio Technica AT 6002



Audio Technica AT 6005

AT 6010 Record Cleaning Kit

Special cleaning solution AT 6008, included in kit, is effective in loosening coagulated dirt in the groove. Price: on application.

AT 6003 Tri Capsule

Stand with thick acrylic covers which will hold up to three spare cartridges in headshells. Price: on application.

ATS Standard Headshell ★

For 1005 arm. Weight: 8gm. Price: on application.

AT UL Ultra Light Standard Headshell Fitting

Will fit AT1005 and 1009 arms. Weight: 6gm. Price: on application.

AT. D Headshell for AT1009 Arm

Weight: 7gm. Price: on application.

AT 6001

Autocleanica. Sweep arm. Double action soft bristle brush and anti-static treated plush roller. Weighted base. Replacement brush/pad kit. AT 601. Price: on application.

AT 6002 ★

Improved Autocleanica. Sweep arm. Conducting arm and brush with grounding wire, dissipates static charges. Supplied with record cleaning solution. AT 608. Price: on application.

AT 605

Acoustic insulators. For use with turntable or speakers, will effectively neutralise both vertical and horizontal vibrations and minimise acoustic feedback. Adjustable for height, set of four complete with turntable spirit level. Price: on application.

AT 607

Stylus cleaner. Powerful cleaning solution, which effectively cleans the stylus. Small brush is attached to bottle cap for convenience. Price: on application.

AT 6005 ★

Air lift. Remote control. Tone arm lift utilising compressed air which unlike oil is not affected by changes in temperature. The lifting and lowering action is smooth and constant. Price: on application.

AT I.2

Oil lift, for use in conjunction with AT 1005 II arm. Price: on application.

Details on other Audio Technica accessories (headshells, cleaners, etc) on request.



BASF record cleaning arm

AT-MG

Anti-resonance magnesium headshell — universal fitting. Price: on application.

ATNH

Solid headshell for professional tonearms. Price: on application.

■ **BASF**

BASF United Kingdom Ltd, Audio/Video Tapes Division, Haddon House, 2-4 Fitzroy Street, London W1P 5AD. Tel: 01-637 8971.

Checkpoint Accessories for Records ★

Record cleaning arm £3.00; cleaning pad £2.10; cleaning cloth 28p; handling pad 56p; stylus

cleaning kit £1.04; turntable levelling kit £2.28; replacement roller and brush 45p; record care kit £3.70; de luxe record care kit £6.44; record and cassette care kit £7.06.

■ **BIB**

Bib Hi-Fi Accessories Ltd, PO Box 78, Hemel Hempstead, Herts. HP2 4RH. Tel: Hemel Hempstead 61291.

Model 42

Record cleaner consisting of an aluminium arm with integral rest, fitted to a self-adhesive base with a brush and velvet roller attached. Price: £2.33 (inc. VAT).

Model 45 Auto-changer Groov-Kleen

Finished in chrome and fits most units with flat top cartridge housings. Complete with velvet and stylus cleaning brush. Adaptor available for Garrard Zero 100. Price: £1.17 (inc. VAT).

Model 50 Groov-Kleen

Has all the features of the Model 60 but made in high quality plastic. The base is black and the cranked arm is white. Price: £1.36 (inc. VAT).

Model 43 Record care kit

Contains Groov-Kleen in chrome finish, record dust off, spirit level, stylus and turntable cleaner. Price: £3.38 (inc. VAT).

Model 60 Groov-Kleen

Chrome finished with armrest and counter weight to ensure light tracking. Price: £1.86 (inc. VAT).

Model 32A Stylus balance

Made from non-magnetic material and fitted with non-scratch base. Measures from ¼ to 5gm and calibrated to be accurate to within ¼gm. Simple to use and supplied with full instructions. In presentation case. Price: £1.69 (inc. 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: 43p (inc. 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: 30p (inc. VAT).

Model 2000 SP

Cleans records while you play them. Improves

★ Indicates entry is illustrated

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: £3.48 (inc. VAT).

Ref: 71 Record Dust-Off

For removing dust and dirt quickly and simply from records to reduce record and stylus wear. Measuring just over 5in, it is convenient to hold in the hand and covers the full width of record grooves, making it easy to remove surface dust by applying gently to the record as it revolves. Supplied with protective cover. Price: 78p (inc. VAT).

Ref: 40 Record Cleaning Cloth

Completely lint-free and washable. Supplied in handy dust-free container. 35p (inc. VAT).

Ref: 69 Anti-Static Liquid

Non-flammable, non-toxic, ideal for cleaning tape heads, record styli, glass, plastic and colour TV screens. 32p (inc. VAT).

Ref: 70 Stylus and Turntable Cleaning Kit

Essential for maintaining stylus and turntable free from dirt. Comprising: cleaning brush, absorbent cloth, anti-static cleaner and stylus inspection mirror, packed in wallet. 78p (inc. VAT).

Ref: 76 Stylus Cleaner

A special purpose stylus cleaning brush and bottle of stylus liquid cleaner, packed in a dust-free container. Essential for maintaining stylus free from dust and dirt. 39p (inc. VAT).

Ref: 79 'Golden' Record Care Kit

This attractive kit comprises: Model 2000 Groove-Kleen, stylus cleaner in dust-free container, record handler, stylus inspection mirror, stylus balance, record dust-off, complete with full instructions. £6.41 (inc. VAT).

Ref: 80 3-Way Record Care Kit

Another handy care kit which includes the Model 42 Groov-Kleen, Record Handler and Record Dust-Off, which can be used dry or moist. Price: £3.20 (inc. VAT).

Ref: 81 Auto-Changer Care Kit

Comprising: Auto-Changer Groov-Kleen, Stylus Cleaner in dust-free container, Record Handler, Record Dust-Off, Cleaning Brush, with full instructions. Price: £2.66 (inc. VAT).

Ref: 94 Static Tester

A simple but effective way of testing static



Bib 101A Groov-Kleen



Bib 44 record level

charge on records or similar plastic surfaces. Price: 99p (including VAT).

Ref: 106 Anti-Static Record Care Kit

The complete kit for overcoming the problem of static on records. Contains the Bib Groov-Stat, static tester and record dust-off, neatly housed in a hinged plastic box. Price: £7.78 (including VAT).

Ref: 95 The Bib Book of Hi-Fi

A hard-back book containing 123 pages and over 50 illustrations on a wide range of Hi-Fi topics. Price: £1.98 (VAT exempt).

Ref: 101 Parallel Tracking Groov-Kleen

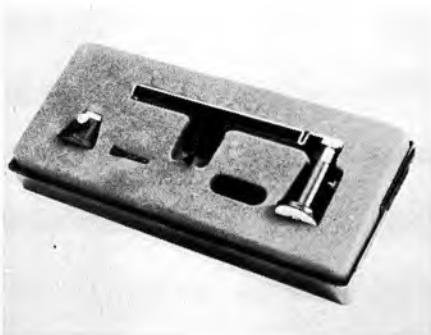
This latest automatic record cleaner is designed to fit all single play modern decks. It is beautifully styled, easy to fit and extremely efficient. Price: £5.98 (including VAT).

Ref: 102 Stat-Kleen Anti-Static Turntable Mat

A most effective way of removing static-charge from records immediately the record starts to play. The mat can be suited to fit all



Bib 114 liquid record protector



Bib 101A Groov-Kleen

turntables and is placed over, or replaces, the existing mat. Price: £2.38 (including VAT).

Ref: 103 Stylus Cleaner

This kit comprises a special angled stylus cleaning brush and bottle of stylus cleaning liquid, supplied in a handy size plastic box. Price: 65p (including VAT).

Ref: 105 Music Centre Care Kit

An all-in-one record and cassette care kit, comprising Bib Groov-Kleen, cleaning brush, stylus cleaner, record dust-off, cassette head cleaner, re-record tabs and extractor tool, pack of replacement cassette title labels. Price: £4.99 (including VAT).

Ref 101A Bib Groov-Kleen (Parallel Tracking) ★

Easy to install, the Bib Groov-Kleen is supplied with two types of base and two height extensions to suit any modern single play record deck. While records play the delicate brush lifts out dirt (from the record grooves) which is then collected on the velvet roller. The brush and roller are housed on a light-

weight carrier which tracks across the record at the same speed as the tone arm. A separate brush for cleaning the velvet is provided. Supplied complete with spare roller and brush, packed in a permanent storage case. Price: £3.97 (including VAT).

Ref 44 Bib Record Level ★

Maintains a perfectly level turntable, thereby preventing unnecessary wear on styli and records. Triangular in shape the Bib level is centrally positioned over the turntable spindle and has two spirit bubbles for accurate and easy checking. Made of durable plastic. Price: £1.73 (including VAT).

Ref 114 Bib Groov-Guard Liquid Record Protector ★

Bib Groov-Guard is a record protector having special properties that reduce the wear of gramophone records. It also helps to reduce static, which attracts harmful dust and dirt to the records. One of the ingredients in BIB Groov-Guard reduces significantly the friction between the stylus and the record vinyl, thus reducing the wear of the record each time it is played and it also has excellent anti-stick properties.

The liquid is supplied in a 2oz bottle and is applied through a special spray nozzle. There is sufficient liquid in each bottle for the treatment of about 30 records. Also included in the pack is a Bib Dust-Off and Record Handler. Price: £4.98 (including VAT). Replacement bottles £2.98 (including VAT).

■ **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: 50p including postage.

■ **BSR**

BSR Ltd, Powke Lane, Cradley Heath,
Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

Cartridge Carrier

Quick-change slide-in carrier. Permits changing or inspecting cartridge easily and quickly without interfering with wiring. Models to suit all BSR McDonald pick-up arms (except 210 mini-changer). Price: £1.38 (plus VAT).

★ Indicates entry is illustrated

■ CONDOR

Condor Electronic Ltd, 100 Coombe Lane,
London SW20 0AY.
Tel: 01-946 0033.

T2001

Blister pack for T2001 cartridge showing specifications as well as instructions. Price on application.

Vac-O-Rec

New Mark 2 model available, details on application.

Music Bug

Audio transducer which uses walls, ceilings and floors to reproduce sound with exceptional clarity and quality. Price and details on application.

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 2142.

Lightweight Metal Headshell

Interchangeable with SAU2, BD2, BD2/A, BD3, BD100 p/u arms. Price: £4.78 (inc. VAT).

Connoisseur Stylus Balance ★

Precision stylus balance with sliding weight adjustment. Scale calibrated 0-6gm. Simple operation giving accurate stylus pressure settings. Price: £1.60 (including VAT).

■ DECCA

Decca Special Products, Ingate Place,
Queenstown Road, London SW8 3NT.
Tel: 01-622 6677.

Magnetic bias compensator

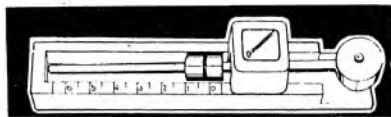
Neat, simple, unobtrusive device using magnetism precisely to neutralise the force which draws a pickup towards the centre of the turntable. Type A for Mk I and Mk I 'Super' *ffss* arms, and for Deram ARI arm. Price: £1.30 (plus VAT).

Central locator

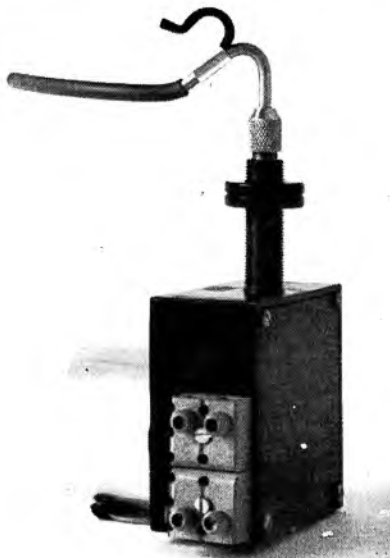
Fits on *ffss* arm like *ffss* head. Pickup arm is correctly positioned when the locator moulding fits the turntable centre spindle. Price: 45p (plus VAT).

Decalift ★

Motorising 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: £9.00 (plus VAT).



Connoisseur Stylus Balance



Decalift



Decca Record Brush



Decca Record Cleaner

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: £1.50 (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: 30p (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: £5.00 (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: £5.30 (plus VAT).

■ **DISC-A-VAC**

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

Disc-A-Vac ★

Recording cleaner on vacuum principle sucking air in through the top vent and blowing out dust through rear vent. As record revolves velvet pads clean the grooves and carbon fibre bristle remove majority of static. Full details included. Price: £17.65 (plus VAT).

■ **EAGLE**

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

PRE402 ★

Mains-powered stereo pickup pre-amplifier for magnetic cartridges including Eagle LC 05 and LC 07. Provided with dual phono sockets. RIAA equalization. Price: £5.70 (plus VAT).

FF2 Stereo pickup amplifier

Designed for use with magnetic cartridges, having RIAA equalization. Fitted with phono socket input and outputs. Powered by a PP3 battery or equivalent. Price: £5.60 (plus VAT).

HS 200

Replacement headshell, lightweight type, matt black finish, standard connector and colour-coded leads. Price: £2.80 (plus VAT).



Disc-A-Vac



Eagle PRE 402

■ **EXPERT PICKUPS**

PO Box No. 3, Ashted, Surrey KT21 2QD.
Tel: Ashted 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

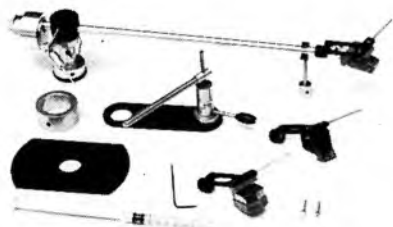
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Garrard Scratch Filter



Groovac Mk. IV



Hadcock Uni-Lift

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.

■ GARRARD

Garrard Engineering Ltd, Newcastle Street, Swindon, Wilts SN1 2LH.
Tel: Swindon (0793) 35381.

SR101 Scratch Suppressor ★

Garrard Music Recovery Module is designed to eliminate sudden large impulses introduced by a scratch or small hole in the record surface. It contains its own pre-amp unit and is plugged into the audio system between the record player and amplifier. It runs from mains and has simple controls. Controls: on/off switch with LED indicator, filter in/out switch with LED indicator to permit good records to be played through filter, and a scratch identification LED indicator to permit scratch-level adjustment for maximum filtering. Price: on application.

■ GROOVAC

R.I. Audio, Kernick Road, Penryn, Cornwall TR10 9DQ.
Tel: Penryn 72753.

Groovac Mk IV ★

Anti-static vacuum record cleaner which consists of a precision lightweight arm and a suction unit acoustically isolated in a special enclosure, fitted with mains switch and indicator. Tracking force 0.4gm. The nozzle is fitted with 2 brushes — one, an earthed carbon fibre brush to discharge static electricity and the other with fine hairs to facilitate removal of dust from the bottom of grooves. Counter-balanced and with integral rest incorporating anti-skating device. Fixes by magnetic base or self adhesive pad. Price £19.50 (inclusive of VAT and postage).

■ 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. Complete with template for easy installation. Screw adjustment of horizontal arm. Damped adjustable rate of descent ensures accurate lowering and cueing. Price: £8.20 (plus VAT).

■ KEITH MONKS

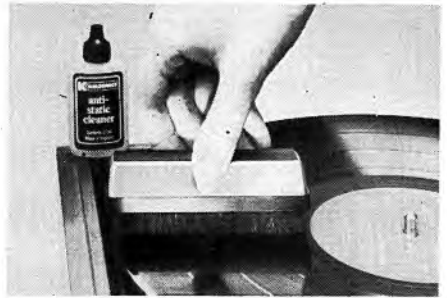
Keith Monks (Audio) Ltd, 26-28 Reading Road South, Fleet, Aldershot, Hants.
Tel: Fleet 20568.

KMAL/BA — Record Sweeper

High quality brush assembly with antistatic



Kelsonics K8



Kelsonics K8

lead and animal hair, variable height control. R.R.P: £7.86.

KMAL DLK Damped Levelling Kit

Set of four adjustable feet for turntable with spirit level. R.R.P: £5.35.

KMAL TFL Levelling Kit

Set of three adjustable feet for turntable with spirit level. R.R.P: £4.00

RCM Mark 2 — Record Cleaning Machines

Single version record cleaning machine process in application of alcohol and distilled water; the liquid plus dirt is then removed by vacuum action. Used by broadcasting companies, sound studios, gramophone libraries, Hi-Fi and record shops and private enthusiasts. R.R.P: £558.30, plastic cover £31.15, 1,000 sleeves with special low density plastic inners £55.0, special spares pack £32.52.

RCM Mark 3

As above but twin deck version, R.R.P: £774.20, plastic cover £40.65. List of approved record cleaning centres available on request.

■ **KELSONICS**

Kelsonics Ltd, Kelsey House, Wood Lane End, Hemel Hempstead, Herts HP2 4RQ. Tel: Hemel Hempstead (0442) 61291.

Record Valet K8 ★

Handle incorporates a reservoir into which a few drops of Kelsonics Anti-Static liquid are inserted in order to maintain the velvet cleaning pad in a moist condition. Adjacent to the pad, and running the full length of the cleaner, is a removable brush. Dust can easily be removed from the pad by the separate brush provided. Top and base cover are engineered in finest steel. Price: £4.99 (inc. VAT).

■ **LEDA**

Leda Audio Accessories Ltd, 7 Thane Works, Thane Villas, London N7 7NU. Tel: 01-607 1107/8.

LA 10 Record Cleaner

Plus velvet bock allowing cleaning fluid to enter through slide clips.

LA 11 Record Stylus Cleaning Fluid

30cc bottle for use with record cleaners, cloths, arms, brushes to remove dirt and dust from records and stylus tips.

LA 12 Stylus Cleaner

20cc bottle with brush held in free standing base for convenient positioning.

LA 13 Record Spray Pack

LA 14 Record Spray Fluid

50cc bottle.

LA 16 Record Cleaning Arm

Finished in bright chrome and black, the arm easily becomes an integral part of the record deck. It has weighted base for free or permanent standing; 8 position roller; minimum counterbalance overhang which eliminates any fouling on plinth covers; brush tufts honed to a point enabling efficient sweeping and tracking action.

LA 23 Disc Wipe and Stylus Cleaner

LA 24 Disc Wipe

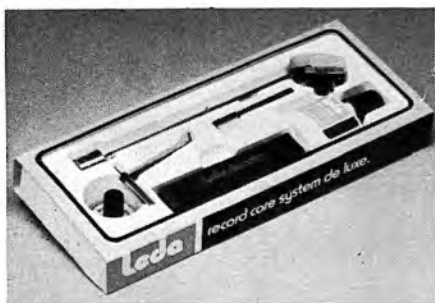
LA 25 Record Care System ★

Contains Record Cleaning Arm, Stylus Cleaner and Disc Wipe in presentation pack.

LA 28 Record Grip

A plush lined grip which eliminates harmful smears from record surface.

★ Indicates entry is illustrated



Leda Record Care

LA 29 Supa Care Pack 1

Custom styled storage case holding Record Grip, Disc Wipe, two brushes and 30cc bottle of Record Cleaning Fluid.

LA 30 Music Centre Care System

Comprehensive kit comprising everything for the care of tape and record sections on stereo music centres. Included in the presentation pack are the Record Cleaning Arm, Disc Wipe, Record/Stylus Cleaning Fluid with brush, Cassette Head Cleaner, Polishing Stick and Tape Cleaning Fluid.

■ Lenco

C. E. Hammond & Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

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: £8.00 (plus VAT).

Lencoclean Super Refill

Price: £1.50 (plus VAT).

Lencofix ★

Device for fixing to record deck cover to act as a record cover holder and includes a pocket containing anti-static cloth. Price: £2.30 (plus VAT).

Lencolamp

Practical turntable illumination unit which clips on to record deck cover. Price: £6.90 (plus VAT).

■ LINN PRODUCTS LTD

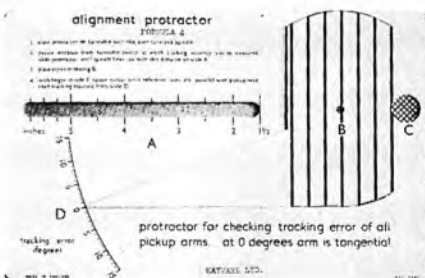
235 Drakemire Drive, Castlemilk,
Glasgow G45 9SZ.
Tel: 041-634 3860.

Lencofix

Plattenreinigung
Appareil pour nettoyer les disques
Reinigungsflüssigkeit



Lencofix



Formula 4 — alignment Protractor

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: £3.00 (plus VAT).

■ LYRICHORD

N. Miers & Co Ltd, 28 Piercing Hill,
Theydon Bois, Epping, Essex CM16 7LE.
Tel: 037-881 2611.

Cartridge carriers

Slide-in type for BDS 80, 90, 95. Price: £1.60.

Plinth

Afromosia veneered wood plinth suitable for BSR units. Price from: £19.77.

Bib HI-FI ACCESSORIES

gentle on your records.

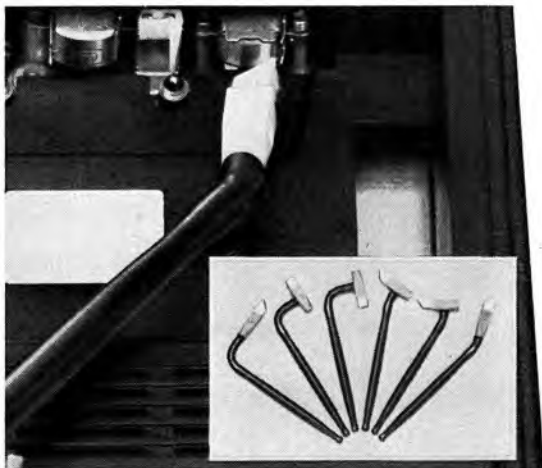
The new Bib Record Valet is the most technically advanced manual record cleaner around.

Too much cleaning fluid can actually harm records, so the Valet humidifies the liquid and leaves no sticky deposits. Made of chromed steel, it looks great and gives you a great standard of record care.

Pat. Pending. Reg. Des. No. 981808

Ref. 110 RRP £5.49 inc. VAT

keep a clear head.



For top sound quality, tape heads need regular attention.

This Bib kit contains everything you need – multi-angle cleaning tool, cleaning and polishing pads, cleaning liquid, brush and inspection mirror – all that's required for professional-standard tape head care. Brit. Pat. No. 1485069

Standard pack

Ref. 25 RRP £1.99 inc. VAT

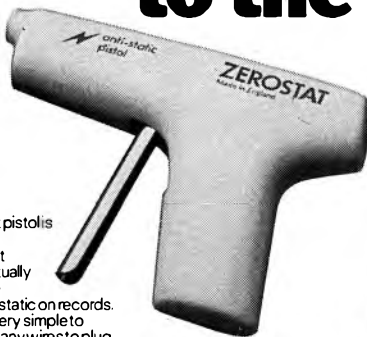
In permanent storage box with cleaning cloth

Ref. 99 RRP £2.48 inc. VAT

Bib helps the music go round

Bib Hi-Fi Accessories Limited, Kelsey House, Wood Lane End, Hemel Hempstead, Herts. HP2 4RQ. Tel: (0442) 61291.

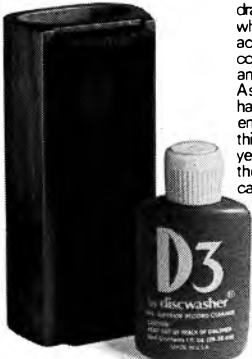
Once we'd invented the pistol, we knew you'd be looking forward to the range.



The Zerostat pistol is a legend. It was the first device to virtually eliminate the problems of static on records. You'll find it very simple to use, without any wires to plug in, or batteries to replace. With average use, say 15 times a day, it will last more than ten years.
£6.99 inc VAT

THE NEW D3 DISCWASHER SYSTEM

It takes a very special brush to remove micro-dust that could become welded to groove walls by stylus pressure. The Discwasher brush with its unique angled micro-fibre fabric is the most efficient way to pick up and absorb micro-dust. The fabric, on its absorbent pad,

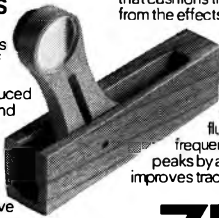


is mounted on a walnut handle which stores a bottle of D3 cleaning fluid. The D3 fluid has several important functions: To pull dirt from the micro-grooves, remove fingerprints and other surface contaminations and to protect the vinyl additives necessary for long term record wear.
£6.99 inc VAT

THE NEW SC-1 STYLUS CLEANER

Record life, stylus life and quality of sound are all dramatically reduced when the diamond accumulates a coating of dust and dirt. A stylus cleaner has to be strong enough to remove this waxy coating, yet gentle enough to protect the delicate cartridge cantilever assembly.

The SC-1 achieves this by providing the perfect combination of bristle density and stiffness. Two drops of D3 cleaning fluid add to its highly efficient cleaning action. It comes in a walnut case, complete with a built-in



magnifying inspection mirror.
£3.99 inc VAT

THE NEW DISCRAKER Discraker



All records contain a measurable warp. A lot contain a very measurable warp. Discraker is a very effective low friction tonearm/cartridge damper that is attached to virtually any headshell, yet weighs less than one gramme. Its revolutionary design features a precision engineered pneumatic piston that cushions the cartridge from the effects of record warps.

Through its damping effect, the Discraker also minimises subsonic woofer flutter, reduces low frequency resonance peaks by as much as 18dB, improves trackability and

reduces record and cartridge wear.
£19.95 inc VAT

THE NEW GOLD-ENS CONNECTOR CABLES

Gold has one third the bulk resistivity of other standard connector metals. So gold-plated contacts ensure the optimum transfer of electrical signals. Audio perfectionists will therefore appreciate that Gold-ens connector cables can make a noticeable improvement to their system. The cables are of ultra-low capacitance, with stranded centre wires and steel spring relief at each end.



They're available in 1 and 2 metre 2 phono-to-2 phono, 1 metre DIN-to-4 phono lengths and female-to-female connector plugs.
From £4.95 inc VAT

ZEROSTAT COMPONENTS

For further information, write to Dept. 65, Zerostat Components, Edison Road, Industrial Estate, St Ives, Huntingdon, Cambs. PE17 4LF. Telephone: St Ives (0480) 62225.

We aim to clean up hi-fi.

Dust cover

Lift off dust cover for above plinth £5.50.

Dust cover

Friction hinged dust cover for above plinth. £12.00.

■ **MAYWARE**

15 Heather Walk, Edgware, Middx.
HA8 9TS.
Tel: 01-958 9421.

Formula 4 Alignment Protractor (formerly BJ) ★

Enables correct setting up and measuring tracking accuracy of all pickup assemblies over entire disc surface. Send SAE for original 'Hi-Fi News' review. Made in plastic ivory. Price on application.

■ **METROCARE**

Metrosound Audio Products Ltd,
Freedex House, 4-10 North Road,
Islington, London N7 9HN.
Tel: 01-607 8141.

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: 80p (plus VAT).

M10 Metro-Mat

A carbon molecule loaded rubber anti-static turntable mat to neutralise the negative static charge on records. Packed in record sleeves. Price: £1.72 (plus VAT).

M11 Hi-Fi Stylus Cleaning Kit

Bottle of specially developed mild solvent fluid. Moulded plastic retaining clip on bottle for soft nylon cleaning brush. Price: 64p (plus VAT).

M26 Ioniser

High-fidelity record cleaner. Permanently anti-static humid soft velvet enclosed in plastic moulding. Price: 80p (plus VAT).

M43 Super Groovemaster

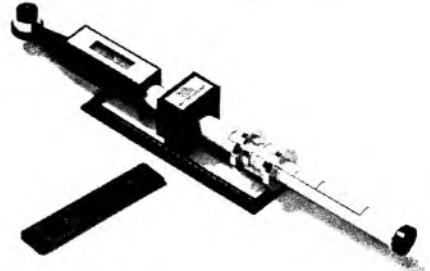
High quality record cleaning arm finished in satin anodised aluminium and contrasting black; pivoted on dye-cast free standing base. Brush supplied for cleaning velvet roller after use. Price: £2.70 (plus VAT).

M52 Metrocare Hi-Fi Kit No. 2

Moulded record cleaner with plush velvet foam backed pad held in protective tray. Bottle



Metrosound M64



Stylus Balance

of record/stylus cleaning fluid and stylus cleaning brush. Price: £1.00 (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: £1.80 (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: £4.40 (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: £1.34 (plus VAT).

M60 Junior Groovemaster

Record cleaning arm finished in bright chrome plated plastic, pivoted on adjustable self-adhesive base. Price: £1.72 (plus VAT).

M64 Phono Cartridge Kit ★

Comprising microscope, screwdriver,

★ Indicates entry is illustrated

tweezers, stylus cleaning fluid and brush. An essential for the safe installation and maintenance of pickup cartridges. Price: £2.80 (plus VAT).

M66 Stylus Balance ★

A professional stylus balance calibrated to within $\frac{1}{20}$ gm with scale divisions at $\frac{1}{100}$ gm between 0 and 3gm. Ensures accurate tracking weight of pickup in tone arm. Price: £2.80 (plus VAT).

M72 Turntable Care Kit.

Comprises spirit level, oiler of advanced design with special oil to reach and lubricate all bearings and moving parts, cleaning brushes and cloth and fluid for cleaning stylus and deck. Housed in a special purpose permanent storage case. Price: £3.40 (plus VAT).

M80 Turntable Spirit Level

A very accurate spirit level, specially designed to set up turntables correctly. Price: 86p (plus VAT)

M81 Duostatic Record Cleaner

A world patented record cleaner incorporating two cleaning surfaces. One consists of polyester with conductive interwoven yarn for static release and the other of thick pile rayon velvet for dust removal. Price: £2.10 (plus VAT).

M85 Duostatic Kit

Record cleaner and cleaning brush packed in permanent storage case with 30cc bottle of stylus cleaning fluid and stylus brush. Price: £2.80 (plus VAT).

M90 Lintrack

Linear tracking cleaning arm with tracking force of 0.5gm fully adjustable to fit most turntables. Price: £2.76 (plus VAT).

M34 Ioniser Fluid

For use in conjunction with M25 ioniser. Price 40p (plus VAT).

M44 Groovemaster Replacement Kit

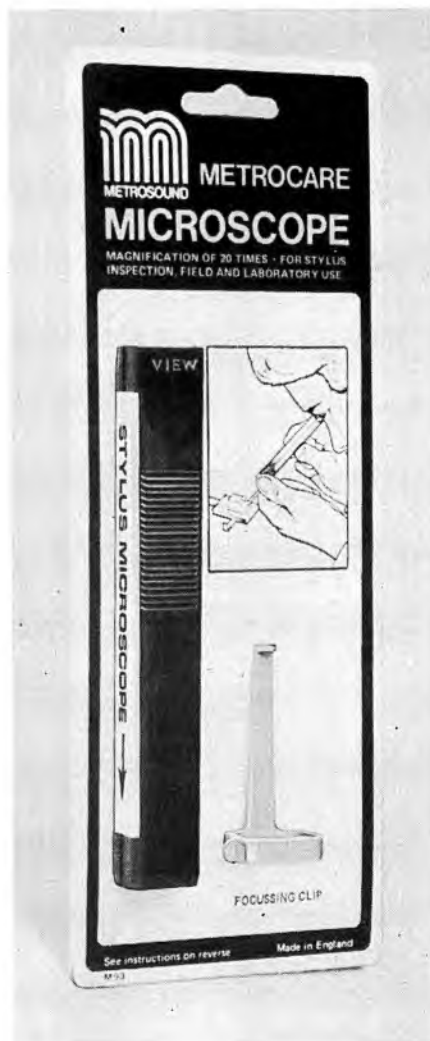
Spare brush and roller for M43 super groovemaster cleaning arm. Price: 40p (plus VAT).

M67 Anti-Static Aerosol Spray

Metrocare anti-static spray will reduce static and clean surfaces of records and turntable covers. The Aerosol action assists spread and penetration of the fluid. Supplied with a velvet applicator pad. Price: £1.72 (plus VAT). Also included: replacement brush, felt pad, self-adhesive base fixing for M90 Lintrack or M95 super Lintrack. Price: 40p (plus VAT).



Metrosound M99 Metrostat



Metrosound Microscope

M93 Stylus Microscope ★

Giving 20 times magnification, supplied complete with clip to aid focusing and full instructions for use. Price: £1.94 (plus VAT).

M95 Super Lintrack

Similar to M90 but with extra-long runners, low profile base and pillar, spare roller and adhesive pad, which makes it suitable for 99% of turntables on the market. Price: £3.24 (plus VAT).

M99 Metrostat ★

Vinyl records are prone to static charges with a tendency to increase in dry room conditions. Solely negative charges attract all airborne particles to the record surface producing audible cracks and pops and increasing wear. M99 is a piezo-electric crystal crushing device that emits a stream of positive ions with the grip of the actuator and secondly an emission of negative ions on release. Inherently discs are negatively charged and attract the positive ions upon grip of actuator. The following stream of negative ions will not be attracted and thus remain neutral, therefore airborne particles will not be attracted. Supplied complete and ready for use. Price: £6.47 (plus VAT).

M100 Turntable spirit level

Combines precision engineering and high accuracy needed when testing the level of transcription turntables. Visibility is greatly enhanced due to contrast provided by the black ring around the cavity and the chrome plated outer bezel. Price: £1.20 (plus VAT).

M101

Comprehensive kit containing stylus microscope, spirit level, stylus balance, tweezers and screwdriver, supplied in strong attractive storage case with full instructions for use. Price: £6.47 (plus VAT).

■ **MUSONIC**

S & B Trading, Stylus House,
34-38 Verulam Road, St. Albans, Herts.
AL3 4DF.
Tel: St. Albans 50611/2.

Kleen Sweep (MR26)

Record and Stylus cleaner. Can be used wet or dry. See rec. retail price.

DisClens (MR8)

A soft cloth impregnated with an anti-static preparation. One wipe removes dust and dirt from the record, leaving it clean and static free. This helps increase stylus and record life. No rec. retail price.

Stylus Cleaner (MR9)

A specially prepared solution which when applied to the stylus tip with the brush provided, cleans and renders it antistatic for longer stylus and record life. Attractively packed in a re-usable plastic wallet. No rec. retail price.

DisClosures (MR14)

Special heavy duty welded sleeves made from glass clear PVC. The clarity and strength of these sleeves make them ideal for record shop browsers or for protecting private record collections. No rec. retail price.

Disc Guards (MR15)

In plain white paper with see-through centre and lined throughout with polythene. Designed to fit snugly inside the printed LP sleeve and provide extra protection for valuable LP records. No rec. retail price.

Super Active 30cc (MR16) 15cc (MR17)

This is the famous formula anti-static fluid which produces excellent results in cleaning and neutralising static in records and other plastic products. The fluid can be applied with a sponge or cloth, and is ideal for re-charging all anti-static cleaning devices. Supplied in dropper bottles of either 30cc fl oz or 15cc fl oz approximately. No rec. retail price.

Steel Needles (MR18)

Steel needles in packs of 20. No rec. retail price.

Stroboscope (MR19)

Enables you to check accuracy turntable speed. No rec. retail price.

Styli

Large range manufactured at Musonic factory. Details on request. Many products above supplied in bulk for dealers.

Stylus cleaning brush (MA 21)

No rec. retail price.

Kleen-Sweep (MA 22)

Hand held record cleaner incorporating stylus cleaning brush. Can be used wet or dry. No rec. retail price.

Kleen-Sweep Fluid (MR 23)

Specially formulated fluid for record and stylus cleaning to be used in conjunction with MR 22. No rec. retail price.

Record and Stylus Cleaning Kit (MR 24)

Consisting of one Kleen-Sweep with one bottle of Fluid. No rec. retail price.

★ Indicates entry is illustrated

Trackduster (MR 25)

Record cleaning arm fashioned in black and chrome finish to complement any turntable. Cleans while records are played by usual brush and roller method. Arm height is adjustable, and unit can be used free standing or fitted permanently. No rec. retail price.

Antistatimat (MR 27)

Made from carbon impregnated rubber and therefore electrically conductive. It will drain the static charge from a record without the aid of fluid or cloths. No rec. retail price.

Precision turntable level (MR 28)

Circular spirit bubble level mounted in plastic with transparent plastic dome. Accurate levelling ensures correct tracking and minimises stylus and record wear. Can be stuck or screwed to any deck. No rec. retail price.

Gripex (MR 29)

Anti-slip dressing for drive belts and idler wheels. Supplied in 30cc bottles complete with brush. Dries off in 15-20 minutes leaving a powerful anti-slip surface. No rec. retail price.

Variscale (MR 30)

Stylus balance 1/2 to 5gm. Finished in chrome with black base. No rec. retail price.

■ NAGAOKA

Kelsonics Ltd, Kelsey House, Wood Lane End, Hemel Hempstead, Herts HP2 4RQ.
Tel: Hemel Hempstead (0442) 61291.

Rolling Record Cleaner ★

New type of cleaner that lifts dust and dirt straight out of the record grooves. It uses a special grade of rubber elastomer which never loses its original surface tackiness. Just rolling over the record surface is sufficient to remove all dust and dirt in the grooves. The roller can be readily detached from the handle and washed in water with detergent. This will completely restore the adhesive on the surface and the roller can be washed over and over again with no deterioration. Price: £7.40 (inc. VAT).

■ PIXALL

Milty Products Ltd, New Mansion House, 173/191 Wellington Road South, Stockport, Cheshire SK1 3UA
Tel: 061-480 8142

Record Cleaner 'Off-the-Record'

Comprises a 3in. wide x 2 1/4in. dia roller with supporting bracket and handle. A specially coated adhesive tape, five feet in length, is wound round the roller and protected, when



Pyser sound guard



Nagaoka record cleaner

not in use, by an acetate wrapper. To clean a record the disc should be placed on a flat surface and the roller applied at a tangent to the centre label. It is then rolled across the grooves towards the outer rim with application of slight pressure. When the tape becomes choked with dust the top layer can be peeled off leaving a fresh surface ready for use. Refills are available. Note: Pixall does not reduce static charge — it is primarily a record cleaner. Price: £1 97 (inc. VAT). Refill 55p (inc. VAT).

■ PYSER

Pyser Ltd, Fircroft Way, Edenbridge, Kent.
Tel: Edenbridge (0732 71) 4111/6.

Sound Guard ★

American produced dry lubricant which increases record life by significantly reducing

record wear. Liquid is sprayed onto the surface and when buffed up immediately following application it leaves a five-millionth-of-an-inch film solid lubricant of low shear strength tightly bonded to the groove surface fortified with an antistatic agent.

One property of this coating is that while it bonds to the record surface it will not bond to itself. Accordingly, re-application does not cause build-up which could interfere with stylus tracking or frequency response.

Marketed in 2oz bottle with pump sprayer and top mounted buffing pad. Each kit will treat approx. 25 LP's (both sides) and refills are marketed separately. Price: £4.99 (inc. VAT). Refill: £3.25 (inc. VAT).

■ 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 plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, audio switching units.

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.

■ Record Care ★

Anti-static record cleaning pads, anti-static cleaning clothes (2 per pack), anti-static fluid 30cc bottle.

■ Q.E.D.

Q.E.D. Audio Products, 112 Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HD.
Tel: Sunbury-on-Thames 87344/5.

■ Disc Switching Unit ★

Enables two record player decks to be connected and controlled without changing leads by hand. Fitted with phono sockets. Size: 10 × 6.5 × 5cm. Price: £7.92 (plus VAT).

■ ROSS ELECTRONICS

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

Connecting Leads

Purpose made connecting leads with a variety of end fittings that permit instant connection or extension between pickup sources and ampli-



QAS Record Care



Q.E.D. disc switching unit

★ Indicates entry is illustrated

fiers with dissimilar input/output connectors. Display packed with header card.

Shielded Adaptors

One-piece, male/female interconnectors to provide direct connection between a wide variety of dissimilar plugs and sockets.

RE-612

Ionizer record cleaner. Anti-static velvet pad aligns ions in one direction on record surface to thus eliminate static. Also removes dust and dirt to keep records noise-free and preserve life. Price: 80p (plus VAT).

RE-614

Special formula, low-toxicity cleaning fluid for use with RE-612 ionizer record cleaner and most other types.

RE-615

Stylus cleaning kit with purpose made brush and special cleaning fluid removes static, dirt and grit from record styli safely and completely. Price: 66p (plus VAT).

RE-616

Record care kit of ionizer velvet pad and cleaning fluid spray removes static, dirt and grit from record surfaces to improve reproduction and preserve record life. Price: £1.20 (plus VAT).



Ross Electronics RE-627 Rosstat

RE-623

Record auto cleaner. Precision engineered arm with offset head pivoted on heavy, free-standing base reduces record wear and improves reproduction by removing dirt and grit from surfaces and grooves in advance of the record stylus. Anti-static liquids are not required. Price: £2.80 (plus VAT).

RE-637

Compact audio care kit containing essential equipment for the maintenance of audio systems, including music centres with automatic record decks. Kit comprises: headshell-fitting record groove cleaner, ionizer record cleaner, stylus cleaning brush and fluid, plus cassette cleaner. In fitted, plastic storage case with instructions. Price: £3.34 (plus VAT).

RE-639

Music centre care kit. All the record and cassette care equipment needed to ensure consistent, trouble-free operation from high-fidelity systems and music centres. Kit comprises: record auto cleaner, stylus brush and cleaning fluid, ionizer, record cleaner. A cassette head cleaner systems and music centres. Kit and tape head cleaning fluid with tool are also included. In fitted plastic case that provides permanent storage. Price: £5.78 (plus VAT).

RE-625

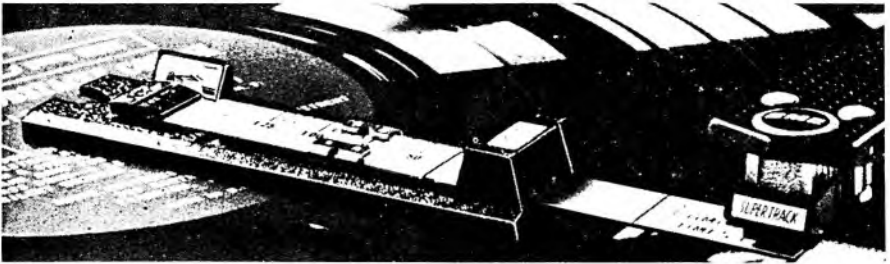
Linear tracking record cleaner arm that overcomes problems that prevent the use of conventional types. In particular, high mass affecting turntable speed is eliminated by a tracking weight of less than 0.5 grams. Height above record is reduced to a minimum and there is no overhang to hinder operation in confined spaces. Price: £3.90 (plus VAT).

Connectors

Plugs and sockets, chassis mounting an inline, to DIN and USA standards.

RE-627 ★

The Rosstat dual electron emission gun neutralises the surface of vinyl records to thus prevent the attraction of airborne particles which can cause noisy reproduction and increased wear to the stylus and record. Pressure on the trigger causes the emission of a stream of positive electrons to neutralise the negative charge on the record surface; as the trigger is released, the gun emits negative electrons which are not attracted so that the record remains neutral. Ergonomically styled in white plastic with chrome-plated trigger. Price: £7.40 (plus VAT).



Shure SFG2 Force Gauge

■ SHURE ELECTRONICS LTD

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

SFG2 Stylus Force 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: £4.32 (plus VAT).

M64-2E

Preamplifier for use with magnetic pickup head and amplifier not having sensitive enough input. Full specification and price in Amplifier Section.

■ SONY (U.K.) LTD

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

Head Shell SH 135 ★

For PS 1350, 2350, 1700, 3300, 4300, 11, 22, Lightweight weighing only 7.5gm. No rec. retail price.

Head Shell SH 150

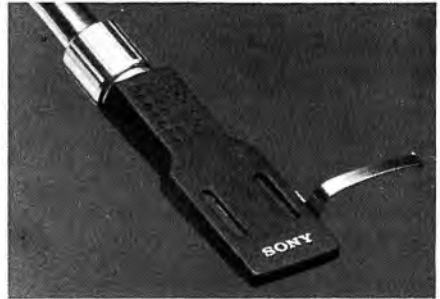
For PS 6750, HMK 70, 77. Fully compatible with most types of arm. Weight: 10.5gm. No rec. retail price.

Head Shell SH 160 ★

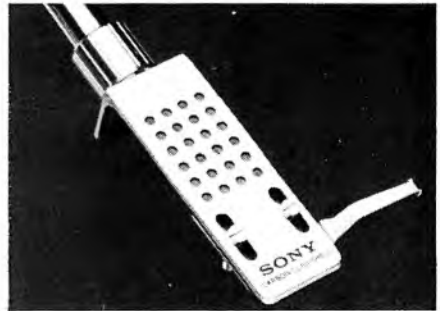
Carbon fibre headshell weighing 12.5gm with high stiffness and low resonance for low sound coloration. Ideal for moving coil cartridges. No rec. retail price.

RK 112/113 ★

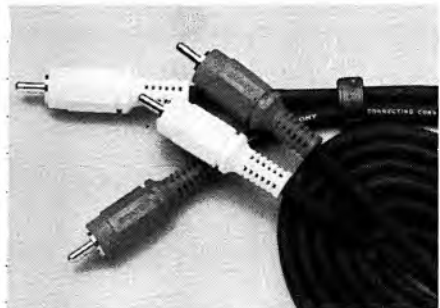
One metre lead, two phono plugs for connection of record deck to amplifier. Plugs are gold plated to give low contact resistance. RK 113 same but two metres long.



Sony SH 135



Sony SH 160



Sony RK 112

★ Indicates entry is illustrated

RK 108H

A one metre lead, 2 phono plugs to two phono sockets, to extend record deck lead equipped with phono plugs. Low capacitance. No rec. retail price.

■ SOUNDS PROFESSIONAL

A div. of F.W.O. Bauch Ltd, 49 Theobald Street, Borehamwood, Herts.
Tel: 01-953 0091.

EARC Antistatic Record Cleaner ★

Combines both electrostatic and conventional cleaning within a single simple-to-use unit so that the record can be completely cleaned in a single sweep. The user merely passes it slowly over the rotating record from the centre outwards. Any static is eliminated by a powerful positive and negative field generated by piezo-electric technique operated by finger pressure alone — no batteries are needed. EARC's soft brushes sweep up the loosened particles on to a velvet cushion for easy removal. Price: £7.99 (inc. VAT).

■ CECIL E. WATTS LTD

Darby House, Sunbury-on-Thames.
Tel: Sunbury-on-Thames 83252.

Dust Bug ★

Automatic Record Cleaner — effective method of removing dust from the record whilst being played. New Formula Parostatik Antistatic Fluid provides a humid condition to minimise static build-up during play. Adjustable dual pedestal for temporary or permanent fixing. Price: £1.94 (inc. VAT).

Parostatik Disc Preener ★

Unique roller design removes dust and dirt from record surface and micro-particles of dust from the record grooves. Built in non-ionic compound prevents static build-up. Price: £1.07 (inc. VAT).

Stylus Cleaner

For all types of pickups. Close pile nylon velvet ribbon efficiently and safely removes pollution from the stylus tip. Price: 42p (inc. VAT).

Manual Parastat With Humid Mop Kit

Versatile dual purpose record cleaner. Restores older and dirty records and maintains new records in prime condition. Over 30,000 finely pointed pure nylon bristles probe down into the bottom of the groove dislodging all dirt, dust and pollution which is collected by two plush pile velvet pads. The Humid Mop cleans and conditions the bristles and pads



Sounds Professional EARC record cleaner



Cecil E. Watts Dust Bug

providing the essential humidity to relax and disperse static charges. Price: £6.00 (inc. VAT).

Manual Parastat

An alternative pack to the above without Humid Mop. Offers the same cleaning function but utilises sponge pad in lid to provide the essential humidity. Price: £5.36 (inc. VAT).

Humid Mop Kit

Provides even greater efficiency in record cleaning when used with Watts Record Cleaning Devices. Cleans and conditions the brushes and pads of the Manual Parastat and Professional Parastat. Also an invaluable aid for cleaning and activating the Dust Bug, Parostatik Disc Preener and Stylus Cleaner.



Cecil E. Watts Parastatic Disc Preener

Removes all pollution collected from the record and provides the essential humidity to relax and disperse static charges. Price: £1.39 (inc. VAT).

Parastat Wash Brush

For washing dirty records. Dislodges extraneous matter from the grooves and surface without harming the record in any way. Price: £1.41 (inc. VAT).

Hi-Fi Parastat

For use with new records which are to be played at extremely low tracking pressures. The brush is packed with finer nylon bristles than those used in the Manual Parastat. Provides a greater density of pointed bristles to explore the record grooves with maximum thoroughness. Specially designed case maintains the essential humid condition. Complete with stylus cleaner. Price: £4.55 (inc. VAT).

New Formula Parostatik Antistatic Fluid

Provides static control without producing any harmful surface film. Developed primarily for use with Watts Record Cleaning Devices but also recommended for controlling static in plastic materials. 1oz-28.42ml size with dropper nozzle as supplied with and replacement for Manual Parastat, Hi-Fi Parastat and Humid Mop kit. Price: 42p (inc. VAT).

Distilled Water Dispenser

Handy dispenser with dropper nozzle is included with the Hi-Fi Parastat and Humid Mop Kit, also available separately for replacement. Ideal for any application requiring the use of distilled water. Price: 32p (inc. VAT).

Xstatic

Specially designed to combat static on records by temporarily neutralising dust attracting charges. It is not a cleaning device but it enables dust to be removed more readily in the interest of sound quality and record life. A piezo-electric element within the Xstatic is the source of high electrical voltages which are fired towards the record surface. The Xstatic should be used on both sides of the record before it is played and follow each treatment by cleaning the record with one of Watts' other products to remove the dust and dirt from the record grooves and surface. Price: £6.48 (inc. VAT).

Parastat Record Cleaning Machine ★

Professional Model for Broadcasting Studios, Radio Stations, Record Libraries, Specialist Dealers, etc. Cleans both sides of the recorded area of EP & LP records in one simple operation. It removes all micro-particles of dust and dirt from the record grooves and at the same time applies an invisible molecular trace of New Formula Parostatik Antistatic Fluid to control the attraction of static. Available to special order only. Price on application.

Spares And Replacement Parts

Dust Bug: Nylon Bristle and Plush Pad. Price: 32p (inc. VAT).

Dust Bug: 1/2oz New Formula Parostatik Antistatic Fluid with wick insert. Price: 26p (inc. VAT).

Dust Bug: Dual Base Pedestal. Price: 48p (inc. VAT).

Parostatik Disc Preener: Packet of 4 wicks. Price: 32p (inc. VAT).

Manual Parastat: Nylon Brush. Price: £1.41 (inc. VAT).

Manual Parastat: Nylon Velvet Pad Covers (pair). Price: 48p (inc. VAT).

Manual Parastat: White PVC Sponge Lid Pads (pair). Price: 26p (inc. VAT).

Humid Mop Kit: Bottle fitted sponge and wick. Price: 32p (inc. VAT).

Humid Mop Kit: 3 wicks and bottle sponge. Price: 32p (inc. VAT).

Hi-Fi Parastat: Nylon Brush. Price: £1.55 (inc. VAT).



Cecil E. Watts Professional Parastat

★ Indicates entry is illustrated

Hi-Fi Parastat: Pad cover and 3 ribbons. Price: 32p (inc. VAT).

Watts Publications

A guide to the better care of LP and stereo records. Contains detailed information on the inside story of record care including numerous illustrations and photo micrographs of record grooves taken by Cecil Watts on his famous microscope. Price: 30p (VAT exempt).

Dust Bug Cecil. Pioneer of Direct Disc Recording. This biography by Agnes Watts relates how his unique knowledge of every aspect of gramophone recording led him to solve the problems associated with static and dust on records. 116 pages plus colour and black and white plates. Price: £2.25 (VAT exempt).

■ WILMEX

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

DISK 22 — turntable mat

Made from natural rubber and high density filler. It offers the following advantages:

1. The effective mass of the support for a record is increased thereby eliminating resonance and vibrations that arise at the record surface on many turntables. The concave surface of DISK 22 is a very effective means of ensuring the best possible contact — even with warped records — between the turntable mat and the record. The record is supported firmly at the rim and the weight of the record itself then brings it into close contact with the rest of the mat surface.

2. DISK 22 is of an unprecedented high weight — 730 grams — which increases the platter flywheel effect and smooths out any wow and flutter that may be present.

3. Stereo separation between the left and right hand channels in a stereo recording is largely determined by the motion of the stylus in the vertical plane. This 'vertical' signal must be reproduced with great fidelity in order to achieve maximum separation. To give the best possible separation, the DISK 22 mat has been manufactured to achieve extra hardness in the vertical plane.

4. The smooth texture surface of DISK 22 has been finely finished to eliminate ridges and indentations. Dust removal is therefore very simple and there can be no danger of trapped dust or dirt damaging the delicate surface of valued recordings.

Recommended Retail Price: £12.95 (plus VAT).

■ WILSON STEREO LIBRARY LTD

104-106 Norwood High Street,
London, SE27.
Tel: 01-670 6394.

W.S.L. Blank Disc

Highly polished blank vinyl disc for adjusting side thrust and alignment. Indicates the amount of side thrust to be corrected. Mirror-like surface reflects underside of cartridge and stylus and assists in accurate alignment. Supplied with instructions for correcting side thrust. Price: £1.90, postage and packing included.

■ ZEEPA

Zeepa Instruments Ltd, 15 Richmond Grove,
Surbiton, Surrey.
Price: 01-399 0966.

Static Eliminator ★

For neutralising static charges on records.
Price: £6.95 (plus VAT).

Dust Lifter ★

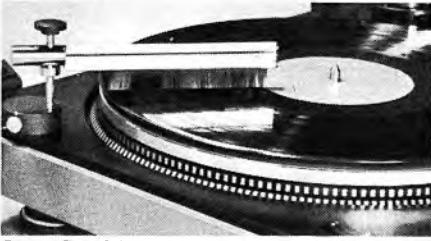
Using carbon fibre conductive bristles for cleaning records and neutralising static. Price: £4.95 (inc. VAT).



Zeepa Static Eliminator



Zeepa Dust Lifter



Zeeper Dust Bridge



Zeeper Gold-plated phono plugs



Zeeper T-101

Tone-Arm Record Cleaner

For cleaning dust off records while on turntable using carbon fibre conductive brush earthed to the record deck. Price: £8.50 (inc. VAT).

Dust Bridge ★

For cleaning dust and static charges while record is on turntable, using conductive bristles earthed to record deck or tuner/receiver/amp. Can also be used separately as a record brush.

T-101 Moving coil Step-up transformer ★

Uses a specially developed alloy which allows even extremely weak magnetic flux to pass to the amplifier without degradation. The winding technique employed suppresses the line capacitance allowing smooth frequency response over an extremely wide range.

Permalloy is used for the magnet shield, each channel being independently shielded and encased in a further shield for improvement of crosstalk and signal-to-noise ratio. All terminals are gold plated to prevent poor contact.

Gold plated phono plugs ★

Low capacitance, low resistance. Four RCA phono to phono connection leads. Price: £3.50 (plus VAT).

STYLUS SERVICE?

We make a point of it!

- our own range of 900 types
- sapphires – diamonds – double diamonds
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- and all at competitive prices

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SWA means Styli With Assurance



fact:
the IV does more...
much more!

The creation of the new Shure V15 Type IV is a tour de force in innovative engineering. The challenge was to design a pickup cartridge that would transcend all existing cartridges in musical transparency, technical excellence, and uniformity. The unprecedented research and design disciplines that were brought to bear on this challenge have resulted in an altogether new pickup system that exceeds previous performance levels by a significant degree.

In fact, this pickup system has prevailed simultaneously over several extremely difficult music re-creation problems which, until now, have defied practical solutions. Most of all, this is an eminently musical cartridge which is a delight to the critical ear.

The Type IV offers:

- Demonstrably improved trackability at

ultra-light tracking forces.

- Dynamically stabilized tracking that overcomes record warp problems.
- Ultra-flat response.
- Dramatically reduced distortion.
- Electrostatically-neutralized record surface.

New! Shure V15 Type IV
SUPER
TRACK IV™

Stereo Dynetic® Pickup Cartridge

Shure Electronics Limited
Eccleston Road, Maidstone ME15 6AU
Telephone: (0622) 59881



Pickup, Cartridges and Arms

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ 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 2×10^{-6} cm/dyne, lateral 4×10^{-6} cm/dyne. FR: 50Hz-12kHz. Output: 178mV. Min load 1M. Price: (diamond) £2.14 (plus VAT); (sapphire) £1.66 (plus VAT).

GP93-1 ★

Stereo crystal cartridge. Turnover dual stylus. Stylo 0.6/0.8 thou diamond or sapphire. 2.5 thou sapphire. Pw: 4-8gm. Tip mass: 2.5mg dynamic. Compliance: vertical 2.2×10^{-6} cm/dyne, lateral 2.2×10^{-6} cm/dyne. FR: flat 250Hz-18kHz 3dB down at 100Hz relative to 1kHz. Output: 250mV. Rec load: 1M. Low temperature coefficient. Price (diamond) £3.01 (plus VAT); (sapphire) £2.50 (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 20×10^{-6} , vertical 17×10^{-6} ; (dynamic) lateral 6×10^{-6} , vertical 5×10^{-6} . Separation: 20dB at 1kHz, 7dB at 10kHz. FR: 70Hz-15kHz +5dB. Output: 100mV. Rec load minimum 1M. Prices: (diamond) £3.88 (plus VAT); (sapphire) £3.38 (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 20×10^{-6} cm/dyne, vertical 17×10^{-6} cm/dyne; (dynamic) lateral 6×10^{-6} cm/dyne, ver-

tical 5×10^{-6} cm/dyne. FR: 70Hz-12kHz \pm 5dB. Channel separation not less than 20dB at 1kHz. Output: 100mV. Rec load: 1M. Price: (diamond) £3.50 (plus VAT).

M6 ★

Stereo magnetic cartridge. Sensitivity: 1.25mV at 1cm/sec. Rec load: 47K. Separation: >15dB at 1kHz. FR: 20Hz-20kHz. Stylus: 0.5/0.7 thou. Pw: 1½-2½gm. Price: (diamond) £7.88 (plus VAT).

M6E

Stereo magnetic cartridge. Sensitivity: 1.25mV at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR: 10Hz-25kHz. Stylus: 0.25 \times 0.8 thou. Pw: 1¼-2gm. Price: (diamond) £17.01 (plus VAT).

M6EX

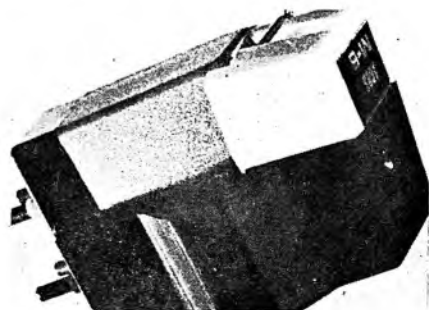
Stereo magnetic cartridge. Sensitivity: 0.8mV



Acos GP91-1



Acos GP93-1



Acos M6

★ Indicates entry is illustrated

at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR: 10Hz-30kHz. Stylus: 0.25 × 0.8 thou. Pw: 1-2gm. Price: (diamond) £21.74 (plus VAT).

GP 91-3 SC

Mono/stereo compatible cartridge with turn-over dual stylus. Playing weight: 5-10gm. Tip mass: 3.5mg sapphire, 3.8mg diamond. Compliance: 2×10^{-6} cm/dyne. FR: 50Hz-17kHz. Output: 200mV. Recommended load: 1M ohm. Price: £1.66 (sapphire); £2.14 (diamond) (plus VAT).

M7

Stereo magnetic cartridge with spherical diamond stylus. Playing weight 1.5-2.5gm. Tip mass: 0.5/0.7 thou. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 3.5mV. Recommended load: 47K ohms. Separation normally greater than -22dB. Price: £5.60 (diamond) (plus VAT).

■ ADASTRA

Adastra Electronics Ltd, Unit 22, Cricklewood Trading Estate, Clarendon Road, London NW2 1TU. Tel: 01-452 6288-9.

D.1 Crystal Turn-over

This well proved cartridge is suitable for a wide range of pickup heads and its high output matches most record players and phono equipment. Turnover clip-on sapphire styli, 33/45 (LP) and 78 rpm with standard replacements easily obtainable. Supplied with miniature connectors and individually boxed. Output at 1kHz: 2.0V. Compliance: 2.0×10^{-6} cm/dyne. Frequency: 30-15,000Hz. Stylus pressure: 5-8gm. Size: 19 × 20 × 46mm. Weight: 9gm. Price: £1.20 (plus VAT).

D.2 Mono/Stereo Compatible Crystal

An almost universal replacement cartridge enabling 'pre-stereo' equipment to play stereo records monaurally without damaging effects. 0.7mm sapphire styli 'flipover' 33/45 (LP) and 78 rpm. Moulded carrying bracket with fixing slots, centre hold and clip-on shield. Individually boxed. Output at 1kHz: 2.0V. Compliance: 1.5×10^{-6} cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4gm. Size (less shield): 18 × 21 × 32mm. Weight: 4.6gm. Price: £1.32 (plus VAT).

D.5 Crystal Turn-over

Intended as the stereo version of Model D.1, this versatile high output cartridge is an ideal replacement for both mono and stereo equipment. Standard fitting bracket; clip-on 33/45

(LP) and 78 rpm sapphire styli. Individually boxed. Output at 1kHz: 1.5V. Compliance: 1.5×10^{-6} cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4-6gm. Size: 18 × 20 × 51mm. Weight: 10gm. Price: £1.98 (plus VAT).

D.6 Ceramic

Will fit most head shells and features sapphire 'flip-over' styli with 33/45 (LP) and 78 rpm selection and protective shield. Individual casket presentation. Output at 1kHz: 0.5V. Compliance: 1.5×10^{-6} cm/dyne. FR: 20-15,000Hz. Stylus pressure: 4-6gm. Size (less shield): 18 × 22 × 32mm. Weight: 3.0gm. Price: £2.28 (plus VAT).

D.12 Replacement Stylus for D.11 Cartridge (JSP.1)

Genuine replacement diamond LP stereo styli already assembled in slide-in housing available in see-through plastic box presentation. Price: £3.30 (plus VAT).

D.16

Pickup cartridge with diamond stylus. Playing weight: 1-3gm. Compliance: 10×10^{-6} cm/dyne @ 100Hz. FR: 20Hz-25kHz. Output: 4mV. Recommended load: 30-100K ohms. Low cost diamond tipped, moving magnet, easy slideout replacement for stylus. Price: £6.00 (plus VAT).

D.17 Replacement Stylus for D.16 Cartridge

Diamond tipped replacement stylus assembly for D.17 model. Price: £3.30 (plus VAT).

■ ADC

BSR Ltd, Monarch Works, Cradley Heath, Warley, Worcs. B64 5QH. Tel: Cradley Heath 69272.

LMF-1 Carbon Fibre Tone Arm ★

Layered carbon fibre. Total length: 313mm. Length pivot-tip: 237mm. Offset angle: 21°. Over-hang tip: 15mm. Rear over-hang: 76mm max. Tracking error: 0° at 60mm. Suitable cartridge 4-10gm. Resonance (XLM) 1gm) 11Hz 10dB peak. Eff. Arm mass: 5.5gm. Controls: Stylus pressure 0-1.5gm. Anti-skate: 0-2gm. Arm height adjustment 38-80mm. Counterweights: 7-15-30gm. Accessories supplied: 2 sets low mass nylon cartridge screws, base/height holder, 220 pf audio cable with gold plated terminals, 3 counterweights, spanner, driver, templates, manual. Accessories available: Die-cast SME type slide adaptor. 500gm stabilizer weight.

LMF-2 Carbon Fibre Tone Arm ★

Layered carbon fibre. Total length: 313mm.

PICK UP, CARTRIDGES AND ARMS



ADC range of magnetic cartridges



ADC Carbon fibre tone-arm

Length pivot-tip: 237mm. Offset angle: 21°. Over-hang tip: 15mm. Rear over-hang: 76mm max. Tracking error: 0° at 60mm. Suitable cartridge: 3-11gm. Resonance (XLM 1gm) 11Hz 10dB peak. Eff. arm mass: 8gm. Controls: Stylus pressure 0-1.5gm. Anti-skate 0-2gm. Arm height adjustment 38-80mm. Counterweights 15-30-45gm. Accessories supplied: 2 sets low mass nylon cartridge screws, base/height holder, 220 pf audio cable with gold plated terminals, 3 counterweights, spanner, driver, templates, manual. Accessories available: Die-cast SME type slide adaptor, 500gm stabilizer weight, spare headshells (LMF-2 only).

ADC ZLM ★

Induced magnet cartridge with nude aliptic TM tapered cantilever stylus. Playing weight: 1/2 - 1 1/4gm. Tip mass: 0.33mg. Compliance: 36×10^{-6} cm/dyne. FR: 10Hz-20kHz \pm 1dB, 20Hz-26kHz \pm 1 1/2dB. Output: nominal output at 1kHz, 1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware, signed frequency response curve. Price: £92.00 (plus VAT).

ADC XLM Mk III ★

Induced magnet cartridge with nude .0002 \times .0007in. elliptical tapered cantilever stylus. Playing weight: 3/4-1 1/2gm. Tip mass: 0.374mg. Compliance: 24×10^{-6} cm/dyne. FR: 10Hz-20kHz \pm 1dB, 20Hz-24kHz \pm 1 1/2dB. Output: nominal output at 1kHz, 1mV per cm/s. Recommended load: 47K. Features: standard

12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware, signed spec card. Price: £58.95 (plus VAT).

ADC VLM ★

Induced magnet cartridge with nude .0007 \times .0003in. elliptical straight cantilever stylus. Playing weight: 3/4-1 1/2gm. Tip mass: 0.469mg. Compliance: 24×10^{-6} cm/dyne. FR: 15Hz-24kHz \pm 2dB. Output: nominal output at 1kHz, 1.1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware. Price: £40.35 (plus VAT).

ADC QLM36 Mk III ★

Induced magnet cartridge with DIASA (nude - diamond + sapphire) elliptical .0003 \times .0007in. straight cantilever stylus. Playing weight: 3/4-1 1/2gm. Tip mass: 0.478mg. Compliance: 24×10^{-6} cm/dyne. FR: 15Hz-22kHz \pm 2dB. Output: nominal output at 1kHz, 1.1mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware. Price: £27.80 (plus VAT).

ADC QLM34 Mk III ★

Induced magnet cartridge with bushed .0003 \times .0007in. elliptical straight cantilever stylus. Playing weight: 1-3gm. Tip mass: 0.771mg. Compliance: 15.5×10^{-6} cm/dyne. FR: 20Hz-20kHz \pm 2dB. Output: nominal output at 1kHz, 1.8mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware. Price: £17.00 (plus VAT).

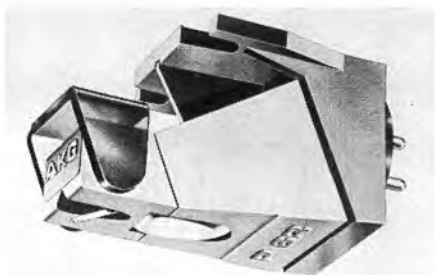
ADC QLM32 Mk III ★

Induced magnet cartridge with bushed .0004 \times .0007in. elliptical straight cantilever stylus. Playing weight: 2-4gm. Tip mass: 1.366mg. Compliance: 8×10^{-6} cm/dyne. FR: 20Hz-18kHz \pm 2dB. Output: nominal output at 1kHz, 1.5mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware. Price: £15.00 (plus VAT).

ADC QLM30 Mk III ★

Induced magnet cartridge with bushed .0007in. spherical straight cantilever stylus. Playing weight: 3-5gm. Tip mass: 1.629mg. Compliance: 7×10^{-6} cm/dyne. FR: 20Hz-18kHz \pm 3dB. Output: nominal output at 1kHz, 15mV per cm/s. Recommended load: 47K. Features: standard 12.7mm dual screw fixing, stylus brush, screwdriver, all mounting hardware. Price: £13.90 (plus VAT).

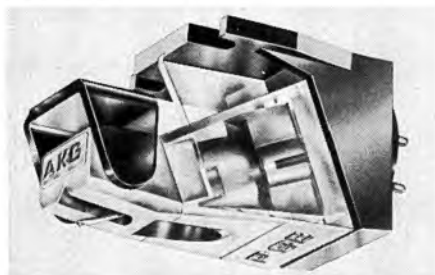
★ Indicates entry is illustrated



AKG P6R



AKG cartridge



AKG P8 (ES)

■ AKG

AKG Acoustics Ltd,
182-184 Campden Hill Road, London W8.
Tel: 01-229 3695.

P6R ★

Variable reluctance moving iron cartridge with spherical diamond tip .0007in. stylus. Playing weight: 2.4gm. Tip mass: 0.9mg. FR: 20-20,000Hz. Output: 6.25V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system P6R designed to withstand backcuing. Price: £15.50 (plus VAT).

P6E

Variable reluctance moving iron cartridge with elliptical diamond .0004in. × .0008in. stylus.

Playing weight: 1.5-3gm. Tip mass: 0.9mg. FR: 20-20,000Hz. Output: 6.25V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system. Price: £19.50 (plus VAT).

P7E

Variable reluctance moving iron cartridge with elliptical diamond tip .0003in. × .0007in. stylus. Playing weight: 1.25-2.50gm. Tip mass: 0.6mg. FR: 10-21,500Hz. Output: 4.5V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system. Price: £29.00 (plus VAT).

P8E

Variable reluctance moving iron cartridge with elliptical diamond .0002in. × .0007in. stylus. Playing weight: 0.75 × 1.25gm. Tip mass: 0.45mg. FR: 10-23,000Hz. Output: 4V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system, naked mount diamond stylus, each P8E is supplied with own frequency response curve. Price: £52.00 (plus VAT).

P8ES ★

Variable reluctance moving iron cartridge with elliptical diamond .0002in. × .0007in. stylus. Playing weight: 0.75-1.25gm. Tip mass: 0.42mg. FR: 10-28,000Hz. Output: 3.75V at 5mV per cm/s. Recommended load: 47K. Features: AKG transversal suspension system, naked mount diamond stylus, each P8ES is supplied with own frequency response curve. Price: £64.00 (plus VAT).

■ AUDIO TECHNICA

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

AT-14SA

Stereo/CD-4 V-magnet cartridge. Stylus: nude Shibata diamond. FR: 10Hz-45kHz. Channel separation: -32dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Compliance: 28×10^{-6} cm/dyne.

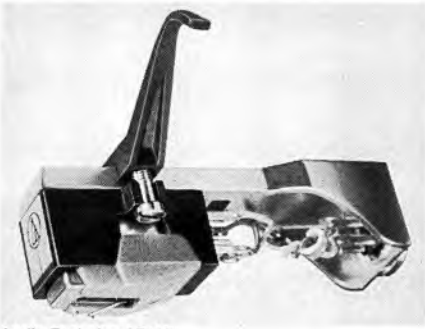
AT-15SA

Stereo/CD-4 V-magnet cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel separation: 33dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Compliance: 30×10^{-6} cm/dyne. Channel separation: 33dB. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

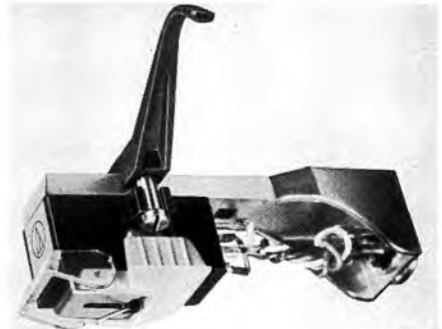
AT-10

Stereo V-magnet cartridge. Stylus: 0.7 spher-

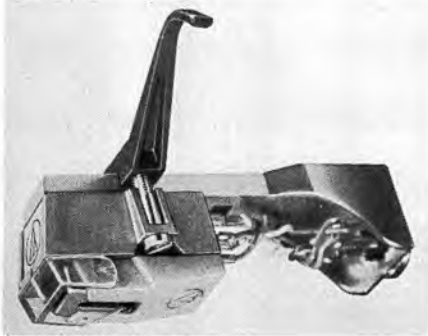
PICK UP, CARTRIDGES AND ARMS



Audio Technica AT11E



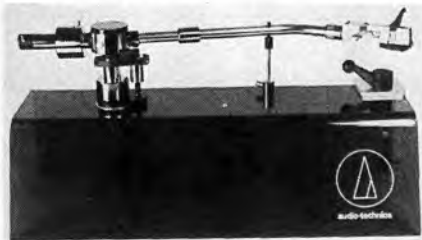
Audio Technica AT12XE



Audio Technica AT13EA



Audio Technica AT205LA



Audio Technica AT1009

ical diamond. FR: 20Hz-20kHz. Channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec.

AT11E ★

Stereo V-magnet cartridge. Stylus: 0.4×0.7 elliptical diamond. FR: 15Hz-28kHz. Channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec.

AT12S

Stereo/CD-4 V-magnet cartridge. Stylus: Shibata diamond. FR: 10Hz-45kHz. Channel separation: 30dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

AT13EA ★

Stereo dual moving magnet cartridge. Stylus:

0.2×0.7 nude elliptical diamond. FR: 10Hz-35kHz. Channel separation: at 10kHz 20dB, at 1kHz 25dB. Output: 4.2mV.

AT205LA ★

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: 0.3gm. Cartridge weight: 5.24gm. Effective mass: 20gm (with AT14S). Bias compensation: calibrated weight. Hydraulic lift and lowering.

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.

★ Indicates entry is illustrated

ATP-1

Professional Dual Magnet Cartridge. Frequency response: 20Hz-20kHz. Channel balance: 1.5dB. Tracking force 3-5gm. Back-cuing capability. Stylus 0.6 mil. Spherical Diamond.

ATP-2

Professional Dual Magnet Cartridge. Frequency response: 15Hz-22kHz. Channel balance: 1.5dB. Tracking force: 3-5gm. Back-cuing capability. Stylus 0.4×0.7 mil. Elliptical Diamond.

ATP-3

Professional Dual Magnet Cartridge. Frequency response: 15Hz-25kHz. Channel balance: 1.5dB. Tracking force 2-3gm. Back-cuing capability. Stylus 0.3×0.7 mil nude elliptical diamond.

ATP-12T

Precision professional tone-arm. Static balance type. Length 12in. All adjustments lockable by grub screws. For disco and studio use.

ATP-16T

Precision professional tone-arm. Static balance type. Length 16in. All adjustments lockable by grub screws. For disco and studio use.

AT 12 XE ★

Dual magnet generating element situated on cantilever pivot to ensure maximum information retrieved from the groove. Stylus: 0.3×0.7 nude elliptical diamond. Playing weight: 1-1.75gm. Tip mass: 0.45mg. Compliance: 25. FR: 15Hz-28kHz. Output: 4.2mV. Recommended load: 47K. Price: on application.

AT 15 XE

As above. Stylus: 0.2×0.7 nude elliptical diamond. Playing weight: 0.75-1.75gm. Tip mass: 0.45mg. Compliance: 43. FR: 5Hz-30kHz. Output: 4.2mV. Recommended load: 47K. Price: on application.

■ BANG & OLUFSEN

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

MMC 4000

Integrated stereo pickup cartridge. Stylus: elliptical naked diamond $5\mu \times 17\mu$. Playing weight 1.0gm. Compliance: 30×10^{-6} cm/dyne. Frequency range: 20-25,000Hz ± 1.5 dB. Separation: >25dB/1000Hz. Output: 2×0.6 mV cm/sec. Impedance: 47K. ETM: 0.4mg. $\frac{1}{2}$ in. mounting bracket available. Price around £25.00 (inc. VAT).

MMC 3000

Integrated electro-mag cartridge with spherical stylus. Playing weight: 1.2gms. Tip mass: 0.5mg. Compliance: 25×10^{-6} cm/dyne. FR: 16Hz-25kHz ± 3 dB. Output: 2×0.6 mV cm/sec. Recommended load: 47K. Features: integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £15 (inc. VAT).

MM 5000

CD4 integrated electro-mag cartridge with Shibata type cartridge. Playing weight: 1.5gm. Tip mass: 0.4mg. Compliance: 30×10^{-6} cm/dyne. FR: 20Hz-15kHz ± 1.5 dB. 30kHz-45kHz JVC 'A' rating. Output: 2×0.6 mV cm/sec. Recommended load: 100K. Features: CD4 integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £28.00 (inc. VAT).

MMC 6000

CD4 integrated electro-mag cartridge with Pramanik diamond stylus. Playing weight: 1gm. Tip mass: 0.22mg. Compliance: 30×10^{-6} cm/dyne. Recommended load: 100K. Features: CD4 integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £38.00 (inc. VAT).

■ BREUER

Linn Products Ltd,
235 Drakemire Drive,
Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.

Dynamic Tone-arm 5A

Ultra high quality tone-arm hand-made in Switzerland for use in top quality Hi-Fi systems. Uses play-free pre-stressed gimbal bearings with friction of 0.01gm in both planes. Price: £375.00 (plus VAT).

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 712142.

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 12×10^{-6} cm/dyne, vertical 8×10^{-6} cm/dyne. FR: 30Hz-16kHz. Separation (1kHz) 25-30dB; (10kHz) 18dB. Output with rec load of 100K, 50mV per channel. Price: £7.57 (plus VAT).

SAU2

Pickup arm with gimbal mountings on ball

PICK UP, CARTRIDGES AND ARMS

mass: 1gm. Compliance: Lat — 12×10^{-6} , vert 8×10^{-6} . FR: 30Hz-16kHz ± 2 dB. Price: £8.52, stylus £3.12 (plus 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: 9×10^{-6} lateral, 5×10^{-6} vertical. FR: 18Hz-18kHz ± 3 dB. Separation better than -20dB at 1kHz. Output: 200mV at 5cm/sec. Rec load imp: 2M. Stylus: diamond. Price: (spherical stylus) £5.00 (plus VAT); (elliptical stylus) £6.30 (plus VAT).

Deram ceramic ★

Mono cartridge. Stylus 1 thou diamond. All other details as for stereo/mono cartridge. Price: £4.80 (plus VAT).

NOTE

Deram heads are suitable for use with amplifiers having a sensitivity of 100mV at 2M. Replacement Deram diamond styli: Double Deram pack (2 stereo styli) £2.75 (plus VAT); or £1.50 each (plus VAT).

London

Stereo magnetic cartridge: *ffss* sum-and-difference system. Stylus: 0.6 thou spherical diamond. Pw: 3gm. Effective tip mass: < 1mg. Compliance: (lateral) 12×10^{-7} cm/dyne, (vertical) 5×10^{-6} cm/dyne. FR: 20Hz-20kHz. Channel separation: better than 20dB. Output: 7.5mV for 5cm/sec. Rec load: 47K. Price: £33.50 (plus VAT).

London cartridge adaptors

Type A. Simple slide-on adaptor for use with *ffss* arms (Mk 1, Mk 1 Super and Professional) to accommodate the London cartridge. Automatically adjusts playing weight. Price: £1.50 (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: 30p (plus VAT).

■ EAGLE INTERNATIONAL

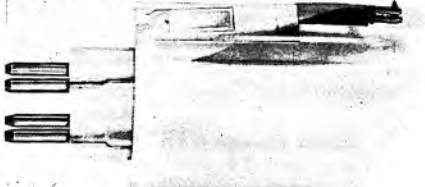
Precision Centre, Heather Park Drive, Wembley, HA0 1SU. Tel: 01-902 8832.

LC07 ★

Moving magnet stereo cartridge. Stylus: conical 0.7 mil. Playing weight. 1.5-2.5gm. Com-



Connoisseur SCU1



Decca Deram



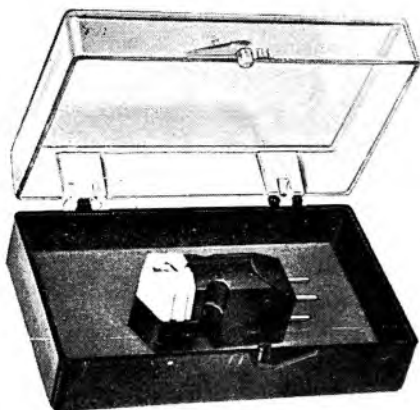
Eagle LC 07

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 1/2in. fixing centres. Five-pin plug connection to base of pickup. 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 separated precision balance with range 0.6gm. Price: £20.84 (including VAT). Extension stem for use with high turntables. Price: 75p (including VAT).

SCU1

Ceramic cartridge with diamond stylus. Tip

★ Indicates entry is illustrated



Eagle LC 05

pliance: 12×10^{-6} cm/dyne. FR: 20-21,000Hz. **Output: 7mV at 5cm^{-1} .** Rec. load: 47K. Price: on application.

LC05 ★

Moving magnet stereo cartridge. Stylus: conical 0.7 mil. Playing weight: 2-4gm. Compliance: 9×10^{-6} cm/dyne. FR: 30-18,000Hz. Output: 6mV at 5cm^{-1} . Rec. load: 47K. Price: on application.

P 750 X

Magnetic cartridge with S750X stylus. Playing weight: 1.7 ± 0.3 gm. Compliance: 18×10^{-6} cm/dyne at 100Hz. FR: 20Hz-30kHz. Output: 4mV at 1,000Hz (50mm/sec). Features: tripole induced magnet system, pure elliptical diamond stylus. Price: on application.

P750 E

Magnetic cartridge with S750E stylus. Playing weight: 2 ± 0.5 gm. Compliance: 10×10^{-6} cm/dyne at 100Hz. FR: 20Hz-30kHz. Output: 4mV at 1,000Hz (50mm/sec). Features: tripole induced magnetic system, deposited elliptical diamond stylus. Price: on application.

P450 S

Magnetic cartridge with S450S stylus. Playing weight: 2 ± 0.5 gm. Compliance: 10×10^{-6} cm/dyne at 100Hz. FR: 20Hz-30kHz. Output: 4mV at 1,000Hz (5mm/sec). Price: on application.

■ EMPIRE SCIENTIFIC CORP

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter SL9 9EW.
Tel: Gerrards Cross 88447.

2000 ★

Diamond cartridge 0.7 mil. Playing weight: 1½-3gms. Tip mass: 1mg. Compliance: 14×10^{-6} cm/dyne. FR: 20-20kHz ± 3 dB. Output: 7mV. Rec. load: 47K. Price: £9.90 (plus VAT).

2000E

Diamond cartridge 0.3 \times 0.7 mil. Playing weight: 1¼-2½gm. Tip mass: 0.9mg. Compliance: 16×10^{-6} cm/dyne. FR, output and load as 2000. Price: £10.90 (plus VAT).

2000E-1

Diamond cartridge 0.2 \times 0.7 mil. Playing weight: 1-2gm. Tip mass: 0.6mg. Compliance: 17×10^{-6} cm/dyne. FR, output and load as 2000. Price: £15.50 (plus VAT).

2000E-II

As per 2000E-1 except Playing weight is ¾-1½gm and compliance 18×10^{-6} cm/dyne. Output: 4.5mV. Price: £18.00 (plus VAT).

2000E-III

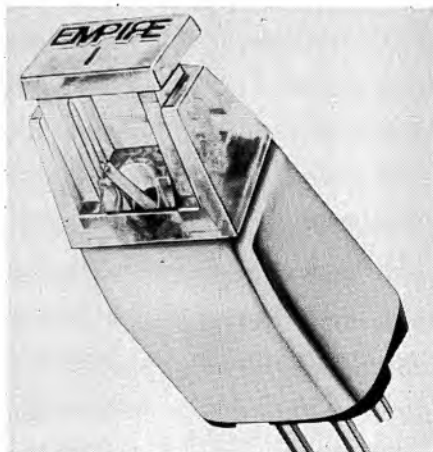
As per 2000E-I except compliance: 20×10^{-6} cm/dyne and Output: 4.5mV. Price: £19.20 (plus VAT).

2000Z ★

Stereo cartridge. As per 2000E-I except Playing weight: ¾-1¼gm. Compliance: 30×10^{-6} cm/dyne. Output: 3mV. Price: £60.00 (plus VAT).

2000T ★

Stereo cartridge with elliptical stylus. Playing weight: ¾-1¼gm. Tip mass: 2mg. Compliance: 30×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 3



Empire 2000 series

mV. Recommended load: 47K. Price: on application.

4000D-I ★

Quad/stereo cartridge 0.2 mil tracing radius. Playing weight: 1-1 $\frac{3}{4}$ gm. Tip mass: 0.4mg. Compliance: 30×10^{-6} cm/dyne. FR: 15-45,000Hz ± 3 dB. Output: 3mV. Rec. load: 100K. Price: £29.50 (plus VAT).

4000D-II

Similar to 4000D-I except Playing weight: $\frac{3}{4}$ -1 $\frac{1}{4}$ gm. FR: 15-50,000Hz ± 3 dB. Price: £87.00 (plus VAT).

4000D-III

Same as 4000D-II except playing weight is $\frac{3}{4}$ - $\frac{1}{4}$ gm. Price: £99.00 (plus VAT).

■ **FIDELITY RESEARCH**

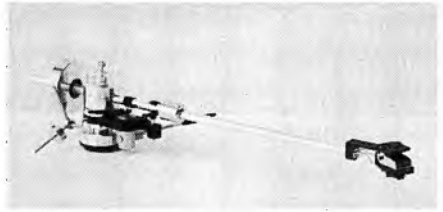
Wilmex Ltd, Compton House,
New Malden, Surrey KT3 4DE.
Tel: 01-949 2545.

FR1 Mk 2

Moving coil cartridge with super elliptical nude diamond stylus. Playing weight: 1.5-2gm. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 0.1mV at 5cm/sec. Recommended load: 30 ohms. Features: needs a high mass arm such as FR54 and boosting device such as FRT4. Price: £57.50 (plus VAT).

FR1 Mk 3

Moving coil cartridge and line contact nude diamond stylus. Playing weight: 2gm. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 0.14mV at 5cm/sec. Recommended load: 10 ohms. Features: needs a non resonant



Mayware Formula 4 Mk III

arm such as FR54 and a boosting device such as FRT4. Price: £82.50 (plus VAT).

Transformers for use with above

FRT3 — £64.95 (plus VAT). FRT4 — £125.00 (plus VAT).

FR-54 tone arm

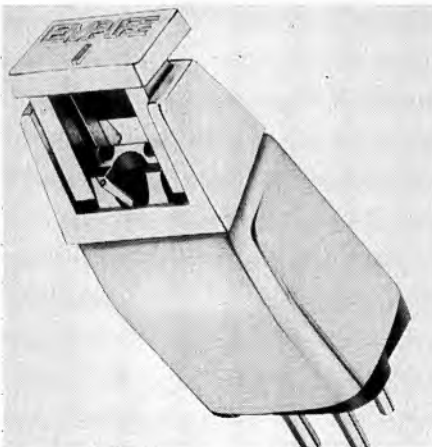
Length: 245mm, overhang 15mm, tracking error angle max 2 deg at centre. Adjustable height 30-90gm, Stylus pressure: 0-3gm. Price: £71.00 (plus VAT).

■ **FORMULA 4**

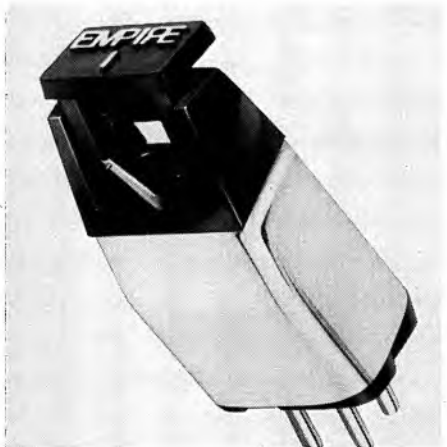
Mayware Ltd,
15 Heather Walk, Edgware, Middx. HA8 9TS.
Tel: 01-958 9421.

Mk III Tone Arm ★

Viscous Pivot Damping with variable low effective mass ensures natural sound without 'listening fatigue' enabling high and low compliance cartridges to reach their 'Linear Region' of best performance, absolutely essential for perfect stereo and quadrophonic transcription due to the suppression of instantaneous tracking force extremes which reduce record wear and high frequency playback distortion. Viscous silicone damping means bet-



Empire 2000Z/T series



Empire 4000 series

★ Indicates entry is illustrated

ter tracking especially of warped records the sound having exceptionally good definition rich full and clean bass. Jewelled uni-pivot friction below 0.005gm. VTF 0-3gm. Bias Control. Stylus-to-pivot 229mm. Suitable cartridges weighing 2-10gm. Price: on application.

■ GOLDRING

Goldring Products Ltd, Anglian Lane,
Bury St. Edmunds, Suffolk IP32 6SS.
Tel: Bury St. Edmunds 64011.

G900 Super E ★

Micro mass moving magnet cartridge. Stylus: 0.0007 × 0.0002. Playing weight: 0.75-1.5gm. Tip mass: 0.32mg. Compliance: Lat 40×10^{-6} cm/dyne ver 20×10^{-6} cm/dyne. FR: 20Hz-20kHz ± 2 dB. Output: at 5cm/sec, 1kHz 5mV RMS. Rec. load: 47K. Because of its extraordinarily low mass, the G900 tracking at less than 1gm, provides extremely low inter-modulation distortion. Because of micro mass it offers very flat frequency response with excellent tone burst response. Price: £42.00 (plus VAT).

G800

Stereo magnetic cartridge. Stylus: 0.0006in. Playing weight: 1½-3½gm. Tip mass: less than 1mg. Compliance: 20×10^{-6} cm/dyne. FR:

20Hz-20kHz ± 3 dB. Output: 4mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £7.50 (plus VAT).

G800H

Stereo magnetic cartridge. Stylus: 0.006in. Playing weight: 2½-3½gm. Tip mass: 1.2mg. Compliance: 18×10^{-6} cm/dyne. FR: 8mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £7.50 (plus VAT).

G800E

Stereo magnetic cartridge. Stylus: Elliptical: 0.0007 × 0.0003in. ($18 \times 8\mu\text{m}$). Playing weight: ¾-1¾gm. Tip mass: less than 1mg. Compliance: 30×10^{-6} cm/dyne. FR: 10Hz-23kHz ± 3 dB. Output: 5mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 20dB at 1kHz. Price: £12.50 (plus VAT).

G800 Super E

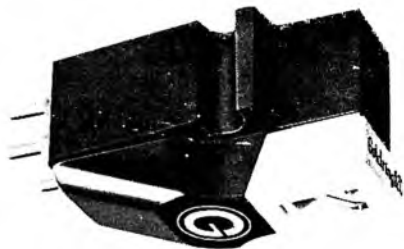
Stereo magnetic cartridge. Stylus: Elliptical 0.0007 × 0.0003in. ($18 \times 8\mu\text{m}$). Playing weight: ½-1¾gm. Tip mass: less than 1mg. Compliance: 35×10^{-6} cm/dyne. FR: 10Hz-23kHz. Output: 4mV at 5cm/sec. 1kHz. Price: £17.40 (plus VAT).

G820 ★

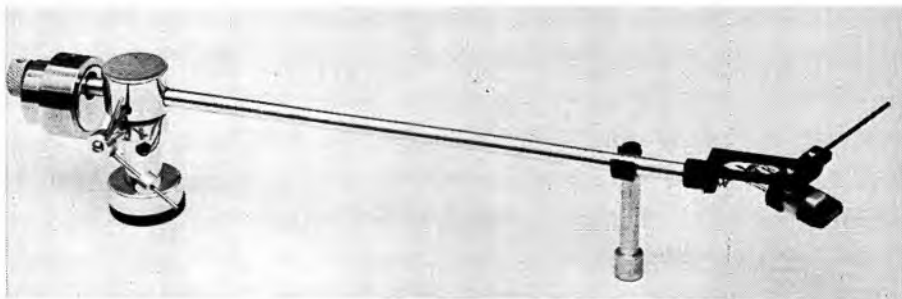
Stereo magnetic cartridge. Stylus: 0.0006in. Playing weight: 1.5-4gm. Tip mass: 1mg. Com-



Goldring G900 Super



Goldring 820



Hadcock GH 228 Super Arm

pliance: 20×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 5mV at 5cm/sec. 1kHz. Rec. load: 47K. Separation: 1kHz 20dB. Price: £10.50 (plus VAT).

G820/E

Stereo magnetic cartridge. Stylus: Elliptical 0.0007 x 0.0003in. ($18 \times 8\mu\text{m}$). Playing weight: $\frac{3}{4}$ -2gm. Tip mass: 1mg. Compliance: 25×10^{-6} cm/dyne. FR: 10Hz-25kHz. Output: 5mV at 5cm/sec 1kHz. Rec. load: 47K. Separation: 1kHz 20dB. Price: £15.00 (plus VAT).

G820/SE

Stereo magnetic cartridge. Stylus: Elliptical 0.0007 x 0.0003in. ($18 \times 8\mu\text{m}$). Playing weight: 0.6-1.75gm. Tip mass: 0.9mg. Compliance: 35×10^{-6} cm/dyne. FR: 10Hz-25kHz. Output: 4mV at 5cm/sec. Rec. load: 47K. Separation: at 1kHz 25dB. Price: £21.00 (plus VAT).

G850

Stereo magnetic cartridge. Stylus: Spherical 0.0006in. Playing weight: $2\frac{1}{2}$ -4gm. Tip Mass: 1.2mg. FR: 20Hz-18kHz. Output: 8mV at 5cm/sec RMS. Rec. load: 47K. Separation: 20dB at 1kHz. £5.75 (plus VAT).

G900/E

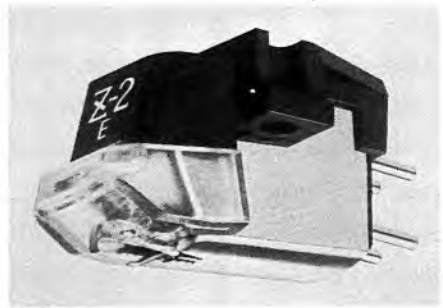
Stereo magnetic cartridge with elliptical 0.0007 x 0.0003in. stylus. Playing weight: 1-2½gm. Tip mass less than 1mg. Compliance: 25×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 6.5mV at 5cm/sec. Recommended load: 47K. Features: low mass only 4gm stylus interchangeable with G900SE. Price: £24.00 (plus VAT).

■ **G. F. C. HADCOCK**

Audio Division, The Old Vicarage, Doveridge, Derby DE6 5NN. Tel: Uttoxeter 2452.

GH 228 Super arm ★

Very low mass arm maintaining maximum rigidity. Headshell is detachable for easy fitting; accepts all cartridges from 3-13gm, suitable for Decca London with standard counterweight; supplied with counterweight sleeves as standard for heavier cartridges up to 13gm. Silicone fluid damping, adjustable thread weight, tracking force adjustment by fine thread, counterweight double decoupled, alignment protractor provided, single hole fixing, separate headshells available, base plate for uni-lift provided. A new 'S' type base plate is available at £2.50 plus VAT so that the arm can be fitted to any deck which has already been cut out for an SME type arm. Overall length: 289.6mm, height 43.90mm, rear over-



JVC Z-2E



JVC X-2

hang 60.9mm, headshell mounting 12.7mm. Price: on application.

■ **JVC**

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

Z-2E ★

Moving magnet cartridge with elliptical diamond stylus. Playing weight: 5.5gm. Compliance: 12×10^{-6} cm/dyne. FR: 10Hz-35kHz. Output: 4mV (1kHz, 50mm/s). Load: 47 ohms. No rec. retail price.

X-2 ★

Moving magnet cartridge with Shibata stylus Mark II diamond. Playing weight: 7.5gm. Compliance: 12×10^{-6} cm/dyne (at 100Hz dynamic). FR: 10Hz-60kHz. Output: 3mV (1kHz, 50mm/s). No rec. retail price.

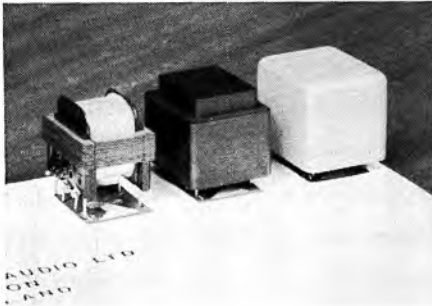
■ **KELSONICS**

Kelsonics Ltd, Kelsey House, Wood Lane End, Hemel Hempstead, Herts HP2 4RQ. Tel: 0442 61291.

K:6 ES-70 EX ★

'Futuristic' ultra high-fidelity cartridge for all matrix surround records. Stylus replacement: S70EX. Tip mass: 0.5mg. Compliance: $20 \times$

★ Indicates entry is illustrated



Kelsonics K3, K5, K6

10^{-6} cm/dyne vert and horizontal. FR: 10Hz-35,000Hz. Output: 3mV. Features: Special eclipse stylus with ultra precision. Super-light and rigid straight cantilever, moving magnet stereo cartridge. 0.2 mil \times 0.8 mil stylus. Price: £38.00 (inc. VAT).

K:4 ES-70F

Flat type stereo cartridge. Stylus: 0.5 mil small diamond. Stylus replacement: S70 FR. Weight: 5gm. Tip mass: 0.25gm. Compliance: 15×10^{-6} cm/dyne. FR: 15Hz-27,000 Hz. Output: 5mV. Price: £14.22 (inc. VAT).

K:5 ES-70E ★

Elliptical stereo cartridge. Stylus: 0.3 \times 0.8 mil diamond. Stylus replacement: S70ER. Weight: 5gm. Compliance: 15×10^{-6} cm/dyne. FR: 10Hz-30,000Hz. Output: 5mV. Price: £18.00 (inc. VAT).

K:3 ES-70S★

Low-cost standard stereo cartridge with stable capability. Stylus: 0.6 mil diamond. Stylus replacement: S70SR. Weight: 5gm. Compliance: 10×10^{-6} cm/dyne. FR: 15Hz-25,000Hz. Output: 5mV. Price: £7.90 (inc. 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 \times 0.8 mil elliptical stylus. Frequency range: 5-40,000Hz \pm 1.5dB. Employs low compliance cantilever and tracks at 1.5-2gm. If a suitable pre-amplifier is not available, as the output voltage is 0.2mV a matching transformer should be employed. Price: £110.00 (plus VAT).

Supex SD 900 Super

Moving coil cartridge. 0.3 \times 0.8 mil elliptical

stylus. Playing weight: 1.5-2gm. Compliance: 12×10^{-6} cm/dyne. FR: 5Hz-50,000Hz. Output: 0.2mV. Price: £110.00 (plus VAT).

Supex SD 901 Super

Moving coil cartridge. 0.3 \times 0.8 mil elliptical stylus. Playing weight: 1.5-2gm. Compliance: 10×10^{-6} cm/dyne. FR: 10Hz-35,000Hz. Output: 2mV. Price: £95.00 (plus VAT).

Supex SM-100

Stereo conical cartridge tracking at 1½gm with a 4mV output. Price: £38.00 (plus VAT).

Supex SM-100/E

Elliptical cartridge tracking at 1½gm with a 4mV output. Price: £55.00 (plus VAT).

Grace F-9E

Stereo cartridge stylus. 0.2 \times 0.8 mil elliptical diamond stylus. Playing weight: 1gm. Output: 3.5mV. Price: £96.00 (plus VAT).

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: £20.00 (plus VAT).

Grace G-707

Pickup 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: £110.00 (plus 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: £140.00 (plus 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-840F employ gimbal 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.



Micro Acoustics 2002e



Micro Acoustics QDC1e

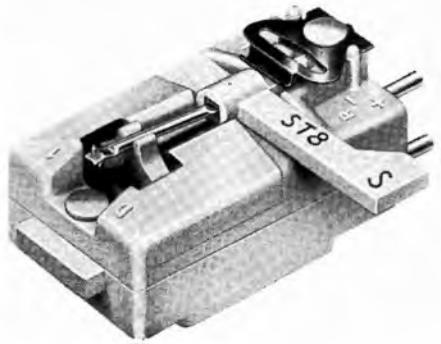
Linn Pre Pre-amp. Type PNAG

Mains powered. For moving coil cartridges 100 μ V to 400 μ V. Gain: 25dB. 2in. 470 ohms/6n8F. Unit comes with separate power supply. Price: £100.00 (plus VAT).

■ **MICRO-ACOUSTICS**

Webland International Ltd, Mirabel House, 117-121 Wandsworth Bridge Road, London SW6. Tel: 01-736 0989/9410.

These cartridges use an electret element transducer directly coupled to the cantilever to faithfully reproduce musical information. As the electret element is displacement sensitive each cartridge body contains a miniature passive network to provide a velocity output and predominantly resistive impedance. The latter print ensures a negligible effect on the fre-



Miers X5H and X5M

quency response caused by any value of cable capacitance up to 1000pF.

2002-e ★

Elliptical diamond, beryllium cantilever. FR: 5Hz-20kHz \pm 1.5dB. Tracking force: 0.7-1.4gm. Weight: 4gm. Price: £65.78 (plus VAT).

QDC-1qB.

Quadra-point CD4 diamond, beryllium cantilever. FR: 5Hz-50kHz \pm 3dB. Tracking force: 1 to 1.75gm. Weight: 4gm. Price: on application.

QDC-1e ★

QDC-1e uses an elliptical stylus (0.0002in. \times 0.0007in.) mounted on an aluminium cantilever. The compliance of the suspension is such that the QDC-1e doesn't require exceptionally light or delicate tone arms in order to achieve its optimum performance. Price: £43.56 (plus VAT).

282-e

Uses low mass miniature elliptical diamond stylus mounted on ultra-lightweight aluminium cantilever. Weight: 5.2gm. FR: 5Hz-20kHz \pm 2dB. Output: 3.5mV each channel at 5cm/sec peak recorded velocity. Load: 10K-100K. Price: on application.

■ **N. MIERS & CO LTD**

28 Piercing Hill, Theydon Bois, Epping, Essex CM16 7LE. Tel: 037-881 2611.

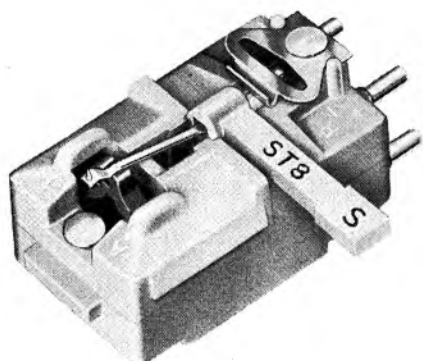
SX6M ★

Stereo crystal cartridge. LP/78 diamond stylus. Pw: 4-6gm. Output: 280mV. Price: £2.30 (plus VAT).

SX6H ★

Stereo crystal cartridge. LP/78 diamond sty-

★ Indicates entry is illustrated



Miers SX6H and SX6M

lus, Pw: 7gm. Output: 700mV. Price: £2.30 (plus VAT).

X5M ★

Monaural crystal compatible cartridge, sapphire stylus. Pw: 3-6gm. Output: 400mV. FR: 40Hz-10kHz. Price: £1.72 (plus VAT).

X5H ★

Monaural crystal compatible cartridge, sapphire stylus. Pw: 5-9gm. Output: 1V. FR: 40Hz-10kHz. Price: £1.72 (plus VAT).

SC12M

Stereo ceramic cartridge. Output: 100mV. Stylus pressure. 2-6gm. Sapphire or diamond stylus. Price: £2.87 (plus VAT).

SC12H

Stereo ceramic cartridge. Output: 170mV. Stylus pressure: 4-6gm. Sapphire or diamond stylus. Price: £2.87 (plus VAT).

■ KEITH MONKS

Keith Monks (Audio) Ltd,
26-28 Reading Road South, Fleet,
Aldershot, Hants.
Tel: Fleet 20568/9.



Keith Monks M9BA Mk 3

M9BA Mk 3 (Improved) ★

Pickup 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: 6gm. LF res: 10Hz for 5gm cartridge. Friction lateral and vertical: 4mg approx. Torque: 25 to 35mg. 13Hz for 6gm mass at 25cu. Mercury Contact pin connection designed for low tracking cartridges. Price: £51.31 (plus VAT). Top Arm £22.89 (plus VAT), spare counterweights for light, heavy and Decca London £5.06 (plus VAT).

■ PHILIPS

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

GP400 Mk2 Super M Cartridge ★

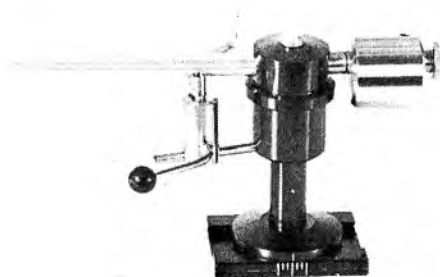
Type: stereo magnetic, 1/2in. fixing. Stylus: 15µm diamond. Compliance: ≥22mm/N lateral. ≥16mm/N vertical. Separation: ≥29dB. Sensitivity: 1.3mV/cm/sec at 1kHz. Stylus pressure: 1.5-3gm. Weight: 6gm.

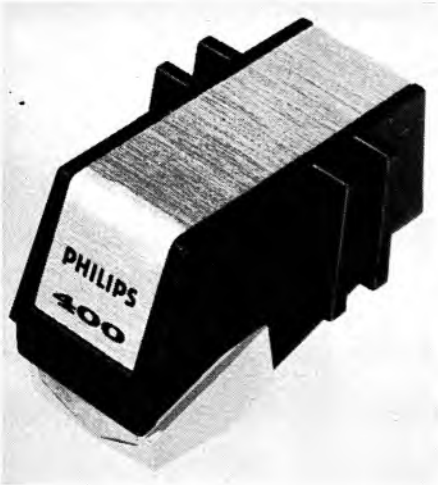
GP401 Mk2 Super M Pickup Cartridge ★

Type: stereo magnetic 1/2in. fixing. Stylus: 7 × 18µm diamond (elliptical). Compliance: ≥20mm/N lateral, ≥16mm/N vertical. Separation ≥29dB. Sensitivity: 1.3mV/cm/sec at 1kHz. Stylus pressure: 1.5-2.5gm. Weight: 7gm.

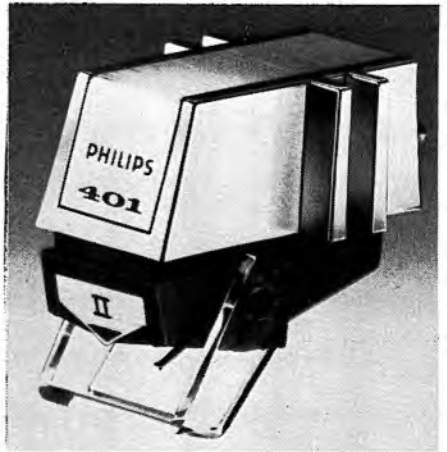
GP412 Mk2 Super M pickup Cartridge ★

Type stereo magnetic 1/2in. fixing. Stylus: 7 × 18µm diamond (elliptical). Compliance: ≥30mm/N lateral. ≥20mm/N vertical. Separation: ≥30dB at 1kHz. Sensitivity: 1.5mV/cm/sec at 1kHz. Stylus pressure: 0.75-1.5gm. Weight: 7gm.

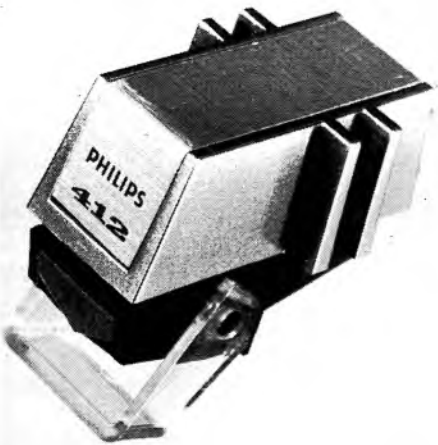




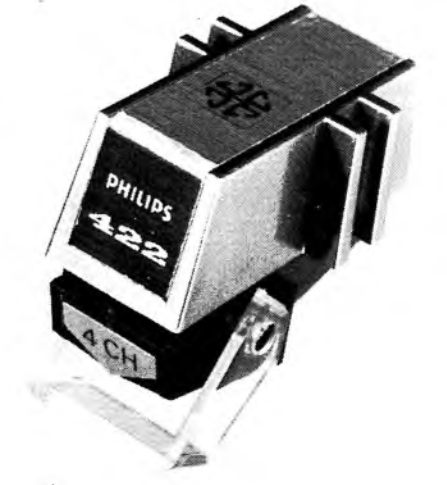
Philips GP 400



Philips GP 401 Mk II



Philips GP 412 Mk II



Philips GP 422 Mk II

GP422 Mk2 Super M pickup Cartridge ★

Type: stereo magnetic 1/2in. fixing Stylus: 7 × 18μm diamond profiled for supersonic tracking Compliance: 32 × 10⁻⁶cm/dyne Separation: ≥30dB at 1kHz. Sensitivity: 1.1mV/cm/sec at 1kHz. Stylus pressure: 0.75-1.5gm. Weight: 6.9gm.

■ **PICKERING**

Distributors: Highgate Acoustics,
38 Jamestown Road, London NW1 7EJ
Tel: 01-267 4936

Large range. Details on request.

■ **REALISTIC**

Tandy Corporation (Branch UK),
Bilston Road, Holyhead Road,
Wednesbury, Staffs WS10 7JN.
Tel: 021-556 6101.

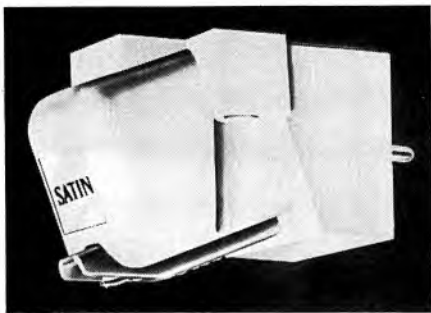
Cartridges

R 7C £8.95; R47EB £13.95, E 27E £16.95;
R1000E £24.95

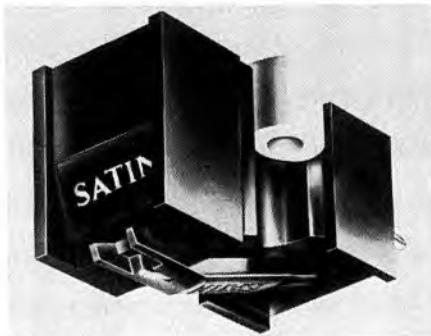
■ **SATIN**

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

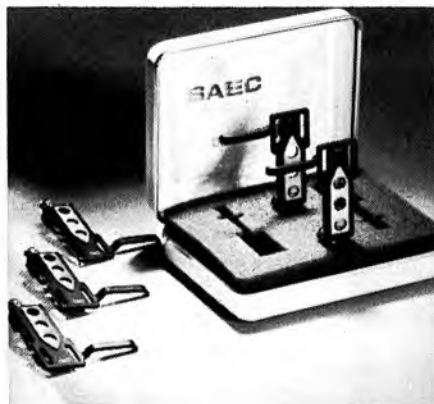
★ Indicates entry is illustrated



Satin M-117G



Satin M-18E



Seac ULS-20 Headshell

M-117G ★

Moving coil cartridge with elliptical diamond stylus. Playing weight: 9.2gm. Compliance: 12×10^{-6} cm/dyne. FR: 20Hz-25kHz. Output: 3mV \pm 2dB. Price: £65.00 (plus VAT).

M-18E ★

Moving coil cartridge with diamond stylus. Playing weight: 9.5gm. Compliance: 15×10^{-6} cm/dyne. FR: 10Hz-30kHz. Output: 2mV \pm 2dB. Price: £120.00 (plus VAT).

M-18X

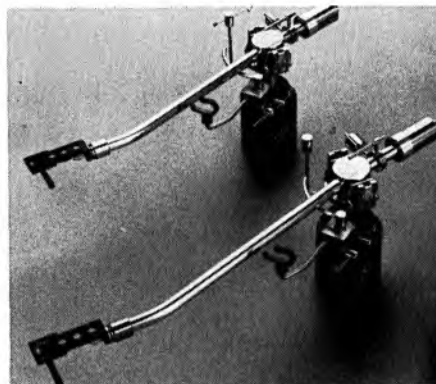
Moving coil extended response cartridge with Shibata diamond stylus. Playing weight: 9.5gm. Compliance: 15×10^{-6} cm/dyne. FR: 10Hz-35kHz. Output: 2mV \pm 2dB. Price: £50.00 (plus VAT).

■ SEAC

Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

WE-308 L ★

Tone arm with double knife edge bearing,



Seac WE 308L

automatic tracking force. Length overall: 367.5mm. Effective length: 270mm. Price: £108.00 (plus VAT).

WE-308

As above but with overall length: 329mm and effective length 240mm. Price: £99.50.

ULS-20 ★

Two Ultimate headshells in box. Price: £16.00 (plus VAT).

Other Accessories

ULS-2 Ultimate headshell £7.00; W-2 twin counterweight for WE308N £18.25; ditto for WE-308L £18.25. Model No. W-2L, AS-500E arm stabilizer £13.50; S-1 arm bracket £39.00 (all plus VAT).

WE-308 SX tone arm ★

New concealed double knife-edged bearing system, gold plated pin connectors, low capacitance, gold plated phono cord supplied. Overall length: 329mm, effective length 240mm, overhang 5mm. Price: £265.00 (plus VAT).

■ SHIBATA

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

Mark III

For details apply above.

■ SHURE

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

M3D

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.7 thou diamond.
Pw: 3-6gm. Compliance: 4×10^{-6} cm/dyne. FR:
20Hz-15kHz. Separation: 20dB at 1kHz. Out-
put: 1mV. Load impedance: 47K. Price: £7.56
(plus VAT).

M44C

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.7 thou diamond
(1 thou and 3 thou styli available). Pw: 3-5gm.
Compliance: 7.5×10^{-6} cm/dyne. FR: 20Hz-
20kHz. Separation: 20dB at 1kHz. Output:
1.8mV. Load impedance: 47K. Price: £9.99
(plus VAT).

M44E

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.7×0.4 thou bi-
radial diamond (3 thou stylus available). Pw:
1 3/4-4gm. Compliance: 15×10^{-6} cm/dyne. FR:
20Hz-20kHz. Separation: >20dB at 1kHz.
Output: 1.8mV. Rec load: 47K. Price: £10.80
(plus VAT).

M44G

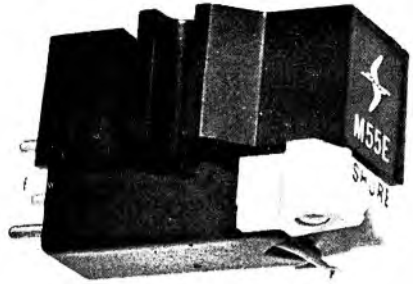
Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.6 thou diamond
(1 thou and 3 thou styli available). Pw: 3/4-
1 1/2gm. Compliance: 25×10^{-6} cm/dyne. FR:
20Hz-20kHz. Separation: 25dB at 1kHz. Out-
put: 1.4mV. Load impedance: 47K. Price:
£9.99 (plus VAT).

M44-7

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.7 thou diamond
(1 thou and 3 thou styli available). Pw: 1 1/2-
3gm. Compliance: 20×10^{-6} cm/dyne. FR:
20Hz-20kHz. Separation: 20dB at 1kHz. Out-
put: 2.2mV. Load impedance: 47K. Price:
£9.99 (plus VAT).

M55E ★

Stereo Dynetic cartridge. Moving magnet.



Shure M24H



Shure V15 Type III

1/2in. fixing centres. Stylus: 0.7×0.2 thou ellip-
tical diamond (3 thou stylus available). Pw:
3/4-2gm. Compliance: 15×10^{-6} cm/dyne. Sepa-
ration: 22dB at 1kHz. Output: 1.3mV. Load
impedance: 47K. Price: £11.88 (plus VAT).

M75B Type 2

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.6 thou conical
diamond (3 thou stylus available). Pw: 1 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: >20dB at 1kHz. Output: 1mV.
Rec load: 47K per channel. Price: £14.85 (plus
VAT).

M75ED Type 2 ★

Stereo Dynetic cartridge. Moving magnet.
1/2in. centres. Stylus: 0.7×0.2 thou elliptical
diamond (3 thou stylus available). Pw: 3/4-
1 1/2gm. Trackability (see note at end) 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: 1mV. Rec. load: 47K per channel.
Price: £21.33 (plus VAT).

M75G Type 2

Stereo Dynetic cartridge. Moving magnet.
1/2in. fixing centres. Stylus: 0.6 thou conical

★ Indicates entry is illustrated

diamond (3 thou stylus available). Pw: $\frac{3}{4}$ -1½gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 20cm/sec, 1kHz 28cm/sec, 10kHz 18cm/sec. FR: 20Hz-20kHz. Separation: >25dB at 1kHz. Output: 1mV. Rec. load: 47K per channel. Price: £17.28 (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. Output: 1mV. Separation: 20dB at 1kHz. Price: £18.63 (plus VAT).

M95ED

Stereo Dynetic cartridge. Moving magnet. ½in. fixing centres. Stylus 0.7 × 0.2 thou bi-radial diamond. (2.5 thou spherical 78 rpm tip also available). Pw: $\frac{3}{4}$ -1½gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 24cm/sec, 1kHz 33cm/sec, 5kHz 28cm/sec, 10kHz 19cm/sec. FR: 20Hz-20kHz. Separation: 25dB minimum at 1kHz. Output: 0.98mV per channel at 1kHz, 5cm/sec peak recorded velocity. Rec load: 47K per channel. Price: £28.62 (plus VAT).

M95EJ

Stereo Dynetic cartridge. Moving magnet. ½in. fixing centres. Stylus 0.7 × 0.4 thou bi-radial diamond. (2.5 thou spherical 78 rpm tip also available). Pw: 1½-3gm. Trackability (see note at end) at 2gm in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 5kHz 30cm/sec, 10kHz 20cm/sec. FR: 20-20kHz. Separation: 20dB minimum at 1kHz. Output: 0.98mV per channel at 1kHz. Rec load: 47K per channel. Price: £19.71 (plus VAT).

M24H ★

Stereo and discrete 4-channel cartridge with Hyperbolic diamond tip. Playing weight: 1-1½gm. Tip mass: 0.39gm. Trackability: 400Hz-200cm/sec, 1,000Hz-28cm/sec, 5000Hz-47cm/sec, 10,000Hz-50cm/sec. FR: 20Hz-50kHz. Output: 0.6mV at 1kHz, 1cm/sec. Recommended load: stereo: 20-100K ohms in parallel with 100-250 pico farads. Discrete 4-channel: 100K in parallel with 100 pico farads. Price: £41.85 (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 × 0.5 thou spherical tips also available). Pw: $\frac{3}{4}$ -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:



Shure M55E



Shure M75 ED Type 2

10Hz;25kHz. Separation: 25dB at 1kHz, 15dB at 10kHz. Output: 0.7mV at 1kHz. Rec load: 47K. Price: £59.13 (plus VAT).

V15-Type IV

Stereo Dynetic cartridge with hyper elliptical nude diamond stylus. Playing weight: $\frac{3}{4}$ -1½gm. FR: 10Hz-25kHz. Output: 0.8mV at 1cm/sec, 1kHz. Recommended load: 47K. Built-in dynamic stabiliser and electrostatic neutraliser. Price: £82.08 (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, Mill Road, 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 0.02gm applied at the stylus will deflect the arm in either plane. Low inertia: 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 $\frac{1}{2}$ in. (12.7mm) fixed centres, 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. Price: £56.70 (plus VAT).

Model 3009/S3 ★

Series II Improved precision pickup arm. Detachable shell. Effective mass: 9.5gm. Other details as above. Price: £62.17 (plus VAT).

3009 Series III ★

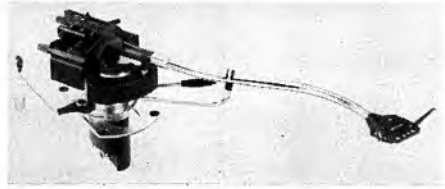
Integral carrying arm replaces conventional tone arm and shell and is interchangeable for multi-cartridge use. Tube has a wall thickness of 0.2mm and is of 'S' form for torsional strength. Positive tracking, main pillar hardened and ground, low friction pivots, vertical axis, knife edges on horizontal axis. Viscous damping in both planes. Precise tracking force of up to 2.5gm can be applied without gauge. 0-1.5gm fine adjustment plus 1gm coarse adjustment. Price: £113.85 (plus VAT).

■ **SIGNET**

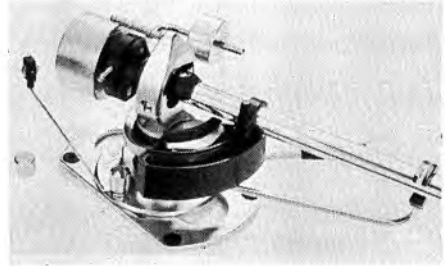
Shiro (UK) Ltd,
The Ridgeway, Iver, Bucks.
Tel: Iver 652222

TK7SU

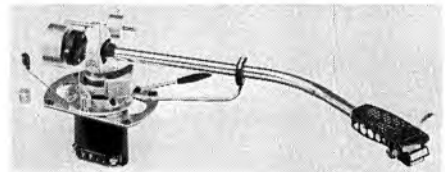
Dual magnet cartridge with nude square shank miniaturised Shibata stylus. Playing weight: 0.75-1.75gm. Tip mass: 0.4mg. Compliance: 41. FR: 5Hz-45kHz. Output: 2.7mV. Recommended load: 47K (or 100K for CD-4). Fea-



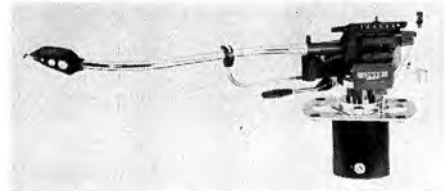
SME 3009 Series II



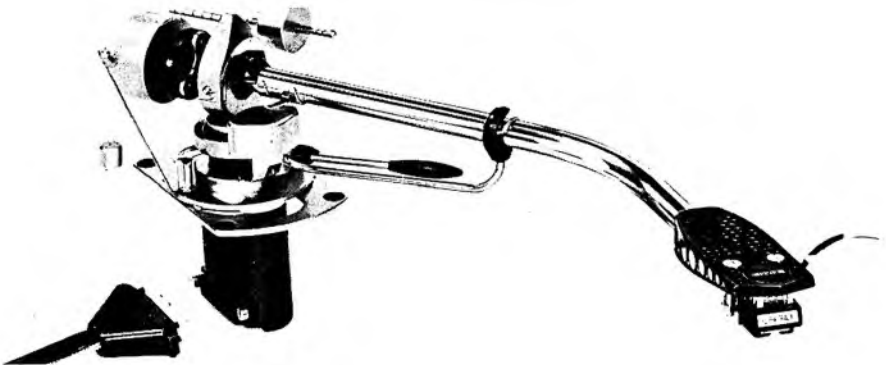
SME FD 200 Fluid damper



SME 3009 Series III

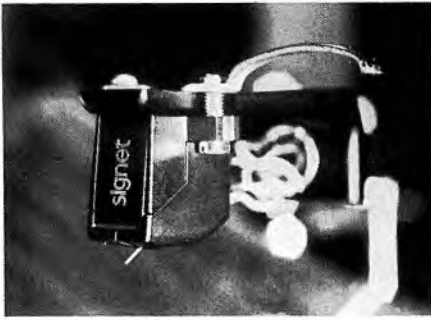


SME 3009 Series III



SME 3009

★ Indicates entry is illustrated



Signet MK111E

tures: See TK7E plus 12 stylus options which include choice of titanium, beryllium and carbon fibre cantilevers with spherical, elliptical or Shibata styli. Price: on application.

MI11E ★

Dual moving coil cartridge with nude mounted grain orientated, miniaturised 0.2×0.7 mil elliptical stylus. Playing weight: 0.75-1.50gm. Tip mass: 0.2mg. Compliance: 40. FR: 15Hz-50kHz. Output: 0.4mV. Recommended load: Transformer MK10T 47K. Features: stylus cut from smallest diamond. Beryllium cantilever construction. Patented dual micro-coil design. Price: on application.

TK5E ★

Dual magnet cartridge with 0.2×0.7 nude square shank elliptical diamond. Playing weight: 0.75-1.75gm. Tip mass: 0.40mg. Compliance: 35. FR: 10Hz-30kHz. Output: 4.2mV. Recommended load: 47K. Features: hand assembled, individually tested for both technical specification and sound quality. Price: on application.

TK7E ★

Dual magnet cartridge with 0.2×0.7 nude square shank elliptical diamond. Playing weight: 0.75-1.75gm. Tip mass: 0.40mg. Com-

pliance: 41. FR: 5Hz-30kHz. Output: 2.7mV. Recommended load: 47K. Features: hand assembled and individually tested for both technical specification and sound quality. Price: on application.

■ SONOTONE

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

Details and prices of range on application.

■ SONUS

C. E. Hammond and Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

Silver Label P

Stereo magnetic cartridge with multi-radial diamond stylus. Playing weight: $\frac{3}{4}$ -1 $\frac{1}{2}$ gm. Compliance: 30×10^{-6} cm/dyne. FR: 5Hz-20kHz ± 2 dB, 20Hz-45kHz ± 4 dB. Output: 1mV. Recommended load: 47K. Price: £38.00 (plus VAT).

Silver Label E

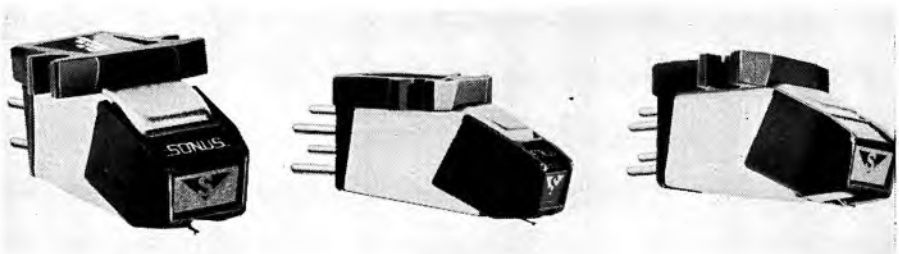
Stereo magnetic cartridge with elliptical diamond stylus. FR: ± 2 dB 5Hz-20kHz. Other details as Silver Label P. Price: £36.00 (plus VAT).

Blue Label ★

Stereo magnetic cartridge with multi-radial diamond stylus. Playing weight: $\frac{3}{4}$ -1 $\frac{1}{4}$ gm. Compliance: 50×10^{-6} cm/dyne. FR: $\pm 1\frac{1}{2}$ dB 5Hz-20kHz ± 6 dB 20kHz to 45kHz. Output: 0.8mV. Recommended load: 47K. Price: £70.00 (plus VAT).

Red Label ★

Stereo magnetic cartridge with elliptical diamond stylus. FR: $+2$ -1 $\frac{1}{2}$ dB 5Hz-20kHz. Other details as Blue Label. Price: £55.00 (plus VAT).



Sonus Range



Sony HA55



Sony XL55

Green Label ★

Stereo magnetic cartridge with spherical diamond stylus. FR: $\pm 2\text{dB}$ 5Hz-20kHz. Other details as Blue Label. Price: £46.00 (plus VAT).

■ **SONY (UK) LTD**

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

Cartridges

VL 30 G Cartridge for HMP40/HMK40/
HMK40A/ HMK70/HMP70. VL 32 G Car-
tridge for PS1350/ PS2350/ PS1700/ PS3300/
PS11/ PS22/ HMK55/HMK72/.

Styli

ND 132G Stylus for PS5520/ PS230/HP511A/
SQP20/ PS5550/ HMP70/ HMK70. ND 133G
Stylus for HMP40/HMK70/HMK30. ND 134G
Stylus for PS1350/PS2350/ PS11/
PS22/HMK55/HMK77/ PS1700/PS3300. ND
100G ND (1006) Stylus for EX1K, EX2K. No
rec. retail prices.

XL 15

Magnetic cartridge with conical diamond 0.6
mil stylus. Playing weight: 1.2-2.5gm (1.7gm
rec). Compliance: $15 \times 10^{-6}\text{cm/dyne}$. FR:
10Hz-30,000Hz. Output: 4mV. Rec. Load:
50K-100K. Features: specially heated can-
tilever for rigidity. No rec. retail price.

XL 25

Magnetic cartridge with elliptical diamond 0.3
 \times 0.8 mil stylus. Playing weight: 1-2gm (1.5
rec). Compliance: $15 \times 10^{-6}\text{cm/dyne}$. FR:
10-30,000Hz. Output: 4mV. Rec. Load: 50K-
100K. Features: specially heat treated tapered
cantilever. No rec. retail price.

XL 35

Magnetic cartridge with elliptical 0.3 \times 0.8 mil
stylus. Playing weight: 1-2gm (1.5 rec). Com-
pliance: $15 \times 10^{-6}\text{cm/dyne}$. FR: 10Hz-
35,000Hz. Output: 3mV. Rec. Load: 50K-
100K. Features: Carbon clad cantilever,
Alnico magnet. No rec. retail price.

XL 45

Magnetic cartridge with line contact type
nude diamond. Playing weight: 1-2gm (1.5 rec).
Compliance: $20 \times 10^{-6}\text{cm/dyne}$. FR: 10-
45,000Hz. Output: 3mV. Rec. Load: 50K-
100K. Features; Carbon-clad cantilever,
samarium cobalt ring magnet. No rec. retail
price.

XL 55 ★

Moving coil cartridge with 0.3 \times 0.8 mil solid
diamond stylus. Playing weight: 1-2.2gm (rec
10-50,000Hz). Output: 0.2mV. Rec. Load: 40
ohms. Features: HA 55 head amplifier
required. No rec. retail price.

HA 55 Head Amplifier ★

For XL 55 above.



South Western Agencies

★ Indicates entry is illustrated

■ SOUTH WESTERN AGENCIES

Spring Gardens, Bigbury,
Kingsbridge, Devon TQ7 4AP.
Tel: Bigbury 323.

Diamond and Sapphire Styli ★

Range exceeding 750 types, augmented by manufacturers' original styli and large range of cartridges. Prices: on application.

SWZ CM 1-D

SWA CM 1-D cartridge with 874 stylus. Playing weight: 1.2-2gm. Tip mass: 0.65mg. Compliance: 25×10^{-6} cm/dyne. FR: 10Hz-28kHz. Output: 3mV/1000Hz. Recommended load: 30K-100K. Features: Channel separation above 25dB/1000Hz. Price: £7.00 (plus VAT).

■ STANTON

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

500A

Magnetic cartridge with D5107A stylus. Playing weight: 2-5gm. FR: 20Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £16.60 (plus VAT).

500AL

Magnetic cartridge with D5107AL stylus. Playing weight: 3-7gm. FR: 20Hz-17kHz. Output: 1mV. Recommended load: 47K. Specially designed for disco and industrial use. Price: £16.60 (plus VAT).

500E

Magnetic cartridge with D5100E stylus. Playing weight: 2-5gm. FR: 20Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £19.99 (plus VAT).

500EE

Magnetic cartridge with D5100EE stylus. Playing weight: 1-2gm. FR: 10Hz-20kHz. Output: 1mV. Rec. load: 47K. Price: £23.25 (plus VAT).

680EE

Magnetic cartridge with D680 stylus. Playing weight: 0.75-1.5gm. FR: 20Hz-20kHz. Output: 0.82mV. Rec. load: 47K. Price: £34.35 (plus VAT).

681EEE

Magnetic cartridge with D680EEE stylus. Playing weight: 0.75-1.5gm. FR: 12Hz-22kHz. Output: 0.7mV. Rec. load: 47K. Price: £53.30 (plus VAT).

881S

Magnetic cartridge with D81 stylus. Playing weight: $\frac{3}{4}$ -1 $\frac{1}{4}$ gm. High compliance. FR: 10Hz-20kHz. Output: 4.5mV/5cm/sec. Recommended load: 47K. Stereohedron stylus for low record wear. Price: £87.95 (plus VAT).

STAX

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

UA7 tone arm

Length: 255mm, hydraulic lowering device, tracking pressure 0-3gm, detachable arm tube. Price: on application.

■ TECHNICS

National Panasonic (UK) Ltd,
107-109 Whitby Road,
Slough, Bucks. SL1 3DR.
Tel: Slough 34522.

EPC-270C ★

Designed for Technics models SL-20, SL-23, SL-2000. Low mass, high compliance suspension, good stability and linearity. Price: £22.95 (inc. VAT).

EPC-205C Model S ★

Standard model in EPC-205C range. Output voltage 3.5mV at 1kHz, 5cm/sec. DC resistance of 500 ohms, inductance of 560mH. Price: £49.95 (inc. VAT).

EPC-205C Model L

Impedance: 30 ohms. Inductance: 40mH. Output voltage: 2mV. This version is not affected so much by load impedance and capacitance presented by the amplifier or connecting cables, and so can be used with any amplifier and with long leads. Price: £49.95 (inc. VAT).

EPC-205C Model H

Same as Model S but with 6dB more output voltage, giving 7mV. All three EPC-205C models can be used with Technics SL-1300, SL-1400, SL-1700, SL-2000. Price: £49.95 (inc. VAT).

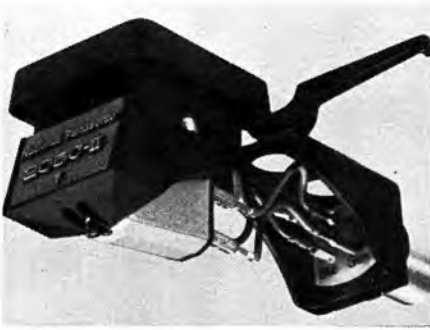
■ TENOREL

Condor Electronics Ltd,
100 Coombe Lane, London SW20.
Tel: 01-946 0033.

T2001SD ★

Magnet cartridge with Shibata nude stylus. Playing weight: 1-2.5gm. Tip mass: .75gm. Compliance: 25×10^{-6} cm/dyne. FR: 15-45,000Hz. Output: 5.5mV at 1kHz 5cm/sec.

PICK UP, CARTRIDGES AND ARMS



Technics EPC 205C



Technics 207C



Tenorel 2001

Recommended load: 47K. Features: Shibata styli suitable for CD4. Price: on application.

T2001DP ★

Magnet cartridge with conical stylus. Playing weight: 1.3gm. Tip mass: 1mg. Compliance: 20×10^{-6} cm/dyne. FR: 15-20,000Hz. Output: 9mV at 1kHz - 5cm/sec. Recommended load: 47K. Features: High output magnetic cartridge. Price: on application.

T2001D ★

Magnet cartridge with conical diamond stylus. Playing weight: 1.5-3gm. Tip mass: 1mg. Com-

pliance: 20×10^{-6} cm/dyne. FR: 15-25,000Hz. Output: 5.5mV at 1kHz - 5cm/sec. Recommended load: 47K. Features: suitable as replacement for Goldring, Shure, Sonotone, Philips magnet cartridges. Price: £5.75 (plus VA1).

T2001ED ★

Magnet cartridge with elliptical stylus. Playing weight: 1-2.5gm. Tip mass: 0.75gm. Compliance: 25×10^{-6} cm/dyne. FR: 15-32,000Hz. Output: 5.5mV at 1kHz - 5cm/sec. Recommended load: 47K. Price: on application.

■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Frimley Road, Frimley, Camberley, Surrey. Tel: Camberley 62222.

C-55M

Moving magnet cartridge with diamond stylus. Compliance: 7×10^{-6} cm/dyne. FR: 3.5mV. Rec. load: 47K. Dual magnet type, 45 deg. Price: £7.07 (plus VA1).

■ ULTIMO

Condor Electronics Ltd, 100 Coombe Lane, London SW20. Tel: 01-946 0033.

20C

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.5 ± 0.3 gm. Compliance: 10×10^{-6} cm/dyne. FR: 20-40,000Hz ± 3 dB. Output: 0.18mV at 1kHz - 5cm/sec. Recommended load: 47K. Features: low output, moving coil cartridge requires transformer model DU6A. Price: Approx. £100.00 (plus VA1).

10X

Moving coil cartridge with elliptical stylus. Playing weight: 1.5 ± 0.3 gm. Compliance: 10×10^{-6} cm/dyne. FR: 20-20,000Hz ± 2 dB. Output: 1.8mV at 1kHz 5cm/sec. Recommended load: 47K. Features: high output. Price: Approx. £59.00 (plus VA1).

20A

Moving coil cartridge with Shibata diamond stylus. Playing weight: 1.5 ± 0.3 gm. Compliance: 8.17×10^{-6} cm/dyne. FR: 20-30,000Hz ± 2 dB, 50kHz -3 +2dB. Output: 2mV at 1kHz, 5cm/sec. Recommended load: 47K. Features: high output, moving coil does not need pre-amp. Price: £73.00 (plus VA1).

20B

Moving coil cartridge with Shibata diamond

SME SERIES III

The best pick-up arm in the world



**Design Council
Award 1978**

For further information, write to SME Limited · Steyning · Sussex · BN4 3GY

'This new pick-up arm is the result of in-depth study of disc reproduction requirements and reflects the audio perfectionist's attitude to design which we have come to associate with SME.'

What really matters is that the manufacturer has anticipated cartridge developments and this alone puts the component well ahead of most others.'

What Hi-Fi?

'... judging by the results obtained from the moving-coils I would say that with damping, this arm is very good and gives a high performance. Certainly it is well in advance of the S2 and now in the eyes of the establishment will presumably become the best pick-up arm in the world.'

Hi-Fi Answers

'There is no doubt that this is an exciting arm well in the avant garde of today's audio electronics. It will certainly have an irresistible attraction for the enthusiast: its precision engineering and its conspicuous aid to music listening will extend this appeal to music lovers.'

Financial Review (Australia)

'The law of diminishing returns says the Series II Improved is a better buy: the law of perfection says that the Series III is a better engineered and more universal arm. For many people that will settle the argument.'

Electronics Today, International (Australia)

'... the SME Series III must surely rank with the top few arms, having as an overwhelming benefit tremendous flexibility of use.'

Hi-Fi Review (Australia)

'For our examples we chose the new SME Series III arm. It could hardly be more appropriate, for SME – a British firm with an enviable reputation for getting things right – are noted for attention to the finer points which we advocate to hi-fi buyers.'

Popular Hi-Fi

'Starting from scratch, or if you are obsessed with perfection, the SME Series III meticulously set up must have the edge, probably not only over their earlier design but also over that of any other.'

The Gramophone

'... the new SME arm fulfils a lot more of the criteria mentioned than most arms, it was gratifying to hear the results achieved with Pioneer's PLC 590 and the Ortofon SL 20E. The best way of quickly describing the improvement is to say that all the strengths of a moving-coil cartridge were further emphasised, or in other words bass out-put became even more solid and realistic than ever, that incredible open clarity of a good moving-coil design was heightened and importantly, treble quality gained both better definition and sweetness.'

Practical Hi-Fi & Audio

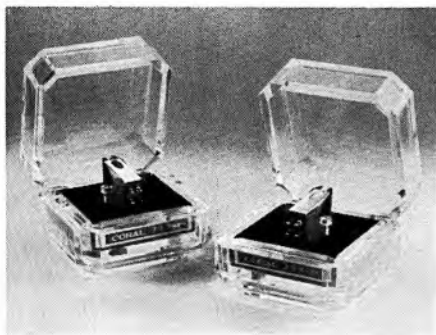
'Standards of engineering in the execution of an SME arm reflects the sort of clear-sighted production competence which caused the British Empire to survive for so long and which continues to earn respect for British high technology overseas. While it takes a true enthusiast to appreciate the finer design points, an SME Series III arm is not only a technological feat it is also a function of a craftsman's love and a work of art. To someone interested more in music than machines and whose aims are high, it should suffice to say that an SME Series III arm is all you could possibly need. It's as simple as that.'

Men Only

'... the new Shure V-15 IV associates for the best with this exceptional arm. In this particular case, this new listening is at the same time more accurate and more human. ... from the cartridges tested the most surprising differences come from Technics and from Ortofon MC20 and it is probable that you will have other surprises of the same kind with other cartridges. The arm adapts to every case, but for all the models it brings an improvement of quality, which may vary in proportion, but which always exists.'

Son Hi-Fi Magazine (France)

★ Indicates entry is illustrated



Videotone Coral 777E, 777EX

stylus. Playing weight: $1.5 \pm 0.3\text{gm}$. Compliance: $8.17 \times 10^{-6}\text{cm/dyne}$. FR: 20-30,000Hz +2dB, 50kHz -3 +2dB. Output: 2mV at 1kHz, 5cm/sec. Recommended load: 47K. Features: Beryllium cantilever suitable for CD4. Price: on application.

■ VIDEOTONE

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

Coral 777 ★

Moving coil cartridge. Playing weight: 5.5gm. Compliance: $13 \times 10^{-6}\text{cm/dyne}$. FR: 10Hz-35kHz. Output: 0.3mV (50cm/sec). Load: 10.2 ohms. Price: on application.

T100 Step-up transformer

Low cost and efficient means of giving required signal boost. FR: 5Hz-50kHz. Gain: 26dB. Input imp: 6 ohms, matching output imp: 47K. Crosstalk: 50dB. Price: £30.00 (plus VAT).

H200 amplifier

Battery power amplifier offering superior performance over T100. FR: 8Hz-45kHz +0 -1dB. Input Imp: 200 ohms. Output imp: 12K, matching imp: 47K. Gain: 26dB. Price: £45.00 (plus VAT).

■ YAMAHA

Natural Sound Systems Ltd, 10 Byron Road, Wealdstone, Harrow, Middlesex HA3 7TL.
Tel: 01-863 8622.

Cartridges (stereo)

CG-7000 — £19.00; CG-6500 — £16.00; CG-5500 — £14.40; CG-7000E (elliptical) £22.90. All plus VAT.

The Cartridge is the key



The lighter the cartridge, the better the sound quality.

At less than 5 gms. cartridges don't come much lighter or better than the amazing new Goldring G900 Super E.

By the use of a micro-miniature magnet to a specification previously believed impossible, plus advanced new magnetic circuitry and coil winding techniques, Goldring have created in the G900 SE an extraordinarily low mass cartridge with very flat frequency response and excellent tone burst response.

The result speaks for itself.

In a clear, firm voice.

 **Goldring**
Sound pure and simple

Goldring Products Limited, Anglian Lane, Bury St. Edmunds IP32 6SS. For further details ring: 0284 64011

Radio Tuners

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ACCUPHASE

Pyser Ltd, Fircroft Way, Edenbridge,
Kent TN8 6HA.
Tel: Edenbridge 864111.

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: 20kHz-15kHz -1dB. Stereo separation: 35dB at 100Hz, 45dB at 1kHz. Stereo and muting threshold: $5\mu\text{V}$. Output imp: 200 ohms (fixed), 2.5K (controlled). Signal strength meter, centre tuning meter and multipath meter. Mains: 100, 117, 220, 240V AC 50/60Hz. Size: $45.5 \times 15.2 \times 35.5$ cm. Price: £328.00 (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. Signal strength meter, centre tuning meter, multipath meter. Mains: 100, 117, 220, 240V AC 50/60Hz. Size: $44.5 \times 15.2 \times 35.5$ cm. Price: £545.00 (plus VAT).

■ AKAI

Rank Audio Visual, Rank Hi-Fi,
PO Box 70, Great West Road,
Brentford TW8 9HR.
Tel: 01-368 9222.

AT 2400

Stereo AM/FM tuner with variable tuning and AFC. Sensitivity: FM — $1.8\mu\text{V}$. AM — $180\mu\text{V/m}$ bar antenna, $15\mu\text{V}$ external aerial. Signal strength and tuning meter. S/N: FM: 75dB. AM: more than 50dB. Output: variable 0mV to 550mV. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions:

$44 \times 33.6 \times 14.1$ cm. Price: £160.98 (plus VAT).

AT 2200

Stereo AM/FM tuner with variable tuning. Sensitivity: FM — $1.9\mu\text{V}$, AM — $180\mu\text{V/m}$ bar, $7\mu\text{V}$ external. Signal strength and tuning meter. S/N: FM — 70dB, AM — more than 45dB. Output: variable 10mV to 700mV. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $38 \times 26.3 \times 12.5$ cm. Price: £110.98 (plus VAT).

AT 2600

Variable tuning. AFC. Sensitivity: $1.7\mu\text{V}$ (1HF) Signal strength/tuning meter. S/N ratio (stereo): 75 dB. Variable output. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $44 \times 33.6 \times 14.1$ cm. Mains voltage: 240V 50/60Hz. Price: £215.02 (plus VAT).

■ ALBA

Alba Radio & Television Ltd, Bull Lane,
Edmonton, London N18 1RA.
Tel: 01-803 445.

800 A ★

AM/FM stereo tuner with multiplex decoder

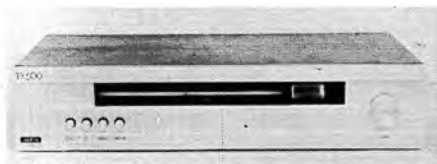


Accuphase T-101 stereo tuner



Alba 800A tuner

★ Indicates entry is illustrated



Alpha TX 500



Amstrad 3000 Mk II



Amstrad EX 303

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 imp: 75 ohms. Price: on application.

■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ.

Tel: 01-267 4936.

TX 500 ★

AM/FM tuner. Tuning range: 87.5-108MHz, 550-1,600kHz. Variable tuning. Manual (pushbutton) AFC. Sensitivity: 1.5µV. Image frequency rejection: -50dB. Signal strength meter. Capture ratio: 2dB. Output level: 50mV-500mV. Aerial input imp: 75 ohms unbalanced. Dimensions: 21 × 44 × 10cm. Mains: 240V AC. Price: £63.50 (plus VAT).

FT 650

Tuning range: 87-108MHz, 540-1,160kHz. Variable tuning. Automatic AFC. Sensitivity: 2µV. Signal strength and centre tuning meters. Capture ratio: 2dB. Fixed output: 200mV. Aerial input imp: 75 ohms unbalanced. Di-

mensions: 42.5 × 24.8 × 14.2cm. Mains voltage tappings: 240V AC. Price: £99.00 (plus VAT).

■ AMSTRAD

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

3000 Mk II ★

AM/FM radio tuner. Tuning range: MW 525-1600kHz, LW 150-270kHz, FM 88-108MHz. Variable tuning. Switchable AFC. Sensitivity (mono): 2.0µV. Image frequency rejection: 54dB. IF rejection: 72dB. Illuminated tuning meter. Capture ratio: 1.5dB. S/N ratio (mono): 63dB. Variable output: 0-1V RMS. Aerial input imp: 75 ohm FM. Dimensions: 36.5 × 15.5 × 9.5mm. Mains: 240V AC. Price: £53.66 (plus VAT).

EX 303★

AM/FM radio tuner. Tuning range: MW 525-1600kHz, LW 150-270kHz, FM 88-108MHz. Variable tuning. AFC. Sensitivity: 1.7µV. Signal meter and tuning meter. S/N ratio: 65dB. Output: 1-1V variable. Aerial input imp: 75 ohms FM. Dimensions: 42 × 34 × 14.5cm. Mains: 240V AC. Price: £71.00 (plus VAT).

■ A/R/D

Audio Research and Development Ltd, Navas House, The Maultway, Camberley, Surrey GU15 1QE. Tel: Camberley 24654.

A/R/D 4000 ★

Tuning range: 87.5-104.5MHz. Variable electronic touch-control tuning plus six pre-set push buttons. AFC: ±400kHz. Sensitivity: 1.2µV stereo. Image frequency rejection: 80dB. IF rejection: 85dB. Signal strength and tuning meters. Selectivity: 55dB. S/N stereo: 67dB. Fixed output: 150mV RMS. Aerial input imp: 75 ohms. Dimensions: 26 × 35.2 × 5.6cm. Mains: 240V. Price: £130.00 (plus VAT).

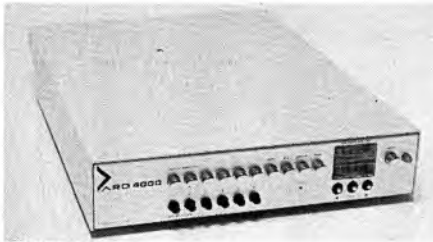
■ ARMSTRONG AUDIO LTD

Walters Road, London N70RZ. Tel: 01-607 3213.

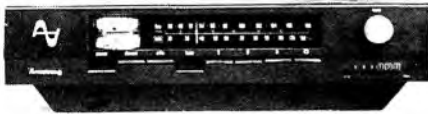
623 (AM-FM) ★

Tuning range: FM: 87.5-108MHz. AM: 145-1,625kHz. Variable and three presets on FM and three presets on FM and AM. AFC. Sensitivity: 1.5µV. Image frequency rejection: 50dB. IF rejection: 100dB. Signal strength and tuning meters. Capture ratio: 1.75dB. Selec-

RADIO TUNERS



A/R/D 4000



Armstrong 623

tivity: 56dB. S/N: 65dB mono. Fixed output: High: 0dB (.775V) 600 ohms. Low: 100mV. Aerial input imp: 75-80 ohms and 240-300 ohms. Dimensions: 31.2 × 28.5 × 8.2cm. Mains: 105-135 and 215-250V. Price: £152.00 (inc. VAT).

624 (FM)

FM only, otherwise similar to 623 (AM-FM). Price: £118.00 (inc. VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

T55 ★

FM stereo tuner with range 88-108MHz. Variable tuning. AFC. Sensitivity: 1.4μV. Two indicator lamps for tuning. S/N mono: 65dB. Output: 1V max from 5K source (variable).



Cambridge Audio T55

Aerial input imp: 75 ohms co-ax or 300 ohms balanced. Dimensions: 41.9 × 24.4 × 5.1cm. Mains voltage tapping: 110/120/220/240V. Price: £159.00 (plus VAT).

■ CHAPMAN

Gimar Ltd, 10 Museum Street, London WC1.
Tel: 01-836 3222.

ST200

FM/AM tuner to complement the S200 Amplifier. Range: 88-108MHz. Pushbutton tuning. Sensitivity mono: 15μV. Sensitivity stereo: 1.0μV for 25dB quieting. S/N: 50dB. S/N mono: 70. Dimensions: 42.8 × 24 × 8.5cm. Price: on application.

■ CHAVE INNOVATIONS LTD

The Granary, Jackass Lane,
Keston, Kent BR2 6AH.
Tel: (0689) 66 52051.

US-1

Tuning range: T/V Band IV, V. Variable tuning. AFC. Image frequency rejection: 55dB. Image frequency rejection: 80dB. Signal strength and tuning meter. Capture ratio: 0.85dB. Sensitivity: 6μV. S/N: 65dB mono. Aerial input imp: 75 ohms. Dimensions: 26 × 20 × 9cm. Mains: 240, 110 V. Price: £70.00 (plus VAT).

VUS-1

VHF Band II, UHF IV, V. Push button tuning. AFC. Image frequency rejection: 60dB. IF rejection: 80dB. Signal strength and tuning meters. S/N: 65dB both mono and stereo. Pre-set outputs. Aerial input imp: 75 ohms. Dimensions: 35 × 22 × 10cm. Mains: 240, 110 V. Price: £90.00 (plus VAT).

★ Indicates entry is illustrated

■ DUAL

Audiodecks Ltd, PO Box 7, Sandbeck Way, Wetherby, West Yorks.
Tel: Wetherby 5477.

CT1640★/CT1640 MB

Tuning range: FM 87.5-104MHz, 9-16MHz, AM 507-901MHz, plus L & M. Variable and pushbutton pre-set tuning. Switchable AFC. Sensitivity: FM $<0.8\mu\text{V}$, AM $<10\mu\text{V}$. Sensitivity (stereo): FM $>2.5\mu\text{V}$. Signal strength and tuning meters. S/N ratio (stereo): ≥ 70 dB. Fixed output. Aerial input imp: 75 ohms unbal. 300 ohms bal. Dimensions: 44 × 38 × 15cm. Mains: 110/120, 220/240. Price: £320.31 (plus VAT).

■ EAGLE

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

T 7400

Tuning range: FM, L, M. Variable tuning with auto AFC. Sensitivity: $1.7\mu\text{V}$. Signal strength/tuning meter. S/N ratio (stereo): 60dB. Variable output control on front panel. Aerial input imp: 75/300 ohms. Dimensions: 40 × 29 × 13.2cm. Mains: 240V. Price: on application.

T 4200

Tuning range: FM, L, M. Variable tuning. Aerial input imp: 75/300 ohms. Mains: 240V. Price: on application.

T 4400

Tuning range: FM, L, M. Variable tuning with switchable AFC. Sensitivity: $2.5\mu\text{V}$ (30dB quieting). Signal strength/tuning meter. S/N ratio (stereo): 60dB. Output: 0-1V. Aerial input imp: 75/300 ohms. Dimensions: 38 × 29 × 15cm. Mains: 24V. Price: on application.

■ GOODMAN'S

Goodmans Loudspeakers Ltd., Downley Road, Havant, Hampshire PO9 2NL.
Tel: Havant 486344.

ST 4000

Tuning range: FM, VHF, AM, L, M, S, manual with 7 presets on FM. AFC. Sensitivity: $1\mu\text{V}$ for 26dB S/N. Signal strength/tuning meter. S/N ratio (stereo): 63dB. Fixed output. Aerial input imp: 75 ohms. Dimensions: 44.6 × 31 × 13cm. Mains: 240V. No recommended retail price.

ST 201

Details not available yet.

■ HITACHI

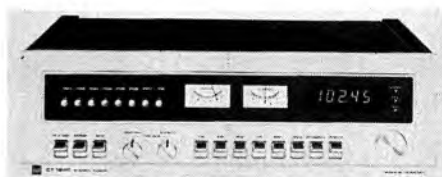
Hitachi Sales (UK) Ltd, Station Road, Hayes UB3 4DR.
Tel: 01-848 8787.

FT 920★

Sensitivity mono: $30\mu\text{V/m}$ 1HF $18\mu\text{V}$. Sensitivity stereo: 1HF $1.6\mu\text{V}$ DIN $1.2\mu\text{V}$. S/N: mono 76dB, stereo 74dB. Dimensions: 43.5 × 14.4 × 39.4cm. Price: £165.00 (inc VAT).

FT 340★

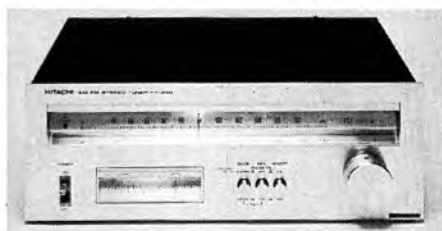
Sensitivity mono: $250\mu\text{V/m}$ 1HF $40\mu\text{V}$. sen-



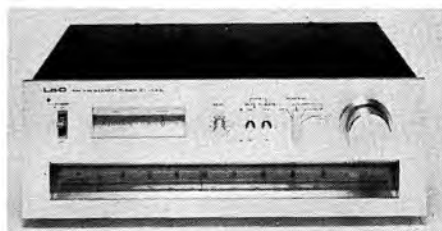
Dual CT 1640 Digital tuner



Hitachi FT 920



Hitachi FT 340



Hitachi FT 440

sitivity stereo: 1HF $2\mu\text{V}$ DIN $1.9\mu\text{V}$. S/N: mono 75dB, Stereo 68dB. Dimensions: $39 \times 14.3 \times 36.9\text{cm}$. Price: £99.50 (inc. VAT).

FT 440★

Sensitivity mono: $250\mu\text{V/m}$ 1HF $12\mu\text{V}$. Sensitivity stereo: 1HF $1.7\mu\text{V}$ DIN $1.4\mu\text{V}$. S/N: 50dB. Dimensions: $43.5 \times 16.7 \times 37.7\text{cm}$. Price: £130.00 (inc. VAT).

■ ITT

ITT Consumer Products (UK) Ltd, Chester Hall Lane, Basildon, Essex SS14 3BW. Tel: Basildon 3040.

8031

Manual tuning — continuously variable with 5FM presets. Coverage: FM, L, M, S. Switchable AFC. Combing signal strength/tuning meter. Aerial input imp: 75/300 ohms. Dimensions: $48 \times 35 \times 15\text{cm}$. Mains: 110/120/220/240. No rec. retail price.

8032 ★

Similar to 8031 but: Sensitivity: FM less than $1.5\mu\text{V}$ for 30dB, S/N unweighted ref 75kHz dev. Signal strength and tuning meters. S/N; exceeds 62dB. No rec. retail price.

8033 ★

Manual tuning — continuously variable with 5 FM presents. Coverage: FM, L, M, S. Switchable AFC. Sensitivity mono: FM less than $1.5\mu\text{V}$ for 30dB S/N unweighted ref 75kHz dev. Signal strength and tuning meters. S/N: exceeds 62dB. Dimensions: $48 \times 35 \times 15\text{cm}$. Mains: 110/120/220/240. No rec. retail price.

■ JVC

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

JT-V71

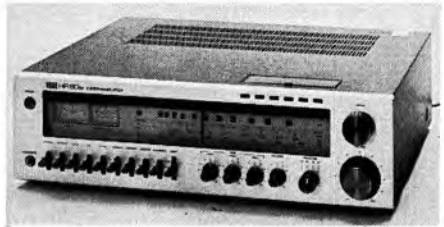
FM/AM tuner with Sensitivity: $1.8\mu\text{V}$ 50dB quieting. Sensitivity Stereo: $38\mu\text{V}$ FM S/N ratio (stereo): 62dB (DIN). Dimensions: $16.2 \times 42 \times 36.1\text{cm}$. Price: on application.

JT-V31

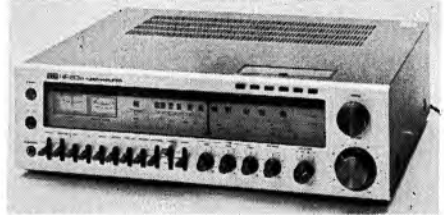
FM/AM tuner with FM sensitivity: $1.9\mu\text{V}$ 50dB quieting. Sensitivity (stereo) $40\mu\text{V}$ FM S/N ratio (stereo) 50dB (DIN). Dimensions: $15.2 \times 39 \times 35.8\text{cm}$. Price: on application.

JT-V11

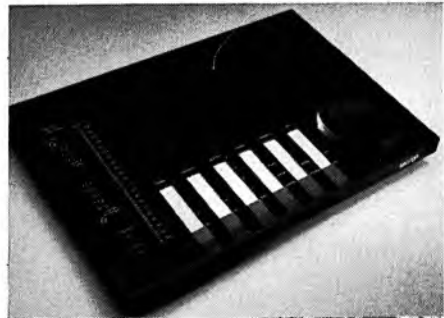
FM/AM tuner with FM sensitivity: $1.9\mu\text{V}$ 50dB quieting. Sensitivity (stereo): $40\mu\text{V}$ FM



ITT 8032



ITT 8033



Lecson FM1

S/N ratio (stereo): 50dB Dimensions: $15.2 \times 39 \times 34.6\text{cm}$. Price: on application.

■ LECSON SYSTEMS LTD

Burrel Road, St. Ives, Huntingdon, Cambs. PE17 4LE. Tel: St. Ives 64124.

FM1 ★

Tuning range 88-108MHz. Variable tuning with four presets. AFC. Sensitivity mono: $1\mu\text{V}$ for 30dB quieting. Sensitivity stereo: $10\mu\text{V}$. LED indicating array. S/N ratio stereo: 70dB. Output: variable for 1V RMS. Aerial input imp: 75 ohms, 300 ohms. Dimensions: $36 \times 25.4 \times 3.8\text{cm}$. Mains voltage tappings: 240V, 120V. Features: solid state LED display of frequency signal strength tuning and other functions. Incorporation of de-emphasis for Dolby processes. Unique design and styling in black aluminium and acrylic. Optional plug-in digital readout (DR1) is available as an extra. Price: approx. £185.00 (plus VAT).

★ Indicates entry is illustrated



Lenco A50 with T30



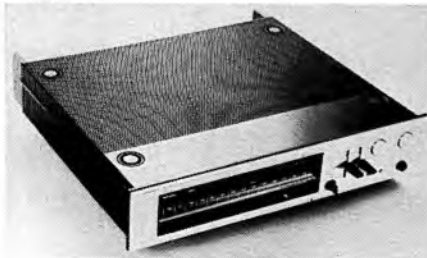
Lux T 34



Lux T 88



Lux T 110



Lux 5T50

■ Lenco

C. E. Hammond & Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

T30 ★

AM/FM tuner with range 87.5-108MHz and 525-1650kHz. Variable tuning. S/N stereo >55dB, mono 20 μ V. Dimensions: 43 × 37 × 13.2cm. Price: £135.00 (plus VAT).

■ LUX

Howland-West, 2-3 Eden Grove, London N7 8EQ.

Tel: 01-609 0293.

T 34 ★

Variable tuning with FM and AM. Sensitivity: 2.02 μ V, Sensitivity (stereo); 2 μ V. Combined signal strength/tuning meter. S/N ratio (stereo): 72dB. Output: 1V. Aerial input imp: 75-300 ohms. Dimensions: 44 × 21.8 × 16.1cm. Mains: 240V. Price: £160.00 (plus VAT).

T 88 ★

Variable tuning with FM and AM. Sensitivity: 2.02 μ V, Sensitivity (stereo): 2 μ V. Combined signal strength/tuning meter. S/N ratio (stereo): 72/68dB. Output: 1V. Aerial input imp: 75-300 ohms. Dimensions: 45 × 30 × 16cm. Mains: 240V. Price: £210.00. (plus VAT).

T 110 ★

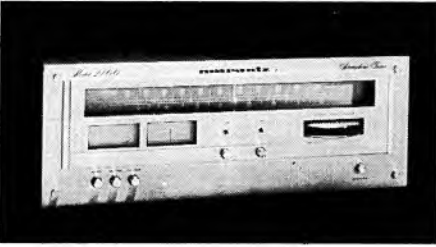
Variable tuning with FM. Sensitivity: 1.6 μ V. Signal strength/tuning meter. S/N ratio (stereo): 72dB. Output: 1.5V. Aerial input imp: 75-300 ohms. Dimensions: 48.3 × 24.3 × 11.4cm. Mains: 220-240V. Price: £355.00 (plus VAT).

5T50 ★

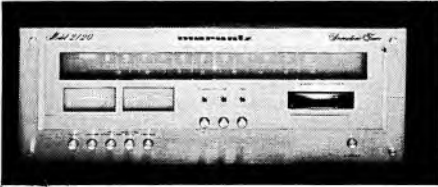
Digital synthesiser with FM tuning range 88.1MHz-107.9MHz. Pushbutton, digital display, memory storage tuning. Sensitivity: 9.8dBf (1.7 μ V), Sensitivity (stereo): 13.3 dBf (4.5 μ V). Signal strength. S/N ratio (stereo): 70dB (mono). Output: 1V 100 ohm (fixed), 0-1V K (variable). Aerial input imp: 75 ohm-300 ohm. Dimensions: 44.2 × 40 × 10.1cm. Mains: 240V. Price: £950.00 (plus VAT).

■ MARANTZ

Audio (UK) Ltd, Debmarc House, 203 London Road, Staines, Middlesex.
Tel: Staines 50732.



Marantz 2100



Marantz 2120

2100 ★

Variable tuning on FM, AM. Sensitivity (mono): 30dB 1.6µV. Signal strength and centre tuning meters. S/N ratio (stereo): 72dB. Fixed output. Aerial input imp: 300 ohms, 75 ohms. Mains 110-240V. Price: £138.22 (plus VAT).

2120 ★

Similar spec except Sensitivity (mono): 30dB 1.4µV. Price £200.00 (plus VAT).

■ **MONOGRAM**

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

3600

FM Stereo receiver covering bands 87.5-108 MHz, 9 presets and manual. Sensitivity (mono): 0.08 mV. Sensitivity (stereo): 5µV - 30dB. Aerial imp: 750 ohm, 300 ohm. Totally linear electronic display. Auto station search, fine tuning and lock. Auto signal strength skip and lock. Preset scan up to 100 stations. Discrete stereo decoder. Simultaneous/automatic mono/stereo transmission indication. AFC. Mute threshold. Dimension 19 × 12 × 3in. Price: £339.00 (plus VAT).

6000

Variable and automatic scanning, 9 presets and manual, electronic and frequency control. Pushbutton tuning with 8 presets. AFC. Sensitivity mono: 2.0µV/30dB/S/N. Sensitivity stereo: 20µV/30dB S/N. Signal strength meter and centre zero tuning meter. S/N ratio: 68dB. Variable output: 0-1V. Aerial input imp: 75 and



Nikko FAM 450



Nikko Gamma — 1

300 ohms. Dimensions: 40 × 30 × 8.8cm. Mains voltage tappings: 110/120, 220/240V. Price: £105.25 (plus VAT).

■ **NATIONAL PANASONIC**

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR.
Tel: Slough 27516

ST 2400

FM/AM tuner with variable flywheel tuning. AFC. Sensitivity stereo: 1.5µV. Separate signal strength and centre FM tuning meter. S/N ratio: 58dB. Output 0.6V fixed. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions: 41.5 × 25 × 10.5cm. Mains: 220/240V 50Hz AC. Price: £79.96 (plus VAT).

■ **NIKKO**

Dowvall Audio Ltd, Ardfallen, Fort Hill Magheralave Road, Lisburn, BT28 3BB.
Tel: Lisburn (02382) 2899.

FAM 800

AM/FM Stereo tuner, with variable tuning. Sensitivity mono: 300µV/m. Sensitivity stereo: 1.8µV. S/N ratio: 70dB. Dimensions: 14.4 × 15.1 × 37cm. Price: on application.

FAM 450 ★

AM/FM stereo tuner with variable tuning. Sensitivity mono: 300µV/m. Sensitivity stereo: 2.0µV. S/N ratio: 68dB. Dimensions: 40 × 14.3 × 34cm. Price: £88.60 (plus VAT).

Gamma—1 ★

FM tuner, sensitivity 1.8µV. FM muting, Hi

★ Indicates entry is illustrated



Philips 186

blend, mode, output level control, IF band selector. Dimensions: 48 × 25 × 63.5cm. Price: to be announced.

■ PHILIPS ELECTRICAL LTD.

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

RH 186 ★

AM-FM Stereo tuner. Details on application.

■ PIONEER

Shriro (UK) Ltd, Shriro House, The Ridgeway, Iver, Bucks SL0 9JL. Tel: Iver 652222/7.

TX-9500 II ★

AM/FM stereo tuner. Tuning range: FM 88-108MHz, AM 550-1650kHz. S-ranged variable capacitor. Signal strength and tuning meters. S/N ratio: (mono) 82dB, (stereo) 65dB. Fixed and variable outputs. Aerial input imp: 75

ohms and 300 ohms. Dimensions: 42 × 39.5 × 15cm. Mains: 220 to 240V. RRP £292.83.

TX 8500 II ★

AM/FM stereo tuner with range FM 88-108MHz, and 550-1650kHz AM. Variable tuning. Signal strength and tuning meters. S/N ratio FM 79dB (mono) 75dB (stereo) at 65dB. AM 50dB. Fixed and variable outputs. Aerial input imp: 75-300 ohms. Dimensions: 42 × 39.5 × 15cm. Mains voltage tapings: 200/240V. RRP: £213.19.

TX 6500 II ★

AM/FM stereo tuner with range 88-108MHz (FM) and 550-1650kHz (AM). Variable tuning. Tuning meter. S/N ratio: Mono 75dB; Stereo 68dB. Fixed output. Aerial input imp: 75-300 ohms. Dimensions: 38 × 32.2 × 13.9cm. Mains voltage tapings: 220/240V AC. RRP: £134.79.

TX 5500 II ★

AM/FM stereo tuner with range 88-108MHz (FM), 550-1650kHz (AM). Variable tuning. S/N ratio: Mono 72dB; Stereo 68dB. Fixed output. Aerial input imp: 75-300 ohms. Dimensions: 38 × 26.9 × 12.4cm. Mains voltage tapings: 220/240V AC. RRP: £93.81.

■ PYE

Pye Ltd, 137 Ditton Walk, Cambridge CB5 8QD. Tel: Teversham 2781.



Pioneer TX 9500 II



Pioneer TX 6500 II



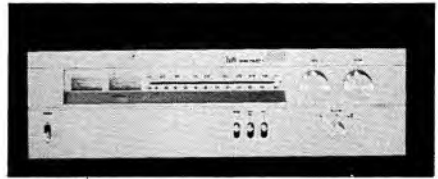
Pioneer TX 8500 II



Pioneer TX 5500 II

T 8000 ★

Variable tuning, AM/FM. Switchable AFC. Sensitivity (mono): $3.5\mu\text{V}$. Sensitivity (stereo): $40\mu\text{V}$. Separate signal strength and tuning meters. S/N ratio: 70dB. Fixed and variable output. Aerial input imp: 300-750 ohms. Dimensions: $48 \times 15 \times 38\text{cm}$. Mains: 240V 50Hz AC. Price: £150.22 (plus VAT).



Pye T 8000

■ QUAD

The Acoustical Manufacturing Co. Ltd,
St. Peters Road, Huntingdon PE18 7DB.
Tel: Huntingdon 52561.



Quad FM3

Quad FM3 ★

Stereo FM tuner. Range: 88-108MHz. Variable tuning. High stability tuned stages maintain accuracy without AFC. 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 $\pm 1\text{dB}$. Separation: 40dB at 1kHz. Distortion: 1kHz at 40kHz deviation, 0.3%. Recommended load: greater than 50K. De-emphasis: $50\mu\text{Sec}$ or $75\mu\text{Sec}$ as required. Mains: 100-125V 200-250V 50-60Hz. Dual gate MOSFET input stage. Integrated circuits (ICs) in IF and decoder. Ceramic filters in IF chain. Output via 5-pin DIN connector. Size: $26 \times 16.5 \times 9.2\text{cm}$. Price: £108.00 (plus. VAT).



Revox A76

■ REALISTIC

Tandy Corporation (Branch UK),
Bilston Road, Holyhead Road, Wednesbury,
Staffs WS10 7JN.
Tel: 021-556 6101/2.



Revox B760

TM 800

Details on application. Price: £99.95 (plus VAT).

■ REVOX

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

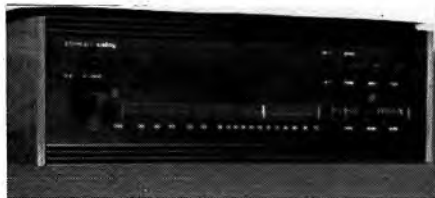
Model A76 ★

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: 60-240 ohms. VHF S/N: 70dB at 75kHz deviation. VHF distortion: 0.2% at 1kHz, 40kHz deviation mono or stereo. Output: 1V adjustable. Mains: 110-250V, 50-60Hz AC. Price: £353.00 (plus VAT).

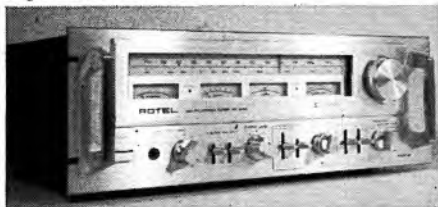
Model A720 Digital Tuner/pre-amp ★

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 $\pm 5\text{dB}$. Phono 2, (RIAA) 3mV/50K $\pm 5\text{dB}$. 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 switches, bass, treble. Low, high and loudness filter. Distortion: 0.1% at 1.5V output. FR:

★ Indicates entry is illustrated



Rogers T75 Series II tuner



Rotel RT 1024

20Hz-20kHz \pm 1dB. S/N: phono, 65dB. Other inputs: 85dB. Price: £860.00 (plus VAT).

B 760 ★

Variable tuning or pushbutton, 15 user-programmable stations, tuning range 87-107.975MHz. Tuning by quartz-referenced digital synthesiser. Sensitivity (mono): $2\mu\text{V}$ for S/N ratio of 46dB. Signal strength and tuning meter. S/N ratio (stereo): 75dB (input of 1mV, 75 ohms) Output: 1.16V fixed or variable (separate output sockets). Aerial Input imp: 60-75 ohms co-axial, 240-300 ohms balanced. Dimensions 45.2 \times 34.8 \times 15.1cm. Mains: 100, 120, 140, 200, 220, 240V 50/60Hz. Price: £560.00 (plus VAT).

■ ROGERS

Swisstone Electronics Ltd,
4-14 Barmeston Road, Catford,
London SE6 3BN.
Tel: 01-697 8511.

T75 Series II ★

Stereo Tuner. Range: 88-108MHz. Sensitivity: $1.0\mu\text{V}$. Capture ratio: 1.5dB. IF Rejection: 80dB. Signal strength and timing meter. Nominal output: (30% modulation) 200mV o/p, 20-15,000Hz < 0.5%. S/N: mono 70dB, Stereo 65dB. Price: £125.00 (plus VAT).

■ ROTEL

Rank Audio Visual, Rank Hi-Fi, PO Box 70,
Great West Road, Brentford TW8 9HR.
Tel: 01-368 9222.

RT 1024 ★

AM/FM stereo tuner with range 87.5-108MHz (FM) and 520-1650 (AM). Variable tuning, no preset. Sensitivity mono: 9.3dB ($3.2\mu\text{V}/300$

ohms). Sensitivity stereo: 14.5dB ($5.8\mu\text{V}/300$ ohms.) Signal strength and tuning meters. S/N ratio stereo: >70dB. Output: fixed 775mV, variable 0-1.5V. Aerial input imp: FM 300 ohms/75 ohms unbalanced. Dimensions: 48.2 \times 37 \times 18cm. Mains voltage tappings: 240V. Price: £386.55 (plus VAT).

RT 425

Variable tuning with range 88-108MHz. Sensitivity: $1.5\mu\text{V}$ (DIN) 10.7dBf (IHF) Signals strength and tuning meter. S/N ratio mono: 70dB. Fixed output. Dimensions: 48 \times 37 \times 18cm. Price: £99.16 (plus VAT).

RT 725

Variable tuning with range 88-108MHz. Sensitivity: $1.5\mu\text{V}$ (DIN) 10.3dBf (IHF). S/N ratio mono: 70dB. Variable output. Dimensions: 43 \times 26 \times 14cm. Price: £122.69 (plus VAT).

RT 925

Variable output. Sensitivity mono: $1.4\mu\text{V}$ (DIN) 9.9dBf (IHF). Signal strength and tuning meter. S/N ratio mono: 70dB. Variable output. Dimensions: 48 \times 35 \times 15cm. Price: £211.76 (plus VAT).

RT 1025

Variable output. Sensitivity mono: $1.2\mu\text{V}$ (DIN) 8.8dBf (IHF). Signal strength and tuning meter. S/N ratio mono: 75dB. Variable output. Dimensions: 48 \times 37 \times 18cm. Price: £287.71 (plus VAT).

■ SANSUI

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

TU 3900

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: $2\mu\text{V}$ (IHF). Signal strength and tuning meters. S/N ratio stereo: 60dB. Fixed output: 775mV @ 100 per cent mod. Aerial input imp: 75 ohms, 300 ohms. Dimensions: 40 \times 12 \times 24cm. Mains voltage tappings: 110, 220, 240V. Price: £81.01 (inc. VAT).

TU 5900

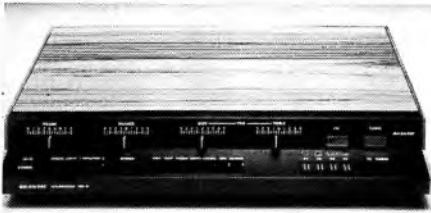
Features as for TU 3900 except: Sensitivity mono: $1.8\mu\text{V}$. Output: variable. Dimensions: 43 \times 13.2 \times 24.3cm. Price: £119.38 (inc. VAT).

TU 7900

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: $1.7\mu\text{V}$ (IHF). Signal strength and tuning meters. S/N ratio: 65dB. Output: Variable 1-775mV @ 100 mod. Aerial



Skantic 4052



Skantic 3062

input imp: 75 ohms, 300 ohms. Dimensions: 43 × 13.2 × 24.3cm. Mains voltage tappings: 110, 220, 240V. Price: £140.09 (inc. VAT).

TU 990

Tuning range 88-108MHz. Variable tuning. Sensitivity mono: 1.5µV (IHF). Signal strength, tuning meter. S/N ratio: 76dB. Variable tuning. Aerial input imp: 75-300 ohms. Dimensions: 46 × 16 × 31cm. Mains voltage tappings: 110, 220, 240V. Price: £219.28 (inc. VAT).

SHARP OPTONICA

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

ST 1515

Large flywheel tuning with FM, M. Sensitivity (mono): 40kHz. Sensitivity (stereo): 1.6µV. S/N ratio (stereo): 62dB DIN. Output: FM 0.25V fixed, AM 0.2V fixed. Dimensions: 40.8 × 27.5 × 14.4cm. Mains (voltage tappings): AC 110/220/240 V, 50/60Hz. Price: £88.80 (plus VAT).

ST 3636

Flywheel tuning with FM, M. AFC: 'auto lock' tuning system avoids drift. Sensitivity (Mono): 40kHz. Sensitivity (stereo): 1.4µV. S/N ratio (stereo): 65dB DIN. Output: FM 0.35V fixed, 0.55V variable, AM 0.2V fixed, 0.35V variable. Dimensions: 44.2 × 37.3 × 14.4cm.

Mains (voltage tappings): AC 110/220/240V. 50/60Hz. Price: £159.91 (plus VAT).

SKANTIC

Skantic (UK) Ltd, Station Road, Edenbridge, Kent TN8 6EY. Tel: Edenbridge 5231.

4052 ★

Tuner. Amp of Swedish design. Output: 88W RMS. Built-in facility for four-speaker reproduction, with volume control for extra speakers. FM radio with 7 programme selectors, light emitting diode indicators. AFC. Sockets for stereo headphones, record deck, tape recorder, auxiliary and additional pair of speakers (six in all). Filter control and loudness compensation device. Touch sensitive and slider controls. Available in teak, walnut, rosewood or white lacquer. Price: on application.

3062 ★

Output: 60W RMS. Built-in facility for four-speaker reproduction. FM stereo radio with four sensor control programme selection and pointer instrument tuning indicator. AFC. Sockets for stereo headphones, record deck, tape recorder and additional pair of speakers (six in all). Loudness compensation control with switch. Touch sensitive, push button and slider controls. Available in teak, walnut, rosewood or white lacquer. Price: on application.

SONY (UK) LTD.

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

ST 5950 U14

Tuning range: VHF 87.5-108MHz, MW 530-1605kHz. Variable tuning. AFC. Sensitivity mono: 2.8µV mono IHF (at 50dB quieting). 1.4mV mono (S/N 26dB). Sensitivity stereo: 35µV stereo IHF (at 50dB quieting). Signal strength and tuning meters. S/N ratio stereo: 70dB. Output: Fixed — 750mV, 10K. Variable 0.2V, 3K. Dimensions: 45 × 33 × 17cm. Mains voltage tappings: AC 110, 127, 220, 240V 50/60Hz. No rec. retail price.

ST A7

Tuning range: FM 87.5-108MHz; AM 530-1605kHz. Digital tuning quartz locked. Sensitivity (mono): (50dB quieting)-2.8µV IHF, 14.2dB Sensitivity (stereo) (50dB quieting) 30µV IHF, 34.8dB. Signal strength and tuning meters. S/N ratio: 75dB. Output: fixed 750mV 2K; variable 0-1.5V, 450 ohms. Aerial input

★ Indicates entry is illustrated



Sony ST11L

imp: 300 ohms balance, 75 ohms unbalanced. Dimensions: 43 × 44 × 17cm. Mains: 240V, 50Hz. No rec. retail price.

ST 11L ★

Tuning range: FM 87.5-108MHz, MW 530-1605 K, LW 150-350 K. Variable tuning. Sensitivity (mono): (50dB quieting) - 4 μ V 1HF. Sensitivity (stereo): (50dB quieting) - 45 μ V 1HF. Signal strength and tuning meters. S/N ratio (stereo): 68dB. Output 750mV 5K. Aerial Input Imp: 300 ohms balanced, 55 ohms unbalanced. Dimensions: 41 × 25 × 15cm. Mains: 240V, 50Hz. No rec. retail price.

■ J. E. SUGDEN & CO LTD.

Carr Street, Cleckheaton, Yorks BD19 5LA.
Tel: Cleckheaton 872 2501.

R51 ★

FM stereo tuner. Tuning range: 88-108MHz. Six push buttons plus AFC, noise filter, stereo threshold control, variable de-emphasis. Sensitivity mono 2.0 μ V. Other specs as for T48 below. Aerial input: 75 ohms coaxial and 300 ohms balanced. Dimensions 28 × 10 × 17cm. Mains: 110/120V, 220/240V. Price: £120.00 (plus VA1).

T48 ★

Tuning range: 88-108MHz. Six push buttons. AFC. Sensitivity mono: 2.0 μ V. Sensitivity stereo: 6.0 μ V. Image frequency rejection: 70dB. IF rejection: 80dB. Capture ratio: 2.5dB. Selectivity: 40dB. S/N mono: 70dB. S/N stereo: 66dB. Fixed output: 0.5 volt. Aerial input imp: 75 or 300 ohms. Dimensions: 16 × 28 × 13cm. Mains: 110-120, 220-230, 240 Volts. Price: £104.00 (plus VAT).

■ TELETON

Teleton Electro (UK) Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW
Tel: Chelmsford 62442

GT 203 Stereo Tuner

Wavebands: VHF/FM 87.5-104MHz; MW 510-1630kHz; LW 145-350kHz. Aerial imp: FM 300 ohms; AM 75 ohms. Sensitivity: VHF/FM 2 μ V for 30dB S/N (measured at 22.5kHz dev.). Image rejection: FM -45dB. Capture ratio: 2dB. Stereo Separation: -30dB. Output: 200mV into 100 ohms. Power requirements: 240V AC 50/60Hz 10W max. Dimensions: 98mm (H) × 422mm (W) × 230mm (D). Net weight: 3.5kg approx. Price: on application.

T300B Stereo Tuner

Wavebands: VHF/FM 88-104MHz; MW 510-1605kHz; LW 150-350kHz. Aerial imp: FM 240 ohms. AM 75 ohms. Sensitivity: VHF/FM 3.5 μ V for 30dB S/N ratio on mono (measured at 22.5kHz dev.). Image rejection: FM -50dB. Capture ratio: 2dB. Crosstalk: 35dB at 1kHz. Power requirements: 105-125V/210-250V AC 50/60Hz 10W max. Dimensions: 42.2 × 9.8 × 23cm. Price: on application.

GT 202 Stereo Tuner ★

Wavebands: VHF/FM 88-104MHz; MW 520-1600kHz; LW 150-350kHz. Aerial imp: (FM) 75 or 300 ohms. (AM) 75 ohms. Sensitivity: VHF/FM 3.5 μ V for 30dB S/N ratio on mono



J. E. Sugden R51



J. E. Sugden T48

(measured at 22.5kHz dev.). Image rejection: FM -50dB. Capture ratio: 2dB. Crosstalk: -35dB at 1kHz. Power requirements: 115/240V AC 50/60Hz. Dimensions: 7.6 x 38.8 x 24.8cm. Price: on application.

■ **TOSHIBA**

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

ST-220

Tuning range: FM/AM. Variable tuning. Sensitivity 2.0µV stereo. Image frequency rejection: 55dB. IF rejection: 75dB. Signal and FM Centre tuner in one. Capture ratio: 1.5dB. Selectivity: 55dB. S/N stereo: 70dB. Fixed output: 450mV. 400Hz 200%. Variable output: 0-600mV, 400Hz 100%. Aerial input imp: 300 ohms 75 ohms. Dimensions: 40 x 31.8 x 12.6cm. Mains: 220-240V. Price: £84.00 (plus VAT).

ST-420

Tuning range: FM/AM. Sensitivity: 1.9µV stereo. Image frequency rejection: 85dB. IF rejection: 90dB. Special large scale for tuning. Capture ratio: 1.0dB. Selectivity: 70dB. S/N stereo: 75dB. Fixed output: 450mV 400Hz 100%. Variable output: 0-600mV 400Hz 100%. Aerial input imp: 300 ohms-75 ohms. Dimensions: 45 x 34 x 13.5cm. Mains: 220-240V. Price: £124.00 (plus VAT).

ST-235

Variable tuning, range FM, L, M. AFC. Sensitivity mono: 1.9mV. Two-way meter. S/N ratio stereo: 65dB. Fixed output. Aerial input imp: 300 ohms, 75 ohms. Dimensions: 42 x 25.7 x 96cm. Mains: 240V 50Hz. Price: to be announced.

ST 230

Similar to above but only two band FM-AM. Signal strength meter and tuning meter. Dimensions: 42 x 25.7 x 146cm. Price: to be announced.

ST-335

Variable tuning on FM, AM. AFC. Sensitivity mono: 2mV. Two meters. S/N ratio: 65dB. Fixed output. Aerial input imp: 300 ohms, 75 ohms. Dimensions: 42 x 25.7 x 9.6cm. Mains: 240V 50Hz. Price: to be announced.

ST-530

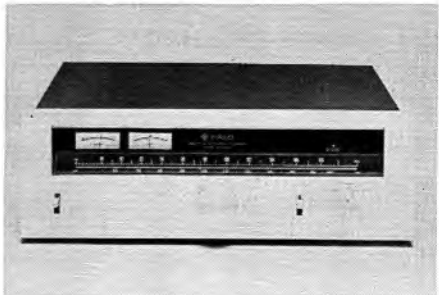
Quartz oscillator with 4FM and 6 AM presets. FM-AM bands. Sensitivity mono: 2mV. LED display meter. S/N ratio stereo: 74dB. Fixed



Trio 600T



Trio KT 5500



Trio KT 6500

output. Aerial input imp: 300 ohms, 75 ohms. Mains: 240V 50Hz. Price: to be announced.

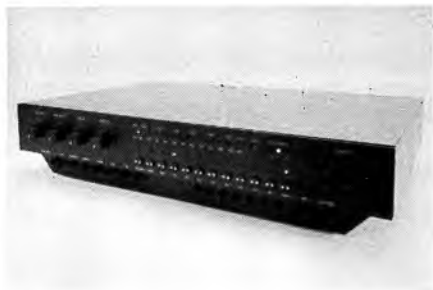
■ **TRIO**

Distributors: B. H. Morris & Co (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middlesex HA0 1SU. Tel: 01-902 9422.

KT 8300

Tuning range: 88-108MHz FM, 535-1,600kHz AM. Variable tuning. Automatic AFC. Sensitivity: 1.6µV. Image frequency rejection: 110dB, IF rejection: 110dB. Separate meters for signal strength and tuning. Capture ratio: wide band 1dB, narrow band 1.5dB. Selectivity: Wide band 40dB, narrow band 110dB. S/N mono: 78dB. S/N stereo: 75dB. Fixed out-

★ Indicates entry is illustrated



Tungsram 3535

put: average 300mV. Variable output: 0-300mV average. Aerial input imp: 75 ohms unbalanced, 300 ohms balanced. Dimensions: 43 × 38 × 15cm. Mains: 240V. Price: £280.00 (plus VAT).

KT 7500

Tuning range: 88-108MHz VHF, 540-1600MW. Variable tuning. Sensitivity stereo: 1.7μV signal strength and tuning meters. S/N ratio stereo: 70dB. Output: variable 0-300mV average. Aerial input imp: 75 × 300 ohms. Dimensions: 43 × 38 × 15cm. Mains voltage tappings: 240. Price: £195.55.

600T ★

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: 14.2dB, 50dB S/N. Sensitivity stereo: 36.8dB, 50dB S/N. Signal strength and tuning meters. S/N Ratio: 80dB. Output: variable 0-1.5V. Aerial input imp: 75 ohms, 300 ohms. Dimensions: 44 × 38 × 15cm.

Mains voltage: 240V. Price: £462.22 (plus VAT).

KT5500 ★

Tuning range: 88-108MHz FM, 535-1,600kHz AM. Variable tuning. Automatic AFC. Sensitivity (mono): 1.9μV. Sensitivity (stereo): 4.0μV. Signal strength and tuning meters. S/N ratio (stereo): 68dB. Fixed output. Aerial input imp: FM 75 ohms unbalanced, 300 ohms balanced. Dimensions: 38 × 29 × 14cm. Mains voltage: 240V. Price: £74.80 (plus VAT).

KT 6500 ★

Tuning range 88-108MHz FM, 535-1,600kHz AM. Variable tuning. Automatic AFC. Sensitivity (mono): 1.8μV. Sensitivity (stereo): 3μV. Signal strength and tuning meter. S/N ratio (stereo): 75dB. Fixed output. Aerial input imp: 300 ohms balanced, 75 ohms unbalanced. Dimensions: 43 × 37 × 15cm. Mains voltage: 240V. Price: £121.16 (plus VAT).

■ TUNGSRAM

Highgate Acoustics, 38 Jamestown Road, London NW7 EJ.
Tel: 01-267 4936.

3535★

Variable tuning with 7 presets. Range: FM/M. AFC Sensitivity mono: 1.8μV. Sensitivity stereo: 2μV. S/N ratio stereo: 55dB. Output: 2 × 35W into 4 ohms, 2 × 28W into 8 ohms. Aerial input imp: 75 ohms, 300 ohms. Dimensions: 45 × 29 × 9.3cm. Mains: 220/240V. Price £229.00 (plus VAT).

Receivers

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ AIWA

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

AX 7400

Amplifier

Power Output: 25W + 25W into 8 ohms. FR: 20Hz-30Hz. Damping Factor: 40, 20. Inputs: phono, DIN 1, DIN 2. Controls: three step bass and treble with turnover frequencies at 200Hz and 400Hz for bass and 2.5kHz and 5kHz treble, loudness, AFC, high filter, speaker selection.

Tuner

Sensitivity FM: 2 μ V (IHF), sensitivity stereo: 250 μ V/m 48dB (S/N 20dB). Variable tuning, wavebands: FM/AM.

General:

Dimensions: 42 × 36 × 15cm. Price: £184.80 (plus VAT).

AX 7600 ★

Amplifier

40W + 40W into 8 ohms. FR: 10Hz-70kHz. Damping Factor: 50, 25. Inputs: phono, aux, DIN 1, DIN 2, Tape 1, Tape 2. Controls as above.

Tuner

Sensitivity FM: 1.8 μ V (IHF). Sensitivity AM: 250 μ V. Variable tuning with coverage: AM/FM.

General

Dimensions: 45 × 36.5 × 16.2cm. Price: £246.33 (plus VAT).

■ AKAI

Rank Audio Visual, Rank Hi-Fi, PO Box 70,
Great West Road, Brentford,
Middlesex TW8 8HR.
Tel: 01-568 9222.

AA 1115

Amplifier

Output: 15W into 8 ohms. FR: 88Hz-108MHz. Damping Factor: 30. Inputs: phono, aux, tape. Controls: power, speaker (A/B, A+B), bass, treble, balance, volume, loudness, mode, tape monitor, selector.

Tuner

Sensitivity: 1.9 μ V. Sensitivity AM: 10 μ V. Wavebands: FM/AM. Variable tuning (FM).

General

Dimensions: 48 × 12.3 × 26.8cm. Finish: wood veneer, brushed aluminium facia. Price: £131.51 (plus VAT).

AA 1125

Amplifier Output: 25W into 8 ohms. Other details as AA 1115. Price: £161.24 (plus VAT).

AA 1135 ★

Amplifier

Output: 35W into 8 ohms. FR: 88Hz-108MHz. Damping factor: 30. Inputs: phono, aux, tape (2). Controls: power, speaker selector, bass, treble, tape monitor, selector, mode, loudness, FM mute, balance, volume.

Tuner

Sensitivity FM: 1.8 μ V. Sensitivity AM: 10 μ V. Variable tuning covering FM/AM.

General

Finish: wood veneer, brushed aluminium facia. Dimensions: 48 × 15.5 × 34.5cm. Price: £196.62 (plus VAT).



Aiwa AX7600



Akai AA 1135

★ Indicates entry is illustrated

AA 1150

As above except Amplifier output is 50W and FM Sensitivity $1.7\mu\text{V}$. Price: £268.84.

AA 1175

Amplifier

75W into 8 ohms. FR: 88Hz-108MHz. Damping Factor: 30. Inputs: phono, aux, tape (2). Controls: power, speakers, bass, midrange, treble, high and low filters, mode, loudness, tape monitor, selector, variable FM muting, balance, volume.

Tuner

Sensitivity FM: $1.7\mu\text{V}$. Sensitivity AM: $10\mu\text{V}$. Variable tuning.

General

Dimensions: $48 \times 16.5 \times 44\text{cm}$. Finish: wood veneer, brushed aluminium fascia. Price: £400.44 (plus VAT)

AA 1200

As above except output: 120W. Price: £537.73 (plus VAT).

■ ALBA (RADIO AND TELEVISION) LTD

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

1500

Amplifier

Power output: 10+10 watts continuous. THD: less than 0.1%. Total Music Power: 40W. FR: 30-18,000Hz. Power bandwidth: 20-30,000Hz. Inputs: P.U. mag $2.5\text{mV}/50\text{K}$, cer. 60mV . Overload capability: P.U. 130mV ; tape 10V . Tape Output (DIN): 120mV . Tone controls, Bass $\pm 13\text{dB}$ at 100Hz . Treble $\pm 10\text{dB}$ at 10kHz . Crosstalk: better than -38dB .

Tuner

Sensitivity FM: $2\mu\text{V}$ (IHF). Sensitivity AM: better than $500\mu\text{V}$. Image rejection FM: greater than 60dB . Image rejection AM: 40dB . IF rejection FM: greater than 75dB . Stereo separation: 34dB at 1kHz .

General

Dimensions: $44.2 \times 19.6 \times 13.7\text{cm}$. Finish in teak veneer. Black and silver trim. Price: on application.

■ ALPHA

Highgate Acoustics, 38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4936.

FR5000

Stereo VHF/AM receiver. Power Output: $2 \times 5\text{W}$. VHF 88-108MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF) $3\mu\text{V}$, AM $25\mu\text{V}$. Aerial imp: 300(75) ohms. S/N ratio: (VHF) IHF 50dB . Output voltage: 250mV . Load imp: 100K . Mains: 110-240V AC. Loudness control, low filters, high filters. Size: $17\frac{1}{5} \times 11\frac{3}{4} \times 5\frac{1}{2}\text{in}$. Finish: teak with brushed aluminium front. Price: £99 (plus VAT).

FR6000★

Stereo VHF/AM receiver. Power Output: $2 \times 20\text{W}$. VHF 88-108MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF) $2\mu\text{V}$, AM $25\mu\text{V}$. Aerial imp: 300 (75) ohms. S/N ratio: (VHF) IHF 50dB . Output voltage: 250mV . Load imp: 100K . Mains: 110-240V AC. Loudness control, low filters, high filters. Size: $17\frac{1}{5} \times 11\frac{3}{4} \times 6\frac{7}{10}\text{in}$. Price: £115 (plus VAT).

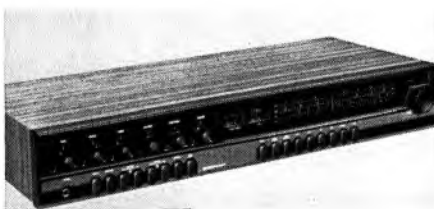
FR8000

Amplifier

Power output: $2 \times 45\text{W RMS}$. FR: 10Hz-40kHz.



Alpha FR 6000



Amstrad 5050



Amstrad EX 333



Armstrong 626

Tuner

Sensitivity: $2\mu\text{V}$. Wavebands: FM/AM. Price: £169.00 (plus VAT).

■ AMSTRAD

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

5050★**Amplifier**

Power output: 25W. FR: 15Hz-30kHz. Damping factor: 72. Inputs: phono, aux, tape monitor. Controls: bass, middle, treble, balance, volume, panorama, quietness-loudness.

Tuner

Sensitivity FM: $1.8\mu\text{V}$. Wavebands coverage: FM, L/M. Variable tuning.

General

Dimensions: $66 \times 36 \times 11\text{cm}$. Price: approx £117.40 (plus VAT).

EX 333 ★**Amplifier**

Power output: 35W. FR: 15Hz-30kHz $\pm 3\text{dB}$. Inputs: mag, aux, tape mono. Controls: volume, bass, balance, treble, rumble filter, scratch filter, meter range, power on/off, mute, AFC, input select, tune, loudness, mono-/stereo.

Tuner

Sensitivity FM: $1.7\mu\text{V}$. Sensitivity AM: $300\mu\text{V}$. Wavebands: FM, L/M. Variable tuning.

General

Dimensions: $42 \times 35 \times 14.5\text{cm}$. Finish: brush grained aluminium front with black finish, steel casing. Price: £123.38 (plus VAT).

■ ARMSTRONG AUDIO LTD

Walters Road, London N7 0R7.
Tel: 01-607 3213.

625(FM)**Amplifier**

Power output: 40 watts into 8 ohms. THD: 0.08% at rated output. FR: 20-20,000Hz. Power bandwidth: 25-45,000Hz. Damping factor: better than 50. Inputs: Disc (2), tape- aux. Tape output (DIN): 0-250mV.

Tuner

Sensitivity FM: $1.5\mu\text{V}$ IHF. Cap-ture ratio: 1.75dB. Image rejection FM: 50dB. IF rejection FM: 100dB. Stereo separation: 40dB at 1kHz. Pilot tone rejection: 65dB. Pilot harmonic rejection: 65dB. TH Stereo: $< 0.2\%$. Waveband coverage: 87.5-108MHz.

General

Dimensions: $50 \times 28.5 \times 8.2\text{cm}$. Teak or rosewood finish. Variable tuning and 6 presets. Price: £215.00 (inc. VAT).

626(AM-FM) ★

AM-FM versions of 625 with similar specifications. 3 AM and 3 FM presets and variable tuning. Price: £248.00 (inc. VAT).

■ ARNOLD

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

SR 7835

Details to be announced.

■ BEOMASTER

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

Beomaster 1900

Stereo FM receiver featuring low profile look with touch operation of programme selection and volume control. Amplifier: Power: $2 \times 30\text{W}$ per channel. THD: less than 0.13%. Damping factor: better than 70 into 4 ohms. Inputs: sockets for magnetic pickup and tape recorder. FR: 20Hz-40kHz $\pm 1.5\text{dB}$. Features: Three position pre-set level for volume control

★ Indicates entry is illustrated

and visual indication of volume level, programme source, tone controls, tuning balance, stereo/mono and standby. Finish: matt black and anodised aluminium with side panels in teak or rosewood. Oak and white finishes to special order. Dimensions: 62 × 25 × 6cm. Price: £250.00 (inc. VAT).

Beomaster 2400

Same as 1900 but with cordless remote control commander. Price: £280.00 (plus VAT).

1500 ★

Amplifier output: 25W into 4 ohms. FR: 20Hz-35kHz. Damping Factor: >50. Inputs: gram, tape. Controls: volume, treble, bass, balance. Tuner Sensitivity: FM: 25µV. AM Sensitivity: <90µV. Variable tuning with four FM presets. Dimensions: 50 × 9 × 25cm. Teak or rosewood finish. Price: £265.00 (plus VAT).

2200 ★

Amplifier output: 2 × 40W. FR: 20Hz-20kHz. Damping Factor: >30. Inputs: gram, tape. Controls: volume, bass, balance, treble. Tuner Sensitivity FM: <20µV. AM Sensitivity: <100µV. Variable tuning and 5 FM presets. Wavebands: FM, L, M. Dimensions: 66 × 35 × 13.6cm. Teak or rosewood finish. Price: £250.00 (plus VAT).

4400★

Amplifier output: 2 × 75W. FR: 20Hz-35kHz ±1.5dB. Damping Factor: >65dB. Inputs: Tape 1, Tape 2. Controls: linear switch, Hi filter, lo-filter, ambio-switch. Sensitivity FM: <20µV. Variable tuning and 6 presets. Waveband coverage: 87.5-108MHz. AFC. Dimensions: 57.5 × 28 × 9.5cm. Teak or rosewood finish. Price: £350.00 (plus VAT).

■ DANSK

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW.
Tel: Newcastle (Staffs) 615131.

2100★

Receiver unit with book-shelf design low line styling. Power output is 2 × 30W, there is variable FM/AM tuning with 5 pre-select stations. Will integrate with a turntable and tape deck. Price: £164.52 (plus VAT).

■ EAGLE INTERNATIONAL

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

R 7200

Amplifier output: 30W. Controls: volume, balance, bass, treble, speakers, input, tuning,



Beomaster 1500



Beomaster 2200



Beomaster 4400



Dansk 2100

loudness, muting, mono/stereo, tape monitor, de-emphasis 25/50 (rear). Tuner covering: FM/AM with variable tuning. Dimensions: 45.6 × 32 × 31cm. Finish: brushed metal/wood finish sleeve. Price: on application.

R 7300

Amplifier output: 45W. FR: 20Hz-35Hz. Inputs: phono, aux, tape. Controls as R 7200. Tuner: sensitivity FM: 2µV. Sensitivity AM: 250µV. Variable tuning on AM/FM. Dimensions: 45.6 × 32 × 13cm. Finish: brushed metal/wood finish sleeve. Price: on application.

R 7500

Amplifier output: 60W. FR: 20Hz-35kHz. Inputs: phono, aux, tape A, tape B. Controls as R 7200. Tuner: sensitivity: 1.9µV. Sensitivity AM: 250µV. Variable tuning. Dimensions: 45.6 × 32 × 13cm. Price: on application.

■ GOODMANS LOUDSPEAKERS LTD

Downley Road, Havant, Hants PO9 2NL.
Tel: Havant 486344.

Model 150 ★

Amplifier

Power output: 110 + 110 watts RMS into 4 ohms. THD: 0.02%. Total music power: 275 watts into 4 ohms. FR: -3dB at 20Hz and 20kHz. Power bandwidth: 10-30,000Hz. Damping factor: 50 into 8 ohms. Inputs: magnetic pickup, aux (tape 2), tape. Overload capability: +38dB any input. Tape output (DIN) has four levels: 250mV into 100K ohms, 50mV into 10K ohms, 2 × 8mV into 10K ohms. Scratch filter, rumble filter. Crosstalk: -50dB.

Tuner

Sensitivity FM: less than 1μV into 75 ohms. Sensitivity AM: 20μV MV, 40μV LW. Capture ratio: better than 1.5dB. Image rejection FM: 75dB. Image rejection AM: 65dB. Spurious rejection FM: 80dB. IF rejection FM: 90dB. Stereo separation: 40dB at 1kHz. Pilot tone rejection: better than 65dB. Pilot harmonic rejection: better than 75dB. Overload capability: 120dB above 1μV input. THD Stereo: 0.5% (67.5kHz deviation). Wavebands 87.5-108MHz, 148-350kHz, 520-1.625kHz.

General

Dimensions: 54 × 36 × 20cm. Black facia, teak or walnut veneer case. No rec. retail price.

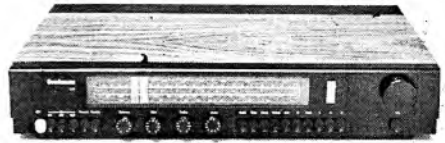
Module 90 ★

Amplifier

Power output: 45 + 45W RMS into 4 ohms. THD: less than 0.1%. Total music power: 120 watts. FR: 25-30,000Hz, ±0.3dB. Inputs: magnetic pickup, aux, tape. Overload capability: +23dB any input. Tape output (DIN): for 10mV into mag. Input: 10mV into 10K ohms. Scratch filter, rumble filter, Crosstalk: 45dB.

Tuner

Sensitivity FM: 1μV into 75 ohms. Sensitivity AM: 50μV. Capture ratio: better than 1.5dB. Image rejection FM: better than 60dB, IF rejection FM: better than 80dB. Stereo separation: -35dB at 1kHz. Pilot tone rejection: better than -40dB. Overload capability: 120dB. THD stereo: 0.5% for 75kHz deviation. Waveband coverage: 87.5-108MHz, 525-1.650kHz. Four presets on FM.



Goodmans 150



Goodmans Module 90

General

Dimensions: 61.6 × 40 × 21cm. Black facia with teak, walnut case. No rec. retail price.

Module 130

Amplifier

Amplifier output: 65 + 65W into 4 ohms. FR: 8Hz-70kHz. Damping factor: 44. Inputs: mag and ceramic pickup, aux, mic. Controls: 5 sliders giving ±10dB at 100, 400, 900, 4000 and 10,000. Mic gain control and all usual selectors.

Tuner

Sensitivity FM: 1.6μV (for 30dB S/N). Sensitivity AM: 250μV (for 20dB S/N). FM/MW. Manual tuning plus five presets on FM.

General:

Dimensions: 53.6 × 38 × 15.5cm. Teak effect finish. No rec. retail price.

■ GRUNDIG

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

Receiver 35

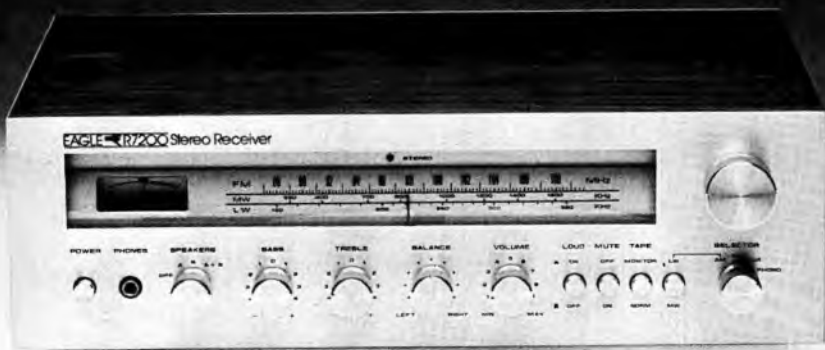
Amplifier Section

Power output: 30W. FR: 20Hz-20kHz. Damping factor: 27. Controls: volume, balance, bass, treble, muting, AFC, monitor, MPX, loudness control, noise filter (-3dB at 7kHz).

Tuner Section

Sensitivity FM: 1.5μV (300 ohms) 0.75μV (75

**30 + 30 + FM
Watts RMS Watts RMS MW
RW**



The new R 7200 receiver from Eagle gives a full 30 watts RMS per channel 40 – 16,000 Hz at 0.7% THD, plus a high sensitivity FM Stereo/Medium Wave/Long Wave tuner section.

All for the price of a 30 watt amplifier. Unbelievable? Find out more.

Please send me details of the R 7200.

Name

Address

.....

.....



HFYB 79R

Eagle International, Precision Centre, Heather Park Drive, Wembley HA0 1SU.

ohms). Sensitivity AM: 4-15 μ V. Waveband coverage: 87.5-108MHz, 510-1620kHz, 145-350kHz, 5.4-16.2MHz. Variable tuning with 8 preset VHF push buttons.

General

Dimensions: 54 × 15 × 32cm. No rec. retail price.

Receiver 30

Amplifier Section

Power output: 30W. FR: 20Hz-20,000Hz. Damping factor: 27. Controls: volume, balance, bass, treble, middle tone control, muting, AFC, monitor, MPX, noise filter, loudness.

Tuner Section

Sensitivity: 1.4 μ V (300 ohms) 0.70 μ V (75 ohms). Sensitivity (AM) 615 μ V. Waveband coverage: 87.5-108MHz, 510-1620kHz. Variable tuning with 8 preset VHF touch sensors.

General

Dimensions: 54 × 15 × 32cm. No rec. retail price.

Receiver 100

Output: 15W. Waveband coverage: VHF, L, M, S. 8 touch sensors on VHF. No rec. retail price.

Receiver 45

Output: 50W. FR: 20Hz-20kHz. Tuner Sensitivity: 1 μ V. VHF/M wavebands. 8 touch sensors on VHF. Dimensions: 54 × 15 × 32cm. No rec. retail price.

■ HARMAN KARDON

Tannoy, St. Johns Road, Tylers Green, High Wycombe, Bucks HP10 8HR. Tel: Penn 5221.

730

Amplifier Section

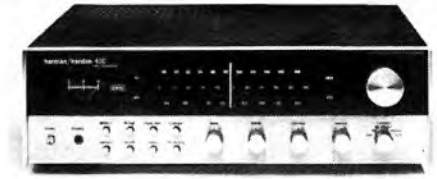
Power output: 40W. FR: 3Hz-130kHz. Damping factor: 30. Inputs: aux 150mV, tape monitor 150, phono 2.5. Controls: tape monitor 1 & 2, Hi-cut, low-cut, contour, bass, treble, balance, volume, function, tuning.

Tuner Section

Sensitivity FM — 1.9 μ V Sensitivity AM — 150 μ V.

General

Dimensions: 43 × 36.8 × 14cm. Price: to be announced.



Harman Kardom HK 430

330C

Amplifier Section

Power output: 20W. FR: 10Hz-80kHz. Damping factor: 30. Inputs: phono 2.8mV, aux 200mV. Controls: speakers 1 & 2, mono, monitor, contour, bass, treble, volume, balance, function tuning.

Tuner Section

Sensitivity FM: 1.8mV. Waveband coverage: FM 88-108MHz, 175-600m variable.

General

Dimensions: 39.3 × 33.1 × 11.5cm. Price: to be announced.

430 ★

Amplifier Section

Power output: 25W. FR: 4Hz-140Hz Damping factor: 40. Inputs: phono 2.7mV, : t. 130mV, tape monitor 120mV. Controls: Hi-cut, low-cut, tape, monitor, contour, FM mute, bass, treble, balance, function, tuning, muting adjust.

Tuner Section

Sensitivity: 1.9mV. Waveband coverage: FM: 88-108MHz, 175-600m variable.

General

Dimensions: 43.2 × 36.8 × 14cm. Price: to be announced.

■ HITACHI SALES (UK) LTD

Hitachi House, Station Road, Hayes, UB3 4DR. Tel: 01-848 8787.

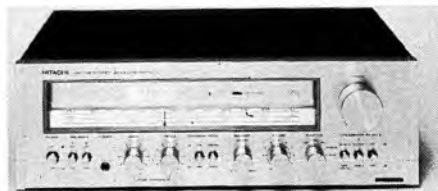
SR 303L

RMS power output: 20Hz-20kHz, 8 ohms. 2 × 15W RMS. FR: 30Hz-15kHz ±0.5dB. Controls: loudness, bass, treble, mid, speakers. Sensitivity (FM): 2.0 μ V IHF, 1.7 μ V DIN. Sensitivity (AM): 250 μ V/m MW, 800 μ V/m LW. Dimensions: 43.5 × 13.4 × 35.9cm. Price: £139.50 (inc. VAT).

★ Indicates entry is illustrated

SR 503L ★

RMS power output: 20Hz-20kHz, 8 ohms. $2 \times 20\text{W}$ RMS. FR: 30Hz-15kHz $\pm 0.3\text{dB}$. Controls: loudness, bass, treble, mid, speakers. Sensitivity (FM): $2.0\mu\text{V}$ IHF, $1.7\mu\text{V}$ DIN. Sensitivity (AM): $250\mu\text{V/m}$ MW, $800\mu\text{V/m}$ LW. Dimensions: $43.5 \times 13.4 \times 35.9\text{cm}$. Price: on application.



Hitachi SR 503

SR 603 ★

RMS power output: 20Hz-20kHz, 8 ohms. $2 \times 30\text{W}$ RMS. FR: 30Hz-15kHz $\pm 0.3\text{dB}$. Controls: loudness, bass, treble, mid, speakers. Sensitivity (FM): $2.0\mu\text{V}$ IHF, $1.6\mu\text{V}$ DIN. Sensitivity (AM): $250\mu\text{V/m}$ MW, $15\mu\text{V}$ IHF. Dimensions: $43.5 \times 13.4 \times 35.9\text{cm}$. Price: £175.00 (inc. VAT).



Hitachi SR 503L

SR 703 ★

RMS power output: 20Hz-20kHz, 8 ohms. $2 \times 40\text{W}$ RMS. FR: 30Hz-15kHz $\pm 0.3\text{dB}$. Controls: loudness, bass, treble, mid, speakers. Sensitivity (FM): $1.8\mu\text{V}$ IHF, $1.6\mu\text{V}$ DIN. Sensitivity (AM): $300\mu\text{V/m}$ MW, $20\mu\text{V}$ IHF. Dimensions: $48.9 \times 14.5 \times 40.1\text{cm}$. Price: £199.00 (inc. VAT).



Hitachi SR 703

SR 903

RMS power output: 20Hz-20kHz, 8 ohms. $2 \times 75\text{W}$ RMS. FR: 30Hz-15kHz $\pm 0.3\text{dB}$. Controls: loudness, bass, treble, mid, speakers. Sensitivity (FM): $1.6\mu\text{V}$ IHF, $1.2\mu\text{V}$ DIN. Sensitivity (AM): $300\mu\text{V/m}$ MW, $20\mu\text{V}$ IHF. Dimensions: $48.9 \times 14.5 \times 40.1\text{cm}$. Price: £335.00 (inc. VAT).

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

■ ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane,
Basildon, Essex SS14 3BW.
Tel: Basildon 3040.

JR-S600 Mk II

FM/AM stereo receiver. Output: 130W into 8 ohms, 180W into 4 ohms. FM sensitivity: $1.5\mu\text{V}$. Dimensions: $16.9 \times 56 \times 43.1\text{cm}$. Price: on application.

8033

Receiver with output: $60\text{W} \pm 1\text{dB}$ into 4 ohms. FR: 20Hz-20kHz $\pm 2\text{dB}$. Damping factor: 30. Inputs: magnetic, tape, aux. Dimensions: $48 \times 35 \times 14\text{cm}$. No rec. retail price.

JR-S400 Mk II

FM/AM receiver with output: 85W into 8 ohms, 110W into 4 ohms. FM sensitivity: $1.5\mu\text{V}$. Dimensions: $16.9 \times 56 \times 43.1\text{cm}$. Price: on application.

8031

Receiver with output 22W into 4 ohms. FR: 20Hz-20kHz $\pm 2\text{dB}$. Damping factor: 10. Inputs: magnetic, tape, aux. Dimensions: $48 \times 35 \times 14\text{cm}$. No rec. retail price.

JR-S300 Mk II

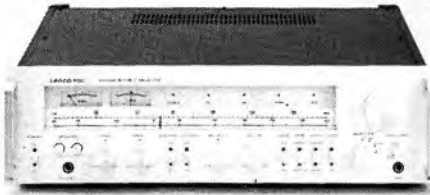
FM/AM stereo receiver with output power: 55W into 8 ohms, 65W into 4 ohms. FM sensitivity: $1.6\mu\text{V}$. Dimensions: $16 \times 50 \times 33.5\text{cm}$. Price: on application.

8032

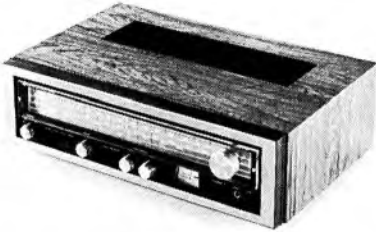
Receiver with output: 40W into 4 ohms. FR: 40Hz-16kHz. Damping factor: 30. Inputs: magnetic, tape, aux. Dimensions: $48 \times 35 \times 14\text{cm}$. No rec. retail price.

JR-S200L Mk II

FM/AM stereo receiver with output power: 38W into 8 ohms, 43W into 4 ohms. FM sensitivity: $1.6\mu\text{V}$. Dimensions: $16 \times 50 \times 33.5\text{cm}$. Price: on application.



Lenco R50



Lux R 1030



Lux R 1040

JR-S100 Mk II

FM/AM stereo receiver with output power: 22W into 8 ohms 25W into 4 ohms. FM sensitivity: $1.8\mu\text{V}$. Dimensions: $16 \times 50 \times 33.5\text{cm}$. Price: on application.

JR-S50

FM/AM receiver with output: 17W into 8 ohms, 20W into 4 ohms. FM sensitivity: $1.8\mu\text{V}$. Dimensions: $13 \times 43 \times 35.9\text{cm}$. Price: on application.

LENCO

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

R25

Power output: $2 \times 19\text{W}$. FR: 10Hz-40,000Hz. Dimensions: $49 \times 39 \times 13.2\text{cm}$. Price: £150.00 (plus VAT).

R50 ★

Power output: $2 \times 40\text{W}$ 8 ohms. FR: 10Hz-40kHz. Dimensions: $49 \times 39 \times 13.2\text{cm}$. Price: £199.00 (plus VAT).

LUX

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

F 1050**Amplifier Section**

Output: 5W. FR: 10Hz-50kHz. Damping Factor: 60. Inputs: phono, aux, monitor. Controls: power switch, volume, tuning, bass, treble, speaker switch, high/low filters, tape selector, tape-monitor, tape dubbing, FM muting, loudness switch, FM Dolby switch, LED.

Tuner

FM Sensitivity: $4.6\mu\text{V}$. AM Sensitivity: $15\mu\text{V}$. Variable tuning on FM/AM wavebands.

General

Dimensions: $49 \times 35.5 \times 18\text{cm}$. Finish: rosewood. Price: £430.00 (plus VAT).

R 1120**Amplifier Section**

Output: 120W. FR: 15Hz-70kHz -1dB. Inputs: phono 1, phono 2, aux, monitor. Controls as R 1050 plus subsonic filter, input selector.

Tuner

Sensitivity FM: $4.0\mu\text{V}$. Sensitivity AM: $200\mu\text{V/m}$. FM/AM wavebands.

General

Dimensions: $49 \times 41.5 \times 18\text{cm}$. Finish: rosewood. Price: £600.00 (plus VAT).

R 1030 ★**Amplifier Section**

Output: 30W. FR: 10Hz-40kHz. Damping Factor: 40. Inputs: aux, phono, monitor, power switch, volume, bass, treble, tunings input selector, tape monitor, speaker switch, high/low filters, muting switch.

Tuner

Sensitivity FM: $4.8\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. FM/AM waveband coverage. Variable tuning.

General

Dimensions: $50 \times 31.5 \times 16.6\text{cm}$. Finish: rosewood. Price: £230.00 (plus VAT).

★ Indicates entry is illustrated

R 1040 ★

Amplifier

Output: 40W. FR: 10Hz-50kHz - 1dB. Damping Factor: 60. Inputs: phono, aux, monitor. Controls: power switch, volume, bass, treble, tape monitor, tuner, input selector, speaker switch, high and low filters, muting switch.

Tuner

Sensitivity FM: $4.8\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. Variable tuning on AM/FM.

General

Dimensions: $48.5 \times 35.3 \times 17.5\text{cm}$. Finish: rosewood. Price: £330.00 (plus VAT).

■ MARANTZ

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

2226B

AM/FM Stereo receiver.

Amplifier

Output: 26W per channel. FR: 20Hz-20kHz. Damping factor: 45. Inputs: phono, aux, 2 × tape. Controls: volume, treble, mid, bass, porch, balance, Hi-filter, selector SW.

Tuner

Sensitivity: $1.6\mu\text{V}$ for 30dB. Waveband coverage: VHF/MW/LW. Variable tuning. Price: £203.11 (plus VAT).

2215

Amplifier

Output: 15W. FR: 20Hz-20kHz. Inputs: aux, phono, tape. Controls: volume, treble, bass.

Tuner

Sensitivity: $2.2\mu\text{V}$ 30dB. Waveband: FM/M.

General

Dimensions: $44 \times 29.3 \times 13.7\text{cm}$. Price: £151.11 (plus VAT).

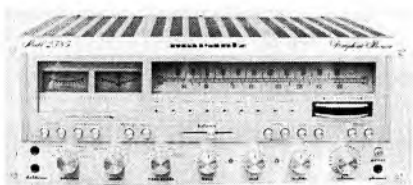
2238B

Amplifier

Output: 38W. FR: 20Hz-20kHz. Damping Factor: 45. Controls: L + R, treble, mid, bass, volume, balance, selector SW, Hi-Filter. Inputs: aux, phono 2 and tapes.

Tuner

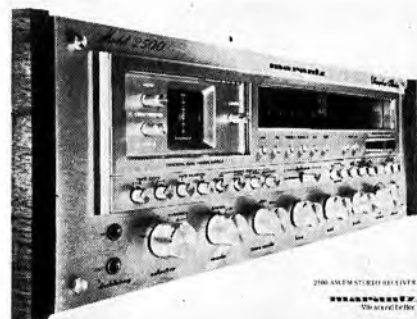
Sensitivity: $2.2\mu\text{V}$ 30dB. Sensitivity AM: $15\mu\text{V}$. Wavebands: FM/M.



Marantz 2330B



Marantz 2500



Marantz 2285

General

Dimensions: $44 \times 36 \times 13.7\text{cm}$. Price: £257.78 (plus VAT).

2285B ★

Amplifier

Output: 85W. FR: 20Hz-20kHz. Damping Factor: 60. Inputs: aux, 2 phono, 2 tapes. Controls: L+R, treble, bass, mid, volume, balance, selector switch, Hi + lo filters 18dB octave, multipath indication.

Tuner

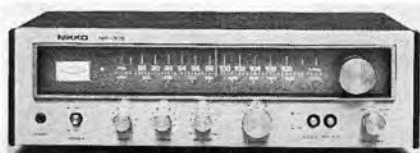
Sensitivity FM: $1.4\mu\text{V}$ -30dB. Sensitivity AM: $12\mu\text{V}$. Wavebands: FM/M.

General

Dimensions: $44 \times 36.5 \times 13.7\text{cm}$. Price: £505.22 (plus VAT).



Nikko NR-715



Nikko NR 1015



Nikko NR-815



Nikko NR-315

2330B ★**Amplifier**

Output: 130W. FR: 20Hz-20kHz. Damping Factor: 60. Inputs and controls as 2285B.

Tuner

Sensitivity FM: $1.3\mu\text{V}$ -30dB. Sensitivity AM: $10\mu\text{V}$. Wavebands: FM/M.

General

Dimensions: 49.1 × 38.6 × 14.6cm. Price: £631.11 (plus VAT).

2385**Amplifier**

Output: 185W. FR: 20Hz-20kHz. Damping Factor: 60. Inputs: 2 × tape, 2 phono, aux. Controls: vol. balance, L+R, treble, mid, bass, multipath, tone/over switch. 15Hz-9kHz -18dB octave filters.

Tuner

Sensitivity FM: $1.2\mu\text{V}$ -30dB. Sensitivity AM: $10\mu\text{V}$. Wavebands: FM/M.

General

Dimensions: 49.1 × 43.5 × 17.8cm. Price: £976.89 (plus VAT).

2500 ★

Specs the same as 2385 except amplifier output is 250W. Price: £1,537.78 (plus VAT).

■ NIKKO

Dowall Audio Ltd, Ardfallen, Forthill, Magheraleave Road, Lisburn BT28 3BB. Tel: Lisburn 2899.

NR-715 ★

Amplifier output: 38W into 8 ohms. FR:

10Hz-30kHz +0 -1dB. Damping Factor: 55. Inputs: phono, tape, aux. Controls: bass, treble, balance, tape mon, mode, loudness, high filter, speaker A, B, A+B $\frac{1}{2}$ Tuner with FM sensitivity: $20.0\mu\text{V}$, AM sensitivity 250V/M. FM/AM wavebands with FM muting. Dimensions: 48 × 35 × 15.5cm. Walnut finish. Price: to be announced.

NR-815 ★

Amplifier output: 55W into 8 ohms. FR: 7Hz-50kHz +0 -1dB. Damping Factor: 60. Inputs: phono, aux, tape 1 & 2, mic. Controls as NR-715 plus low filter, dubbing tape 1 to tape 2 and dubbing tape 2 to tape 1. FM Sensitivity: $1.8\mu\text{V}$. AM Sensitivity: $250\mu\text{V/m}$; FM/AM with FM muting and FM 25 S de-emphasis switch. Dimensions: 51.8 × 41.3 × 17.4cm. Walnut finish. Price: to be announced.

NR-315 ★

Amplifier output: 10W into 8 ohms. FR: 20Hz-20kHz +0.5, -1dB. Damping Factor: 40. Inputs: phono, tape, aux. Controls: bass, treble, balance, loudness, tape, mon, speaker A, B, A+B. Tuner with FM sensitivity: $2.2\mu\text{V}$, AM sensitivity $280\mu\text{V/m}$. FM/AM wavebands. Dimensions: 44 × 30 × 13.5cm. Walnut finish. Price: to be announced.

NR-615

Amplifier output: 28W into 8 ohms. FR: 10Hz-30kHz +0, -1dB. Damping Factor: 55. Inputs: phono, tape, aux. Controls: bass, treble, balance, loudness, tape, mon, speaker A, B, A+B. Tuner with FM sensitivity: $20\mu\text{V}$, AM sensitivity: $250\mu\text{V/m}$. FM/AM with FM muting. Dimensions: 43 × 35 × 13.5cm. Walnut finish. Price: to be announced.

NR-1015 ★

Amplifier output: 85W into 8 ohms. FR: 7Hz-

★ Indicates entry is illustrated

50kHz +0, -1dB. Damping Factor: 60. Inputs: phono, aux, mic, tape 1 & 2. Controls: bass, treble, balance, high filter, low filter, loudness, audio muting, dubbing tape 1 to tape 2, tape 2 to tape 1, speaker A, B, A+B. Tuner with FM sensitivity: $1.8\mu\text{V}$ (IHF), AM sensitivity: $250\mu\text{V/m}$. FM/AM with FM muting and FM 25 S de-emphasis switch. Dimensions: $51.8 \times 41.3 \times 17.4\text{cm}$. Walnut finish. Price: to be announced.

■ PHILIPS ELECTRICAL LTD

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

AH 682 ★

Output: $2 \times 22\text{W}$. Details on application.

AH 683 ★

Output: $2 \times 35\text{W}$. Details on application.

AH 684 ★

Output: $2 \times 45\text{W}$. Details on application.

AH 686 ★

Output: $2 \times 65\text{W}$. Details on application.

AH 794

Output: $2 \times 40\text{W}$. Features: switchable high, low and loudness filters. Audio mute switch, source/tape monitoring with 3-head recorders. 5FM presets. LED indicator, tape dubbing facility. FR: 20Hz-20kHz $\pm 1\text{dB}$. Controls: bass, treble, loudness. Damping Factor: 40. Inputs: phono, tape A, tape B, monitor. FM, L, M with FM sensitivity: $1\mu\text{V}$. Dimensions: $56.8 \times 14.2 \times 36\text{cm}$. Price: on application.

■ PIONEER

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

SX 850

Amplifier Section

Output: 65W at 8 ohms, 85W at 4 ohms. FR: 7Hz-90kHz to -1dB . Input: phono 1 & 2 $2.5\text{mV}/50\text{K}$, mic $6.5\text{mV}/50\text{K}$, aux/tape play 1 & 2/tuner $150\text{mV}/50\text{K}$. Controls: speakers a, b, a + b, bass and treble with separate turnovers, high and low filters FM MPX, noise filter. FM muting, AM/FM. Phono 1, phono 2, mic, aux, tape duplicate, tape monitor, adaptor balance, mode, loudness, volume, muting, tuning.

Tuner Section

Sensitivity FM: Mono 10-3dBf, Stereo 22-2dBf. Waveband coverage FM 87.5-108MHz. AM 525-1605kHz variable.



Philips 682



Philips 683



Philips 684



Philips 686

General

Dimensions: 52.6 × 41.1 × 17.3cm. Walnut finish with aluminium front. Price: on application.

SX 750 ★**Amplifier Section**

Output: 50W at 8 ohms, 60W at 4 ohms. FR: 10Hz-50kHz DIN. Inputs: phono 2.5mV/50K, auxiliary/tape play 1 and 2/tuner 150mV 50K. Controls: speakers off, a, b, a + b, bass, treble, tone, high filter, balance, volume, loudness, mode, duplicate, tape monitor, function, FM muting, tuning.

Tuner Section

Sensitivity FM: Mono 10-7dBf, Stereo 19-0dBf, stereo 50mV DIN. Sensitivity AM: 15μV IHF. Wavebands FM 87.5-108MHz, AM 525-1605Hz. Variable tuning.

General

Dimensions: 48 × 37.1 × 14.9cm. Walnut finish with aluminium front. Price: on application.

SX 650 ★**Amplifier Section**

Power output: 35W to 8 ohms, 35W to 4 ohms. FR: 10Hz-50kHz DIN. Controls: speakers off a, b, a + b, bass, treble, high filter, FM muting, balance, volume, loudness, mode, tape monitor 1 & 2, function, tuning.

Tuner Section

Sensitivity FM: mono 10-7dBf, Stereo 19-0dBf. Stereo 44 micro DIN. Sensitivity AM: 15μV. Wavebands: FM 87.5-108MHz, AM 525-1605kHz. Variable tuning.

General

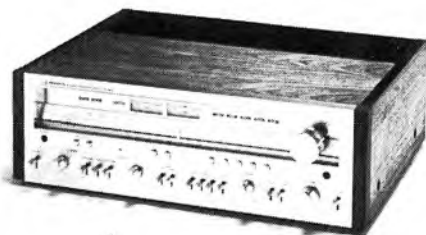
Dimensions: 48 × 37 × 14.9cm. Walnut finish with aluminium front. Price: on application.

SX 550**Amplifier Section**

Power output: 20W to 8 ohms, 20W to 4 ohms. FR: 10Hz-50kHz DIN. Inputs: phono 2.5mV/50K, mic 7.5mV/50K, aux, tape play 1 & 2/tuner 150mV/50K. Controls: speakers off, a, b, a + b, base, treble, FM muting, mode, balance, volume, loudness, tape monitor 1 & 2, function, tuner.

Tuner Section

Sensitivity FM: mono 11-2dBf, Stereo 20-0dBf. Sensitivity AM: 15μV IHF. Waveband

*Pioneer SX 750**Pioneer SX 650**Pioneer SX 950*

coverage: FM 85.5-108MHz, AM 525-1605kHz. Variable tuning.

General

Dimensions: 44.8 × 30.7 × 14.1cm. Walnut finish with aluminium front. Price: on application.

SX 450**Amplifier Section**

Power output: 15W 8 ohms, 15W 4 ohms. FR: 7Hz-70kHz DIN. Inputs: phono, mic, aux, tape play, tuner 150mV/50K. Controls: speakers off, a, b, a + b, base, treble, balance, volume, loudness, FM muting, mode, tape monitor, function, tuner.

Tuner Section

Sensitivity FM: mono 11.2dBf, Stereo 20-

★ Indicates entry is illustrated

0dBf. 50mV DIN. Sensitivity AM: 15 μ V IHF. Waveband coverage: FM 87.5-108MHz. AM 525-1605kHz. Variable tuning.

General

Dimensions: 44.8 × 30.7 × 14.1cm. Walnut finish with aluminium front. Price: on application.

SX 950 ★

Amplifier

Continuous power output is 85W per channel. min. FR: 20Hz-20,000Hz with no more than 0.1%. Input sensitivity/impedance: 1V/50K ohms (power-amp in). Output: Speaker: A, B, C, A + B, B+C, A+C. Headphone: Low impedance. Damping factor: 25 (20Hz-20,000Hz 8 ohms). H & N: 100dB (IHF, short-circuit A network).

Preamplifier

Input sensitivity/impedance: phono 1: 2.5mV/50K ohms; phono 2: 2.5mV/50K ohms; mic: 6.5mV/50K ohms; aux: 150mV/50K ohms; Tape play 1: 150mV/50K ohms; Tape play 2: 150mV/50K ohms; Tape play 3 (DIN connector): 150mV/50K ohms. Phono overload level (THD 0.1%) phono 1: 200mV (1kHz); phono 2: 200mV (1kHz). THD: no more than 0.05% (20Hz-20kHz, 1V output). FR phono (RIAA equalisation): 30Hz-15kHz, \pm 0.2dB aux, tape play: 15Hz-40kHz, +0dB, -1dB. Tone control: bass: \pm 7dB/ \pm 10dB (100Hz); turnover frequency 200Hz/400Hz. Treble: \pm 7dB/ \pm 10dB (10kHz).

FM Tuner

Usable sensitivity: Mono: 10-3dBf (3.6 μ V/300 ohms), Stereo: 22.2dB (14.1 μ V/300 ohms). Usable Sensitivity (IHF): Mono: 1.8 μ V. 50dB. Quieting Sensitivity: Mono: 17.2dBf, Stereo: 38.0dBf. S/N Ratio (at 65dBf, Mono: 72dB, Stereo: 67dB; Distortion at 65dBf; 100Hz: 0.15% (mono), 0.3% (stereo); 1kHz: 0.15% (mono) 0.3% (stereo); 6kHz: 0.4% (mono), 0.4% stereo. FR: 30Hz to 15kHz \pm 0.2dB, -2.0dB. Capture Ratio: 1.0dB.

AM Tuner

Sensitivity: 300 μ V/m (IHF, antenna ferrite), 15 μ V (IHF, ext. antenna). Selectivity: 40dB. S/N ratio: 55dB. Image response ratio: 65dB. IF response ratio: 85dB. Antenna: Built-in ferrite loopstick antenna.

General

Dimensions: 52.6 × 41.1 × 17.3cm. Walnut finish with aluminium fascia. No rec. retail price.



Pye TA 12000



Pye TA 8000



Pye TA 4000

■ PYE

Pye Ltd, 137 Ditton Walk, Cambridge CB5 8QD. Tel: Teversham 2781.

TA 12000 ★

AM/FM stereo receiver. Amplifier section: output 60W per channel. FR: 20Hz-20,000Hz +0.5, -1.5dB. Inputs: phono (1, 2), mic, aux, tape/monitor (A, B). Controls include: contour, bass, treble, low and high filter, audio muting. Output: speakers, headphone. FM tuner: Sensitivity: 1.7 μ V, waveband 87.5-108MHz. AM tuner sensitivity: 60 μ V. Wave range 520-1605kHz. General: Dimensions: 48 × 15 × 38cm. Price: £301.33 (plus VAT).

TA 8000 ★

AM/FM stereo receiver. Amplifier section: output 40W per channel. FR: 20Hz-20,000Hz +0.5, -1.5dB. Inputs: phono (1, 2), aux, tape/monitor (A, B). FM tuner: Sensitivity: 2 μ V. Wave range 87.5-108MHz. AM tuner: Sensitivity 68 μ V. Range: 520-1605kHz. General: Dimensions: 48 × 15 × 38cm. Price: £248.00 (plus VAT).

TA 6000

AM/FM stereo receiver. Amplifier section: output 30W per channel. FR: 20Hz-20,000Hz +0.5, -1.5dB. Inputs: phono (1, 2), aux,

tape/monitor (A, B). FM tuner: Sensitivity: $2\mu\text{V}$. Wave range: 87.5-108MHz. AM tuner: Sensitivity: $68\mu\text{V}$. General: Dimensions: $48 \times 15 \times 38\text{cm}$. Price: £194.67 (plus VAT).

TA 4000 ★

AM/FM stereo receiver. Output: 20W per channel. FR: 30Hz-20,000Hz. THD: 1%. Inputs: phono (1, 2), aux, tape/monitor (A, B). FM tuner: wave range 87.5-108MHz. Sensitivity: $25\mu\text{V}$. AM tuner: $90\mu\text{V}$, wave range 520-1605kHz. General: Dimensions: $48 \times 15 \times 38\text{cm}$. Price: £141.33 (plus VAT).

■ REALISTIC

Tandy Corporation (Branch UK),
Bilston Road, Wednesbury,
West Midlands WS10 7JN.
Tel: 021-556 6101.

STA-64

AM/FM stereo receiver.

Amplifier Section

Power output at 8 ohms 40W. FR: 15Hz-30kHz $\pm 2\text{dB}$. S/N ratio: 65dB.

Tuner Section

Sensitivity IHF: $2.2\mu\text{V}$. AM tuner sensitivity: $200\mu\text{V}$ for 20dB.

General

Mains voltage: 220/240V AC. Dimensions: $13.3 \times 47 \times 33.5\text{cm}$. Price: £179.95.

STA-77L

AM/FM stereo receiver.

Amplifier Section

Power output 8 ohms, 54W music, 44W RMS. FR: 15Hz-25kHz $\pm 2\text{dB}$. S/N: 60dB.

Tuner Section

Sensitivity IHF: $1.9\mu\text{V}$. AM tuner sensitivity: $200\mu\text{V}$ for 20dB.

General

Mains: 220/240V AC 50/60Hz. Size: $13.5 \times 47 \times 35.5\text{cm}$. Price: £199.95.

STA-90 ★

AM/FM stereo receiver.

Amplifier Section

Power output: 114W RMS, 140W music at 8 ohms. FR: 20Hz-20kHz $\pm 2\text{dB}$. S/N ratio: 60dB. Input sensitivity: 3mV (phono), 250mV (aux/tape).



Rotel RX 1603



Rotel RX 503

Tuner Section

Sensitivity IHF: $2.0\mu\text{V}$. AM tuner sensitivity: $250\mu\text{V}$ for 20dB.

General

Mains voltage: 220/240V 50Hz. Size: $14.9 \times 48.8 \times 36.8\text{cm}$. Price: £259.95.

■ ROTEL

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

Tuner Section

Sensitivity: $2.0\mu\text{V}$, $3.6\mu\text{V}$. Sensitivity AM: $200\mu\text{V/m}$.

General

Dimensions: $56.6 \times 33 \times 12\text{cm}$. Wood finish with black aluminium front panel. Price: £187.25 (plus VAT).

RX 1603 ★

Amplifier Section

Power output: 180W. FR: 5Hz-100,000Hz. Damping Factor: 60. Inputs: aux, 2 phono, 2 tape monitor, 3 pairs speakers. Controls: mic, mixing level, vol, muting, loudness, balance, tape copy, mode, high-low filters, 2 setting turnover switches, treble, bass, 2 phones, Dolby, multipath, hi blend, FM muting, FM auto.

Tuner Section

Sensitivity: $1.6\mu\text{V}$, $3\mu\text{V}$. Sensitivity AM: $200\mu\text{V/m}$.

General

Dimensions: $60 \times 48 \times 18\text{cm}$. Wood finish with black aluminium front panel. Price: £700.85 (plus VAT).

THE PYE HI-FI SOUND PROJECT



AND WE CAN

The Pye Hi-Fi Sound Project is a new and comprehensive range of high performance, high fidelity equipment. The range covers amplifiers, tuners, receivers, speakers, turntables, a music centre... and more.

Pye has commissioned each separate model in the range from the best, most experienced source in the world. Speakers from Britain, receivers from Japan, turntables from West Germany. And in each source area Pye has selected a

manufacturer of unrivalled excellence.

Pye is the only British manufacturer to have taken this radical step.

The benefits are numerous.

Firstly, the equipment is designed to the most exacting of specifications, laid down by Pye, with the aim of bringing you performance of such a degree that other manufacturers will not be able to better it at the price. Compare the specifications and price of the receiver shown here and you'll see what we mean - 60 Watts per channel at 0.3% total harmonic distortion (0.06% harmonic distortion at 50 Watts) makes it a formidable piece of equipment. And these specifications err on the conservative side; already, independent authorities such as the Swedish Hi-Fi Institute are giving the Hi-Fi Sound Project range even better performance ratings than Pye have done.

Hand in hand with this has gone a single-minded insistence on quality. Over the years, Pye has gained an enviable reputation for the above average reliability we build into our products - reliability that stems from painstaking initial design allied to stringent selection of materials and components, and strict quality control. And since this equipment will be sold throughout the world, we regard built-in reliability as more important than ever.

The size of our world wide programme is also the main reason for the Hi-Fi Sound Project range being available at

TA 12000 RECEIVER

AMPLIFIER SECTION

POWER OUTPUT: 60W * continuous per channel at 0.3% THD into 8 Ω over 20 - 20,000Hz bandwidth

DISTORTION: Harmonic distortion at 50W: 0.06%
Intermodulation at 30W: 0.05%

INPUTS: Phono (2), Tape (2, with A to B dubbing facility), Auxiliary, Microphone (with mixing facility)

TUNER SECTION

SENSITIVITY: AM: 60 μ V for 26 dB s/n FM: 1.7 μ V acc to IHP.

TOTAL HARMONIC DISTORTION: Mono: 0.15% Stereo: 0.25%

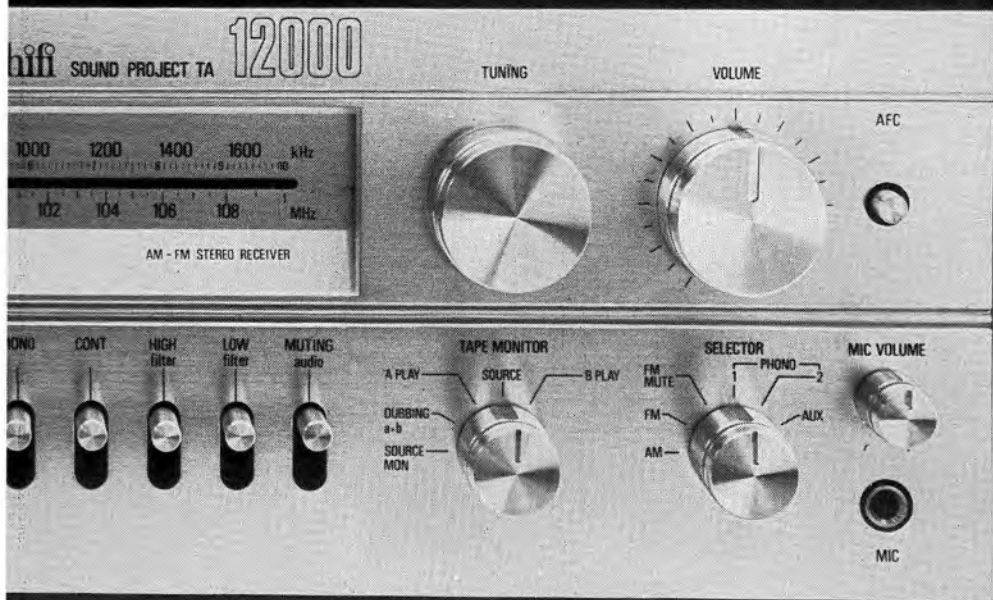
FEATURES

Separate signal strength and FM centre tuning meters. Smooth fly-wheel tuning control. Precise 41-step volume control. Provision for three separate speaker systems.

PRICE £339.00 (SRP)

* The independent Swedish Hi-Fi Institute measured this at 67 Watts

OBJECT RANGE IS UNIQUE



AND PROVE IT.

such an attractive unit cost. You won't need to look for a dramatic discount in this equipment, because Pye, unlike some other brands have not set the recommended prices artificially high.

And finally, since Pye are making the Hi-Fi Sound Project range available only through selected local retailers throughout the country, you'll get the advice, and the service, you should be entitled to when purchasing a piece of equipment of this calibre. Moreover, every Pye dealer is a specialist in his own right - and he's backed by 25 Pye Local Service Centres should he need to call on one. No other range of hi-fi

equipment can offer you this kind of long-term service assurance.

So, the Pye Hi-Fi Sound Project isn't simply a new range of hi-fi equipment. It represents a unique approach to high fidelity: one in which the outstanding performance, quality and reliability of the equipment itself is combined with a highly competitive price, and the back up of an integrated, nationwide dealer and service network.

If you need any more proof, we suggest you listen to the equipment for yourself.

There'll be a dealer near you.

THE PYE HI-FI SOUND PROJECT. A UNIQUE APPROACH TO HIGH FIDELITY.

TO: Hi-Fi Sound Project, Pye Limited, 137 Ditton Walk, Cambridge CB5 8OD.
You're talking my kind of music. Please send me more information on the Pye Hi-Fi Sound Project Range.

Name: _____

Address: _____



You can rely on Pye

★ Indicates entry is illustrated

RX 303

Output: 20W. FR: 20Hz-60kHz. Inputs: phono, tape, aux, tuner. Controls: power, speakers, bass, treble, balance, volume, loudness, tape monitor, mode, function. Tuner sensitivity FM: $1.6\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. Variable tuning. Dimensions: $47 \times 27.5 \times 13.5\text{cm}$. Finish: wood with silver aluminium front panel. Price: £130.25 (plus VAT).

RX 403

As above except output: 25W. Price: £154.63 (plus VAT).

RX 503 ★

Output: 35W. FR: 10Hz-70kHz. Inputs: phono, tape, aux, tuner. Controls: power, speakers, bass, treble, balance, volume, high filter, loudness, FM muting, mode, tape monitor, function, tuning. Tuner sensitivity AM: $15\mu\text{V}$. Sensitivity FM: $1.5\mu\text{V}$. Variable tuning. Dimensions: $48 \times 32.5 \times 14.5\text{cm}$. Finish: brushed silver aluminium panel. Price: £205.04 (plus VAT).

RX 603

As above except output: 50W. Price: £285.71 (plus VAT).

RX 803

Output: 75W. FR: 5Hz-70kHz. Inputs: phono, tape, aux, tuner. Controls: power, speaker, bass, treble, done defeat, filters, tape dub and monitor, muting, loudness, balance, volume. Tuner sensitivity FM: $1.4\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. Variable tuning. Dimensions: $49 \times 41 \times 14.5\text{cm}$. Brushed silver aluminium finish. Price: £342.86 (plus VAT).

RX 1203

Output: 120W. FR: 5Hz-100kHz. Inputs: phono, tape, aux, tuner. Control as RX 803. Tuner sensitivity FM: $1.2\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. Variable tuning. Dimensions: $58 \times 51 \times 18\text{cm}$. Finish: brushed silver and aluminium. Price: £593.28 (plus VAT).

■ SANSUI

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

Details not received at time of going to press.

■ SONY

Sony (UK) Ltd, Consumer Information,
134 Regent Street, London W1R 6DT.
Tel: 01-439 3874.



Sony STR 4800



Sony STR 5800

STR 4800 ★

Amplifier Section

Power output: 40W per channel. Inputs: phono, aux, 2 tape. Controls: muting, volume, tuning, function, monitor, acoustic com, balance, treble, bass, filters, speakers.

Tuner Section

Sensitivity FM: $1.9\mu\text{V}$ IHF. Sensitivity AM: $250\mu\text{V/m}$. Wavebands: 87.5-108MHz VHF, 530-1605kHz MW. Variable tuning.

General

Dimensions: $49 \times 42 \times 17\text{cm}$. Walnut side panels. No rec. retail price.

STR 5800 ★

Amplifier Section

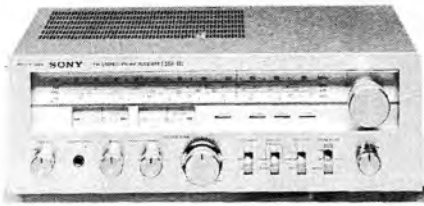
Power output: 60W per channel. Inputs: phono, aux, ext adpt, 2 and tape & tape copy. Controls: muting, volume, tuning, function, monitor, tape copy, ext adpt, mono, multipath, muting, acoustic com, balance, treble, bass, filter, speaker.

Tuner Section

Sensitivity FM: $1.5\mu\text{V}$ IHF. Sensitivity AM: 250mV/m . Waveband coverage as STR 4800.

General

Dimensions: $49 \times 42 \times 17\text{cm}$. Walnut side panels. No rec. retail price.



Sony STR 11



J. E. Sugden R48

STR 6800 SD**Amplifier Section**

Power output: 85W per channel. Inputs: 2 × phono, aux, ext adpt, 2 × tape. Controls: muting, volume, tuning, function, monitor, tape copy, ext adpt, mono, multipath, Dolby FM, muting, acoustic com, balance, treble, bass, filter speaker.

Tuner Section

Sensitivity: 1.7 μ V IHF. Sensitivity AM: 250 μ V/m. Waveband coverage as STR 4800. Variable tuning.

General

Dimensions: 49 × 42 × 17cm. Walnut side panels. No rec. retail price.

STR 111. ★**Amplifier**

Output: 25W. Damping Factor: 30 at 1kHz (8 ohms). Inputs: phono, tape. Controls: volume, balance, bass, treble, loudness, mode, monitor, function

Tuner

Sensitivity FM: 1.7 μ V. Sensitivity AM: 250 μ V on MW, 87.5-108MHz on FM and 130-350kHz on LW. Variable tuning.

General

Dimensions: 41 × 27 × 15cm. Finish: brushed aluminium. No rec. retail price.

■ J. E. SUGDEN & CO LTD

Carr Street, Cleckheaton,
West Yorkshire.
Tel: Cleckheaton 872501.

R 48 ★**Amplifier**

Power Output: 45W RMS per channel. THD: less than 0.1%. Total music power: 190W. FR: 30-20,000Hz. Power bandwidth: 8-35,000kHz. Damping Factor: 32. Inputs disc (2), tape (2). Scratch filter, rumble filter. Crosstalk: approx. 40dB.

Tuner

Sensitivity FM: 2.0 μ V. Capture Ratio: 2.5dB. Image rejection FM: 70dB. IF Rejection FM: 80dB. Stereo separation: 30dB. Pilot tone rejection: 40dB. Pilot harmonic rejection: <60dB. THD: stereo: 0.1% at 30% mod. Waveband coverage: 88-108MHz.

General

Dimensions: 56 × 28 × 13cm. Price: £240.00 (plus VAT).

■ TANDBERG (UK) LTD

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

TR 220**Amplifier**

Power Output: 20W. THD: 0.2%. Total music power 20W. FR: 30-30,000Hz.

Tuner

Sensitivity FM: 20 μ V. Capture Ratio: 1.3dB. Image rejection FM: 70dB. IF rejection FM: 95dB. THD stereo: 0.4%. Waveband coverage: 87.5-108MHz.

General

Dimensions: 56.7 × 11.7 × 31.2cm. Teak or rosewood finish. Price: £156.44 (plus VAT).

TR 2075 ★**Amplifier**

Power output: 75W per channel. FR: 6-80,000Hz. Inputs: Tape (2), phono. Loudness compensation button. Controls: on/off, power, 2 tape, loudness.

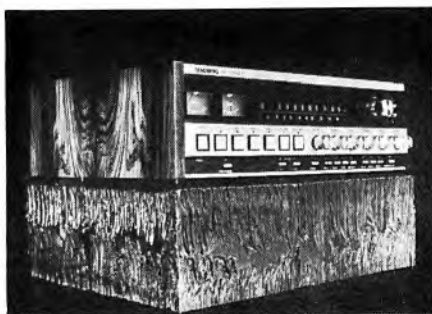
Tuner

Sensitivity FM: 0.8 μ V. Sensitivity AM: 30 μ V. Capture ratio: 0.9dB. Image rejection FM:

★ Indicates entry is illustrated



Tandberg TR 2025 L



Tandberg TR 2075 Mk II

70dB. Waveband coverage: 87.5-108MHz. Variable lines.

General

Dimensions: 51 × 15.3 × 35.3cm. Teak or rosewood finish. Price: £490.00 (plus VAT).

TR 2055

Amplifier Section

Power output: 55W. FR: 7Hz-80kHz, 10Hz-20kHz. Inputs: 2 × tape, 2 × phono. Controls: 2 × tape monitor buttons, volume, bass, treble, balance, speakers, tape copy, loudness, high and low filters, muting.

Tuner Section

Sensitivity: 20 μ V (40 μ V). Waveband coverage: 87.5-108MHz. Variable tuning.

General

Dimensions: 20 × 14 × 6in. Teak or rosewood finish. Price: £335.33 (plus VAT).

2040

Output 40W into 8 ohms. FR: 8Hz-50kHz. Damping Factor: 50. Inputs: Tape 1, tape 2, phono. Five preset pushbuttons on FM. Dimensions: 51.5 × 14.3 × 32cm. Price: £283.56 (plus VAT)

2025 ★

Output: 25W, otherwise as 2040. Price: £339.11 (plus VAT).

2025L

Output: 25W into 8 ohms. Waveband coverage: VHF, L, M. Three preset push buttons on FM. Dimensions: 51.5 × 14.3 × 32cm. Price: £256.89 (plus VAT).

2025 MR

As 2025L. Dimensions: 55.5 × 14.5 × 32cm. Price: £283.56 (plus VAT)

■ TEAC

Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds. Tel: Dunstable 603151.

AG 5700

Direct coupled stereo receiver. Power output: 50 × 50W. Damping factors: 30 at 8 ohms. FR: 20Hz-20kHz ± 1dB. Phono: 150mV. Tape rec 1, 2: 150mV. FM sensitivity: 1.9 μ V (IHF). Waveband: 88-108MHz. Stereo separation: 40dB/1kHz. Price: on application.

AG 2700 ★

Amplifier Section

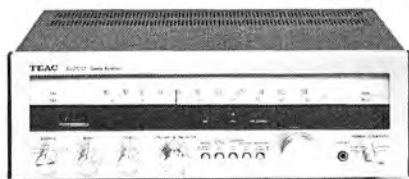
Power output: 20W + 20W. FR: 20Hz-20kHz ± 1dB. Damping factor: 30 at 8 ohms. Inputs: phono 3.5mV, aux 180mV, tape deck play 180mV.

Tuner Section

Sensitivity FM: 2.5 μ V (IHF). Sensitivity AM: 200 μ V (IHF). Variable tuning.

General

Dimensions: 45 × 31.5 × 15.3cm. Price: on application.



Teac AG-2700

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd,
Bath Road, Slough.
Tel: Slough 872101.

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: $2.4\mu\text{V}$ DIN (FM), $20\mu\text{V}$ DIN (AM). Aerial: 240 ohms. Inputs: phono 1.8mV 47K, phone (ceramic) 240mV 470K, tape, 240mV 470K. Outputs: $2 \times$ headphones, $6 \times$ loudspeakers (4-16 ohms), tape 1.7mV. Power output: 30W per channel. THD: 0.5%. FR: 20Hz-20kHz $\pm 5\text{dB}$. Selector switches for four speakers, room 1 (four speaker stereo); two speakers, room 2. Adjustable muting. Price: £259.00 (inc. VAT).

Opus 7050

Amplifier

Power output: $2 \times 70\text{W}$. Total music power: $2 \times 50\text{W}$. FR: 20-22,000Hz. Inputs for tape, p/u, loudspeakers, headphone, monitor. Rumble filters.

Tuner

Waveband: FM, L, M, S.

General

Dimensions: $61.8 \times 30 \times 11.8\text{cm}$. Light matt walnut, black side panels or white or black and silver. Price: £365.00 (inc. VAT).

TR 1200

Ultra sensitive, powerful, very low distortion two channel receiver for the reception of FM and AM wavebands. Seven FM stations pre-selected and recalled at the touch of a sensor. Preset FM station frequency indicator. Electronic AFC. Manual AFC switch. LED signal strength meter which also incorporates an exact tuning beacon. Adjustable stereo threshold. Automatic bandwidth control for AM. Seven inputs. Price: £598.00 (inc. VAT).

Concerto Hi-Fi 4530

Hi-Fi stereo receiver. 4 wavebands, FM, MW, LW, SW. Automatic FM tuner (AFC) with manual override and indicator. S, FM station presets. Music output: $2 \times 45\text{W}$ (cont sine power). $2 \times 30\text{W}$. 4 slide controls for vol, balance, treble and bass. Headphone sockets. Price: £239.00 (inc. VAT).

TRX 2000

Low distortion, sensitive, powerful FM/AM

receiver. Output of $4 \times 50\text{W RMS}$ into 4 ohms from four channels or $2 \times 60\text{W RMS}$ into 4 ohms on two channels it is intended to meet all the requirements of the most discerning Hi-Fi enthusiast. The highly accurate, crystal controlled frequency indication is by a five digit numerical display which is also a 24 hour clock. Seven FM stations may be stored and quickly tuned to touch buttons. AFC circuit is automatically switched off during tuning for accurate station selection or it may be switched on and off manually. A stereo station beacon is contained within the field strength tuning meter.

There are ten socket inputs for two or four channel tape and record decks and a decoder is built in for SQ matrix. After tape monitoring of two and four channels is possible. The output to the speakers may be monitored on the four VU meters with inertialess LED indicators, and the output transistors and loudspeakers are protected by a thermal overload switch. There are sockets for three sets of headphones and a microphone.

Price: £ approx. £898.00 (inc. VAT).

■ TOSHIBA (UK) LTD

Toshiba House, Great South West Road,
Feltham, Middlesex.
Tel: 01-751 1281.

SA-220L ★

Amplifier

Power output: $11\text{W} \times 2\text{ RMS}$ at 8 ohms. THD: 0.8%. Total music power: 32W. FR: 30-30,000Hz. Power bandwidth: 20-50,000Hz. Damping factor: 30 (8 ohms 1kHz). Inputs for phono, tape, aux. Overload capability: 90mV 0.08%. Tape output (DIN): 30mV. Bass and treble tone controls.

Tuner

Sensitivity FM: $2.3\mu\text{V}$. Sensitivity AM: $15\mu\text{V}$. Capture ratio: 3.5dB. Image rejection FM: 55dB. Image rejection. AM: 45dB. Spurious rejection FM: 70dB. IF rejection FM: 70dB. Stereo separation: 35dB. THD: stereo: 0.8%. Waveband coverage: FM, L, M, S.

General

Dimensions: $44.5 \times 27 \times 13\text{cm}$. Woodgrain finish. Price: £95.55 (plus VAT).

SA-320L ★

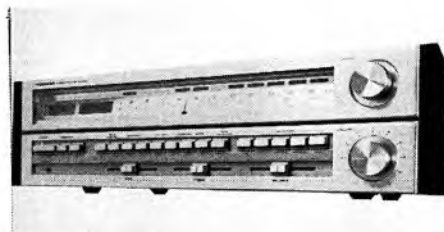
Amplifier

Power output: $15\text{W} \times 2\text{ RMS}$. THD: 0.8% rated. Total music power: 50W. FR: 30-30,000Hz. Power bandwidth: 10-60,000Hz. Inputs for phono, tape, aux. Overload capa-

★ Indicates entry is illustrated



Toshiba SA-320L



Toshiba SA-620



Toshiba SA-220L

ility: 100mV at 8%. Tape output (DIN) 30mV. Bass and treble controls. Loudness: +10dB + 5dB. Scratch filter.

Tuner

Sensitivity FM: 1.9 μ V. Sensitivity AM: 15 μ V. Capture ratio: 1.0dB. Image rejection: 60dB. Image rejection AM: 40dB. Spurious rejection: 75dB. IF rejection AM: 90dB. Stereo separation: 40dB. Pilot tone rejection: 40dB. Pilot harmonic rejection: 40dB. THD stereo: 0.4%. Waveband coverage: FM, L, M.

General

Dimensions: 50 x 38.7 x 16.3cm Woodgrain finish. Price: £124.00 (plus VAT).

SA-420

Amplifier

Power output: 25W x 2 RMS. THD: 0.4%

rated. Total music power: 70W. Other details as per SA320L plus rumble filter. Tuner and general details as per SA-320L. Price: £164.44 (plus VAT).

SA-520

Amplifier

Power output: 40W x 2 RMS at 8 ohms. THD: 0.4% rated. Total music power: 100W. FR: 20-30,000Hz. Power bandwidth: 5-60,000Hz. Damping Factor: 45 (8) ohms at 1kHz. Inputs: phono, tape, aux. Overload capability: 150mV 0.4% THD. Tape output (DIN) Tape 2 30mV. Scratch and rumble filters.

Tuner

Sensitivity FM: 1.8 μ V. Sensitivity AM: 15 μ V. Capture ratio: 1.0dB. Image rejection AM: 40dB. Spurious rejection FM: 100dB. IF rejection FM: 100dB. Stereo separation: 40dB. Pilot tone rejection: 40dB. THD stereo: 0.4%. Waveband coverage: FM, M.

General

Dimensions: 53 x 38.7 x 16.3cm. Woodgrain finish. Price: £212.89 (plus VAT).

SA-620 ★

Amplifier

Power output: 60W x 2 RMS. THD: 0.4% rated. Total music power: 140W. Other details as per SA-520. Price: £288.44 (plus VAT).

SA-725I

Amplifier with output 25W x 2 into 8 ohms. FR: 20Hz-20kHz. Damping Factor: 40. Inputs: phono, tape, aux, bass, treble, balance. Tuner with FM sensitivity: 1.9 μ V. AM sensitivity: 300mV. FM/AM wavebands with variable tuning. Dimensions: 48 x 37 x 14.5cm. Simulated wood cabinet. Price: to be announced.

SA-735

Amplifier output: 35W x 2. Damping Factor: 50. Inputs: phono, aux, tape 1, tape 2. Controls: bass, treble, balance, 2 tape, FM mute, filter. Other details as SA-725L.

SA-750

Amplifier output: 50W x 2 into 8 ohms. FR: 20Hz-20kHz. Damping Factor: 50. Inputs: phono, aux, tape 1 & 2. Controls: bass, treble, balance, tape duplicate, two filters, stereo, mono, loudness. Tuner sensitivity FM: 1.8 μ V. Sensitivity AM: 300mV. FM/AM coverage with variable tuning. Dimensions: 48 x 40 x 14.5cm. Simulated wood cabinet. Price: to be announced.

SA-775

Amplifier output: 75W × 2 into 8 ohms. FR: 20Hz-20kHz. Damping Factor: 30. Inputs: phono 1 and 2, aux, tape, adaptrol. Other details as SA-750 except FM sensitivity 1.7mV and dimensions: 52 × 45 × 17.8cm. Price: to be announced.

■ **TRIO**

B. H. Morris & Co (Radio) Ltd.
Precision Centre, Heather Park Drive,
Wembley, Middx. HA0 1SU.
Tel: 01-902 9422.

KR 9600 ★**Amplifier Section**

Power output: 160W. FR: 5Hz-50kHz ± 1dB. Damping factor: 50. Inputs: 2 × phono, 2 × tape, aux, mic. Controls: volume, bass, mid, treble, deviation/signal. FM muting, mode, loadness, balance, attenuator, filters speakers, sound injection.

Tuner Section

Sensitivity FM: 1.5μV. Sensitivity AM: 10μV. Waveband coverage: 88-108MHz, 450-1600kHz. Variable tuning.

General

58 × 42 × 17cm. Brushed aluminium finish. Price: £511.11 (plus VAT).

KR 2090

Amplifier output: 16W. Power bandwidth: 10Hz-60kHz. Damping Factor: 30. Inputs: phono, aux, tape. Controls: volume, balance, bass, treble. Tuner sensitivity FM: 2μV. AM Sensitivity: 20μV. Waveband coverage: AM/FM with variable tuning. Dimensions: 47 × 35 × 14cm. Finish: brushed aluminium. Price: £93.52 (plus VAT).

KR 3090

Amplifier output: 26W. Power bandwidth: 10Hz-50kHz. Damping Factor: 40. Inputs: phono, aux, tape. Controls: volume, balance, bass, treble, loudness. Tuner sensitivity FM: 2μV. Sensitivity AM: 20μV. Wavebands: AM/FM with variable tuning. Dimensions: 47 × 35 × 14cm. Finish: brushed aluminium. Price: £140.30 (plus VAT).

KR 4070

Amplifier output: 40W. Power bandwidth: 10Hz-40kHz. Damping Factor: 40. Inputs: phono, aux, tape. Controls: volume, balance, bass, treble, loudness. Tuner Sensitivity FM:



Trio KR 9600

1.9μV. AM Sensitivity: 16μV. Wavebands: FM/AM with variable tuning. Dimensions: 47 × 39 × 15cm. Finish: brushed aluminium. Price: £168.00 (plus VAT).

KR 4070 L

As KR 4070 but with Long Wave facility. Price: £181.55 (plus VAT).

KR 5030

Amplifier output: 60W. Power bandwidth: 10Hz-45kHz. Damping Factor: 30. Inputs: phono, aux, tape A, tape B. Controls: volume, balance, bass, treble, loudness, filter. Tuner sensitivity FM: 1.9μV. Sensitivity AM: x5μV. Wavebands: AM/FM with variable tuning. Dimensions: 48 × 40 × 15cm. Finish: brushed aluminium. Price: £332.22 (plus VAT).

KR 6030

Amplifier output: 80W. Power bandwidth: 5Hz-50kHz. Damping Factor: 50. Inputs: phono, aux, tape A, tape B. Controls: volume, balance, bass, treble, loudness, sub-filter. Dimensions: 48 × 40 × 15cm. Finish: brushed aluminium. Price: £295.55 (plus VAT).



We'd never sign it if it wasn't a masterpiece.

When you buy the new ADC ZLM Aliptic cartridge, you receive authenticated proof of its individual performance. That's more than you can say for just about any other cartridge. So hear the ZLM and the rest of the incredible ADC range today. They can make records you know well, sound like you're hearing them for the first time.



Audio Dynamics Corporation

A Division of BSR Limited, Powke Lane, Cradley Heath, Warley,
W. Midlands B64 5QH.

Record Decks

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADC

BSR Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

Accutrac 4000 ★

A 'computerised' turntable operated by remote control with three separate but interrelated component pieces, the automatic direct drive electronic turntable, a remote receiver and a hand-held cordless transmitter. By selection of tracks indicated numerically on the transmitter a message can be transmitted to the receiver which is located in convenient proximity to the turntable and the receiver in turn activates the turntable's arm which places the stylus precisely at the beginning of the track selected. LED (light emitting diode) winking 'eye' lets the listener know that the information has been received and held in total memory. Twenty-four commands can be programmed. Transmitter can also be programmed to reject, cue, repeat and clear, as well as play. DC brushless direct drive motor. Speeds: 33 $\frac{1}{3}$ and 45 rpm (electronic speed change). Turntable platter: die-cast aluminium alloy, diameter 306.4mm 12 $\frac{1}{16}$ in. Weight: 1.4kg (3lb 2oz). W and F: less than 0.03% WRMS (DIN 45507) \pm 0.042% weighted zero to peak. Rumble: better than -70dB (DIN 45539B), -50dB (DIN 45539A). Tonearm. Type: Tubular S-shaped, statically-balanced arm direct readout, decoupled counter-weight, electronically controlled cue, pause and muting operation, anti-skate control. Effective length: 237mm (9 $\frac{5}{16}$ in.) pivot to stylus tip. Overhang: 15mm (1 $\frac{1}{32}$ in.) Stylus tip: nude .0003in. \times .0007in. elliptical diamond. General. Power requirements: Model 4000/EW-1 120V AC 50/60Hz. Model 4000/EW-2 240V AC 50/60Hz. Model 4000/EW-3 100V AC 50/60Hz. Model 4000/EW-4 220V AC 50/60Hz. Power consumption: 12W. Accessories included: ADC

TX-1 remote control transmitter with 9V battery. ADC SX-1 remote control receiver with connecting cable. Removable hinged dust cover. Wood veneer cabinet. 45 rpm record spindle adaptor. 48in. dual phono cables. Dimensions: 47 \times 44.1 \times 15.2cm. Price: £255.20 (plus VAT).

■ AIWA

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

AP 2200

DD turntable with PU arm and cartridge, semi-automatic. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.035%, 0.065% DIN. S/N ratio: 60dB (IEC-B) 70dB (DIN-B). Turntable platter 30.6cm aluminium diecast, solid resin cabinet. Direct drive. Motor: 2-phase, 8-pole linear torque DC servo motor. Static balanced pickup arm, 215mm effective arm length. Features: front controls, adjustable insulator feet, synchronising facilities with Aiwa cassette decks. Price: £116.63 (plus VAT).

AP 2500 ★

DD turntable with PU arm. Speeds: 33 $\frac{1}{3}$, 45



ADC Accutrac 4000 Computerised Turntable



Aiwa AP 2500

★ Indicates entry is illustrated



Ariston RD 11S



Akai AP100



AR 77XB



Amstrad TP12 D

rpm. W and F: 0.03%, 0.04% DIN. S/N ratio: 60dB (IEC-B) 75dB (DIN-B). Turntable 31.4 aluminium die cast. Weight: 1.4kg, solid resin cabinet. Direct drive. Motor: 3-phase, 8-pole, 24slot FG servo motor. Static balanced pickup arm 237mm effective arm length. Features: front controls, stylus set down muting, photo electric play end detec. Price: £186.61 (plus VAT).

■ AKAI

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

AP 100 ★

Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Turntable: 300mm aluminium die cast weighing 6.1kg made of styrene. Belt driven. Motor: 4-pole synchronous. 220mm S-shaped tone arm, oil damped. Finish: metallic silver, auto return. Price: £83.95 (plus VAT).

AP 101

Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Turntable: 300mm aluminium die cast weighing 6.3kg, made of styrene. Belt driven. Motor: 4-pole synchronous. 220mm S-shaped tone arm, oil damped. Finish: metallic silver, auto stop. Price: £96.80 (plus VAT).

■ ALBA (RADIO AND TELEVISION) LTD

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

220

Plinth mounted with hinged and lift-off top cover. PU arm included with BSR P163 single auto/manual record deck. Speeds: 45 and 33 $\frac{1}{3}$ rpm. Wow: typically 0.13%. Flutter: typically 0.13%. Rumble: greater than -55dB weighted, greater than 35dB unweighted. Synchronous motor. Turntable measures 27.9cm. Belt drive. Motor: dynamically balanced, high torque synchronous 4-pole 200-240V, 50Hz. Pickup arm: S-shaped, low resonance, floating on concentric gimbal style mount, counter balanced. Satin black and polished aluminium finish. Viscous cueing control and click suppressor and muting. Price: on application.

■ AMSTRAD

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

TP12D ★

Integrated turntable fitted with pickup arm, mounted on base with transparent dust cover. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: less than 0.1% WRMS. Rumble: better than -47dB. Speed constancy: No change with $\pm 40\%$ supply volts variation. Turntable 300mm diameter. Weight: 0.75kg. Aluminium platter. Belt drive. S-shaped pickup arm. Offset angle 22°, length 220mm. Fully adjustable counterbalance and bias compensation. Standard detachable head-shell. Viscous cueing device. Finish: black veneered base with removable hinged transparent dust cover. Price: approx. £59.74 (plus VAT).

■ AR

Teledyne Acoustic Research International,
High Street, Houghton Regis,
Dunstable, Beds LU5 5QJ.
Tel: Dunstable 603151.

AR 77 XB ★

Plinth mounted, hinged lid, stylus force gauge, stylus overhang adjustment guide, connecting cables, 45 rpm adaptor and special screw-driver. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -65dB DIN 'B'. Turntable: 29.8cm. Belt drive. Motor: permanent magnet synchronous motor. Pickup arm: integral low mass tonearm with removable low mass cartridge shell. Finish: walnut base with transparent plastic hinged dust cover. Price: £75.00 or £83.00 with cartridge (plus VAT).

■ ARISTON

Ariston International (Electronics) Ltd,
Mayhole KA19 7BH, Scotland.
Tel: 0655 82424.

RD 11S ★

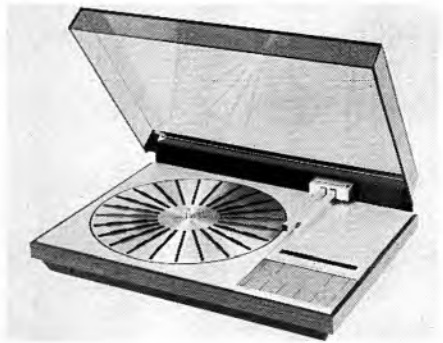
No pickup arm. Complete with plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.3%. Rumble: -74dB weighted. Turntable: 30cm dia. Weight: 3.27kg, made of mazak material. Belt drive. Motor: 24 pole sync. Finish: Rosewood, black, walnut. Price: £130.00 (plus VAT).

■ BEOGRAM

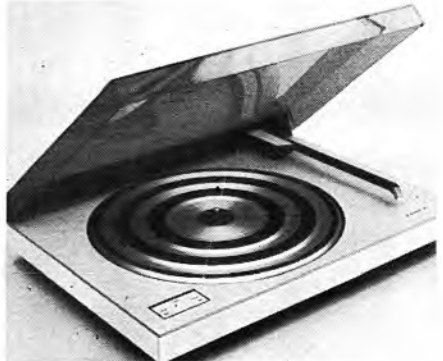
Bang & Olufsen (UK) Ltd,
Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester 21591.

Beogram 4002 ★

Plinth-mounted motor unit with tangential arm



Beogram 4002



Beogram 1902

and MMC 4000 integrated cartridge. Hinged translucent dust cover. Servo driven tone arm plus detector arm for automatic record size and speed sensing. Computer-like data unit gives completely automatic operation. Speeds: 33 $\frac{1}{3}$ and 45 rpm (with 6% fine speed adjustment). W and F: better than $\pm 0.05\%$ DIN ($\pm 0.025\%$ RMS). Rumble: better than -65dB (DIN B). Turntable: 12in. aluminium alloy radially ribbed. Belt drive DC tachomotor. Individual speed indicator lights. Power supply: 110, 130, 220 and 240V AC 50/60Hz. Price: approx. £325.00 (plus VAT).

1102

Automatic integrated record player fitted with pickup arm and MMC 3000 cartridge on plinth with hinged dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: $< \pm 0.035\%$ WRMS. Rumble: > 62 dB DIN weighted. 12in. aluminium turntable. Belt drive DC tachomotor. Magnesium alloy pickup arm, anti-skating device. Finish: teak/rosewood. Price: approx. £95.00 (plus VAT).

1902 ★

Automatic integrated record player fitted with pickup arm and MMC 4000 cartridge on plinth

★ Indicates entry is illustrated

with hinged dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $\pm 0.03\%$ WRMS. Rumble: <63dB DIN weighted. Turntable: 12in. aluminium with rubber facing. Belt drive, DC tachomotor. Magnesium alloy pickup arm, anti-skating device. Finish: teak/rosewood. Price: approx. £120.00 (plus VAT).

■ **B.I.C.**

B.I.C. 60-61 Leslie Park Road, Croydon, Surrey CR0 6TP. Tel: 01-656 2631/2.



Black Knight Rumblecure Equipment



BSR BDS 80



BSR McDonald BDS 95

BIC 960

Automatic belt drive turntable complete with base, cover and tone arm. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: less than 0.05%. Rumble: better than -65dB. 24-pole synchronous motor. Tubular aluminium tone arm. Price: on application.

BIC 980

Automatic electronic drive turntable complete with base, cover and tone arm. Pitch adjustment: $\pm 3\%$. W and F: less than 0.03%. Rumble: better than -65dB. 24-pole synchronous motor. Tubular aluminium tone arm. Built-in stroboscope. Price: on application.

920

Belt drive turntable complete with base, cover, and tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.12%. Rumble: (DIN B) better than -60dB. Turntable diameter 27cm. 24 pole 300 rpm synchronous motor 220-240V AC. Tubular aluminium pickup arm. Automatic start/stop, programme selector, damped cueing, anti-skate. Price: on application.

1000

Belt drive turntable complete with base, cover and tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.04%. Rumble: (DIN B) better than -70dB, unweighted better than -55dB. Turntable 30cm dia. Two motors, platter drive, 24 pole 300 rpm synchronous electronic control. Low speed motor for tonearm lift/traverse. Tubular aluminium pickup arm. Electronic control, pitch range $\pm 3\%$. Strobe, LED indicator controls. Full automatic facilities, remote control facilities. Price: on application.

■ **BLACK KNIGHT RUMBLECURE**

Bank Top Workshop, Currier Lane, Ashton-under-Lyne, Lancs. OL6 6TA. Tel: 061-330 2836.

Rumblecure ★

Specialise in vibration problems arising from inter-action between speakers and turntable via the structure of the building (solid-borne vibration). All items are made up to suit each individual case owing to the very complicated nature of vibration behaviour. For example Rumblecure make special top-quality corner speakers with dead-centre, centre of gravity. Anti-vibration cushioning can thus be built-in to prevent vibration entering the floor and structure. Obviously the better the outfit the greater will be the vibration problem.

It follows that this is no simple matter and Hi-Fi 'experts' (self-styled) prefer to avoid the



CEC BD 3200



CEC BD 5200

issues owing to the need to condemn turntables and forfeit 'Con'-'Review' fees.

Several attacks have been made on the forthright attitude of Rumblecure but challenges for physical confrontation, with turntables as evidence, have been avoided by those concerned. Hence the fact that Rumblecure have opted out of the trade 'rat-race'.

Countless permutations of equipment, rooms and types of structure reduce this to a very personal service where years of practical 'know-how' must be applied *on the spot*. The average cost of a visit would be about £75.00 to include the specially prepared goods made up for the outfit. This would result from the preliminary correspondence for which 2 × 9p stamps must be included with *each letter* leading up to the visit. Such visits can be at your convenience and this includes Sundays.

■ BSR

BSR Ltd, Monarch Works, Cradley Heath, Warley, Worcs B64 5QH.

Tel: Cradley Heath 65191.

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 pickup arm. Plug-in headshell. Counterbalanced pickup arm. Bias compensator calibrated for spherical and elliptical, styli. Viscous damped cue control. Calibrated stylus pressure gauge. Muting switch. Price: Module K8 £53.89, Module £46.35. Chassis K8 £34.50. Chassis £26.94.

■ BDS80 ★

Transcription-engineered single player with belt drive. Speeds: 33⅓ and 45 rpm. Total wow

and flutter: within DIN weighted specification. 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. 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: Module K5E £60.38. Module £51.75. Chassis/K5E £43.13. Chassis £39.50 (plus VAT).

■ BDS95 ★

Single play, belt driven turntable, fitted with pickup arm. Supplied mounted on a slimline plinth with smoky-grey cover, and complete with ADC K5E magnetic cartridge. Can also be supplied in chassis form. Speeds: 33⅓, 45 rpm. Wow: $\leq \pm 0.2\%$. Flutter: $\pm 0.13\%$. Rumble: weighted $> -55\text{dB}$, unweighted $> -35\text{dB}$, typically -58dB weighted. 11in. turntable of diecast alloy. Belt drive, 4-pole synchronous motor. Counterbalanced pickup arm. S-shaped, tubular aluminium on gimbal style mount. Satin black mainplate and control panel with combination of black and polished aluminium on tonearm and turntable. Price: Module/K5E £65.77, Module £56.05. Chassis/K5E £48.51. Chassis £38.80 (plus VAT).

■ CEC

Alban Electronic Supplies Ltd,
28 Spencer Street,
St. Albans, Herts AL3 5EG.
Tel: St. Albans 30236/7.

★ Indicates entry is illustrated

BD 2200

Manual turntable with hydraulic tone arm lift fitted with MC20 cartridge. Price: £79.31 (inc. VAT).

ND 3200 ★

Semi auto turntable with auto end-of-play shut off and hydraulic tone arm lift. Ortofon F15C cartridge. Price: £108.00 (inc. VAT).

BD 4200

Auto turntable with repeat play facility. Ortofon F15C cartridge. Price: £119.81 (inc. VAT).

BD 5200 ★

Semi auto turntable with stroboscope and $\pm 5\%$ pitch adjustment. Ortofon F15C cartridge. Price: £129.93 (inc. VAT).

■ 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, $33\frac{1}{3}$ and 45 rpm. Wow: $<0.1\%$. Flutter: $<0.1\%$. Rumble: -65dB . $10\frac{1}{2}\text{in.}$ non-ferrous lathe-turned turntable. Precision ground belt drive. Unique drive arrangement eliminates transmission noise. Press button speed change. Low hum field. Slim line construction. Only $1\frac{3}{4}\text{in.}$ required below mounting platform. Mains: 100-120V and 200-240V 50 or 60Hz. Price: £25.48 (inc. VAT).

BD2

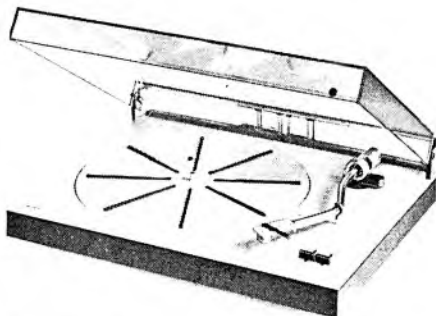
Integrated transcription unit. Includes a BD1 motor unit (mounted on a larger platform and fitted with pressbutton speed change) and a type SAU2 pickup arm. Hydraulic arm lift, operated from front. Anti-vibration mounted. Supplied either chassis only or plinth mounted. Acrylic cover. Size: $12\frac{1}{4} \times 14 \times 4\frac{3}{4}\text{in.}$ (2in. below and 2in. above the platform). Price: (chassis model) £47.76 (inc. VAT); (assembly mounted on plinth complete with acrylic cover) £63.28 (inc. VAT). With auto lift off £56.27 and £71.72.

BD103

9V DC servo controlled motor with electronic speed variation on all 3 speeds — $33\frac{1}{3}$, 45 and 78 rpm. Externally housed power source, eliminating hum fields, convertible for 120 or 230V mains supply. Belt drive. Turntable, $11\frac{1}{2}\text{in.}$ diameter. Neon illuminated stroboscope underneath turntable viewed through



Connoisseur BD1



Dansk SD 1702



Dual CS 510



Dual CS 502-1

Connoisseur's Choice



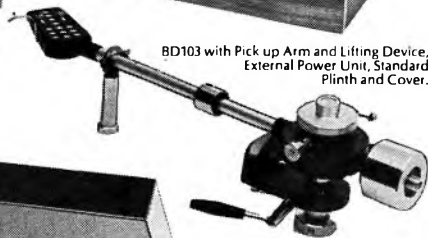
BD101 with SAU4 Pick Up Arm, Standard Plinth and Cover.



BD103 with Pick up Arm and Lifting Device, External Power Unit, Standard Plinth and Cover.



SAU2 Pick Up Arm with Standard Headshell



SAU4 Pick Up Arm with Light Weight Metal Headshell

The Connoisseur Range of Precision High Fidelity Turntables and Pick Up Arms.

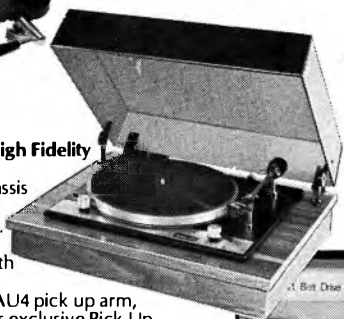
The **BD1** available in Kit Form, as a Chassis Model or mounted on Standard Plinth and Cover with pick up mounting disc.

The **BD2/A** fitted with SAU2 Arm available on Standard or Compact Plinth and Cover and as Chassis model.

The new **BD101** two speed unit with SAU4 pick up arm, and the **BD103** three speed unit with its exclusive Pick Up Arm and Lifting Device External Power Source: are both available on Standard or Compact Plinth and Cover. Also without pick up arms but with mounting discs to allow most high quality arms to be used.

In terms of Pick Up Arms the new **SAU4** with light weight metal headshell and a whole range of features, specially designed for high compliance cartridges, joins the established **SAU2** as a further option for the Connoisseur.

For Full Specification Details, Refer to Directory Entries, Your Local Dealer or Direct to...



BD2/A with SAU2 Pick Up Arm, Standard Plinth and Cover.

BD1 Kit



Connoisseur

Write for further details to:
A. R. Sugden & Co. (Engineers) Ltd.
 Manufacturers of Connoisseur Sound Equipment,
 Connoisseur Works, Atlas Mill Road,
 Brighouse, West Yorkshire HD6 1ES
 Telephone: Brighouse (0484) 712142,
 Telex: 517144 Sugden G
 Telegrams & Cables: Connoisseur Brighouse.

garbage in! garbage out!

Said about computers, but equally true about Hi-Fi. No matter how expensive or advanced your arm, cartridge, amp and speakers... if you feed in a rubbish signal you get a rubbish sound out. Think about it before you spend another penny on your system. Pounds paid for your amp and speakers and pennies for your turntable mean only one thing... pounds down the drain. You might as well throw the entire system in the bin!

At Linn Products our objective is musical satisfaction from disc material. Bearing this in

mind we have produced the finest disc source around in the LP12.

You may quibble about the price but you'll save a fortune in the long run, and get the result you wanted first time. By building round our turntable you get peak performance from your other components.

Ask your dealer for an A - B demonstration... provide your own amp and speakers if you want.

The Linn-Sondek LP12 will provide the results... Quality IN... Quality OUT...!



 **LINN**
SONDEK
simply better!

Linn Products Ltd., Sondek Division, 235 Drakemire Drive, GLASGOW G45 9SZ U.K. Tel: 041-634 3860 Telex: 77301

mirror at front of plinth available with either 50 or 60Hz stroboscope. Adjustable magnetic bias. Stylus balance. Hinged acrylic dust cover. Price: £109.69 (plus VAT). Also avail-

■ DANSK

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs ST5 0SW.
Tel: Newcastle (Staffs) 615131.

Dansk 1702-1 ★

Ultra slim styling. Voltage 110/220V AC, 50/60Hz. Motor: 32 pole synchronous motor. Speeds: 45 and 33 $\frac{1}{3}$ rpm. Speed control: stroboscope, illuminated by neon lamp. Transmission: space drive with flat neoprene belt. W and F: less than 0.08% (DIN 45507). Rumble: better than 45dB unweighted, better than 60dB weighted (DIN 45539). Turntable: diameter 300mm. Pickup arm. Type: Dansk. Overhang: 16mm. Stylus pressure adjustment: 0.2gm/0-20mN. Pickup lift: viscosity damped. Anti-skating: magnetic action. Pickup. Type: Ortofon F15Q. Frequency range: 20-18,000Hz \pm 1dB. Channel separation: 20-20,000Hz better than 25dB at 1kHz. Output voltage: 1mV \pm 1dB at 1kHz 1cm* \times sec. Stylus pressure: 0.75-2gm/7.5-30mN. Stylus angle: 15 μ . Compliance: 25 \times 10⁻⁶cm/dyne. Stylus-tip-radius: 15 μ m (0.015mm). Cabinet: Dimensions: 100 \times 450 \times 360mm. In teak or black. Price: £129.20 (plus VAT).

■ DUAL

Audiodecks Ltd, PO Box 7,
Sandbeck Way, Wetherby Yorksm LS22 4YS.
Tel: Wetherby 5477.

721

Direct drive, two-speed turntable fitted with Shure V 15 Mark 3LM, plinth and cover. 3kg, 30mm dia. Speeds: 33 $\frac{1}{3}$ and 45 rpm. Speed check with illuminated strobe for platter speeds of 33 $\frac{1}{3}$ and 45 rpm. For 50 or 60Hz. Overall speed variation. S/N Ratio: rumble unweighted 70dB, weighted 50dB. Size: 42.4 \times 15 \times 36.8cm. Price: £245.38 (inc. VAT).

CS510 ★

Single-play turntable with mechanical sensor to tell when the tonearm is lined up precisely over the lead-in groove. When the record finishes the tonearm is lifted by cue-control and the motor shuts off automatically. Belt driven. A simple system which filters out motor vibration. Features include: 8-pole synchronous motor. 12in. dynamically balanced 2-speed platter with inbuilt gear cut strobe. Viscous-damped cue-control. Multi-scale

antiskate. Low mass gimbal tonearm and Shure M95D cartridge. Weighted rumble according to DIN 45 500 is better than -63dB. Wow and flutter is better than 0.08% according to DIN 45 507. Price: £136.51 (inc. VAT).

CS704

Direct drive, two speed turntable fitted with Shure V15 type 3 cartridge, including pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $<\pm 0.05\%$, rumble weighted: >46 dB, unweighted: >67 dB. Die-cast aluminium platter 30cm, weight 1.8kg. Strobe for speed control. Counterbalanced tubular aluminium tonearm. Dimensions: 42.4 \times 15 \times 36.8cm. Price: £173.64 (plus VAT).

CS1249

Belt drive two speed turntable fitted with Shure DM 103M-E magnetic cartridge including pickup arm plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $<\pm 0.06\%$. Rumble unweighted: >44 dB, weighted >63 dB. Anti-magnetic, dynamically balanced detachable 30.5cm turntable, weight 1.3kg. All-metal tonearm with four-point gimbal suspension. Dimensions: 42 \times 14.8 \times 36.5cm. Price: £156.20 (plus VAT).

CS502-1 ★

Integrated unit with pick-up, console, cover and cartridge. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: $<0.09\%$ peak. Rumble: 7-62dB DIN B. Turntable: 12in. cast aluminium alloy, dynamically balanced. Weight: 1.3kg. Belt drive. Motor: 110/220 8-pole asynchronous. Pickup arm has low mass full size, true 4-point gimbal. Friction: Hor <15 mg Vert <7 mg. Finish: Walnut. Features: Auto-lift off at record end. Pre-set pitch adjustment. Price: £92.82 (plus VAT).

CS604

Similar to CS502-1 but neon illuminated dot strobe on turntable edge and direct drive motor. Pickup as special double anti-resonator balance weight. Features: Auto-return, cue indent facility. Price: not yet known.

■ EAGLE

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

D4500

Manual turntable with pickup arm/headshell in black plinth/smoked acrylic dustcover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $>0.05\%$. Rumble: better than 50dB. Turntable: 300mm aluminium alloy. Belt drive. 4-pole synchronous motor. S-shaped pickup arm with

★ Indicates entry is illustrated



Elac PC 870



Environmental Sound EST4



Empire 698

bias compensation, adjustable counterweight and detachable headshell. Finish: matt black. Features: lift, lower. Price: on application.

D7500

Semi automatic turntable with pickup arm/headshell in grey plinth with smoked acrylic dustcover. Details as D4500. Finish: grey matt and silver. Price: on application.

■ ELAC

Paul Spring Electronics Ltd,
19-23 Masons Hill, Bromley, Kent BR2 9HD.
Tel: 01-464 0823.

PC 870 ★

Deck with pickup arm, cartridge, plinth and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $\pm 0.07\%$ Rumble: $>60\text{dB}$ DIN 45539. Turntable 30.2in. dia. made of aluminium. Belt drive plus idler engaging during arm cycling. 4-pole synchronous motor. Elac 24cm arm fitted with STS 455-12 moving magnetic cartridge. Price: £108.00 inc. cartridge (plus VAT).



Fons International Mark I

PC 831

Deck with pickup arm, cartridge, plinth and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $\pm 0.09\%$ Rumble: $>62\text{dB}$ DIN 45539. Steel turntable 28.5in. dia. Belt drive. Fully auto and changer. 4-pole synchronous motor. Elac 20.5cm arm fitted with Elac moving magnet cartridge ST 5355-17. Price: £82.00 inc. cartridge (plus VAT).

■ EMPIRE SCIENTIFIC

Hayden Laboratories Ltd, Churchfield Road,
Chalfont St. Peter, Bucks.

Troubador 698111 ★

Complete with PU arm, plinths and cover, but excluding cartridge. Speed: $33\frac{1}{3}$, 45 rpm. Flutter: 0.04%. Rumble: 68dB below 3.54cm/sec at 1kHz. Turntable: 12in. dia. weighing 7lb 3oz. Belt drive. Hysteresis synchronous motor 220/250V. Low mass aluminium arm using sapphire bearings for vertical or horizontal movement. Adjustment for bias and tracking

weight in $\frac{1}{4}$ gm intervals. Cable capacitance 180pF low capacity version available 70pF for CD4 use. Deck and pickup finished in satin gold in a walnut plinth with smoked glass cover. Price: £289.00 (plus VAT).

■ ENVIRONMENTAL SOUND

Environmental Sound,
Northallerton, North Yorks.
Tel: Northallerton 5434/5.

EST 4X ★

Plinth, mercury/gold contact unipivot arm. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: 66dB (DIN). Turntable weight: 3.5lb. Direct drive, DC servo motor. Pickup: unipivot, mercury gold contacts, magnetic aids compensation. Finish: Black. Features: adjustable feet, built-in level mounting. Price: £142.40 (plus VAT).

EST 7

As EST 4X except pickup arm: low mass cartridge. Split bearings, horizontal/vertical movement. Price: £142.40 (plus VAT).

EST 6

Plinth without arm. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: 66dB. Turntable weight: 3.5lb. Direct drive, DC servo motor. Finish: Black. Features: adjustable feet, built-in level mounting. Price: £94.40 (plus VAT).

EST 5

Plinth with double gimbal arm. Details as EST 6 except: pickup has double gimbal arm and gravity bias. Price: £113.60 (plus VAT).

■ FONS

Fons International (Electronics) Ltd,
Maybole, Ayrshire KA19 7BH, Scotland.
Tel: Maybole 82424.

International Mk I ★

Variable speed transcription record deck complete with plinth and cover. Speeds: 29-100 rpm (variable). Wow and Flutter: $\pm 0.03\%$. Rumble: -70dB unweighted relative to a 10cm/sec tone. Speed constancy: better than 0.09%. Turntable: 12in. aluminium. Turntable weight: 5lb (1.82kg). Belt drive. DC servo-controlled motor. Finish: plinth available in rosewood (extra). Tone arm not supplied. Price: £108.00 (plus VAT).

RD 11S

Two-speed belt-drive turntable complete with plinth and cover. Platter weight: 9lb. W and FG 0.03%. Rumble: -74dB weighted. Further details on application.

■ GARRARD

Garrard Engineering Ltd,
Newcastle Street, Swindon, Wilts SN1 2LH.
Tel: Swindon (0793) 35381.

GT20 ★

Manual single record player with integrated plinth and spring counter-balanced tinted dust cover. Speeds: $33\frac{1}{3}$, 45 rpm. Wow and Flutter (DIN) slow weighted: 0.12%. Rumble DIN A: -43dB. Rumble DIN B: -63dB. Die cast aluminium turntable 311mm dia, inertia 160kgm. Flexible belt drive, 4-pole synchronous motor. Pickup arm: fully counter-balanced low mass 'S' shape; combination jewel and ball bearing pivots; viscous damped cue control; bias compensation; screw-in removable headshell. Metallic finish with matching controls. Price: without cartridge £69.95, with Shure M75/ED II £81.95 (plus VAT).

GT25P ★

Semi-automatic two speed record player with integrated plinth and spring counter-balanced tinted cover. Also available as a record changer to order. Speeds: $33\frac{1}{3}$, 45 rpm. Wow and Flutter (DIN) slow weighted: 0.12%. Rumble DIN A: -43dB. Rumble DIN B: -63dB. Die-cast aluminium turntable 311mm dia, inertia 160kgm. Flexible belt drive, 4-pole synchronous motor. Pickup arm: fully counter-balanced low mass 'S' shape; combination jewel and ball bearing pivots; viscous damped cue control; bias compensation calibrated for elliptical and conical styli; screw-in removable headshell. Metallic finish with matching controls. Price: without cartridge £79.95 with Shure M75/ED II £91.95 (plus VAT).

GT35P ★

Semi-automatic two speed record player with DC Servo controlled motor, pitch control and stroboscope. Integrated plinth with spring counter-balanced tinted cover. Also available as a record changer. Speeds: $33\frac{1}{3}$, 45 rpm $\pm 3\%$. W and F (DIN) slow weighted: 0.10%. Rumble DIN A: -45dB. Rumble DIN B: -65dB. Die-cast aluminium turntable with strobe, 319mm dia, inertia 220kgm. Flexible belt drive. Pickup arm: fully counter-balanced 'S' shape; combination jewel and ball bearing pivots; viscous damped cue control; bias compensation calibrated for elliptical and conical styli; screw-in removable head shell. Metallic finish with matching controls. Price: without cartridge: £97.95 with Shure M75/ED II £109.95 (plus VAT).

★ Indicates entry is illustrated



Garrard DD 75



Garrard SP 25 Mk V



New Garrard range showing L-R GT 25P, GT 35P, GT 20

SP25 Mark V ★

Two-speed automatic record player with plinth and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F (DIN) slow weighted: -0.20% . Rumble DIN A: -35dB . Rumble DIN B: -55dB . Die-cast aluminium turntable 280mm dia. Flexible belt drive, 4-pole synchronous motor. Pickup arm: 'S' shaped tubular with ball-bearing pivot, viscous damped cue control, adjustable calibrated stylus force setting calibrated bias compensator. Price: without cartridge £47.90 with Shure M75/6SM £53.20 (plus VAT).

DD75 ★

Semi-automatic single player with DC direct drive motor and automatic electronic lift and shut off, plinth and cover. Speeds: $33\frac{3}{4}$, 45 rpm $\pm 3\%$. W and F (DIN) slow weighted: 0.06% . Rumble DIN A: -50dB . Rumble DIN B: -70dB . Die-cast aluminium turntable 308mm dia, inertia 224kgm. Multi-pole motor. Pickup arm: 'S' shaped low mass with jewel/ball pivots, stylus force adjustment, calibrated counter-balance weight, viscous

damped cue control, electronic variable speed control with illuminated stroboscope. Finish in natural teak or matt black. Price: without cartridge £116.60 with Shure M75/ED II £130.50 (plus VAT).

■ HITACHI

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

HT 350 ★

Direct unitorque 308mm aluminium die-cast turntable. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.04% . Static balance tubular 'S' tone arm, oil damped. Length: 301mm, overhang: 15mm. Price: £99.50 (inc. VAT).

PS 48 ★

Direct unitorque 308mm aluminium die-cast turntable. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.025% . Static balance tubular 'S' tone arm, oil damped. Length: 301mm, overhang: 15mm. Price: £146.00 (inc. VAT).

PS 58

Details as above. Price: £169.00 (inc. VAT).

■ ITT

ITT Consumer Products (UK) Ltd,
Chester Hall Lane,
Basildon, Essex SS14 3BW.
Tel: Basildon 3040.

8011 ★

Complete record playing unit with plinth and cover, arm, cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.1% DIN. Rumble: -65dB. Turntable of aluminium alloy die-casting, 31cm dia. Direct drive. DC servo 12 pole motor. Static balance pickup arm, effective length 215mm, stylus force 0.3g, cartridge mass 4.5-11g. Semi-auto operation. No rec. retail price.

8012 ★

As above except: Rumble: -70dB. Turntable dia: 32cm. Length of PU arm: 227mm. No rec. retail price.

■ JVC

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

JL-F50

Fully auto direct drive. DC servomotor. W and F: 0.05%. Platter: 31cm die-cast. Statically-balanced tone-arm. No rec. retail price.

JL-A20

Automatic return belt drive. 4-pole synchronous drive motor. W and F: 0.08%. Platter: 30cm dia. Aluminium die-cast. Statically-balanced tone arm. No rec. retail price.

JL-A40 ★

Automatic return direct drive. DC servomotor. W and F: 0.05%. Platter: 31cm aluminium die-cast. Statically-balanced tone arm. No rec. retail price.

JL-A15

Automatic return belt drive. 4-pole synchronous motor. W and F: 0.08%. Platter: 30.9cm aluminium die-cast. Statically balanced tone arm. No rec. retail price.

QL-10

Quartz-locked turntable. Motor: core-less DC servomotor. W and F: 0.04% DIN. No rec. retail price.



Hitachi PS48



Hitachi HT 350



ITT 8011



ITT 8012

★ Indicates entry is illustrated



JVC JL-A40



Lenco L236



Lenco L133



Lenco L833

QL-7

Quartz-locked turntable. DC servomotor. W and F: 0.045%. No rec. retail price.

■ Lenco

C. E. Hammond and Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

L133 ★

Transcription unit on plinth with cover. Rumble: RFS -45dB, RGS +62dB. W and F: $\pm 0.08\%$. Anti-skate belt drive with 16 pole synchron motor. Speeds: 33 $\frac{1}{3}$, 45 rpm. Manual record player with auto-stop, on/off switches. Price: £68.00 (plus VAT). £7 extra for Lenco M100 cartridge.

L236 ★

Version with auto start and return. Rumble: RFS -46dB, RGS -65dB. W and F: $\pm 0.08\%$. Anti-skating. Belt drive with 16 pole synchron motor. Manual record player with auto-stop. Speeds: 33 $\frac{1}{3}$, 45 rpm. On/off switches. Price:

£80.00 (plus VAT). £7 extra for Lenco M100 cartridge.

L833 ★

Direct drive turntable with electronic high frequency auto stop. Two speed with adjuster. Illuminated strobe, anti-skating. Tonearm with 0.5mN tracking force and lift. Complete with base and dust cover. Price: £135.00 (plus VAT). £12 extra for Shure M75E cartridge.

L830

Manual version of above. Price: £115.00 (plus VAT). £12 extra for Shure M75E cartridge.

■ LINN-SONDEK

Linn Products Ltd, 235 Drakemire Drive,
Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.

LP12 ★

Single speed (33 $\frac{1}{3}$ rpm) 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. Stan-

dark plinth finish afrormosia, 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: £150.00 (chassis only), £185.00 (with plinth and cover), £295.00 (with Grace G707 arm). All plus VAT.

■ LUX

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

PD 131 ★

No arm supplied, but bayonet fitting to take SME arm. Fitting available for other arms. Mounted rosewood base and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -70dB. Turntable: 30cm dia, of aluminium die-cast. Direct drive. Brushless DC servo motor. Features: mirror system stroboscope. Price: £260.00 (plus VAT).

PD 282 ★

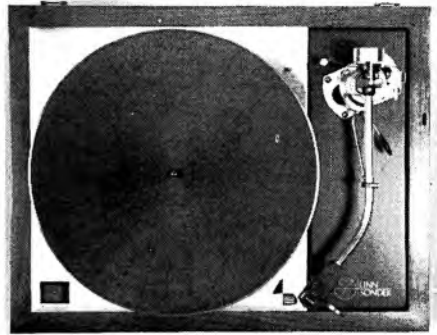
PU arm fitted. Mounted in rosewood base with perspex cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -60dB. Turntable: 30 cm dia, aluminium die-cast. Direct drive motor. AC servo 6-pole condenser motor. Pickup arm has extremely low bearing friction, lateral balance, anti-skate control, oil-damped cueing. Features: stroboscope indicated on outer edge of turntable by means of neon light. Rosewood finish. Price: £160.00 (plus VAT).

■ LYRICHORD

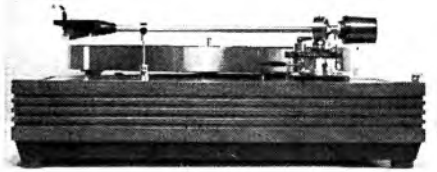
N. Miers & Co Ltd, 28 Piercing Hill,
Theydon Bois, Epping, Essex CM16 7LE.
Tel: 01-849 2611/2.

BDS80

Single player with low mass PU arm available in chassis form or plinth mounted. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: typically $\pm 0.13\%$. Rumble: typically -58dB. Turntable: precision machined alloy, weighing 4lb. Belt drive. Motor: four-pole dynamically-balanced high torque synchronous 240V 50Hz. PU arm: low mass square section aluminium, viscous cueing device ensures featherlight touchdown of stylus. Finish: satin black mainplate and a combination of black and silver on tonearm, turntable and control panel. Price: £67.50 (plus VAT).



Linn-Sondek LP12 (aerial view)



Linn-Sondek LP12 (side view)



Lux PD 131



Lux PD 282

★ Indicates entry is illustrated



Lyrichord 182



Lyrichord 141

182 ★

Single player with 'S' shaped pickup arm, mounted on afrosmosia veneered plinth with lift off dust cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W: less than 0.3%. F: less than 0.08%. Rumble: -29dB. Turntable with 10 $\frac{1}{2}$ in. dia platter of pressed aluminium. Pulley drive. Two-pole motor. Features: fine counterbalance, cue lever, satin black mainplate with brushed aluminium trims. Price: £62.40 (plus VAT).

141 ★

Autochanger mounted on afrosmosia veneered plinth with lift off dust cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W: 0.2%. F: 0.06%. Turntable of pressed steel, 11in. dia. Pulley drive. Two-pole motor. Features: low mass tubular arm, cue lever, arm jock, satin black mainplate. Price: £56.67 (plus VAT).

129

Autochanger mounted on plinth with dust cover. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W: 0.35%. F: 0.08%. Turntable: 11in. platter. Pulley drive. 2-pole motor. Tubular arm, pressure indicator, satin black mainplate. Price: £53.16 (plus VAT).

BDS 95

'S' shaped low resonance pickup arm, single player with semi-auto. Mounted on plinth with friction hinged cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W: +0.13%. F: +0.13%. Rumble: -55dB weighted, -35dB unweighted. Turntable: 12in. dia. Belt drive. 4-pole high torque motor, satin black mainplate. Price: £72.96 (plus VAT).

■ MARANTZ

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

6300 ★

Turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: -60dB. Turntable: 31cm dia weighing 1.6kgm. Direct drive DC servo controlled motor. S-shaped arm statically balanced. Price: £188.44 (plus VAT).

6100 ★

Turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.08%. Rumble: -60dB. Turntable: 30cm weighing 1.6lbs. Belt drive AC sync. motor. S-shaped arm, statically balanced. Finish: walnut finish. Price: £94.67 (plus VAT).

6150 ★

Turntable complete with pickup arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.045%. Rumble: -60dB. Turntable: 308mm. weight 1.3kgm. Direct drive. S-shaped pickup arm, static balanced. Finish: walnut vinyl. Price: £117.33 (plus VAT).

■ MONITOR AUDIO LTD

347 Cherry Hinton Road, Cambridge CB1 4DJ.
Tel: Cambridge: 42898/46344.

ET 500

Direct drive with platter mounted to motor shaft. Arm extra, various mountings available. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.055%. Rumble: -65dB. Turntable with special lead laminated base. 18V direct drive motor. Wood finish in teak/walnut/rosewood or black. Price without arm: £119.00 (plus VAT).

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd.
107-109 Whitby Road, Slough,
Berks SL1 3DR.
Tel: Slough 27516.

SL-18

Complete with arm, plinth and cartridge.

RECORD DECKS

Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.06%. Rumble: -65dB DIN 'B'. Aluminium die-cast platter measuring 30cm. Belt drive, FG servo DC motor. Universal 'S' shaped arm with detachable headshell. Simulated rosewood, auto return arm. Price: £65.73 (plus VAT).

■ PHILIPS

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

GA 437

Belt driven deck with GP 400 Super M pickup, plinth, dust cover. Speeds: $33\frac{1}{3}$, 45 rpm. Wow and F: <0.15%. Rumble: <38dB (DIN A), <-58dB (DIN B). Turntable dia: 29.2cm. Synchronous 24 pole motor. Black/silver finish, stylus force gauge and side thrust compensation. Price: on application.

AF 777 ★

Electronic auto record deck. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.05% or 0.08% DIN. Rumble: -43dB DIN 'A', -65dB DIN 'B'. Low mass tubular aluminium tone arm, effective length 215mm. Turntable of aluminium 308mm dia. DC direct control belt drive motor. Price: on application.

AF 877 ★

Electronic semi-auto record deck. Speeds:



Marantz 6300



Marantz 6100



Marantz 6150



Philips AF 777



Philips AF 877

★ Indicates entry is illustrated

33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%, or 0.05% DIN. Rumble: -50dB DIN 'A', -dB DIN 'B'. Tubular aluminium tone arm, low mass. Effective arm length: 215mm. GP401 Super M II cartridge. Turntable: die cast aluminium with odourless rubber mat, dia 310mm. DC direct control belt drive motor. Price: on application.

AF 677★

Semi-auto with speeds of 33 $\frac{1}{3}$, 45 rpm. W and



Philips AF 677



Philips AF 977



Pickering FA 230

F: 0.08% DIN or 0.05%. Rumble: -43dB DIN 'A', -65dB DIN 'B'. GP 400 Super M Mk II cartridge. Pressed aluminium turntable, dia 308mm. DC/direct control — belt drive. Price: on application.

AF 777

Auto record player. As above.

AF 877

Semi-auto with speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03% or 0.05% DIN. Rumble: -50dB DIN 'A', -70dB DIN 'B'. GP 401 Super M Mk II cartridge. Die cast aluminium turntable 310mm dia. DC/direct control — belt drive. Price: on application.

AF 977 ★

As above.

■ **PICKERING**

Highgate Acoustics,
38 Jamestown Road, London NW1.
Tel: 01-267 4936.

FA 230 M ★

Complete module on plinth with Pickering XSV 3000 cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.07%. Rumble: -60dB DIN. Turntable: 12in. alloy. Belt drive. Motor: 24-pole synchronous motor. Pickup arm: aluminium with unipoise mounting. Finish: aluminium/black. Features: Plinth with hinged lid, gyropoise turntable mounting. Price: £172.00 (plus VAT).

■ **PIONEER**

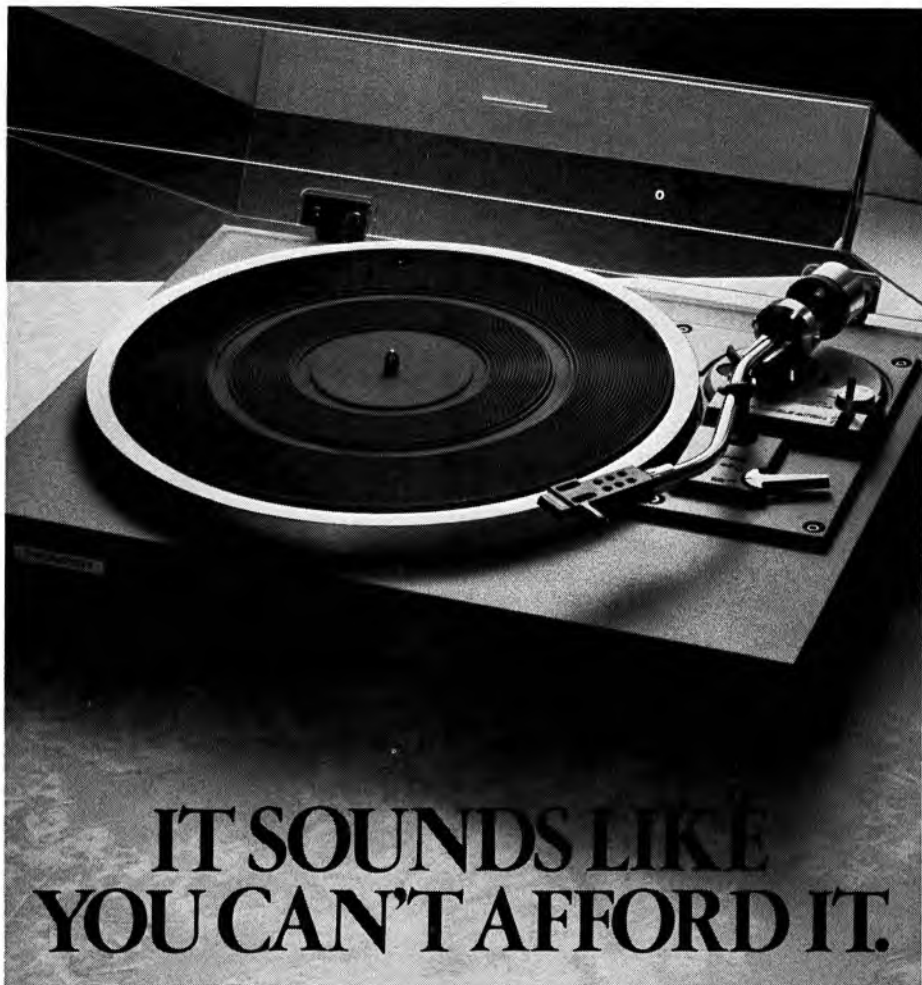
Shiro (UK) Ltd, Shiro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652227.

PL-510A ★

Integrated turntable and arm with plinth and cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: not more than 0.03% WRMS. S/N ratio: more than 60dB. Aluminium alloy die cast turntable, 12in. (300mm) diameter. Direct drive system. Brushless DC servo-controlled motor. Static balance type S-shaped pipe arm. Usable cartridge weight 4gm (min) to 10gm (max). Double floating suspension system. Fine speed adjustment. Plug-in type headshell. Price: on application.

PL 530

Direct Drive Automatic drive deck integrated turntable with S shaped pipe arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm to within $\pm 2\%$ with strobe light. W and F: 0.03%. Rumble: S/N ratio 70dB (DIN B). Turntable: 330cm



IT SOUNDS LIKE YOU CAN'T AFFORD IT.

The Pioneer PL 514 turntable has a wow and flutter figure of 0.055% (WRMS). And a signal-to-noise ratio of 65dB (DIN B).

This is despite the fact that it's belt-driven.

Despite the fact that it's fitted with that hi-fi buff's nightmare, an auto-return mechanism.

And despite the fact that it's no more expensive than a lot of turntables that sound a lot cheaper.

For full details, write to Shiro (UK) Limited, Shiro House, The Ridgeway, Iver, Bucks SL0 9JL.

 **PIONEER**[®]

EVERYTHING YOU HEAR IS TRUE.

ITS PRICE MAY COME AS A SHOCK TO YOU.



Just recently we've been telling you that whilst Trio may well be the finest hi-fi you'll find, it certainly won't be the cheapest.

Thus warned, you wouldn't be too shocked to learn that our most expensive turntable costs around £415.00.

What might shock you, however, is the price of our KD-1033 B turntable in the picture.

It runs into two figures.

Or to put it another way, it costs considerably less than sixty pounds*.

Which sounds ridiculously little for anything made by Trio, who were one of the first Japanese companies to specialise in hi-fi.

But perhaps you're thinking: 'Yes, but this turntable is probably very mean on specifications'.

In which case look up the KD-1033 B in our free catalogue and get another shock.

You can get your catalogue by writing to us. You'll find our address below.

*excluding cartridge.

 **TRIO**

Sadly, it's not cheap.

B. H. Morris and Co. (Radio) Ltd. Dept. C, Precision Centre, Heather Park Drive, Wembley, Middx. HA0 1SU

Agents in Eire: Peat Wholesale Ltd., Dublin.



Pioneer PL 510A

made of diecast aluminium alloy. Brushless DC servo motor for platter drive. Warren motor for automatic functions. Pickup arm: Static balanced S shaped pipe arm with plug in headshell. Effective arm length 221mm. Overhang 15.5mm. Usable cartridge weight 4gm minimum to 14.5gm maximum. Anti-skating device. Lateral balancer. Stylus pressure direct read out counter weight. Viscous damped cueing device. Walnut finish. Size: 48 × 17 × 39cm. Price: on application.

PL 570 ★

Integrated turntable and arm with plinth and cover, fully automatic. Speeds: 33 $\frac{1}{3}$, 45 rpm controlled to within $\pm 6\%$ with strobe light. W and F: 0.025%. Rumble: S/N ratio more than 70dB (DIN B). Aluminium alloy diecast turntable 32.5cm dia. Direct drive. Quartz PLL Hall motor. Pickup arm details: static balanced S shaped pipe arm. Effective arm length 237mm. Overhang 15mm. Usable cartridge weight 4gm (minimum) to 13.5gm (maximum). Anti-skating device. Lateral balancer. Stylus pressure direct read out counter weight. Arm height adjuster to within plus or minus 5mm. Cueing device. Plug in headshell. Walnut finish. Price: on application.

PL 550

Integrated manual turntable with arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm controlled to within 6% with strobe light. W and F: 0.025%. Rumble: S/N ratio more than 70dB (DIN B). Aluminium alloy diecast turntable 32.4cm dia. Direct drive. Quartz PLL Hall motor. Details of the PL 550 turntable: tone arm. Static balanced S shaped pipe arm. Effective arm length 221mm. Overhang 15.5mm. Usable cartridge weight 4gm minimum to 14.5gm maximum.



Pioneer PL 570

Anti-skating device. Lateral balancer. Stylus pressure direct read out counter weight. Arm height adjuster to within plus or minus 5mm. Viscous damped cueing device. Plug-in headshell. Spare headshell. Walnut finish. Price: on application.

PL 514

Plinth mounted with tone arm and dust cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: no more than 0.055% WRMS. Rumble: more than 65dB (DIN B). Belt driven with 4 pole synchronous motor. Tone arm: Static balanced S shaped pipe arm, effective arm length 221mm. Overhang: 15.5mm. Usable cartridge weight: 4gm min to 10gm max. Removable headshell auto return simple controls, grey metal like vinyl plinth. Price: on application. Dimensions: 44 × 36.5 × 14cm. Weight: 7.5kg.

PL 516

Plinth mounted with tone arm and dust cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. Wow and Flutter: no more than 0.045% WRMS. Rumble: more than 68dB (DIN B). Belt driven with FG servo controlled DC motor. speed controls to within plus or minus 2% with strobe light. Tone arm: Static balanced S shaped pipe arm, effective arm length 221mm. Overhang: 15.5mm usable cartridge weight 4gm min to 10gm max. Removable headshell auto return. Quick start grey metal like vinyl plinth. Price: on application. Dimensions: 44 × 36.5 × 14cm. Weight: 7.5kg.

PL 518

Plinth mounted with tone arm and dust cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: no more than 0.03% WRMS. Rumble: more than 73dB (DIN B). Direct drive with DC servo motor. Tone arm: S shaped pipe arm with lateral bal-

★ Indicates entry is illustrated

ance weight. Static balanced. Effective arm length 221mm. Overhang: 15.5mm usable cartridge weight 4gm min to 10 max. Removable headshell. Auto return. Strobe speed control. Grey metal like vinyl plinth. Price: on application. Dimensions: 44 × 14.5 × 36.5cm. Weight: 9.5kg.

PLC 590

Integrated turntable plinth mounted with dust cover and supplied with three tone arm mounting plates. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: no more than 0.025% WRMS. Rumble: 75dB (DIN B). Aluminium alloy diecast turntable 320mm diameter. Direct drive quartz PLL motor. Direct readout speed indicator (Analogue) quartz lock controls for platter speed (Switchable). Quick stop facility diecast cabinet. Dimensions: 49 × 40.6 × 18.5cm. Weight: 14kg. Price: on application.

PL 520

Plinth mounted with tone arm and dust cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: no more than 0.03% WRMS. Rumble: more than 73dB (DIN B). Direct drive with brushless DC servo motor. Tone arm: S shaped tone arm with warren motor for automatic functions. Effective arm length 221mm. Overhang 15.5mm. Usable cartridge weight 4gm min 10 gm max. Removable headshell. Full automatic operation. Strobe speed control, vinyl plinth with controls along front edge. Dimensions: 46 × 39.5 × 17.1cm. Weight: 8.5kg. Price: on application.

■ REALISTIC

Tandy Corporation (Branch UK).
Bilston Road. Holyhead Road.
Wednesbury. Staffs WS10 7JN.
Tel: 021-556 6101/2.

LAB 100

Price: £59.95 (plus VAT).

LAB 400

Price: £124.50. Full details on application.

■ REGA

Rega Research Ltd.
Swaines Industrial Estate.
Ashingdon Road. Rochford. Essex.
Tel: Southend 546674.

Planar 2

Complete integral unit with arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Turntable: 12in glass. Belt drive. Motor: 24 pole synch dynamically suspended and derated. Pickup arm suitable for most cartridges. Finish: Hardwood/black. Price: £78.00 (plus VAT).

302



Revox B790



Rotel RP 3300

Planar 3

As above in black finish. Price: £117.64 (plus VAT).

Planet

As above in Black and White finish. Price: £88.33 (plus VAT).

■ REVOX

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

B 790 ★

Complete in plinth, cover, with pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm and variable $\pm 7\%$. W and F: 0.05%. Turntable: 313mm dia. Direct drive. Tangential tracking, ultra short servo driven. Price: £345.00 (plus VAT).

■ ROTEL.

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

RP 1300

'S' shaped arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.08%. Aluminium alloy die-cast turntable measuring 310mm dia. Belt drive. 4-pole synchronous motor. Pickup arm static balanced with plug-in headshell, oil damped cue, direct readout stylus gauge, counter-weight, anti-skate device. Finish: brushed metallic. Price: £68.08 (plus VAT).

RP 2300

As above but automatic. Price: £78.07 (plus VAT).

RP 3300 ★

'S' shaped arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05%. Aluminium alloy diecast turntable measuring 310mm dia. Belt drive. FG DC servo motor. Static balanced pickup arm with plug-in headshell, oil-damped cue, stylus gauge and anti-skate device. Finish: brushed metal. Features: speed control, stroboscope. Price: £86.73 (plus VAT).

RP 5300

As RP 330 except: W and F: 0.04%. Brushless servo motor. Price: £111.52 (plus VAT).

■ SHARP OPTONICA

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

RP 2727

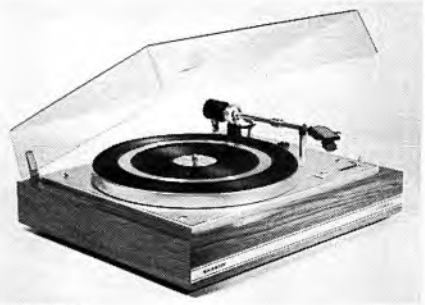
Fully automatic, direct drive, plug-in headshell. Speeds: 33 $\frac{1}{3}$, 45 rpm. W: \pm 0.45%. F: 0.03%. Rumble: better than 65dB. Aluminium die cast turntable with stroboscope marks, measuring 31cm dia. DC coreless motor with frequency generator, servo control mechanism. 'S' shaped pickup arm fully automatic, static balance, oil damped cue. Effective length: 210mm. Two independent pitch controls. Price: £133.24 (plus VAT).

■ SKANTIC

Skantic (UK) Ltd, Station Road,
Edenbridge, Kent TN8 6EY.
Tel: Edenbridge 5231.

4221 ★

Semi-auto with single lever operation for start, stop, pickup arm lift and set down. Adjustable anti-skating and stylus pressure devices. Elec-



Skantic 4221



Skantic 9341

tronic speed switch 33 $\frac{1}{3}$ and 45 rpm. Shure M75MB type 2 magnetic cartridge. 16 pole synchronous motor with belt drive. Tinted acrylic dust cover. Price: on application.

9341 ★

Full auto. Single lever operation for start, stop, pickup arm lift and set down. Adjustable anti-skating and stylus pressure devices. Electronic speed switch 33 and 45 rpm. Shure M75MB type 2 magnetic cartridge. 16 pole synchronous motor with belt drive. Tinted acrylic dust cover. Price: on application.

■ SONY

Sony (UK) Ltd,
Consumer Information Showroom,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

PS 11

Fitted with pickup arm and Sony VL32G cartridge. Plinth mounted in special low-resonance material. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: 70dB (DIN). Turntable: 32.6cm, diecast aluminium. Direct drive. Motor: Brushless slotless DC servo. Pickup arm: static balanced tone arm. Semi-auto. No rec. retail price.

★ Indicates entry is illustrated



Sony PS22

PS 22 ★

As PS 11 but fully-automatic. No rec. retail price.

PS 8750

Fitted with pickup arm, plinth mounted. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.025%. Rumble: 70dB DIN. Turntable: 32cm diecast aluminium. Direct drive, crystal lock control system. AC servo motor. Pickup arm: static balanced, universal. Features: highly sensitive jewelled trunion mount for longitudinal and lateral support of tonearm. No rec. retail price.

PS-X4

Fitted with pickup arm, plinth mounted in special low resonance compound. Speeds: $33\frac{1}{3}$, 45 rpm. W: 0.025%. F: 0.045% DIN. Rumble: S/N ratio 73dB DIN. Turntable: 31.7cm, diecast aluminium. Direct drive motor. Motor: High torque brushless, slotless DC servo,

quartz locked. Pickup arm: static balanced tone arm. Semi-automatic, adjustable feet. No rec. retail price.

PX-X6 ★

As PS-X4 but fully automatic and with touch sensitive start/stop and repeat controls. No rec. retail price.

PS X-7

Details as PS-X4 except for a carbon fibre tone-arm and fluid filled turntable mat. No rec. retail price.

TTS-8000 ★

Supplied without plinth or arm. Optional plinth RS 8000 available. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.02%. Rumble: S/N ratio 70dB DIN. Turntable: 32cm diecast aluminium. Direct drive, crystal lock system. Brushless, slotless motor with DC servo system. Features: fluid filled platter mat, touch sensitive start/stop switch. No rec. retail price.

■ STRATHEARN

Strathearn Audio Limited,
Kennedy Way Industrial Estate,
Belfast BT11 9BL, N. Ireland.
Tel: Belfast 611100.

STA4 ★

Integrated automatic/manual electronic servo direct-drive turntable with plinth fitted with low mass arm. Speeds: $33\frac{1}{3}$, 45 rpm. Adjustable $\pm 6\%$. W and F: 0.11% weighted peak. Rumble: -58dB DIN B (Ref. 10cm/sec). Aluminium turntable, 277mm diameter. Weight: 1.6kgm. Motor: electronic servo controlled 110/240V 50/60Hz. Low mass pivoted arm with Ortofon FF15E cartridge. Semi-



Sony PS X6



Sony TTS 8000 and RS8000 plinth



Strathearn STA4

automatic single play deck. Finish: black or satin silver. Price: on application.

STM4 ★

Direct drive integrated manual electronic turntable. Servo direct drive, plinth, fitted with low mass arm. Speeds: $33\frac{1}{3}$, 45 rpm, $\pm 6\%$. W and F: 11% weighted peak. Rumble: -58dB DIN B. Aluminium turntable 27.7cm dia, weight 1.6kgm. Electronic servo-controlled motor. Pickup arm: low mass pivoted arm with Ortofon FF15 EO cartridge factory fitted. Finish: black or satin silver. Price: on application.

SMA2000 ★

Integrated manual turntable with electronic servo direct drive, touch controls, electrical cueing and low mass arm. Speeds $33\frac{1}{3}$ and 45 rpm. W and F: 0.06% weighted peak. Rumble: -70dB DIN B. Turntable weight 0.82kgm, diameter 300mm 110/250V 50/60Hz. Low mass pivoted arm. Ortofon VMS 20E cartridge fitted. Electronic strobe, variable speed, electro-optical end of record detect with motor switch off and arm lift. Finish: black or satin silver. Price: on application.

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd,
Bath Road, Slough, Bucks.
Tel: Slough 33311.

S500

Two-speed record deck. Opto-electronic end-of-play cut-out and pick-up arm lift. Pressure diecast turntable 12in. diameter, $5\frac{1}{4}\text{lb}$. Fine speed adjustment ($\pm 5\%$). Illuminated stroboscope on outer rim of turntable. Belt drive with tachometer governed direct-current



Strathearn STM4



Strathearn SMK 2000

motor. Studio transcription arm (Ortofon AS212). Manual lift. Magnetically acting anti-skating adjustment with setting scale. Adjustable stylus pressure with counterweight. Foot-fall sound absorption by joint-spring-mounting of the turntable and pickup arm. Tinted cover. Casing: metal, black and silver. Size: $17 \times 5\frac{1}{2} \times 14\text{in}$. (including cover). Price: £179.00 (inc. VAT).

W248

Record deck auto, single play and changer units in one. Speeds: $33\frac{1}{3}$, 45 rpm. Fine speed adjustment $\pm 3\%$. Heavy turntable. Rumble: S/N ratio $>56\text{dB}$. Shure M75-6SM magnetic stereo cartridge. Anti-skating device. Price: £135.00 (inc. VAT).

■ TOSHIBA (UK) LTD

Toshiba House, Frimley Road, Frimley,
Camberley, Surrey.
Tel: Camberley 62222.

SR355 ★

Plinth mounted with arm but without cartridge. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: 60dB. Turntable 30cm in diameter. Direct drive. DC servo motor. S-shaped arm, spring adjusted. Cueing lever. Woodgrain plinth. Smoked acrylic cover. Price: £115.11 (plus VAT).

★ Indicates entry is illustrated



Toshiba SR-355



Toshiba SR-225



Toshiba SR-370

SR255 ★

With arm on Solid steel base with solid platter — without cartridge. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.05% WRMS. Rumble: 58dB. Turntable 33cm diameter. Direct drive DC servo motor. S-shaped spring adjusted arm. Bias control and cueing device. Direct reading tracking weight. Smoked acrylic cover. Price: £101.78 (plus VAT).

SR-370 ★

Direct drive deck, plinth mounted, without arm or cartridge. Speeds: $33\frac{1}{3}$, 45 rpm. Wow: 0.04%. Rumble: 60dB. Turntable dia: 30cm. DC servo motor. Finish: solid plinth. Price: £128.89 (plus VAT).

SR370/SME 3009

As SR 370 with SME 3009 pickup arm. Price: £168.89 (plus VAT).

SR370/SME3009 52

As SR 370 with SME 3009/52 pickup arm. Price: £172.89 (plus VAT).

SRF-335

Plinth mounted with arm. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.035%. Rumble: -60dB. Turntable measures: 29.6cm. Direct drive, fully automatic, DC servo motor. 'S' shaped static balanced arm. Price: to be announced.

SRF-235

Plinth with arm and cartridge. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.06%. Rumble: 50dB. Turntable: 29.6cm. Belt drive, fully auto. 4-pole synchronous motor. 'S' shaped static balance pickup. Price: to be announced.

SRF-530

Plinth mounted with arm. Speeds: $33\frac{1}{3}$, 45 rpm. W: 0.35%. Turntable measuring: 29.6cm. Direct drive fully auto, DC servo motor. 'S' shaped static balance. Features: auto repeat with memory counter. Price: to be announced.

■ TRIO

B. H. Morris and Co Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middlesex.
Tel: 01-902 9422.

KD 500 ★

Pickup arm not supplied. Cutout for SME. Plinth mounted. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.03% WRMS. Rumble: more than 70dB. 12in. dia turntable. Direct drive, 8 pole 24 slot brushless DC servo controlled motor. High compression ARCB base which has the feel and looks of granite. Price: £173.33 (Plus VAT).



Trio KD 500



Trio KD 2070



Trio KD 3070

KD 2055

Belt drive turntable, ARCB plinth mounted, supplied with S-type pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.06%. Rumble: -65dB (DIN). Cast aluminium turntable 30cm dia., weight 1.05kg. Synchronous 4-pole motor. Pickup arm: S-type with independent variable speed, auto/return/cut mechanism. Finish: stone look ARCB. Price: £84.00 (plus VAT).

KD 1033B

Fitted with PU arms plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.06%. Rumble: -64dB. Turntable 30cm dia. Belt drive. Synchronous 240V AC motor. Medium mass S-type pickup arm, pulley weight, bias. Matt black finish. Price: £46.73 (plus VAT).

KD 2070 ★

Pickup arm, plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.04%. Rumble: -65dB. Turntable 31cm dia. Direct drive. DC servo motor. Pickup arm 'S' type, detachable headshell. Features: fully manual speed adjust, built-in strobe. Price: £93.33 (plus VAT).

KD 3070 ★

As above. Price: £111.11 (plus VAT).

KD 750

Pickup arm, plinth. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.022%. Rumble: -74dB. Turntable: 33cm. Direct drive, quartz lock. Brushless DC servo motor. Pickup arm of magnesium alloy. 'S' type. Finish: Walnut high gloss veneer. Price: £327.48 (plus VAT).

■ VISONIK/CEC

Alban Electronic Supplies Ltd,
28 Spencer Street,
St. Albans, Herts AL3 5EG.
Tel: St. Albans 30236.

DD 8200

'S' shaped arm, plinth mounted. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.03%. Rumble: -70dB. Turntable of aluminium alloy die-cast with dia of 310mm. Direct drive. DC servo motor. 'S' shaped pickup arm, static balanced. Features: all controls located on front panel, semi-auto. Price: £130.00 (plus VAT).

APPOLO

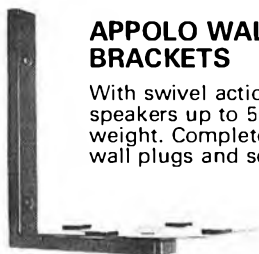


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APPOLO II £24.18 pr.



SABRE II
£28.96 pr.

All prices include VAT at 12½%

Speaker Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

Adastra Electronics Ltd.
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

M135 Loudspeaker Stand

Strong, all purpose designed stand in chromed tubular metal with four legs, each fitted with non-slip rubber ferrules. The circular steel plate is already drilled with holes to facilitate fitting to underside of loudspeaker cabinets, audio systems and TV. Height: 12in. Price: £10.80 (plus VAT).

L65/L66/L67

Range of metal cased 2-way LC networks with cross-over frequency of 3kHz. L65 for 3 ohm systems, L66 — 8 ohms, L67 15 ohms. Price: £2.00 (plus VAT).

L68

3-way LC network with cross-over points 1kHz and 5kHz. Imp: 8 ohms. Price: £4.00 (plus VAT).

■ RICHARD ALLAN

Richard Allan Radio Ltd, Bradford Road,
Gomersal, Cleckheaton, Yorks BD19 4AZ.
Tel: Cleckheaton 872442.

CN54 Crossover Unit

Two-way quarter section. Recommended for use with CR5 bass unit and CB4 tweeter. Crossover frequency: 5kHz. Imp: 8 or 15 ohms. Price: (twin) £3.40; (triple) £3.50. All plus VAT

CN104 Crossover Unit

A two-way half-section parallel network. Crossover frequency: 5kHz. Imp: 8 or 15 ohms. Price: £7.35 (plus VAT).

CN1284 Crossover Unit

A three-way crossover with main crossover

operating from half-wave parallel network and subsidiary crossover capacity fed. Crossover frequencies: 1.1kHz and 5kHz. Imp: 8 or 15 ohms. Price: £10.00 (plus VA1).

CN1220 Crossover Unit

Three-way half-section. Crossover frequencies: 700Hz and 7kHz. Price: £13.50 (plus VA1).

CN820 Two-way Crossover

Frequency 3.5kHz. Low pass 12dB/Oct. High pass 18dB/Oct. Nominal imp: 8 ohms. Price: £3.40 (plus VA1).

CN8280 Three-way Crossover

Frequencies: 250Hz, 3.5kHz. Low pass 6dB/Oct, band pass 12dB/Oct and 18dB/Oct. High pass 24dB/Oct. Nominal imp: 8 ohms. Price: £21.50 (plus VA1).

CN54M Two-way Crossover

Frequency 6kHz. Low pass 6dB/Oct. High pass 12dB/Oct. Nominal imp 8 ohms. Price: £3.51 (plus VAT).

CN1230 Three-way Crossover

Frequencies 1,200+6kHz. Low pass 12dB/Oct. Band pass 6dB/Oct. High pass 12dB/Oct. Nominal imp 8 ohms. Price: £4.50 (plus VAT).

CN35L

18dB/Oct low pass filter at 3.5kHz. Price: £9.00 (plus VAT).

CN35H

24dB/Oct high pass filter at 3.5kHz. Price: £3.60 (plus VA1).

■ ARMSTRONG

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

J2 Loudspeaker stand ★

Designed primarily for Armstrong 602 speakers but will take any other kind. Made from



Armstrong J2 Stand

★ Indicates entry is illustrated

heavy duty spun steel coated in black nylon. Round bass measures 34cm and is 31cm high. Price per pair: £22.50 (inc. 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 show-rooms and for comparative tests. Price: on request.

■ AVF

Audio & Vision Furniture Ltd,
Lane Street, Bradley, Bilston,
West Midlands WV14 8UT.
Tel: Bilston (0902) 47371-4.

Loudspeaker Stand AVF 1423

Hi-Stand Universal measures 25.4 × 43.2 × 30.5cm and will take a maximum load of 36.5kg.

Loudspeaker Stand AVF 1029

Hi-Stand, Vari-Tilt Universal has a variable tilt on the platform ranging from 0 to 13 deg controlled by a knob at the rear. Measurements: 15.2 × 43.2 × 30.5cm, and will take a maximum load of 34kg.

Loudspeaker Stand AVF 1280

Hi-Stand, KD Custom measures 25.4 × 27.3 × 33cm and takes a maximum load of 27.3kg.

Loudspeaker Stand AVF 1030

Hi-Stand, Vari-Tilt Custom measures 12.1 × 28 × 33cm and takes a maximum load of 22.7kg.

Music Centre Stand 2134D

Adjustable support stand extends from 53.3 to 86.3cm and has optional castors. Matches above speaker stands. Depth is 33cm. All above are finished in durable black nylon.

■ CURB

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

Loudspeaker Stand Type A

Strong, rigid, welded steel sections finished in

black and including castors. Price: £20.25 (plus VAT).

Loudspeaker Stand Type B

As above. Price: £18.30 (plus VAT).

■ DECCA

Decca Special Products, Ingate Place,
Queenstown Road, London SW8 3NT.
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: £3.30 (plus VAT).

■ FALCON ACOUSTICS

Falcon Acoustics, Tabor House,
Norwich Road, Mulbarton, Norwich,
Norfolk NR14 8JT.
Tel: Mulbarton 78272.

Large range of crossover components and networks with distribution via specialist outlets. Also wadding, cabinet damping compounds, input panels, grille fabrics in 10 patterns.

■ GOODMANS

Goodmans Loudspeakers Ltd,
Downley Road, Havant,
Hampshire PO9 2NL.
Tel: Havant 686344.

Loudspeaker Stand Type CS3

Packed in pairs, suitable for all floor standing speakers with a face area of from 26mm.

■ GRABERN

Grabern Audio Ltd, 139a Brighton Road,
Coultsden, Surrey CR3 2NJ.
Tel: 01-660 4780.

Appolo II ★

Manufactured in steel and coated in nylon. Platform lined in neoprene, with castors suitable for most floor speakers. Height 255mm, width 255mm, depth 280mm. Comes in flat pack. Price: £21.50 pair (plus VAT).

Appolo Wall Brackets WB1

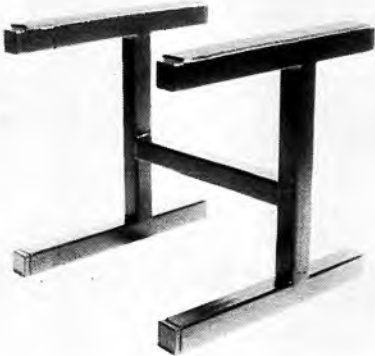
Manufactured in steel and coated in nylon. Table revolves to give desired angle of speakers, suitable for speakers up to 50lb in weight. Supplied complete with wall plugs and screws. Price: £9.70 pair (plus VAT).

Sabre II

A heavy duty stand manufactured in steel and



Appolo II Stand



Appolo III stand

coated in nylon. Platform lined in neoprene, with castors. Comes in flat pack. Height 255mm, width 305mm, depth 305mm. Price: £25.75 pair (plus VAT).

Appolo III ★

New low priced stand designed for smaller speakers, manufactured in 3/4in. square high grade steel and coated in nylon. Supplied without castors. Height: 20.7cm, width: 20.3cm. Depth: 20.5cm. Price: £13.50 per pair (plus VAT).

TV Wall Brackets WB/2

Manufactured in high grade steel and finished in black and chrome for most sizes of TV. Max depth 42cm, max height 46cm, min height 30.5cm, max weight 72kg. Price: £14.70 (plus VAT).

TV Wall Bracket WB/3

As above with specs: max depth 54cm, max height 66cm, min height 38cm, max weight 72kg. Price: £16.70 (plus VAT).

■ **KEF**

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP.
Tel: Maidstone 672261.

Crossover networks

DN12 (SP1004) combines B139, B110 and T27. DN13 (SP1017) combines B110 and T27. DN13 (SP1015) combines B200 and T27. DN22 (SP1065) modification kit to update Model 104 to Model 104aB specification. No recommended retail price.

■ **QAS**

Quality Audio Supplies, Wollaton Road, Beeston, Nottingham NG9 2PB.
Tel: Nottingham 265141.

Accessories

Wide range of audio accessories including phono plugs, DIN plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, connecting leads with all types of terminations, audio switching units, headphones, mics, cassettes.

■ **QED**

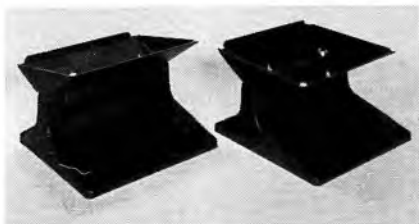
QED Audio Products Ltd, 112 Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HD.
Tel: Sunbury 87344/5.



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RING US FOR
INFORMATION

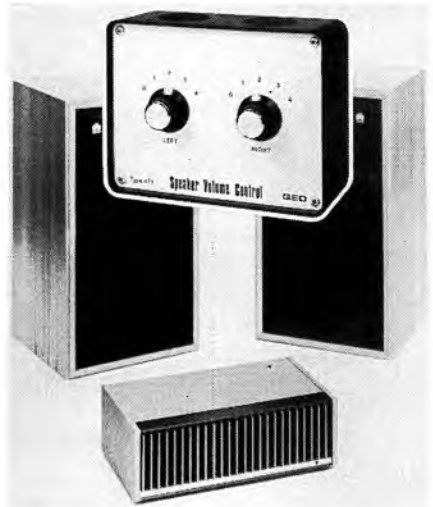
Solus Products



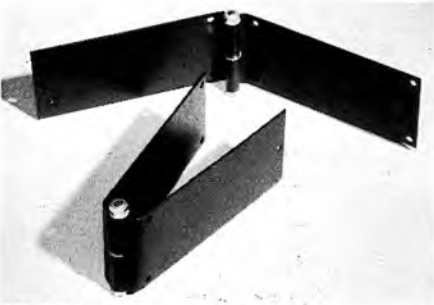
37 CHURCHILL WAY · FLECKNEY · LEICS · Telephone 0533 403331



QED 2/2



QED 4/3 speaker volume control



QED 7/1 brackets

Type 16/1 Amplifier Switching Unit ★

A unit for switching two amplifiers or receivers into one pair of speakers. Price: on application.

Type 8 Speaker Control Console

Provides control over two pairs of headphones and up to four pairs of speakers, any combination of which can be selected without the risk of damaging an expensive amplifier. Price: £15.00 (plus VAT).

Type 2/2 Two-way Speaker Switching Unit ★

Designed to allow an extra pair of speakers to be connected to amplifiers not having that facility, or to expand on existing facilities. Price: £6.20 (plus VAT).

Type 7/1 Speaker Mounting Bracket ★

For mounting lightweight speakers, these

brackets can be locked in the correct position after fitting. Horizontal movement up to 130 deg. Maximum loading 7kg. Price: £5.76 (plus VAT).

Type 7/2 Speaker Mounting Bracket

Suitable for speakers of up to 15kg. Horizontal and vertical adjustment. Price: on application.

Type 4/3 Speaker Volume Control ★

Designed to provide 'in-room' control over volume of additional pair of speakers remote from main amplifier. Particularly suitable for persons requiring speakers in several rooms, whilst still being able to control each pair individually. It is also possible to turn off this control without affecting any others. Price: on application.

Type 4/4 Speaker Volume Control

Similar to 4/3 except suitable for 4 ohm speakers. Price: £15.80 (plus VAT).

Type 4/2 Speaker Volume Control

Also similar to type 4/3 but only suitable for low power high efficiency speakers of between 4-16 ohms. Price: £8.50 (plus VAT).

■ ROSS

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

CN.28

2-way dividing network. Shielded, totally enclosed unit with integral mounting lugs. Imp:

★ Indicates entry is illustrated

8 ohms. Crossover frequency: 3kHz. Max. system input: 15 watts RMS. Price: £1.50 (plus VAT).

RE-404

Metal encased, 2-way dividing network with integral mounting base. 12dB per octave. Imp 8 ohms. Crossover frequency: 3kHz. Max. system input: 50 watts. Price: £2.70 (plus VAT).

■ SELMOR

Selmor Engineering Industries Ltd,
24 Mulberry Street, Tower Hamlets,
London E1 1EH.
Tel: 01-247 3344.

LM 15 Adjustable Loudspeaker Stand

Foamed tape inside bracket grips speaker without scratching and absorbs speaker vibration. Width adjustable 23-35.5cm. Five height positions from 23-35.5cm. Incline of brackets directs sound from speaker to any ideal listening level. Steel construction in black or silver epoxy powder. Price: £8.30 per pair (plus VAT).

■ SMC LOUDSPEAKERS

76 Bedford Road, Kempston, Beds.
Tel: Bedford 854133.

T12 Trolley

New version soon available. Details and price to be advised.

■ SOLUS

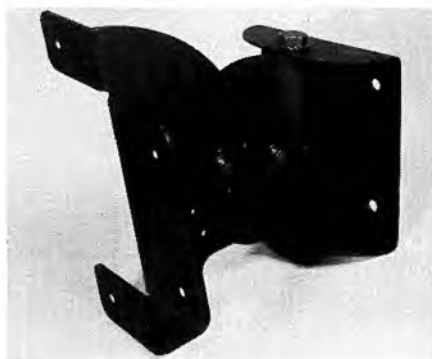
Solus Products, Post Office Lane,
Market Harborough,
Leicester LE16 7EA.
Tel: 0858 66242.

Wall Brackets

Range includes BEK 100 for speakers up to 25kg, Minor 5.



Solus Minor 5 bracket



Solus BEK 100

VE 2521 Loudspeaker Stands

Designed to put speakers approximately 6in. above floor level and to give adjustment facility so that sound is not absorbed by carpets, giving choice of the right angle for listening. Height: 15cm, platform: 26cm × 21cm. Colour: matt black.

BEK 100 Universal Bracket for Speaker Boxes

★
A means of fitting speakers to the wall in a simple and reliable manner. The box will adjust to any direction both horizontally and vertically. Dimensions: 16 × 11 × 12cm.

Minor 5 ★

Wall fixing brackets for speakers of 5kg max. Dimensions: 5 × 5 × 10cm.



Sony Loudspeaker stands

■ **SONY**

Sony (UK) Ltd, London Showroom,
Consumer Information, 134, Regent Street,
London W1.

Loudspeaker stands ★

Details upon application.

RK55 ★

A 5m Litz wire (bare wires both ends) for connecting top quality amps and speakers. Imp 8.5 ohms, resistance 0.015 ohms/m.

■ **THAMES VALLEY AUDIO ACCESSORIES**

31b Rose Street, Wokingham, Berks.
Tel: Wokingham (0734) 790265/783771.

Dual Axis Speaker Mountings

Multi-directional wall mounting for speakers designed to facilitate accurate stereo alignment. Mounting is concealed by attachment to the rear face of the speaker enclosure enabling movement both vertically and horizontally. Complete with fittings for wall and speaker. Finished in black stove enamel. Price per pair: £7.99 (plus VAT).

Speaker Stand ★

Spun aluminium speaker stand. Overall height of 9 1/2 in. is sufficient to avail normal acoustic obstructions, thus improving sound reception. Speaker is held in position and insulated from stand by adhesive felt pads. Price per pair: £18.00 (plus VAT).

Music Centre Stand ★

Price: £30.00 each (inc. VAT).

TV Stand

Price: £30.00 (inc. VAT).

Combination Pack

Music centre stand plus one pair speaker stands. Price: £45.00 (inc. VAT).

■ **TRISTAN**

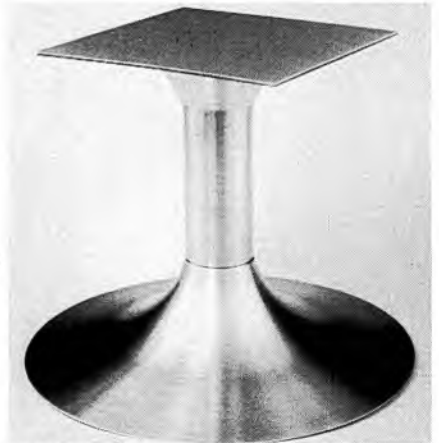
Danil Engineering Co, Old Teme Bridge,
Lower Wick, Worcester WR2 4BY.
Tel: Worcester 425595.

Tristan 12

Speaker stand suitable for larger bookshelf type speakers where it is required to have them floor mounted. All steel, finished in semi-matt black enamel. To suit speaker 7-10in. (178-245mm) deep by 10in. (254mm) wide. Holds speaker 8in. (203mm) above floor. Price: £9.60 per pair (plus VAT).



Sony Litz cables



TVA Music Centre stands



TVA speaker stands

★ Indicates entry is illustrated

Tristan 15

Speaker stand suitable for small and medium floor standing units up to 12in. (305mm) wide by 12in. (305mm) deep. All steel, finished in semi-matt black enamel. Holds speaker 8½in. (216mm) above floor. Price: £11.68 per pair (plus VAT).

Tristan 15T

Speaker stand. Details as Tristan 15 but holds speaker 10½in. (267mm) above floor. Price: £12.00 per pair (plus VAT).

Tristan 22C ★

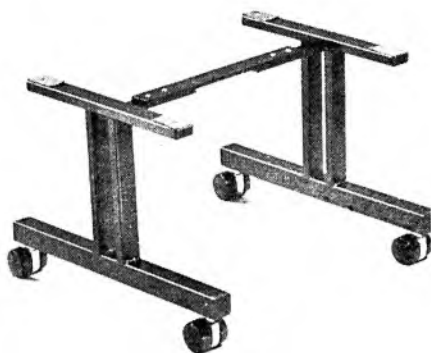
Speaker stand. All steel, finished in semi-matt black enamel. Adjustable for width. With castors. Suitable for monitor type loudspeakers with a depth of 10in. (254mm) or more and a width between 12in. (305mm) and 17in. (422mm). Holds speaker 9½in. (244mm) above floor. Price: £20.00 per pair (plus VAT).

■ WOOLLETT

Woollett Audiostatics,
Anerley Station Road, London SE20 8PY.
Tel: 01-699 5296.

XSI

Speaker matching transformer, 35W 40Hz upwards. 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 ± 0.6 dB. Price: £5.76 plus £1.50 p & p (inc. VAT).



Tristan 22C

XS2

Speaker isolating and matching transformer. Matches 16 ohms to 4 ohms and Bifilar wound. Grain orientated laminations. Ratio 1:1 double wound (2:1 auto). FR: 16Hz-100kHz ± 0.6 dB. May be used to attenuate -6dB and -12dB while maintaining heavy damping on speaker and offering correct load to amplifier. Suitable for operating stereo system comprising two high frequency, or full range, speakers with common bass speaker. *Note:* Not suitable for mains isolation in live chassis equipment. Price: £5.76 plus £1.50 p & p (inc. VAT).

Speaker Drive Units

★Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

Adastra Electronics Ltd, Unit N22,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 62889.

Peak 100

Heavy-duty full-range speaker unit. 15in nominal diameter. Fibre cone. Voice coil diameter: 2in. Voice coil material: aluminium. Imp: 8 or 16 ohms. Gap flux: 15,000 lines. HC: 50W (peak 100W), FR: 20Hz-15kHz. Ceramic magnet. Price: £36.00 (plus VAT).

Hi-Ten ★

Full-range 10in loudspeaker. Voice coil dia: 1in. Imp: 8 or 15/16 ohms. FR: 40Hz-13kHz. Bass resonance: 70Hz. Power handling: 10W. Flux density: 10,000 lines. Price: £4.15 (plus VAT).

Top 30

Heavy-duty 12in unit for electronic music, guitars, etc. Cast chassis, ceramic magnet. FR: 25Hz-13kHz. Bass resonance: 45Hz. Imp: 8 or 15/16 ohms. Power handling: 25W (40W peak). Flux density: 12,000 lines. Voice coil dia: 1½in. Weight: 4½lb. Price: £18.00 (plus VAT).

L.51 Horn Tweeter

3in pressure-driven tweeter with 10W rating. FR: 1.5Hz-16kHz. Crossover frequency: 3kHz. Sensitivity: -104dB. Imp: 8 or 15/16 ohms. Price: £4.20 (plus VAT).

L.52/Foster FHT6 Horn Tweeter

Ceramic magnet horn tweeter with 20W handling capacity. FR: 5Hz-20kHz. Sensitivity: -102dB. Flux density: 10,000 lines. Imp: 8 ohms. Price: £7.20 (plus VAT).

L.55/K.2003 Cone Tweeter

3W, compact HF unit with foam cone. FR:

3Hz-15kHz. Sensitivity: -95dB. Flux density: 8,000 lines. Imp: 8 ohms. Price: £2.52 (plus VAT).

L.56 Trumpet Tweeter

All metal cast horn tweeter with centre diffuser and 20W rating. FR: 2.5Hz-20kHz. Crossover frequency: 3kHz. Sensitivity: -105dB. Flux density: 12,000 lines. Imp: 8 ohms. Price: £8.40 (plus VAT).

L.57 Dome Tweeter

Slimline dome tweeter for front mounting. 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. Imp: 8 ohms. Price: £7.20 (plus VAT).

L.52 Foster FHT6 Horn Tweeter

Ceramic magnet horn tweeter with 20W handling capacity and frequency response 5,000 to 20,000Hz. Imp: 8 ohms. Price: £7.20 (plus VAT).

L.108 'System 3'

3-way system consisting of an 8in. bass woofer, 5in. mid-range unit and 2½in. HF reproducer. Teak cabinet with cushioned facia and glass-wool lined interior. Dimensions: 21 × 10 × 9½in. 20W handling capacity. FR: 40Hz-20kHz. Imp: 8 ohms. Weight 11lb. Price: £40.00 (plus VAT).

■ RICHARD ALLAN

Richard Allan Radio Ltd, Bradford Road,
Gomersal, Cleckheaton, Yorks BD19 4AZ.
Tel: Cleckheaton 872442.

CB4

4in tweeter. Paper cone. Doped cambric surround. Ceramic magnet. Voice coil ⅝in. Gap flux 0.8 Tesla. HC: in systems up to 30W. vci: 8 or 15 ohms. FR: 2kHz-17kHz. rcf: 5kHz. Price: £3.40 (plus VAT).



Adastra Ltd. "Hi Ten"

★ Indicates entry is illustrated

DT20

20mm dome tweeter. Low mass, plastic foil dome. Ceramic magnet. Voice coil 20mm. Gap flux 1.2 Tesla. FR: 3kHz-25kHz. HC: in systems up to 100W. vci: 8 or 15 ohms. rcf: 7kHz. Price: £7.10 (plus VAT).

H5 MID

5in mid-range unit. Coated paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 1.2 Tesla. HC: in systems up to 30W. FR: 250Hz-15kHz. vci: 8 or 15 ohms. Price £6.75 (plus VAT).

CR5

5in bass/mid-range unit. Paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 1.4 Tesla. HC: 15W. vci: 8 or 15 ohms. FR: 30Hz-8kHz. Specially designed for use in small volume infinite baffle enclosure. Price: £8.40 (plus VAT).

B8 Bass

8in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1.2 Tesla. HC: 20W. vci: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £7.35 (plus VAT).

B8T

8in paper cone plus tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1.2 Tesla. HC: 20W. vci: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £7.85 (plus VAT).

CG8

8in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1.4 Tesla. HC: 20W. vci: 8 or 15 ohms. FR: 45Hz-10kHz. Price: £9.50 (plus VAT).

CG8T

8in paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1.4 Tesla. HC: 20W. vci: 8 or 15 ohms. FR: 45Hz-17kHz. Price: £10.00 (plus VAT).

CG10

10in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 1.3 Tesla. HC: 30W. vci: 8 or 15 ohms. FR: 35Hz-10kHz. Price: £15.50 (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: 30W. vci: 8 or 15 ohms. FR: 35Hz-15Hz. Price: £16.00 (plus VAT).



Richard Allan HP12B

CG12

12in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 1.3 Tesla. HC: 30W. vci: 8 or 15 ohms. FR: 25Hz-9kHz. Price: £16.50 (plus VAT).

CG12T

12in paper cone with tweeter inner. Doped cambric surround. Ceramic magnet. Voice coil: 1½in. Gap flux: 1.3 Tesla. HC: 30W. vci: 8 or 15 ohms. FR: 25Hz-15Hz. Price: £17.00 (plus VAT).

CG12 Super

12in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 2in. Gap flux: 11.3 Tesla. HC: 75W. vci: 8 or 15 ohms. FR: 25Hz-5kHz. Price: £25.20 (plus VAT).

CG15

15in paper cone. Doped cambric surround. Ceramic magnet. Voice coil: 2in. Gap flux: 1.6 Tesla. HC: 75W. vci: 8 or 15 ohms. FR: 20Hz-5kHz. Price: £37.80 (plus VAT).

Richard Allan full-range speaker modules are included in Speaker Enclosure section. Twin Assembly, Triple-8 Assembly speaker kits are in the Constructional Kits section.

LP8B

8in Bextrene. PVC roll surround. Ceramic magnet. Voice coil: 25mm. Flux density: 1.2 Tesla. HC: 20W vci: 8 or 15 ohms. FR: 40Hz-5.5kHz. Price £10.50 (plus VAT).

HP8B

8in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 38mm high temperature winding. Flux density: 1.3 Tesla. HC: 45W vci: 8 or 15 ohms. FR: 25Hz-4.5kHz. Price: £15.50 (plus VAT).

HP12B ★

12in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 50mm high temperature winding. Flux density: 1.3 Tesla. HC: 75W. vci: 8 or 15 ohms. FR: 25Hz-1kHz. Price: £25.20 (plus VAT).

DT30

Soft dome tweeter, moving coil. Nominal cone dia: 2.5cm. Voice coil dia: 2.5cm. Nominal Impedance: 8 or 15 ohms. Gap flux: 1.2 Tesla. Nominal capacity: 10W RMS. FR: 2 kHz-20kHz ± 3 dB. Recommended crossover frequency: 2.5kHz min. Price: £7.85 (plus VAT).

FB8

Moving coil bass/midrange. Nominal cone dia: 20cm. Voice coil diameter: 2.5cm. Nominal impedance: 8 or 15 ohms. Gap flux: 1.2 Tesla. Nominal capacity: 20W RMS. FR: 30Hz-8kHz. Rec. crossover frequency: 6kHz Max. Price £7.85 (plus VAT).

CG12C

Moving coil bass. Nominal cone dia: 30cm. Voice coil dia: 4cm. Nominal impedance: 8 or 15 ohms. Gap flux: 1.2 Tesla. Nominal capacity: 30W RMS. FR: 25Hz-5kHz. Rec. crossover frequency: 2kHz. Price: £17.30 (plus VAT).

AB8

Auxiliary bass radiator. Nominal cone dia: 20cm. Treated polystyrene cone with polyurethane surround. Free air resonance 10Hz. Price: £4.75 (plus VAT).

HP12B Super

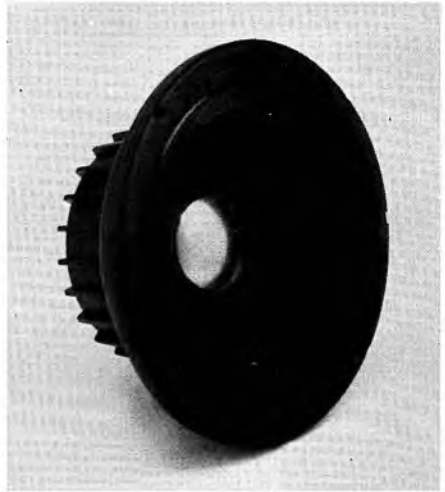
As HP12B but with 1.7 Tesla magnet. Price: £30.00 (plus VAT).

■ **ATC**

Acoustic Transducer Co Ltd,
Pier House Laundry,
Strand-on-the-Green, London W4.
Tel: 01-995 3654.

SM 72-150 Soft Dome Midrange

Studio monitor, midrange driver. Nominal cone diameter: 7.5cm. Voice coil diameter: 7.5cm. Imp: 8 ohms. Gap flux: 14,000 gauss. Nominal cap: 75W nominal maximum input power 150W. FR: 200Hz-4.5kHz. Recom-



ATC

mended crossover frequency: 250Hz-3.5kHz. Features: soft dome-dual suspension edgewise wound. Ribbon wire voice coil. Price: £85.00 (plus VAT).

PA 75-234 STD

Full range paper cone, paper edge. Nominal cone diameter: 19cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 16 ohms. Gap flux: 12,000 gauss. Nominal cap: 75W maximum input power 125W. FR: Resonance 90Hz nom. free air, usable up to 6kHz. Recommended crossover frequency: 300-2kHz PA system mid-range. Features: edgewise wound ribbon wire voice coil. Price: £65.00 (plus VAT).

PA 75-234 STD-LS

Full range—paper cone—line surround. Details as above. Price: £65.00 (plus VAT).

PA 75-234 Bass-LC

Bass driver, paper cone, linen edge. Nominal cone diameter: 19cm. Voice coil diameter: 7.5cm. Nominal Imp: 8, 12 ohms. Gap flux: 10,500 gauss. Nominal cap: 75W, maximum recommended input power 150W. FR: Resonance (nom. free air) 50Hz usable up to 1.5kHz. Recommended crossover frequency: 300-750Hz. Features: edgewise wound ribbon wire voice coil. Price: £67.50 (plus VAT).

SB 75-234 Studio Bass

Bass driver, plasticised paper cone. Rubber surround. As above except FR: 22Hz-1.5kHz. Price: £70.00 (plus VAT).

★ Indicates entry is illustrated

PA 75-314 STD

Full range, paper cone, paper edge, edgewise wound copper ribbon, wire voice coil. Nominal cone diameter: 26cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 16 ohms. Gap flux: 12,000 gauss. Nominal cap: 75W, maximum input power 125W. FR: 75Hz-6kHz. Recommended crossover frequency: 300Hz-1.6kHz PA system midrange. Price: £72.50 (plus VAT).

PA 75-314 STD-LS

Full range, paper cone, linen surround. As above except FR: 45Hz-6kHz. Price: £72.50 (plus VAT).

PA 75-314 Bass-LC

Bass driver, paper cone, linen surround. Nominal cone diameter: 26cm. Voice coil diameter: 7.5cm. Nominal imp: 8, 12 ohms. Gap flux: 11,000 gauss. Normal capacity: 75W, maximum input power 150W. FR: 40Hz-3kHz. Recommended crossover frequency: 200Hz-500Hz. Features: Edgewise wound ribbon wire voice coil. Price: £75.00 (plus VAT).

SB 75-314 Studio Bass

Bass driver, plasticised paper cone, rubber surround. Details as above. Price: £77.50 (plus VAT).

PA 100-375 STD

Full range bass driver, paper cone, paper edge. Nominal cone diameter: 32.5cm. Voice coil diameter: 10cm. Nominal imp: 8, 16 ohms. Gap flux: 14,500 gauss. Nominal capacity: 100W, maximum 150W recommended input power. FR: 55Hz-5kHz. Features: Edgewise wound ribbon wire voice coil. Price: £120.00 (plus VAT).

PA 100-375 STD-LS

Full range bass driver, paper cone, linen edge. Details as above except FR: 40Hz-5kHz. Price: £120.00 (plus VAT).

PA 100-375 Bass-LC

Bass driver, paper cone, linen surround. Nominal cone diameter: 32.5cm. Voice coil diameter: 10cm. Nominal imp: 8, 12 ohms. Gap flux: 13,000 gauss. Nominal capacity: 100W, maximum recommended input power 200W. FR: 35Hz-2.5kHz. Recommended crossover frequency 300-500Hz. Features: Edgewise wound ribbon wire voice coil. Price: £125.00 (plus VAT).

■ BADGER SOUND SERVICES

Badger Sound Services, 46 Wood Street, Lytham St. Annes, Lancs. FY8 1OG. Tel: St. Annes 729247.

CN 1

Equivalent to Cambridge Audio R50. Combines B139, B110, T27 and STC4001G. A very high quality network produced to meet the needs of the builders of 'Hi-Fi Answers' transmission line design. Components are hand tested and selected for accuracy. High power-handling capacity — well suited to modern amplifiers of up to 75 watts rms per channel.

CN 114

B139, B110, T27, HF2000. Specification as for CN 1 but using the Celestion HF2000 super tweeter in place of the 4001G. Used in the American 'Audio Amateur' magazine design.

CN 30

Equivalent to KEF DN 12. Combines B139, B110 and T27. Crossover frequencies 400 and 3500Hz.

CN 31

Equivalent to KEF DN 13 (SP 1015) but higher power handling. Combines B200 and T27. Crossover frequency 3500Hz.

CN 32

Equivalent to KEF DN 13 (SP 1017). Combines B110 and T27. Crossover frequency 3500Hz.

CN 68

B200/Peerless KO 10 DT Network to combine this well known bass/midrange unit with the Peerless 'soft dome' tweeter. Can be supplied modified for DT 10 HFC.

CN 104

B200/Isophon KK8. As CN68 but enabling the B200 to be combined with the Isophon KK8.

CN 108

B200/Audax HD 12 9D25. A variation of CN104 enabling the use of the very analytical Audax dome tweeter.

CN 73

B139/B110/T27 High Power network. A high power version of CN30 suitable for use with amplifiers rated at up to 75 watts rms per channel.

CN 106

B139/Peerless K040MRF/Audax HD12-9D25 or Isophon KK8 or SEAS (D86H). Network for the 'Practical Hi-Fi and Audio' PRO 9TL design (C. J. Rogers, October 1976).

CN 107

Two Peerless KP 100WF/K040MRF/KO10DT

for disco or domestic use. Network to construct a high efficiency (2.5W for 96dB at 1 metre) (high power (100W) high quality system equally suitable for disco or domestic use. Uses two bass units in parallel. Imp: 4 ohms.

CN 95 + tweeter type

Daline 3-way crossover network — improved version. A network for the 'Hi-Fi News' 3-way Daline (R. Fris, October 1975). Please state whether for T15 or KO 10DT tweeter.

CN 80

Daline 2-way network B110/127 — improved version. As CN95 but intended for 2-way version.

CN 91

Daline 2-way network B110/KO 10DT version. (Hi-Fi News, Oct. 75). Additional network published in the above issue enabling a 2-way version using the Peerless tweeter.

CN 105

B139/B110/Two HF1300/T27/4001K. Network for the Hi-Fi News 'State of the Art' design (April 1976) by P. Atkinson.

CN 120

Sonaudax HD17B25H/HD12-9D25. For systems A and E in our suggested enclosures.

CN 121

Sonaudax HD20B25(H)-4 (or J version)/HD12-9D25. For systems B and C in our suggested enclosures. System C has been published as the Hi-Fi News & Record Review 'Tabor' (Sept. 1977) and this is the specified network. Resistor R2 on the board can be shorted out by those constructors who, in the light of a listening test, prefer a little more treble 'bite'.

CN 119

Peerless KP 825 WF/K010DT. For system G in our suggested enclosures. A very good performer offering high efficiency and therefore well suited to budget amplifiers of low power.

CN 118

Peerless KO 825 WF/MT24. For system H in our suggested enclosures. Combines good performance with high efficiency. As with system G this design is well suited to low power budget amplifiers but offers a lower cost than system G

CN 122

Sonaudax HD24S45/HD17B25H/HD 12-9D25. For system D in our suggested enclosures. A

modern large 3-way system producing surprisingly good results from a 10in bass unit.

CN 123

Peerless KP 100WF/K040MRF/K010DT. A variation on our CN 107 network produced in response to requests for a smaller 8 ohm version. Use only one KP100WF in an enclosure of 2 cu ft (60 ltr.). Suitable for amplifiers up to 75 watts per channel and quite efficient.

■ BAKER

Baker Loudspeakers Ltd,
Bensham Manor Road Passage,
Thornton Heath, Surrey.
Tel: 01-684 1665.

Regent

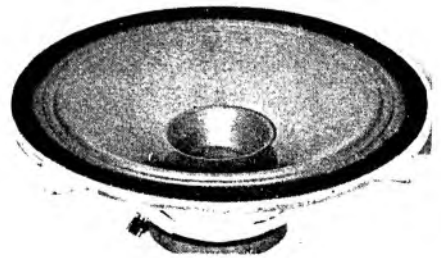
Full range 12in cone speaker. Paper cone with roll surround. Voice coil: 1 1/2in. Copper voice coil. vci: 3, 8 or 15 ohms. Gap flux: 12,000 gauss. HC: 20W. FR: 45Hz-13kHz. Price: on application.

Major ★

Full range 12in speaker with built-in tweeter cone. 14,000 gauss magnetic gap. FR: 30Hz-14.5kHz. HC: 25W. vci: 3, 8 or 15 ohms. Cast aluminium chassis. Weight: 6lb. Price: on application.

Deluxe Mk II

Full range 12in cone speaker. 15W. Bass reso-



Baker 12in. Major



Baker Superb Twelve

★ Indicates entry is illustrated

nance: 30Hz. Gap flux: 14,000 gauss. Copper voice coil: 1/2in 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: on application.

Superb Twelve ★

Full range 12in speaker with built-in tweeter cone. Foam plastic surround. Coil diameter: 1/2in. 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: on application.

Auditorium 12

Full range 12in cone speaker suitable for bass unit multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1/2in diameter. vci: 8 or 15 ohms. FR: 25Hz-16Hz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: on application.

Auditorium 15

High power 15in speaker suitable for bass unit in multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1/2in dia. vci: 8 or 15 ohms. FR: 25Hz-16kHz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: on application.

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: 1/2in. Depth: 6in. Weight: 5lb. Price: on application.

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: 30Hz-13kHz. Gap flux: 14,000 gauss. Voice coil: 1/2in. Depth: 6/4in. Weight: 6lb. Price: on application.

Group 50/15

15in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 75W. vci: 8 or 15 ohms. Bass resonance: 45Hz. FR: 30Hz-13kHz. Gap flux: 17,000 gauss. Voice coil: 2in. Depth: 8in. Weight: 15lb. Price: on application.

Group 50/12

12in cone speaker with heavy duty suspension

for electronic music, guitars, etc. vci: 8 or 15 ohms. Max. power: 60W. Bass resonance: 55Hz. Flux: 15,000 gauss. FR: 30Hz-16kHz. Voice coil: 1/2in. Depth: 4/4in. Weight: 10lb. Price: on application.

■ CASTLE ACOUSTICS LTD

Shortbank Road, Skipton, N. Yorks.
Tel: Skipton 5333.

8 RS DD

Full range Cone diameter 20cm. Coil diameter 2.5cm. Imp: 8 ohms. Flux: 54,000 maxwells. Gap Flux: 15 watts. Peak Cap: 25 watts. FR: 50-20,000Hz ± 6dB. Resonant Frequency: 37Hz. Price: £13.50 (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 sold complete with acoustic lens. Size: 6 1/2 × 3 1/2 × 2in. Aluminium ribbon element. Imp: 8 ohms constant. HC: 30W maximum. FR: 2.5kHz-25kHz. rcf: 2.5kHz. Price: £21.50 (plus VAT).

London Ribbon ★

Horn-loaded high frequency ribbon speaker.



Decca DK30 Ribbon



Decca London Ribbon Speaker

Size: 9½ × 4½ × 7½in. Aluminium ribbon element. Imp: 8 ohms constant. HC: 30W maximum. FR: 1kHz-25kHz. Rec crossover: 1kHz. Price: £33.00 (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: £3.30 (plus VAT).

■ **EAGLE INTERNATIONAL**

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

DF406

Full range 10cm dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. cap: 6W. FR: 80-15,000Hz. Price: £6.90 (plus VAT).

DF615

Full range 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. capacity: 15W. FR: 50-15,000Hz. Price: £10.90 (plus VAT).

DF820

Full range 20cm. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 45-15,000Hz. Price: £12.90 (plus VAT).

DB130

Woofer 20cm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. capacity: 30W. FR: 35-4,500Hz. Price: £15.45 (plus VAT).

DB250

Woofer 30cm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. cap: 50W. FR: 30-3,000Hz. Price: £34.30 (plus VAT).

DG500

Full range group 30cm. dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 50W. Price: £36.90 (plus VAT).

DG750

Full range group 38cm dia. Nom. imp: 8 ohms. Gap flux: 10,500 gauss. Nom. cap: 75W. Price: £52.00 (plus VAT).

DTC 50

Cone tweeter 6cm dia. Nom. imp: 8 ohms. Gap flux: 7,800 gauss. Nom. cap: 30W. FR: 3,000-20,000Hz. Price: £2.15 (plus VAT).

DTC 70

Cone tweeter 9cm dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 30W. FR: 4,000-20,000Hz. Price: £3.00 (plus VAT).

DTH 110

Horn tweeter 9cm × 5.5cm. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 4,000-20,000Hz. Price: £6.95 (plus VAT).

DTH 200

Horn tweeter 5.5cm dia. Nom. imp: 8 ohms. Gap flux: 9,000 gauss. Nom. cap: 20W. FR: 5,000-20,000Hz. Price: £6.00 (plus VAT).

DTS 250

Dome tweeter 9.5cm dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. FR: 1,500-18,000Hz. Price: £7.45 (plus VAT).

DTS 280

Dome tweeter 11cm dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. Nom. cap: 40W. FR: 2,000-20,000Hz. Price: £8.50 (plus VAT).

DMC 60

Cone midrange 13cm dia. Nom. imp: 8 ohms. Gap flux: 8,000 gauss. Nom. cap: 30W. FR: 800-9,000Hz. Price: £3.80 (plus VAT).

DMC 100

Cone midrange 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 8,500 gauss. Nom. cap: 60W. FR: 800-5,000Hz. Price: £11.30 (plus VAT).

DMS 170

Dome midrange 13cm dia. Nom. imp: 8 ohms. Gap flux: 9,500 gauss. Nom. cap: 30W. FR: 1,000-10,000Hz. Price: £7.75 (plus VAT).

DMS 260

Dome midrange 16.5cm dia. Nom. imp: 8 ohms. Gap flux: 9,100 gauss. Nom. cap: 50W. FR: 800-8,500Hz. Price: £12.50 (plus VAT).

■ **GOODMANS**

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



Goodmans Twin Axiom 8

Speak to us about the best in Loudspeakers



The very best went into the development of our new 'baby' the five inch bextrene loudspeaker.

Not only were we looking for the economy and versatility of a bass through to upper midrange unit but also the advantage of low colouration.

This is the first speaker to be developed by Audax, France, in conjunction with our new design and research laboratories at Eastleigh, Southampton.

In addition to the technical facilities for speaker and systems design — in both live and anechoic conditions — our Eastleigh operation includes showroom, administration, production and warehousing. With our improved technology and design techniques the future will bring more new ventures into High Fidelity to meet the increasing demands of the discerning HIFI enthusiast.



SONAUDAX
LOUDSPEAKERS LTD.

OUR SPEAKERS SPEAK FOR THEMSELVES

Woodside Avenue Eastleigh Hampshire SO5 4YD Telephone Southampton (0703) 611444 Telex 47497

Twin Axiom 8 ★

8in full-range twin-cone driver. Paper cone. Rubber surround. Voice coils: 1in diameter copper wound. Imp: 8 ohms. Gap flux: 13,500 gauss. Total flux: 53,000 maxwells. HC: 15W (DIN). FR: 40Hz-18kHz. No rec. retail price.

Audiom 8PA

8in heavy duty. 20cm cone diameter. Paper cone material. Paper surround. Nominal imp: 8 or 15 ohms. Capacity: 15 watts. FR: 50-9000Hz. Resonant frequency: 85Hz. No rec. retail price.

Audiom 12P

12in heavy duty. HC: 50W. Imp: 8 or 15 ohms. No rec. retail price.

Audiom 12P-G

12in heavy duty. HC: 50W. Imp: 8 or 15 ohms. No rec. retail price.

Audiom 12P-D

12in heavy duty twin-cone. HC: 50W. Imp: 8 or 15 ohms. No rec. retail price.

Audiomax 12AX

Bass drive unit. Nominal diameter: 12in. (312mm). Nominal imp: 8 or 15 ohms. Nominal power handling: 100W. Resonance frequency: 55Hz. Sensitivity (96dB at 1m): 0.12W. 10cm diameter voice coil. No rec. retail price.

Audiomax 15AX

Bass drive unit. Nominal diameter: 15in. (395mm). Nominal imp: 8 or 15 ohms. Nominal power handling: 100W. Resonance frequency: 55Hz. Sensitivity (96dB at 1m): 0.25W. 10cm diameter edge wound voice coil. No rec. retail price.

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: 16¼in. Depth: 8¾in. Weight: 26lb. Recommended sealed enclosure (per speaker): 7000 cu in. No rec. retail price.

Hifax 50Hz

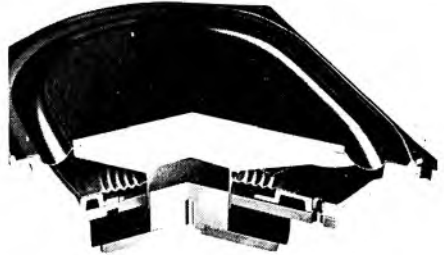
High power HF horn unit with built-in filter network. Nom. cap: designed for systems rated at 50W. Nom. imp: 8 or 15 ohms. No rec. retail price.

■ JORDAN-WATTS

Benlow Works, Silverdale Road,
Hayes UB3 3BW.
Tel: 01-573 6928.



Jordan-Watts speaker drive module



KEF B139 SP1044

Module Mk II ★

Full range with nominal cone 10.2cm dia. Voice coil 3.8cm dia. Nominal imp: 4, 8 or 16 ohms. Gap flux: 11,500 gauss. Nominal capacity: 15W. FR: 40Hz-20,000Hz. Price: £19.50 (plus VAT).

■ KEF

KEF Electronics Ltd, Tovil, Maidstone,
Kent ME15 6QP.
Tel: Maidstone 672261.

B139 SP1044 ★

11.82 × 8.25in. 8lb. HC: 50W. Resonance: 23Hz. Imp: 8 ohms. FR: 20-1,000Hz. No rec. retail price.

B200 SP1014

8¾in dia × 4in. 3¼lb. HC: 25W. Resonance: 25Hz. Imp: 8 ohms. FR: 25-3,500Hz. No rec. retail price.

B110 SP1003

5½ dia × 3⅞in. 3.6lb. HC: 20W. Resonance: 30Hz. Imp: 8 ohms. FR: 55-5,000Hz. No rec. retail price.

T27 SP1032

4¼ dia × 1⅜in. 1.4lb. HC: 8W. Resonance:

★ Indicates entry is illustrated

900Hz. Imp: 8 ohms. FR: 3,500-40,000Hz. No rec. retail price.

■ PEERLESS

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. Imp: 8 ohms. Price: £3.21 (plus VAT).

MT 225 HFC ★

Cone tweeter. 58 × 58mm. HC (System Max.): 50W. FR: 1500-20,000 Hz. Imp: 8 ohms. Price: £3.33 (plus VAT).

MT 25 HFC

Cone tweeter. 68 × 68mm. HC (System Max.): 50W. FR: 2000-18,000 Hz. Imp: 8 ohms. Price: £3.33 (plus VAT).

DT 10 HFC

Dome tweeter. 75 × 115mm. HC (System Max.): 50W. Cone resonance: 1000 Hz. FR: 1,500-20,000Hz. Imp: 8 ohms. Price: £10.02 (plus VAT).

KO 10 DT

Dome tweeter. 80 × 115mm. HC (System Max.): 50W. Cone resonance: 1000Hz. FR: 1,500-20,000Hz. Imp: 8 ohms. Price: £8.78 (plus VAT).

KO 40 MRF

Enclosed Midrange. 122 × 122 × 110mm. deep. HC (System Max.): 50W. Cone resonance: 230Hz. Rec. FR: 500-5,000Hz. Imp: 8 ohms. Price: £11.48 (plus VAT).

KO 65 WG

Woofer, rubber roll surround. 165mm. diam × 84mm. deep HC: 20W. Cone resonance: 35Hz. Upper freq. limit: 4,000Hz. Imp: 8 ohms. Price: £10.10 (plus VAT).

MT 24 CT ★

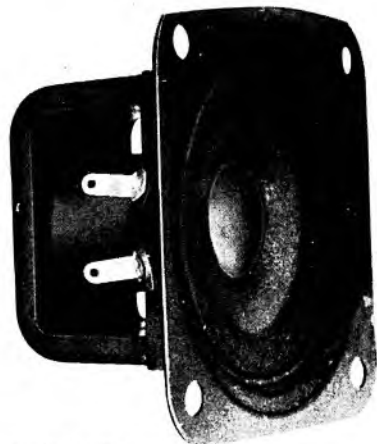
Cone tweeter, 55 × 55mm. HC (system max.): 50W. FR: 1000 to 20,000Hz. Price: £3.72 (plus VAT).

KU 45 MR

Cone midrange, 110 × 110mm. HC (system max.): 50W. Cone resonance: 230Hz. FR: 250 to 10,000Hz. Price: £7.10 (plus VAT).

KO 50 WG

Woofer, foam roll surround, 130 × 130mm.



Peerless MT 225 HFC



Peerless MT 24CT

HC: 20W. Cone resonance: 45Hz. Upper freq. limit: 4000Hz. Price: £9.68 (plus VAT).

KO 825 WF

Woofer, foam roll surround, 210mm diameter. HC: 50W. Cone resonance: 36Hz. Upper freq. limit: 5000Hz. Price: £10.50 (plus VAT).

KP 825 WF

Woofer, foam roll surround, 210mm diameter. HC: 70W. Cone resonance: 32Hz. Upper freq. limit: 5000Hz. Price: £15.71 (plus VAT).

KP 100 WF ★

Woofer, foam roll surround, 250mm diameter. HC: 70W. Cone resonance: 26Hz. Upper freq. limit: 5000Hz. Price: £15.96 (plus VAT).

■ **SONAUDAX LOUDSPEAKERS**

Sonaudax Loudspeakers Ltd,
Woodside Avenue, Eastleigh,
Hampshire SO5 4YD.
Tel: (0703) 611444.

RETAIL AGENTS:

Falcon Acoustics Ltd, Tabor House, Norwich
Road, Mulbarton, Norwich, Norfolk
NR14 8JT. Tel: Mulbarton (0508) 78272.



Peerless KP100WF

HD 12.9D 25

Soft dome tweeter. Voice coil dia: 25mm.
Nom. imp: 8 ohms. Gap flux: 15,000 gauss.
Nom. cap: 80 watt system. FR: 1kHz-20kHz.
Rec. crossover freq: 5kHz @ 12dB/octave.
Linear frequency response curve. Excellent
protection grille available to manufacturers.
Price: £7.65.

HD 80 D 19 MK ★

Poly carbonate dome tweeter. Voice coil dia:
19mm. Nom. imp: 8 ohms. Gap flux: 15,400
gauss. Nom. cap: 30 watts system. FR: 1kHz-
20kHz. Rec. crossover freq: 4kHz @
12dB/octave. Linear frequency response
curve. Available 6.5cm square front plate.
Price: £5.75.



Sonaudax HD13B25H

HD13 D 34H.

Midrange dome tweeter. Voice coil dia: 34mm.
Nom. imp: 8 ohms. Gap flux: 16,000 gauss.
Nom. cap: 60 watts system. FR: 7,000Hz-
20kHz. Rec. crossover frequency: 2.5kHz @
12dB/octave. Aluminium former. Linear fre-
quency response curve. Price: £12.33.

HD 13 B 25 (JorH) ★

Base to midrange unit. Nom. cone dia: 13cm.
Voice coil dia: 25mm. Nom. imp: 8 ohms. Gap
flux: J = 11,000 gauss; H = 14,000 gauss. Nom.
cap: 30 watts. FR: 50Hz-8kHz. Rec. crossover
freq: 4-5kHz @ 12dB/octave. Bextrene cone.
Available in 2 and 4 layer voice coil. Price: J =
£10.68 & £10.90; H = £12.93 & £13.21.

HD 17 B (JorH). ★

Base to midrange unit. Nom. cone dia: 17cm.
Voice coil dia: 25mm. Nom imp: 8 ohms. Gap
flux: J = 11,000 gauss; H = 14,000 gauss. Nom.
cap: 30 watts. FR: 50Hz-7kHz. Rec. crossover
freq: 40kHz @ 12dB/octave. Pressed steel
chassis & bextrene cone. Price: H = £11.46;
H = £14.52.

HD 17 B 37.

Base to midrange unit. Nom. cone dia: 17cm.
Voice coil dia: 37mm. Nom. imp: 8 ohms. Gap
flux: 12,000 gauss. Nom. cap: 40 watts. FR:
40Hz-5kHz. Rec. crossover freq: 5kHz @



Sonaudax HD17B37MK

★ Indicates entry is illustrated

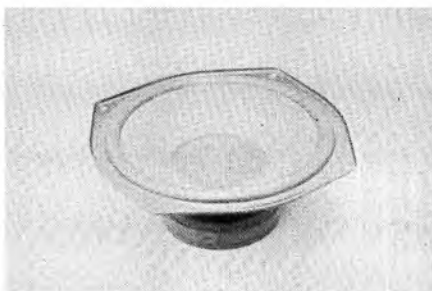
12dB/octave. Aluminium die-cast chassis. Bextrene cone & PVC surround. Price: £21.24.

HD 20 B 25 (JorH).

Bass to midrange unit. Nom. cone dia: 20cm. Voice coil dia: 25mm. Nom. imp: 8 ohms. Gap flux: J = 11,000 gauss; H = 14,000 gauss. Nom. cap: 30-35 watts. FR: 40Hz-5kHz. Rec. crossover freq: 4.5kHz @ 12dB/octave. Bextrene cone with Plastifex both sides. Price: J = £12.33; H = £15.33.

HD 35 S 66 ★

Bass unit. Nom. cone dia: 35cm. Voice coil dia: 66mm. Nom imp: 8 ohms. Gap flux: 11,500 gauss. Nom. cap: 100 watts. FR: 30Hz-2.5kHz. Rec. crossover freq: 350Hz @ 12dB/octave. Low bass resonance: 17Hz. 4 layer coil, aluminium former. Price: £100.08.



Volt B250

■ STRATEC

Strathearn Audio Ltd,
Kennedy Way Industrial Estate,
Kennedy Way, Belfast BT11 9BL.
Tel: Belfast 611100.

SLC2

Planar electrodynamic midrange/high frequency drive unit. Transformer matched for 4-8 ohms. Nominal capacity: 50W. FR: 400Hz-20kHz. Recommended crossover frequency: 500Hz. Features: low distortion, high power handling capacity. Price: on application.

■ VOLT

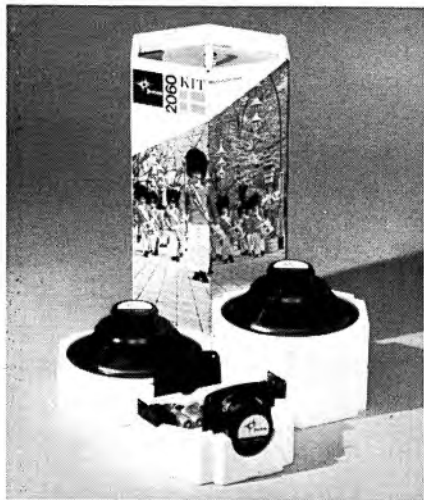
Volt Loudspeakers Ltd,
14 Tudor Court, Castle Way,
Hanworth, Middlesex TW13 7QQ.

B250 ★

High quality bass unit. Nominal diameter: 25cm. Voice coil diameter: 3.9cm. Nominal imp: 8 ohms. Gap flux: 10,000 gauss. FR: 20Hz-1kHz. Recommended crossover frequency: 500Hz and below. Features: optimised purely for bass frequencies. Price: £24.67 (plus VAT).

ABR 250

Auxilliary bass radiator. Price: £14.25 (plus VAT).



Sonaudax HD17B25J



Sonaudax HD35S65

Speaker Enclosures

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ AIWA

Aiwa Sales and Service (UK) Ltd,
30 and 32 Concord Road,
Westwood Park Trading Estate,
London W3.
Tel: 01-803 4451.

SC 51

Two-way bass reflex speaker with 15cm and 5cm drive units. Crossover frequency: 4kHz. FR: 50Hz-18kHz. Imp: 8 ohms. Rec. amplifier output: 35W. Dimensions: 21 × 24 × 33cm. Price per pair: £63.41 (plus VAT).

■ AKAI

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

SW 127

Bass reflex speaker with drive units: 200mm and 44mm. Crossover frequency: 4kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 30W. Dimensions: 30 × 22 × 50cm. Walnut finish. Price per pair: £90.76 (plus VAT).

SW 137

Bass reflex speaker with drive unit: 250mm, 120mm, 44mm. Crossover frequency: 1.2 and 5kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 33 × 29 × 57cm. Walnut finish. Crossover contour controls. Price per pair: £119.51 (plus VAT).

SW 157

Bass reflex speaker with drive units: 300mm, 120mm, 44mm. Crossover frequency: 1.2 and 5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 38.5 × 29 × 66cm. Walnut finish. Crossover contour controls (2). Price per pair: £179.24 (plus VAT).

SW 177

Closed speaker enclosure with drive units: 380, 130, 44 and 44mm. Crossover frequency: 0.7 and 5kHz. FR: 25Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 100W. Dimensions: 42.4 × 30 × 67cm. Walnut finish. Crossover contour controls (2). Price per pair: £239.07 (plus VAT).

■ RICHARD ALLAN

Richard Allan Ltd, Bradford Road,
Gomersal, Cleckheaton, West Yorkshire
BD19 4AZ.
Tel: Cleckheaton 872442.

RA8

Compact enclosure designed to fit on bookshelves and room dividers. Imp: 8 ohms. FR: 50Hz-20kHz. Crossover: 3.5kHz. Handling capacity: 20W. Finish: teak or walnut. Size: 39.5 × 266 × 247mm. Price: £73.50 per pair (plus VAT).

RA82L

Floor standing constricted labyrinth enclosure. Electrically the same as RA82. FR: 40Hz-20kHz ±3dB. Size: 724 × 345 × 292mm. Finish: teak or walnut. Price: £136.00 per pair (plus VAT).

RA828LP ★

Floor standing labyrinth enclosure. Crossover frequencies: 250Hz, 3.5kHz. Handling capacity: 45W. Size: 749 × 381 × 292mm. Finish: teak or walnut. Price: £213.00 per pair (plus VAT).



Richard Allan RA 828LP

★ Indicates entry is illustrated

Tango

Infinite baffle speaker with 25mm dome treble and 200mm bass/mid. Crossover frequency: 60kHz. FR: 90Hz-20kHz \pm 3dB. Imp: 8 ohms. Rec. amplifier output: max 30W RMS. Dimensions: 40 \times 35 \times 29cm. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £69.00 (plus VAT).

Maramba

Auxiliary bass radiator. Drive units: 25mm dome treble, 200mm bass/mid, 200mm ABR. Crossover frequency: 6kHz electric, 120Hz acoustic. FR: 80Hz-20kHz \pm 3dB. Imp: 8 ohms. Rec. amplifier output: max 30W RMS. Dimensions: 60 \times 25 \times 22cm. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £89.00 (plus VAT).

Charisma

Reflex speaker. Drive Units: 300mm bass, 200mm mid, 25mm dome treble. Crossover frequency: 1.2kHz + 6kHz. FR: 40Hz-20kHz \pm 3dB. Imp: 8 or 15 ohms. Rec. amplifier output: max 45W RMS. Dimensions: 67 \times 39 \times 30cm. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £157.50 (plus VAT).

Professional Monitor

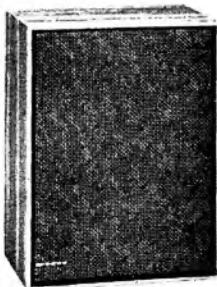
Bass reflex speaker. Drive Units: 30 \times 20cm Bextrene 2.5cm dome, 1.9cm dome. Crossover frequency: 250Hz-3.5kHz;12kHz. FR: 20Hz-20kHz \pm 3dB. Imp: 8 ohms. Rec. amplifier output: 30-150W. Dimensions: 45 \times 38 \times 100cm. Finish: teak or walnut. Features: independent control of mid and treble. Price: to be announced.

■ ALPHA

Highgate Acoustics Ltd.
38 Jamestown Road,
London NW1 7EJ.
Tel: 01-267 4936.

HT17 Mk2 ★

Infinite baffle speaker enclosure. Two drive



Alpha HT17 MkII



Altec Lansing Fifteen

units. Crossover frequency: 3.5kHz. FR: 50Hz-18kHz. Imp: 8 ohms. Dimensions: 25 \times 14 \times 36cm. Weight: 4.2kg. Finish: teak. Price: £44.00 per pair (excluding VAT).

HT20 Mk3

Infinite baffle speaker enclosure. Three drive units. Crossover frequencies: 750Hz and 3kHz. FR: 35Hz-20kHz. Dimensions: 28 \times 22 \times 44cm. Weight: 9.2kg. Finish: teak. Price: £78.00 per pair (excluding VAT).

HT50

Infinite baffle speaker enclosure. Two drive units. Crossover frequency: 3kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Dimensions: 25 \times 20 \times 36cm. Weight: 5.5kg. Finish: teak. Price: £48.00 per pair (excluding VAT).

■ ALTEC LANSING

Highgate Acoustics Ltd,
38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4936.

1

Infinite baffle speaker. Drive Units: 1 \times 220mm, 1 \times 110mm. Crossover frequency: 3kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 12-75W. Dimensions: 29 \times 28 \times 53cm. Finish: Oak Tweeter control. Price per pair: £164.00 (plus VAT).

3

Bass reflex speaker. Drive units: 1 \times 250mm, 1 \times 110mm. Crossover frequency: 1.5kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 10-100W. Dimensions: 32 \times



Altec Lansing Fifteen

29 × 60cm. Finish: oak. Tweeter control, mid control. Price per pair: £216.00 (plus VAT).

5

Bass reflex speaker. Drive units: 1 × 300mm, 2 × 110mm. Crossover frequency: 1.5kHz. FR: 45Hz-20kHz. Imp: 8 ohms Recommended amplifier output: 12-150W. Dimensions: 36 × 30 × 64cm. Finish: walnut. Tweeter control, midrange control. Price per pair: £298.00 (plus VAT).

7

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 165mm, 1 × 110mm. Crossover frequency: 850Hz, 8kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 15-200W. Dimensions: 40 × 36 × 62cm. Finish: walnut. Tweeter control, midrange control. Price per pair: £378.00 (plus VAT).

9

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 165mm, 1 × 120mm. Crossover frequency: 800Hz-7kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 12-250W. Dimensions: 44 × 37 × 36cm. Finish: oak. Tweeter control, midrange control. Price per pair: £498.00 (plus VAT).

Santana II

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 125mm. Crossover frequency: 2.5kHz. FR: 40-20kHz. Imp: 8 ohms. Recommended amplifier output: 12-150W. Dimensions: 48 × 40 × 65cm. Finish: walnut. Tweeter control, midrange control. Price per pair: £432.00 (plus VAT).



Altec Lansing Nineteen

Stonehenge II

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 120mm, 1 × 125mm. Crossover frequency: 500Hz, 5kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 20-250W. Dimensions: 40 × 37 × 94cm. Finish: oak. Column cabinet, tweeter control, mid-range control. Price per pair: £590.00 (plus VAT).

15 ★

Bass reflex speaker. Drive units: 1 × 300cm, radial phase plug compression driven mounted to curved radial horn. Crossover frequency: 1.7kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 12-250W. Dimensions: 55 × 39 × 67cm. Finish: oak. Tweeter control, midrange control. Price per pair: £698.00 (plus VAT).

17

Bass reflex speaker. Drive units: 1 × 380mm bass driven mounted sectoral horn and compression driver. Crossover frequency: 1.5kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 10-350W. Dimensions: 65 × 45 × 100cm. Finish: oak. Tweeter control, midrange control. Price per pair: £850.00 (plus VAT).

19 ★

Bass reflex speaker. Drive units: 1 × 380mm. Radial phase plug driver mounted to 811B sectoral horn. Crossover frequency: 1.2kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 10-350W. Dimensions: 45 × 55 × 98cm. Finish: oak. Tweeter control, mid-range control. Price per pair: £1,098.00 (plus VAT).

★ Indicates entry is illustrated



Amstrad Acoustra 2500



Amstrad EX300

■ AMSTRAD

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

2500 ★

Fully sealed speaker enclosure. 303mm bass unit and 85.7 mid-range/treble. Crossover frequency: 1,200Hz. FR: 35Hz-17kHz. Imp: 8 ohms. HC: 25W. Dimensions: 25.7 × 24.1 × 48.9cm. Weight: 9.1kg. Finish: teak effect veneered cabinet, black fabric front. Price: approx. £51.09 per pair (plus VAT).

EX 300 ★

Fully sealed speaker enclosure. Drive units: 203, 114, 87mm. Crossover frequency: 900Hz + 5kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 10-35W. Dimensions: 27 × 26 × 50cm. Finish: Teak effect cabinet and transparent black gauze front. Features: variable mid-range control. Price: £77.93 (per pair).

■ AR

Teledyne Acoustic Research,
High Street, Houghton Regis,
Dunstable, Beds. LU5 5QJ.
Tel: Dunstable 603151.

AR 10 Pi

Infinite Baffle speaker with 305mm acoustic suspension woofer, 38mm hemispherical dome midrange, 19mm hemispherical dome highrange. Crossover frequency: 525Hz-5000Hz. FR: Woofer 18Hz (free air), midrange 400Hz, Highrange 2,000Hz. Imp: 4-16 ohms nominal. Amplifier: 25W. Dimensions: 35.4 × 63.5 × 27.3cm. Weight: 24.9kg. Walnut-finish. No rec. retail price.

AR 11 ★

Infinite Baffle speaker with 305mm acoustic suspension woofer, 38mm hemispherical dome midrange, 19mm hemispherical dome high range. Crossover frequency: 525Hz-5,000Hz. FR: Woofer 18Hz (free air), midrange 400Hz, high range 2,000Hz. Imp: 4 ohms nominal. Amplifier requirements: min 25W per channel. Dimensions: 35.4 × 63.5 × 27.3cm. Weight: 24.9kg. Teak or Walnut finish. No rec. retail price.

AR 12 ★

Infinite Baffle speaker 25.4cm acoustic suspension woofer, 56mm midrange with integral rear loading cavity and magnetic fluid suspension, 19mm hemispherical dome highrange. Crossover frequency: 700Hz, 4,000Hz. FR: Woofer 26Hz (free air), midrange 500Hz high range 2,000Hz. Imp: 8 ohms nominal. Amplifier requirements: Min. 12W per channel. Dimensions: 35.4 × 63.5 × 27.3cm. Weight: 15.9kg. Walnut or teak finish. No rec. retail price.

AR 14

Infinite Baffle speaker with 25.4cm acoustic suspension woofer, 25mm hemispherical dome highrange. Crossover frequency: 1,300Hz. FR: Woofer 26Hz (free air), highrange 1,000Hz. Imp: 8 ohms nominal. Amplifier requirements: Min. 15W per channel. Dimensions: 35.4 × 63.5 × 27.3cm. Teak or walnut finish. Price: to be announced.

AR 17

Infinite Baffle speaker. Drive units: 203mm woofer, 32mm tweeter. Crossover frequency: 2000Hz. FR: 40-25kHz (DIN). Imp: 8 ohms. Recommended amplifier output: minimum 15W. Dimensions: 25.4 × 47.3 × 22.2cm. Finish: teak or walnut grain. Magnetic fluid for power handling injected into tweeter voice coil gap. No rec. retail price.

AR 15 ★

Acoustic suspension speaker with drive units: 200mm woofer, 25mm dome highrange. Crossover frequency: 1,700Hz. FR: 40Hz-



AR11



AR 15



AR 12

25kHz. Imp: 8 ohms. Recommended amplifier output: 100W per channel. Dimensions: 29.8 x 19.7 x 54.4cm. Walnut finish. Price: £152.00 (plus VAT).

AR 9 ★

Acoustic suspension transmission line. Drive units: 2 x 300mm acoustic suspension woofers, 200mm midrange, 38mm dome upper midrange, 19mm tweeter. Crossover frequency: 200Hz, 1,200Hz, 7,000Hz. Imp: 4 ohms. Recommended amplifier output: 400W per channel. Dimensions: 38.1 x 40.2 x 134cm. Oiled walnut finish. Features: three three-position switches for lower midrange, upper midrange and high range level control. Price: £814.00 (plus VAT).



AR9

602

Ported enclosure with drive units: 25mm, 30mm, 200mm. Crossover frequency: 2.3kHz, 7.5kHz. Frequency range: 55Hz-20kHz ±2dB. Imp: 8 ohms. Dimensions: 60 x 27 x 28cm. Finish: teak or rosewood. Price per pair: £177.67 (plus VAT).

■ **ARMSTRONG**

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

■ **A.T.C.**

Acoustic Transducer Co Ltd,
Pierhouse Laundry, Strand-on-the-Green,
London W4.
Tel: 01-995 3654.

★ Indicates entry is illustrated



ATC S50-S85

S50 ★

Studio Control monitor with 1in. soft dome, 3in. soft dome and 9in. bass driver. Nominal imp: 6 ohms. Nominal capacity: 300W. FR: 40Hz-20kHz. Price per pair: £575.00 (plus VAT).

S85 ★

Infinite baffle studio control monitor with 1in. soft dome, 3in. soft dome and 2 × 9in. bass drivers. Nominal imp: 6 ohms. Nominal capacity: 300W. FR: 30Hz-20kHz. Dimensions: 86 × 46.1 × 47.6cm. Price: £635.00 per pair (plus VAT).

■ AUDIO KRAFT

Audio Kraft, 320 London Road,
South Benfleet, Essex.
Tel: South Benfleet 58500.

Steel Satellite 1 ★

Infinite baffle enclosure with drive units: 120mm bass, 60mm treble. Crossover frequency: 2.5kHz. FR: 60Hz-20kHz. Imp: 4 or 8 ohms. Recommended amplifier output: 100W. Dimensions: 30 × 20 × 60cm. Black painted steel cabinet. Optional inbuilt 50W amplifier. Price per pair: £125.00 (plus VAT).

Central Bass 1

Infinite baffle enclosure with 325 × 200mm drive units. Crossover frequency: up to 100Hz. FR: 20Hz-100Hz. Imp: 4 or 8 ohms, 10K. Recommended amplifier output: 100W. Dimensions: 60 × 40 × 30cm. Wood and metal finish. Price: £180.00 (plus VAT).

■ AUDIOMASTER

Audiomaster Ltd, 33 Bridle Path,
Watford, Herts WD2 4BZ.
Tel: Watford 33010.

LS3/5A ★

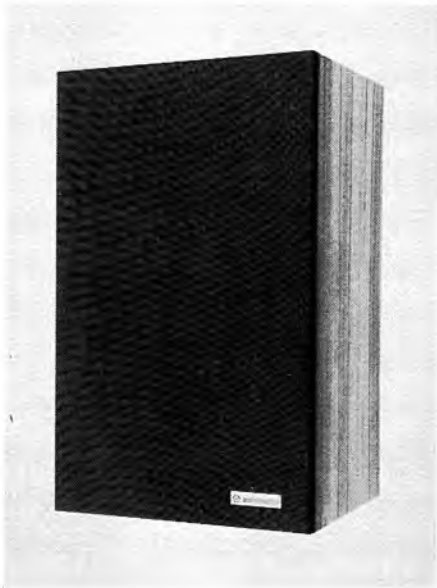
Closed box speaker. Drive units: 102mm bass, 19mm treble. Crossover frequency: 3.5kHz. FR: 80Hz-20kHz ±3dB. Imp: 15 ohms nominal. Recommended amplifier output: 25-50W. Dimensions: 30.8 × 19.3 × 16cm. Finish: teak or walnut. Features: designed by the BBC and built under licence from them. Price per pair: £150.00 (plus VAT).

MLS 1 ★

Closed box with drive units: 165mm bass, 25mm treble. Crossover frequency: 3kHz. FR: 60Hz-20kHz ±4dB. Imp: 8 ohms. Rec. amplifier output: 15-60W. Dimensions: 23 × 19.2 × 37.2cm. Finish: teak or walnut. Price: £88.80 (plus VAT).



AudioKraft Steel Satellite 1



Audiomaster LS3/5A

MLS 2

Closed box speaker with drive units 200mm treble, 25mm bass. Crossover frequency: 3kHz. FR: 50Hz-20kHz \pm 4dB. Imp: 8 ohms. Rec. amplifier output: 12-75W. Dimensions: 28.7 x 23.1 x 46.3cm. Finish: teak or walnut. Price: £115.47 (plus VAT).

■ AUDIO-PRO

Audio-Pro (Hi-Fi) Ltd,
Casl House, Sandy Lane,
Moston Road, Sandbach, Cheshire.
Tel: Sandbach 7520.

5-40

Infinite baffle enclosure with drive units: 2 x 8cm piezo tweeter, 12.7cm mid, 2 x 20.3cm bass. Crossover frequency: 1,500Hz and 4,000Hz. FR: 28Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-90W. 40 litre cabinet. Finish: black ash. Price per pair: £209.56 (plus VAT).

4-40

Acoustic dipole with drive units: 2 x 8.9cm piezo tweeter, 2 x 20.3cm bass/mid. Crossover frequency: 3,000Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-90W. Finish: black ash. Price per pair: £206.18 (plus VAT).

3-35

Infinite baffle enclosure with drive units: 8.9cm piezo tweeter, 20.3cm, bass/mid,



Audiomaster MLS 1

20.3cm, ABR. Crossover frequency: 3,000Hz. FR: 40Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-35W. Finish: black ash. Price: per pair: £135.20 (plus VAT).

■ BEOVOX

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

Beovox S25

Uniphase pressure chamber with 2.5cm treble and 16.5cm bass units. Crossover frequency: 3kHz. FR: 60Hz-18kHz +4 -8dB. Imp: 4-8 ohms. Amplifier requirements: 25 Watts maximum. Dimensions: 22 x 14 x 41cm. Weight: 4kg. White, oak finish to special order. Standard in teak or rosewood. Price per pair: approx. £80.00 (plus VAT).

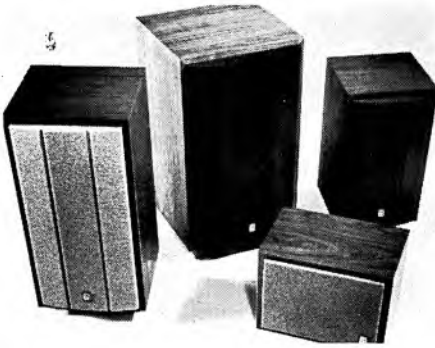
Beovox S35

Pressure chamber enclosure with 2.5cm treble and 20cm bass drive units. Crossover frequency: 3kHz. FR: 49-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 35W max. Dimensions: 26 x 18 x 48cm. Teak or rosewood. Price per pair: approx. £155.00 (plus VAT).

Beovox P30

Phase linear pressure chamber with 2.5cm treble and 16.5cm bass drive units. Crossover frequency: 3kHz. FR: 49-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 30W max.

★ Indicates entry is illustrated



BIC Venturi

Dimensions: 30 × 9 × 54cm. Weight: 5kg. White or oak to special order, but standard finish in teak or rosewood. Price per pair: approx. £115.00 (plus VAT).

Bevox P45/2

Phase linear pressure chamber with 2.5cm treble, phase link 9cm, 2 × 12.5cm bass. Crossover frequency: 2kHz. FR: 40-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 45W max. Dimensions: 35 × 14 × 65cm. Weight: 8kg. White or oak, teak or rosewood finish. Price per pair: approx. £170.00 (plus VAT).

S45/2

Phase linear with 2.5cm treble, phase link 9cm, 20cm bass drive units. Crossover frequency: 2,000Hz. FR: 38-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 45W max. Dimensions: 26 × 16 × 48cm. Weight: 7kg; Standard teak or rosewood finish with white or oak to special order. Price per pair: £170.00 (plus VAT).

S75

Phase linear speaker with 2.5cm treble, 5cm Mid, phase link 12.5cm, 25cm bass. Crossover frequency: 700Hz, 4kHz. Imp: 4-8 ohms. FR: 36Hz-20,000Hz. Amplifier requirements: 75W max. Dimensions: 32 × 20 × 59cm. Weight: 11kg. Standard teak or rosewood finish with white or oak to special order. Price per pair: approx. £225.00 (plus VAT).

M 100/2

Phase linear with bass reflex. Drive units: 1½in. tweeter, ¾in. super tweeter, 2½in. mid-range, 4½in. phase-line, 12in. woofer. FR: 27-22,000Hz. Imp: 4-8 ohms. Recommended amplifier output: 100W, up to 500W RMS with protection circuits plus LED display if protection circuit operative. Dimensions: 35 × 29 × 70cm. Finish: teak/rosewood. Adjustable

stand included in price. Price per pair: £535.00 (plus VAT).

M 75

Pressure chamber with drive units: 2.5cm treble, 6cm mid, 12.5cm phase link, 25cm bass. Crossover frequency: 500Hz-4,500Hz. FR: 27Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 75W. Dimensions: 35 × 27 × 65cm. Teak, rosewood finish. Protection circuits with LED display if operative. Price: £345.00 (plus VAT).

■ B·I·C· VENTURI

B·I·C· Venturi, 60-61 Leslie Park Road, Croydon, Surrey CR0 6TP.
Tel: 01-656 2631/2.

Formula 1W ★

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. Finish: walnut. Price: on application.

Formula 2W ★

Reflex bass enclosure with 3 units, plastic cone and cloth surround. Bass driver diameter: 20cm. Nominal capacity: 75W RMS. FR: 40Hz-20kHz. Size: 30.5 × 29 × 50cm. Weight: 34½lb. Finish: walnut. Price: on application.

Formula 4W ★

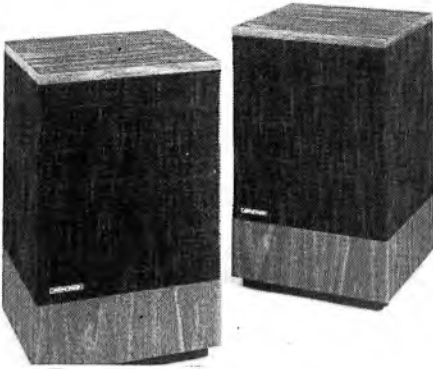
Reflex bass enclosure with 3 units, plastic cone and cloth surround. Bass driver diameter: 25.4cm. Nominal capacity: 100W. FR: 35Hz-20kHz. Size: 33.5 × 33 × 63.5cm. Weight: 48lb. Finish: walnut. Price: on application.

Formula 6W

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. Finish: walnut. Price: on application.

Formula 5 Spec II

Reflex speaker. Drive units: bass diameter 250mm, T-slot midrange driver, piezo-electric tweeter. FR: 30Hz-30kHz. Imp: 6 ohms nominal. Rec. amplifier output, up to 100W RMS per channel. Dimensions: 65 × 36 × 31cm. Finish: walnut. Other features: amplifier clipping indicator, speaker overloading indicators, manual and automatic reset circuit breakers. Midrange/treble level controls. Price: on application.



Bose 501



Bose 301



Bose 901

Formula 6 Spec II

Reflex speaker enclosure with drive units: 300mm bass, 130mm lower mid. T-slot mid-range horn, Piezo-electric tweeter. FR: 25Hz-30kHz. Imp: 6 ohms. Recommended amplifier output: 125W per channel. Dimensions: 40 × 38 × 71cm. Walnut veneer. Price: on application.

■ **BOSE**

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

Bose 501 ★

Infinite baffle enclosure with units and crossover. One forward-facing 10in. bass driver, two rear-angled 3in. tweeters. Imp: 4 ohms. Amplifier requirements: 10W. HC: 100W RMS. Dimensions: 14½ × 14½ × 24in. Weight: 45lb each. Direct reflecting. Finish: ebony/gull

cloth and walnut grain effect veneer. Sold in pairs. Price: £265.00 per pair (plus VAT).

Bose 301 ★

Ported bass reflex enclosure plus variable high frequency deflection 'sound paddle'. One 8in. bass unit and one 3in. tweeter. Crossover frequencies: 1kHz and 3kHz. Imp: 8 ohms. Amplifier requirements: 10W. HC: 60W RMS. Dimensions: 17 × 10½ × 9½in. Weight: 17lb each. Finish: walnut effect veneer with foam grille coverings. Asymmetrical direct/reflect. Bookshelf speaker. Sold in matched pairs. Price: £155.00 per pair (plus VAT).

901 Series III ★

Acoustic matrix multi-cell chamber. Drive units: 9 matched full-range speakers utilising aluminium voice coils. linear high excursion suspension. Low imp voice coils connected in series, size: 4½in. dia. FR: 20Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: min 10 watts, max 70 watts. Dimensions: 21 × 13 × 12½in. Walnut veneer finish. Features: Bose 901 III active equaliser. part of L/S system. controls frequency response curve. Sold in matched pairs with equaliser controls. Price per pair including equaliser: £560.00 (plus VAT).

601

Ported Reflex enclosure. Drive units: (six in total) 2 × 8in. bass, 4 × 3in. tweeter. Crossover frequency: 2kHz. FR: within 20Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 20-100W into 8 ohms. Dimensions: 15 × 13 × 25½in. Finish: Walnut veneer. Features: Two position symmetry switch; asymmetric — side directed tweeters receive greater high frequency excitation. Symmetric: all tweeters equally excited — for spkr placement without adjacent reflecting walls. Price: £385.00 per mirror image pair (plus VAT).

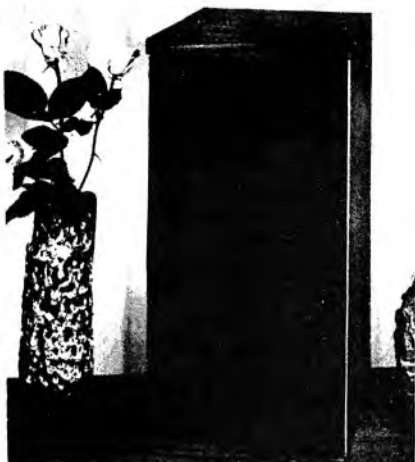
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■ **B & W**

B & W Loudspeakers, Meadow Road,
Worthing, Sussex BN11 2RX.
Tel: Worthing 205611.

DM4 ★

Three-unit monitor speaker system suitable for 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 (± 5 dB 80Hz-20kHz). HC: 30W. Imp: 8 ohms at 400Hz. Size: 53 × 25.5 × 25.6cm. Finish: teak, rosewood, satin white, black ash or walnut. Every model individually tested and calibration certificate supplied. Price: £72.04 each (plus VAT).



B & W DM4

DM6

Monitor loudspeaker with 224mm bass unit, 131mm midrange, 19mm high frequency unit. Both bass and midrange units are loaded into independent irregularly-shaped totally sealed enclosures. FR: 50-20,000Hz. Sensitivity: 7.6W into nominal imp (i.e. 7.8 volts) for pink noise sound pressure of 95dB at 1 metre (anechoic conditions). Power Handling: suitable for amplifiers between 25 and 350W RMS under normal domestic conditions. Crossover

frequencies: 500Hz, 5kHz. Imp: 8 ohms. Dimensions: 93.1 × 41 × 38cm. Satin white, teak veneer, walnut, black ash or rosewood finish. Price: £222.00 each (plus VAT).

DM5

Infinite baffle speaker with drive units: 140mm

Whether large or small your studio needs the PM 450

Audition the new Chartwell PM 450, a major breakthrough in the field of high power professional loudspeakers.

With its new and unique patented cone material, it is extremely sensitive and has enormous acoustic output with very low colouration and distortion up to its maximum output of 116dBA at 1 metre.

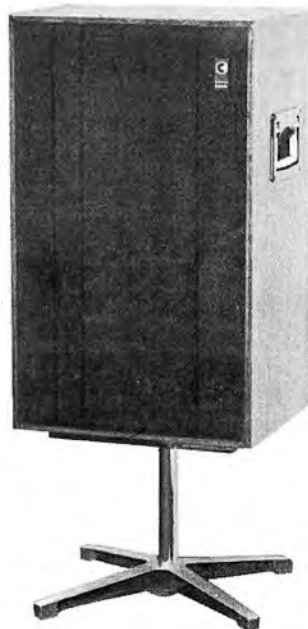
Ask for details of both the Electronic and the Passive versions quoting Ref. No. HFYB



**CHARTWELL
ELECTRO-ACOUSTICS
LIMITED**

2 Commonside East,
Mitcham, Surrey, CR4 1HX,
England.
Tel.: 01-648 4494/5
01-640 7426/7

“Precision in Sound”



cone dia, 26mm voice coil, 19mm. Crossover frequency: 4.5kHz. FR: 100Hz-20kHz \pm 5dB. Imp: 8 ohms. Recommended amplifier output: 10-25W. Dimensions: 22.7 \times 24.1 \times 45.5cm. Teak, walnut, black ash, rosewood or satin white. Calibration certificate supplied. Price per pair: £106.74 (plus VAT).

DM7

Bass reflex speaker with drive unit: 150mm cone dia, 160mm, 26mm tweeter voice coil. Crossover frequency: 3kHz. FR: 30Hz-25kHz, 70Hz-20kHz on measuring axis -3dB at 50Hz. Imp: 8 ohms. Recommended amplifier output: 50-200W. Dimensions: 27 \times 36.7 \times 90.3cm. Teak, walnut, black ash, rosewood or satin white finish. Calibration certificate supplied. Price per pair: £355.36 (plus VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

L30F ★

Multi-port speaker with bass/midrange 200mm and HF 25mm. Crossover frequency: 3.8kHz. Imp: 8 ohms. Amplifier output: 50W. Dimensions: 28 \times 25 \times 49cm. Grey fabric/charcoal grille, mustard fabric/green grille; brown fabric/dark brown grille. Price per pair: £129.90 (plus VAT).

L30W

Similar to C40F but with finish in polished walnut/dark brown grille. Price per pair: £139.90. Polished rosewood/charcoal grille £149.90. Teak/green grille £139.90.

TL200 ★

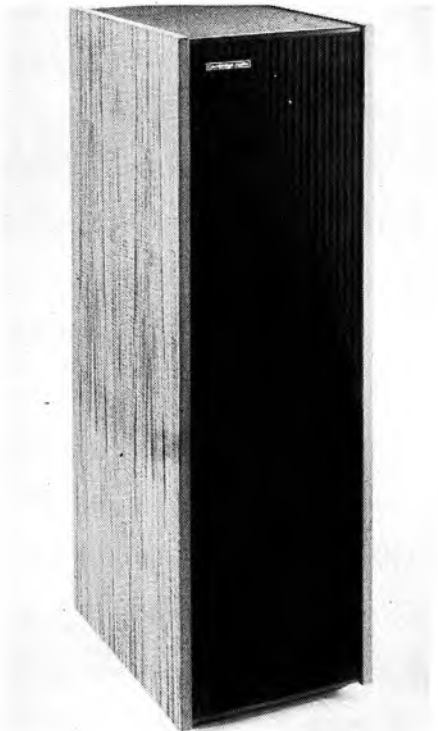
Transmission line with bass 30 \times 30cm, mid-range 13 \times 7.5, med HF 11 \times 2, UHF 3cm dia. Crossover frequency: 400Hz, 3kHz, 10kHz. FR: 20Hz-25kHz. Imp: 8 ohms. Rec. amplifier output: 50W nominal. Dimensions: 33.02 \times 44.8 \times 105.4cm. Teak finish, other finishes to order. Price per pair: £380.00 (plus VAT).

TL100 ★

Transmission line with bass 30 \times 20cm, mid-range 13 \times 7.5, HF 11 \times 3cm. Crossover frequency: 400Hz, 3kHz. FR: 25Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 40W. Dimensions: 33.02 \times 32.04 \times 79.4cm. Teak finish, other finishes to order. Price per pair: £278.00 (plus VAT).

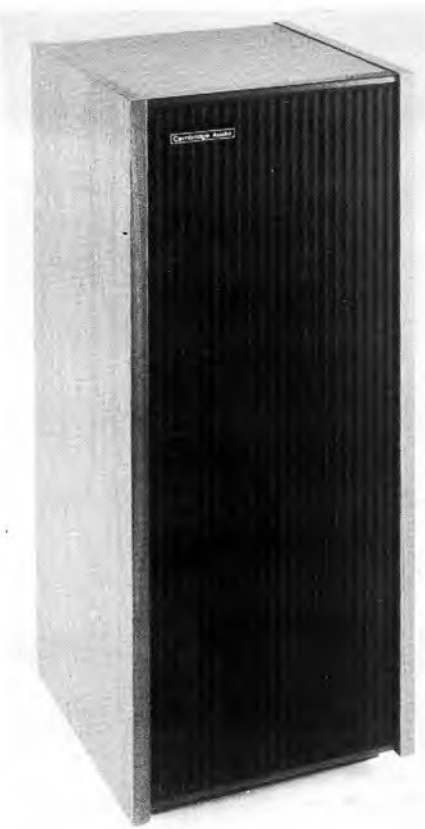


Cambridge Audio L30F



Cambridge Audio TL200

★ Indicates entry is illustrated



Cambridge Audio TL100

■ CASTLE

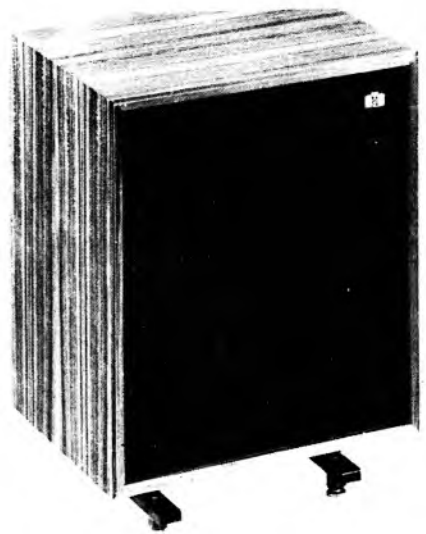
Castle Acoustics Ltd, Park Mill,
Shortbank Road, Skipton, Yorks.
Tel: Skipton 5333.

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 £190.00 per pair (plus VAT); walnut £197.00 per pair (plus VAT); rosewood £225.00 per pair (plus VAT). Period Styling £225.00 upwards.

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



Castle Howard

× 15in. Finish: teak, oak, walnut or mahogany. Price: teak £240.00 per pair (plus VAT); walnut £250.00 per pair (plus VAT); rosewood £280.00 per pair (plus VAT); period styling £285.00 per pair (plus VAT).

Richmond II

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: 16³/₈ × 9 × 9⁷/₈in. Weight: 18³/₄lb. Finish: teak, rosewood or walnut. Price: £88.00 per pair (plus VAT); walnut £90.00, rosewood £110.00 (plus VAT).

Kendal

Drive units: 30mm tweeter, 20cm bass/mid range. Crossover frequency: 3.5kHz. FR: 48-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 10-40W. Dimensions: 29 × 28 × 52.5cm. Weight: 11kg. Teak, walnut, oak, mahogany, rosewood. Veneered baffle back. Hand finished. Price: £122.00 (teak), £126.00 (walnut), £150.00 (rosewood). (All plus VAT).

■ CELEF

Celef Audio, 130 Thirsk Road,
Borehamwood, Herts. Tel: 01-207 1150.

Celef Monitor

Resistively loaded reflex port. FR: 70Hz-20kHz ±2dB. Imp: 8 ohms. Power handling capacity: 80W. 2 drivers. Distortion: less than

1% for 90dB SPL. Size: 20½ × 11 × 9½in. Weight: 24lb. Finish: teak, walnut or white. Price: on application.

Celef Studio Professional Transducer ★

Special damped tapering bass chamber with rear resistive reflex loading. Imp: 8 ohms. Power handling: 100W. FR: 20-20,000Hz. Crossover: 250Hz and 5kHz. Distortion: less than 1% for 96dB. Size: 31 × 14 × 15in. Weight: 80lb. Price: on application.

Domestic II

Totally enclosed with 120mm bass/mid and 20mm tweeter. Crossover frequency: 3.2kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 5-50W per channel. Dimensions: 16 × 9½ × 8in. Teak and walnut finish. High efficiency. Bookshelf mounting. Price: on application.

Mini Professional SM ★

Totally enclosed, 210mm bass/mid, 20mm tweeter. Crossover frequency: 3.5kHz. FR: 38Hz-20kHz. Imp: 8 ohms. Amplifier output: 15-100W per channel. Dimensions: 23 × 11 × 12in. Teak and walnut finishes, others to order. High efficiency, low distortion. 2W gives 90dB at less than 0.5% from 50Hz to 20kHz. Price per pair: £205.00 (plus VAT).

Domestic I

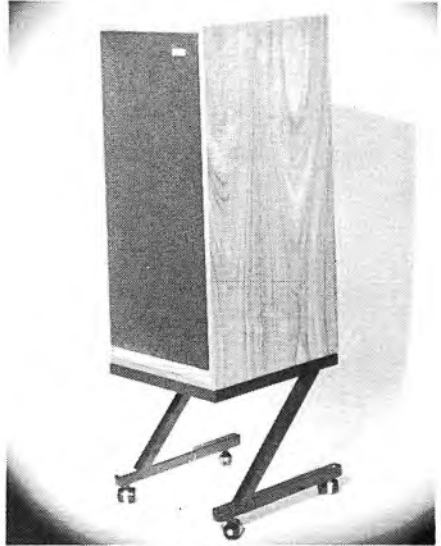
Totally enclosed with 8in. bass/mid and 1in. soft dome treble drive units. Crossover frequency: 3kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 10-100W per channel. Dimensions: 24 × 12 × 10in. Finish: teak, walnut, others to order. Features: high efficiency plus high power handling. Price: on application.

PEI

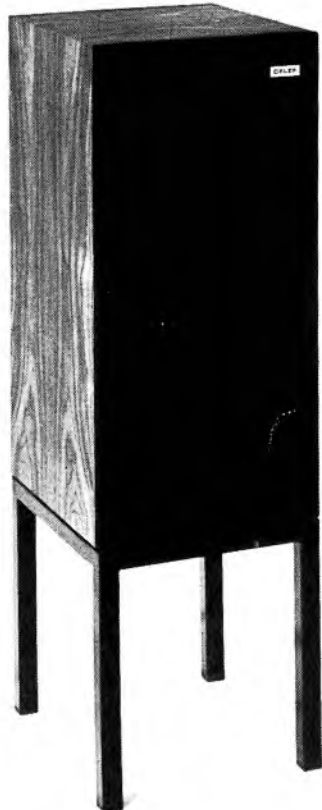
Resistive reflex with special 1in. solid birch ply back. Cabinet structure of high density with 18mm chipboard with heavy damping. Drive units: hybrid system, 8in. bass/mid, 1in. lower treble and direct radiating piezo unit. Crossover frequency: 2.9kHz, 11kHz. Frequency range: 30Hz-30kHz. Imp: 8 ohms. Rec. amplifier output: 25-100W per channel. Dimensions: 25 × 11 × 12in. Finish: teak, walnut, rosewood, white. Features: extremely rigid cabinet and piezo electric super tweeter. Price: on application.

■ CELESTION

Rola-Celestion Ltd, Ditton Works,
Foxhall Road, Ipswich, Suffolk IP3 8JP.
Tel: Ipswich 73131.



Celef Studio Professional



Celef Mini Professional SM

★ Indicates entry is illustrated

Ditton 44 ★

Infinite baffle speaker with drive units: 26mm, 154mm, 308mm. Crossover frequency: 500Hz-5kHz. FR: 25Hz-40kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-100W. Dimensions: 37 × 25 × 76cm. Teak/walnut finish. Price per pair: £253.00 (plus VAT).

Ditton 25

ABR enclosure with drive units: 26mm 34mm (2), 308mm, 308mm ABR. Crossover frequency: 2kHz, 9kHz. FR: 20Hz-40kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-120W. Dimensions: 36 × 28 × 81cm. Teak/walnut finish. Price: £292.46 (plus VAT).

Ditton 22 ★

Infinite baffle speaker with drive units: 26mm, 130mm, 205mm. Crossover frequency: 500Hz, 3kHz. FR: 30Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-80W. Dimensions: 33 × 37 × 51cm. Teak/walnut. New bookshelf type. Price per pair: £165.00 (plus VAT).

Ditton 33 ★

Infinite baffle speaker with drive units: 26mm, 130mm, 256mm. Crossover frequency: 500Hz, 5kHz. FR: 25Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-80W. Dimensions: 35 × 26 × 21cm. Teak/walnut finish. Price per pair: £214.08 (plus VAT).

UL 8 ★

ABR enclosure with drive units: 26mm, 205mm, 205mm ABR. Crossover frequency: 30Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 15-100W. Dimensions: 28 × 23 × 58cm. Teak/walnut finish. Price per pair: £160.84 (plus VAT).

Hadleigh Mk II

Infinite baffle speaker with drive units: 204mm, 26mm. Crossover frequency: 2.5kHz. FR: 50Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-20W. Dimensions: 34 × 25.5 × 24cm. Teak/walnut finish. Small bookshelf or music centre unit. Price per pair: £60.28 (plus VAT).

Ditton 66

ABR enclosure with drive units: 26mm, 52mm, 308mm, 308mm ABR. Crossover frequency: 500Hz, 5kHz. FR: 18Hz-40kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-160W. Dimensions: 38 × 29 × 100cm. Teak/walnut finish. Price per pair: £439.00 (plus VAT).

UL 6 ★

ABR enclosure with drive units: 26mm, 154mm, 154mm ABR. Crossover frequency: 2.5kHz. FR: 35Hz-28kHz. Imp: 4-8 ohms. Recommended amplifier output: 20-80W. Dimensions: 41 × 22 × 29cm. Teak/walnut finish. Bookshelf ABR. Price per pair: £130.45 (plus VAT).

Ditton II ★

Infinite baffle enclosure with drive units:



Celestion Ditton 44



Celestion Ditton 22

Everyone should own at least one masterpiece... ours come in pairs

Masterpieces of design and development available from Chartwell Electro-Acoustics Ltd., an English company producing loudspeaker drive units and systems which are acknowledged as being some of the finest available.

Chartwell produce the highly praised BBC LS3/5A miniature monitoring loudspeaker under licence as well as domestic and professional studio models of their own design. Meticulous care and continual advancement in the construction of loudspeakers, including the use of recently developed cone materials, ensure that Chartwell speakers are considered the first choice by many.

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**CHARTWELL
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LIMITED**

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Mitcham, Surrey, CR4 1HX,
England.

Tel.: 01-648 4494/5
01-640 7426/7

Precision
loudspeakers
for those who
care about the
rhythm in
their life.



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Loudspeakers

Name _____
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HPFB



spendor

Spendor advertisements try to avoid unqualified assertions about the quality of Spendor products, preferring to point out how well they are regarded by professional people, including the BBC, IBA and associated broadcast companies, RTE, EMI, Marconi, Dolby and Ampex.

As evidence of continuing success WDR, the largest broadcasting organisation in Germany, is this year re-equipping its studios with Spendor speakers and amplifiers.

Your local Spendor dealer will be pleased to demonstrate our products to you. His address can be obtained from:

Spendor Audio Systems Limited
Station Road Industrial Estate Hailsham, Sussex, England.
BN27 2ER

BIG News for 78 from Monitor Audio

After many hours of painstaking research and development, Monitor Audio announce the big news of 78, three brand new hi-fi products.

To give you the best, these exciting new hi-fi products have been engineered with perfection in mind. During extensive tests, all surpassed even Monitor Audio's already high standards of quality.

We are confident that this announcement will be the biggest news to hit the hi-fi world in 78.

Sound Cable

Sound Cable is a remarkable new high definition low distortion speaker wire which is capable of significantly improving the performance of any high fidelity system.

Areas of significant sonic improvement realized by the use of Sound Cable include the following:

- 1 Bass definition and punch
- 2 Dynamic range
- 3 High end detail and smoothness
- 4 Imaging
- 5 Depth and overall 'air' (real air around the instruments throughout their range and not just added brightness)

In addition, a false reverberant quality caused by the internal electrical reflection in regular speaker wire is eliminated.

Typical characteristics

DC resistance: 12 m ohms/metre
Inductance: 0.155 micro henry/metre
Impedance: 8.4 ohms

MA10

200 W STUDIO PROFESSIONAL

Monitor Audio's new high power loudspeaker offering a no compromise acoustic performance with a specification to match.

Frequency response:

± 2 dB, 50 Hz - 20 kHz on axis

Voltage sensitivity: 2.83 volts will produce 87 dB

Distortion: Less than 1% even at high pressure levels 96 dB, 1 metre

Impedance: Nominally 8 ohms
Dimensions: 80 cm high x 38 cm wide x 38 cm deep



ET500

The direct drive turntable with no compromise design features.

This product is the result of two years' research and has three very special features: Lead laminate plinth, Separate power supply and an Interchangeable arm facility.

Give the ET500 a hearing!

Interchangeable arm mount



Separate power unit

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Monitor Audio Limited 347 Cherry Hinton Road Cambridge England
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Name _____
Address _____

No SAE necessary

3 of the best

Charisma

Maramba



Richard Allan bring you three high efficiency systems designed to the most exacting standards, obtaining the best possible reproduction at minimum cost.

Each unit is beautifully finished in natural teak or walnut veneer, and enhanced with a sculptured front of acoustically transparent foam, ensuring that there is no significant effect on the treble response.

Both the Tango and Maramba are compatible with the Charisma, as rear speakers in quadrophonic systems.

Richard Allan

Please send me further information on the above systems, plus a list of Richard Allan stockists in my area. Richard Allan Radio Ltd., Bradford Road, Gomersal Cleckheaton BD19 4AZ, Yorkshire, England. Tel: Cleckheaton (0274) 872442
Telex: 51112 Concab-G Cables: 'ACOUSTICS' Bradford

Name _____

Address _____

HFYB

SPEAKER ENCLOSURES

26mm, 154mm. Crossover frequency: 2.5Hz. FR: 90Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 15-50W. Dimensions: 20 × 25 × 35cm. Teak/walnut finish. Bookshelf. Price per pair: £82.57 (plus VAT).

Ditton 15XR ★

ABR enclosure with drive units: 26mm, 205mm, 205mm ABR. Crossover frequency: 2.4Hz. FR: 30Hz-28kHz. Imp: 8 ohms. Recommended amplifier output: 10-60W.

Dimensions: 25 × 24 × 56cm. Teak/walnut finish. ABR unit, bookshelf. Price per pair: £120.37 (plus VAT).

■ CERWIN-VEGA!

C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

R 10 Receiver Saver

Reflex speaker with drive units: 254mm LF



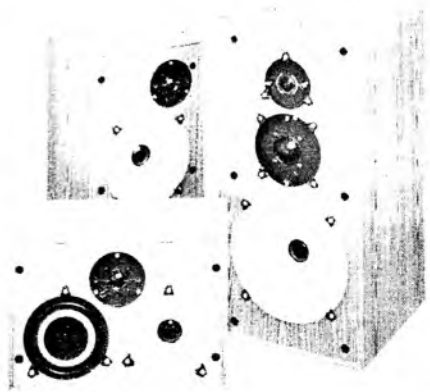
Celestion Ditton 33



Celestion Ditton 11



Celestion Ditton 15



Celestion UL6, 8

★ Indicates entry is illustrated

and 25mm HF. Crossover frequency: 1,200Hz. FR: 38Hz-20kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 40W, 80W with bass excavator. Dimensions: 33 \times 29 \times 60.95cm. Walnut finish. Price per pair: £240.00 (plus VAT).

R 12 Receiver Saver

Reflex speaker with drive units: 305mm LF and D horn (25.4mm VC) HF. Crossover frequency: 2,000Hz. FR: 38Hz-20kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 50W, 100W with bass excavator. Dimensions: 36.80 \times 29.20 \times 63.50cm. Walnut finish. Price per pair: £300.00 (plus VAT).

R 123 Receiver Saver

Reflex enclosure with drive units: 305mm LF, 152mm Mid, D horn (25.4mm VC) HF. Crossover frequency: 500Hz, 5,000Hz. FR: 38Hz-29kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 50W, 100 with bass excavator. Dimensions: 36.80 \times 29.20 \times 63.50cm. Walnut finish. Price per pair: £400.00 (plus VAT).

Hardrocker 212

Reflex enclosure with drive units: 305mm LF, Horn HF. Crossover frequency: 2,000Hz. FR: 35Hz-17kHz. Imp: 8 ohms. Recommended amplifier output: 100W, 200W with bass excavator. Dimensions: 40 \times 40 \times 66cm. Walnut finish. Price per pair: £400.00 (plus VAT).

Hardrocker 312

Reflex enclosure with drive units: 305mm LF, 152mm Mid, Horn HF. Crossover frequency: 300Hz, 3,500Hz. FR: 35Hz-17kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 150W, 300W with bass excavator. Dimensions: 40 \times 40 \times 66cm. Walnut finish. Price per pair: £480.00 (plus VAT).

Hardrocker 317

Reflex enclosure with drive units: 380mm LF, 152mm Mid, Horn HF. Crossover frequency: 300Hz, 3,500Hz, 12,000Hz. FR: 30Hz-17kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 200W, 400W with bass excavator. Dimensions: 46.35 \times 45 \times 74.95cm. Walnut finish. Price per pair: £660.00 (plus VAT).

Loudspeaker S-1

Reflex enclosure with 305mm LF, 152mm Mid, D Horn (25.4mm VC) HF. Crossover frequency: 300Hz, 4,000Hz. FR: 28Hz-20kHz \pm 4dB. Imp: 8 ohms. Dimensions: 36.8 \times 35.5 \times 63.5cm. Walnut finish. Thermo vapour suspension. Price per pair: £526.00 (plus VAT).

Loudspeaker S-2

Reflex enclosure with drive units: 380mm LF, 152mm Mid, Horn HF. Crossover frequency: 200Hz, 4,000Hz. FR: 28Hz-17kHz \pm 3dB. Imp: 8 ohms. Recommended amplifier output: 250W. Dimensions: 46.3 \times 45 \times 74.95cm. Walnut finish. Thermo vapour suspension. Price per pair: £926.00 (plus VAT).

12 TR

Direct radiating/reflecting with rear bass duct. Drive units: 305mm LF, 152mm Mid, D Horn (25.4mm VC) HF. Crossover frequency: 35Hz-20kHz \pm 3 $\frac{1}{2}$ dB. Imp: 8 ohms. Recommended amplifier output: 100W. Dimensions: 34.30 \times 34.30 \times 101.50cm. Oiled walnut or black grille finish. Ultra-high efficiency. High power floor facing woofer for improved loading. Price per pair: £570.00 (plus VAT).

H 10

Vent-tuned high energy design with drive units: 254mm Steel LF, D Horn (25.4mm VC) HF. Crossover frequency: 2,000Hz. FR: 38Hz-20kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 25W, 50W with bass excavator. Beige/brown finish. Price per pair: £178.00 (plus VAT).

W 10

Vent-tuned high energy design. Drive units: 254mm Cast aluminium LF, D Horn (25.4mm VC) HF. Crossover frequency: 2,000Hz. FR: 38Hz-20kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 40W, 80W with bass excavator. Walnut and ebony facing. Price per pair: £198.00 (plus VAT).

H 12

Vent-tuned high energy design with drive units: 305mm Cast aluminium LF, D Horn (25.4mm VC) HF. Crossover frequency: 2,000Hz. FR: 38Hz-20kHz \pm 4dB. Imp: 8 ohms. Recommended amplifier output: 50W, 100W with bass excavator. Beige/brown finish. Price per pair: £198.00 (plus VAT).

W 12

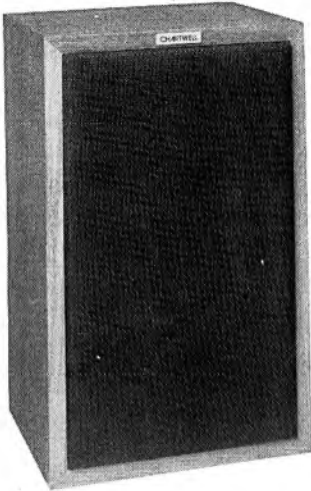
As above but with Walnut and ebony facing. Price per pair: £238.00 (plus VAT).

H 15

Vent-tuned high energy design with drive units: 380mm LF, Horn (2). Crossover frequency: 2,000Hz. FR: 32Hz-16kHz \pm 5dB. Imp: 8 ohms. Recommended amplifier output: 100W, 200W with bass excavator. Beige/brown finish. Price per pair: £358.00 (plus VAT).

DB 10 Bass Excavator

Designed to take advantage of extra bass capability of Cerwin-Vega speakers. It restores buried or rolled-off bass in records and tapes. Eliminates distortion and woofer damage due to subsonic noise. Extends the useful response of many speaker systems up to a full octave. Housed in steel enclosure in standard RCA inputs and outputs. Price: £35.00.



Chartwell LS3/5A

■ **CHARTWELL**

Chartwell Electro-Acoustics Ltd,
2 Commonside East, Mitcham,
Surrey CR4 1HX.
Tel: 01-648 4494/5, 01-640 7426/7.

LS3/5A ★

1B speaker with B110 and T27 drive units. Crossover frequency: 3kHz. FR: 60Hz-20kHz ± 4 dB. Imp: 15 ohms. Rec. amplifier output: 25W. Dimensions: 19 × 16 × 30.5cm. Finish: teak, walnut, rosewood. Price: teak/walnut £150.00 per pair (plus VAT); rosewood, black oak £165.00 per pair (plus VAT).

PM 100 ★

Reflex speaker with Chartwell CEA 165 and 25 drive units. Crossover frequency: 3.5kHz. FR: 50Hz-20kHz ± 3 dB. Imp: 8 ohms. Rec. amplifier output: 40W. Dimensions: 24 × 20 × 46cm. Sculptured foam grille. Price: teak/walnut £161.00 per pair (plus VAT), rosewood £181.00 per pair (plus VAT).

PM 200 ★

Reflex speaker with Chartwell CEA 205 & 25 drive units. Crossover frequency: 3.5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Amplifier output: 50W. Dimensions: 34.3 × 26.6 × 66cm. Sculptured foam grille. Price: teak/walnut, £214.00 per pair (plus VAT), rosewood, black oak £276.00 (plus VAT).

PM 400 ★

Reflex speaker with Chartwell CEA 305, Chartwell CEA 145, 25 drive units. Crossover frequency: 500Hz, 3.5kHz. FR: 30Hz-30kHz.

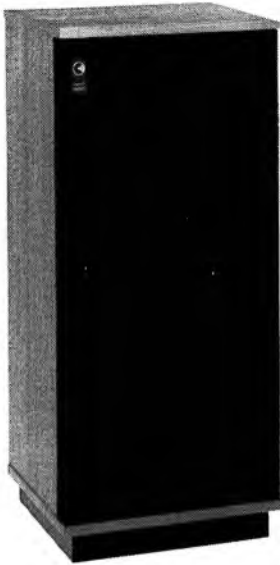


Chartwell PM200



Chartwell PM100

★ Indicates entry is illustrated



Chartwell PM400

Imp: 8 ohms. Rec. amplifier output: 100W. Dimensions: 38.1 × 33 × 86.4cm. Sculptured foam grille. Price: teak/walnut £361.00 per pair (plus VAT), rosewood, black oak £437.00 per pair (plus VAT).

PM 450 Passive

Reflex speaker with Chartwell CEA305PP and 25 drive units. Crossover frequency: 1.8kHz. FR: 45Hz-20kHz ± 3dB. Imp: 8 ohms. Recommended amplifier output: 300W. Dimensions: 76 × 46 × 41.2cm. Teak and walnut finish £1,000.00 (plus VAT), rosewood/black oak £1,086.00 (plus VAT).

PM 450 Electronic

Reflex speaker with Chartwell CEA305PP and 25 drive units. Crossover frequency: 1.8kHz. FR: 45Hz-20kHz ± 2dB. Imp: 20K or 600 balanced switchable. Supplied with integrated power amplifier. Dimensions: 94.5 × 46 × 41.2cm. Teak/Walnut finish £1,400.00 (plus VAT), Rosewood/Black Oak £1,486.00 (plus VAT).

■ CLARK

Clark Speakers, 122 Hull Road, Anlaby, North Humberside HU10 6UV. Tel: Hull 656706.

A1-31H

Critically damped three triangle transmission line enclosure. Drive units: bass 207mm cone, 122mm precisely damped mid-range, 19mm

Melinox dome tweeter. Crossover frequency: 450Hz and 3.3kHz. FR: 25Hz-30kHz. Imp: 8 ohms. Amplifier requirements: suitable for 15-135W RMS per channel amplifiers. Dimensions: 78 × 45 × 36cm. Weight: 34kg. Finish: walnut or teak. Optimum perspective control. Mounted on castors. Price per pair: £273.00 (plus VAT). Discount for direct sales.

A1-35/2

Critically damped, three triangle, transmission line enclosure. Drive units: 300 × 210 flat polystyrene diaphragm bass, 207mm precisely damped mid-range in 7.7 litre isolated enclosure. 19mm Melinox dome tweeter. Undamped line length: 2.71m. Crossover frequencies: 250Hz, 3.3kHz. FR: 20Hz-30kHz. Imp: 8 ohms. Amplifier requirements: suitable for 25-125W RMS per channel amplifiers. Dimensions: 89 × 45 × 35cm. Weight: 41kg. Finish: Walnut or teak. Optimum perspective control. Mounted on castors. Price per pair: £335.00 (plus VAT). Discount for direct sale.

TS22

IB enclosure. Drive units: 19mm Melinox dome tweeter; 222mm Bextrene cone bass/mid. Crossover frequency: 3.3kHz. FR: 35Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 25-60W. Dimensions: 53 × 28 × 24cm. Finish: teak or walnut. Price: £120.00 (plus VAT). Discount for direct sales.

BR27

Reflex enclosure. Drive units: 19mm Melinox dome, 122mm precisely damped mid range, 300 × 210mm polystyrene diaphragm bass. Crossover frequency: 450 and 3.3kHz. Frequency range: 35Hz-30kHz. Imp: 8 ohms. Recommended amplifier output: 25-125W. Dimensions: 67 × 37 × 33cm. Finish: Teak or Walnut. Mounted on castors. Price: to be announced. Discount for direct sales.

■ DAHLQUIST

Hayden Laboratories Ltd. Churchfield Road, Chalfont St. Peter, Bucks. SL9 9EW. Tel: Gerrards Cross 88447.

DQ-10 ★

Will handle 200W programme material. Power requirements: 60W. Imp: 8 ohms. Number of drivers: 5. Crossover points: 400Hz; 1kHz; 6kHz; 12.5kHz. FR: 35Hz-27kHz. Dimensions: 30½ × 31½ × 9in. Finish: rich black cloth with American walnut side trim and legs. Enclosure rear surfaces black leatherette lamination. Price: £610.00 per pair (plus VAT).

DQ-1W ★

High definition add on woofer system. Walnut



Dahlquist DO10

cabinet with black grille assembly. Price: £226.00 per pair (plus VAT).

■ **DANSK**

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs.
Tel: Newcastle Staffs 615131.

A-25

Volume: 25 litres. FR: 30-20,000Hz. Nominal level: 45W. Overload level: 90W. Efficiency 96dB/1kHz: 5W. Crossover: 1,500Hz. Design system: aperiodic valve. Units: Dome 38mm, bass 254mm. Dimensions: 25cm deep × 29cm wide × 50cm high. Price: £45.81.

■ **DECCA SPECIAL PRODUCTS**

Ingate Place, Queenstown Road,
London SW8 3NT.
Tel: 01-622 6677.

London Enclosure ★

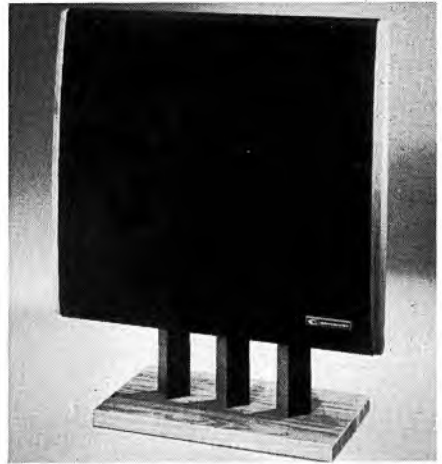
Infinite baffle speaker. Drive units: ribbon (London), high flux 203mm bass. Crossover frequency: 1.6kHz. FR: 50-25,000Hz. Imp: 8 ohms. Amplifier requirements: 25W nominal. Dimensions: 35.4 × 28.1 × 58.5cm. Weight: 19kg. White, rosewood, or walnut. Price: £200.00 per pair.

■ **DUAL**

Audiodecks Ltd, PO Box 7, Sandbeck Way,
Wetherby, Yorks.
Tel: Wetherby 5477.

CL 380

IB enclosure with 3-way drive units. FR:

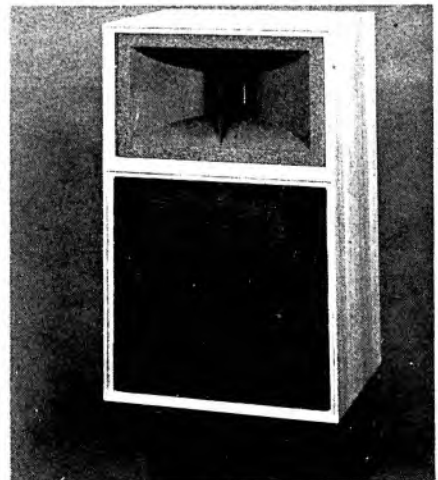


Dahlquist

25Hz-25kHz. Imp: 4 ohms. Amplifier output: 15Hz-25kHz. Dimensions: 30 × 22 × 50cm. Walnut finish. Level controls at MF & HF. Removable grille, finished baffle. Price per pair: £235.00 (plus VAT).

CL 450

IB enclosure with drive units: 205mm, 25mm. Crossover frequency: 1500Hz. FR: 30Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 20-80W. Dimensions: 30 × 25 × 50cm. Finish: walnut colour. Features: HF level control, finished front, detachable grille. Price per pair: £197.24 (plus VAT).



Decca London Enclosure

★ Indicates entry is illustrated

CL 470

IB enclosure with drive units: 250mm, 38mm, 25mm. Crossover frequency: 600Hz, 3,000Hz. FR: 25Hz-25kHz. Imp: 8 ohms. Recommended amplifier output: 20-100W. Dimensions: 33 × 26 × 59cm. Finish: walnut colour. Features: HF and MF level controls. Fully-finished front detachable grille. Price per pair: £250.90 (plus VAT).

■ DYNATRON

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

LS 3238

Crossover frequency: 1,500Hz. Dimensions: 35.5 × 27 × 69cm. Other details on application. Price per pair: £175.00 (plus VAT).

■ EAGLE

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

L 7800

Infinite baffle speaker. Imp: 8 ohms. Recommended amplifier output: 80W. Walnut finish. Price: to be announced.

L 7600

Infinite baffle speaker. Imp: 8 ohms. Recommended amplifier output: 60W. Walnut finish. Price: to be announced.

L 4400

Infinite baffle speaker. Imp: 8 ohms. Recommended amplifier output: 50W. Teak finish. Price: to be announced.

L 4200

Infinite baffle speaker. Imp: 8 ohms. Recommended amplifier output: 20W. Teak finish. Price: to be announced.

■ EMPEROR

M.M.G. Associates, 19 St Andrews Road, Great Malvern, Worcs WR14 3PR.
Tel: Malvern 63555.

Mk II Series

Infinite baffle speaker enclosure. 13 × 8in. elliptical driver with coaxially mounted high frequency unit. Crossover frequency: adjustable. FR: 50Hz-16kHz ±3dB. Imp: 8 or 16 ohms. Amplifier requirements: 20W. Adjustable high frequency balance. Dimensions: 79 × 43 × 23cm. Finish: teak effect in Melamine. Price per pair: £108.00 (inc. VAT).

■ ENVIRONMENTAL SOUND

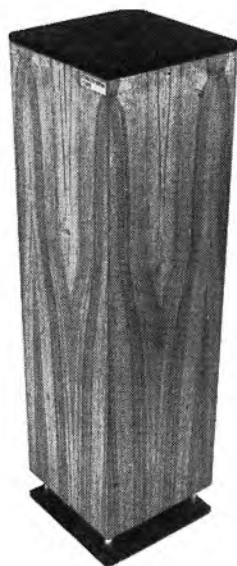
Environmental Sound,
High Street, Northallerton,
North Yorks. DL7 8EE.
Tel: Northallerton 5434/5.

Table 15 ★

Infinite baffle completely disguised as an elegant Victorian table. Drive units: 203mm, 150mm, 25mm. Crossover frequency: 800 and 5,000Hz. FR: 35-18,500Hz. Imp: 8 ohms. Amplifier output: 10-50W. Dimensions: 45.7 × 38.1cm. The structure of the table is covered in a variety of shades of beige and the whole



Environmental Sound VT15



Environmental Sound Column

object enveloped in a lace tablecloth which is acoustically transparent. These are omnidirectional units designed to blend with the decor of the home while reproducing pure uncoloured sound, giving flexibility of positioning. Price: £189.44 (plus VAT).

Table 24

Infinite baffle disguised as an elegant Victorian table. Drive units: 25.4mm, 100mm, 25mm. Crossover frequency: 800, 5,000Hz. FR: 18.5kHz. Imp: 8 ohms. Designed to operate with amplifiers from 10-100W RMS. Dimensions: 56 × 61 cm. The structure of the table is covered in a variety of shades of beige and the whole object enveloped in a lace tablecloth which is acoustically transparent. These are omnidirectional units designed to blend with the decor of the home while reproducing pure uncoloured sound, giving flexibility of positioning. Price: £286.00 (plus VAT).

Rondo

Rigid cylinder with acoustical transparent top. Infinite baffle. Drive units: 203mm, 56mm. Crossover frequency: 3,000Hz. Output: 10-30W. FR: 40-20,000Hz. Imp: 8 ohms. Designed to operate with amplifiers from 10-50W RMS. Dimensions: 38.1 × 25.4cm. Finish: white, dark brown. Periantric loudspeaker. Price per pair: £80.56 (plus VAT).

Tower

Infinite baffle made in high density veneered chipboard. Drive units: 203mm, 25mm dome. Crossover frequency: 3,000Hz. FR: 35Hz-18.5kHz. Imp: 8 ohms. Dimensions: 48.3 × 27.3 × 27.3cm. Teak, black or walnut finish. Features: Periantric loudspeakers. Price per pair: £104.74 (plus VAT).

Column ★

Infinite baffle speaker. Drive units: 203mm, 25mm dome. Crossover frequency: 800 and 5,000Hz. FR: 35Hz-18.5kHz. Imp: 8 ohms. Amplifier output: 10-50W. Dimensions: 22.2 × 22.2 × 76.2cm. Teak, black or walnut finish. Periantric loudspeaker allowing maximum number of locations in the home. Price per pair: £150.46 (plus VAT).

FF 00

Compact bookshelf unit, IB enclosure. Drive units: 100mm, 25mm. Crossover frequency: 5,000. FR: 59Hz-18.5kHz. Imp: 8 ohms. Recommended amplifier output: 10-25W. Dimensions: 23.9 × 14 × 23.5cm. Finish: teak, walnut veneers or black. Price per pair: £51.20 (plus VAT).

FF 1

Infinite baffle device of moderate dimensions yet capable of producing real bass. Drive units: 165mm, 25mm. Crossover frequency: 5,000Hz. FR: 55Hz-18.5kHz. Imp: 8 ohms. Recommended amplifier output: 10-35W. Dimensions: 35.6 × 22.9 × 25cm. Finish: teak, walnut or black. Price per pair: £70.01 (plus VAT).

FF 2

Bass reflex devices with tuned ports designed to optimise performance of low frequency drivers. Drive units: 165mm, 25mm. Crossover frequency: 5,000Hz. FR: 49Hz-18.5kHz. Imp: 8 ohms. Recommended amplifier output: 10-35W. Dimensions: 55.8 × 25.4 × 23.8cm. Finish: teak, walnut or black. Price per pair: £93.31 (plus VAT).

FF 3

Bass reflex enclosure. Drive units: 20.3mm, 25mm. Crossover frequency: 5,000Hz. FR: 39Hz-18.5kHz. Imp: 8 ohms. Output: 10-50W. Dimensions: 68.6 × 27.3 × 29.8cm. Finish: walnut, teak, black. Price per pair: £121.66 (plus VAT).

■ EXPOSURE

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

I

Transmission line — 2-way drive units. Crossover frequency: 14kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Amplifier output: 25-100W. Dimensions: 30.5 × 30.5 × 61cm. Walnut finish. Price per pair: £195.00 (plus VAT).

II

As above but with 3-way drive units. Price: £245.00 (plus VAT).

■ GALE

Rurkesary Ltd, 23 Bruton Place, London W1.
Tel: 01-499 9966.

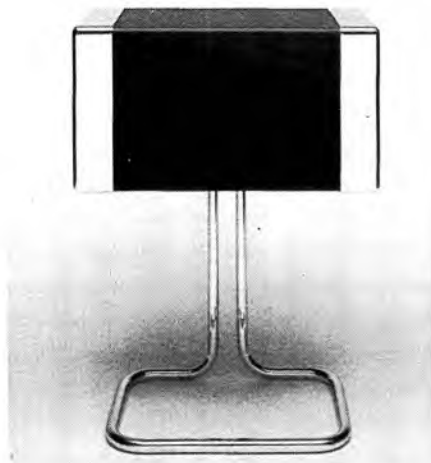
GS401A ★

Infinite baffle enclosure consisting of 2 bass drivers, midrange & tweeter. Crossovers: 475 & 5000Hz. FR: 55Hz-20,000Hz in anechoic chamber, 35Hz-20,000Hz normal room. Output: 40-200W. Imp: 4-8 ohms. Fuse protected; balance controls for midband and treble. Compact speaker designed for use as bookshelf unit or can be placed on Gale speaker stands. Dimensions: 33 × 27 × 60.5cm. Seven year guarantee. Finish: matt black & chrome. Fea-

★ Indicates entry is illustrated



Gale 401C



Gale GS401A on stand

tures: Matching chrome stands £50.00 per pair (plus VAT). Price: £175.00 each (plus VAT).

GS401C ★

Identical specifications to GS401A but with walnut cabinet. Price: £175.00 each (plus VAT).

■ GOODMAN'S

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

RB 35 ★

Closed box with 260mm bass, 85mm midrange and 26mm HF dome. Crossover frequency: 1kHz and 6kHz. FR: (DIN) 40Hz-20kHz. Imp: for amps of 4 or 8 ohms. Amplifier output: 10-60W. Dimensions: 32 × 25 × 62cm. Teak or walnut effect. Supplied with 7m of lead with DIN plugs. No rec. retail price.

RB 20 ★

Closed box with 200mm bass, 85mm midrange, 26mm dome HF. Crossover frequency: 1kHz and 6kHz. FR: (DIN) 50Hz-20kHz. Imp: 4 or 8 ohms. Amplifier output: 10-50W. Dimensions: 26 × 25 × 48cm. Teak or walnut effect finish. Supplied with 7m lead fitted with DIN plugs. No rec. retail price.

RB 18 ★

Closed box with 200mm bass, 26mm dome HF. Crossover frequency: 2,000Hz. FR: 60Hz-20kHz. Imp: 4 or 8 ohms. Amplifier output: 10-40W. Dimensions: 26 × 25 × 43cm. Teak or walnut effect. 7m of lead supplied fitted with DIN plugs. No rec. retail price.

dB 50 ★

Reflex system for discotheque use. 310mm bass, horn HF unit. Crossover frequency: 2,000Hz. FR: 80Hz-18kHz. Imp: 4 or 8 ohms. Amplifier output: 2-75W. Dimensions: 38 × 30.5 × 62cm. Teak or walnut effect. High sensitivity: DIN 0.4W, wide dispersion. No rec. retail price.

Achromat Beta

Closed box with 165mm bass, 25mm dome HF. Crossover frequency: 2kHz. FR: 45Hz-22kHz. Imp: 4 or 8 ohms. Amplifier output: 20-75W. Dimensions: 18.3 × 24 × 35cm. Teak or walnut veneers. Price: to be announced.

Achromat Kappa

Closed box with 203mm bass, 25mm dome HF. Crossover frequency: 4kHz. FR: 40Hz-22kHz. Imp: 4 or 8 ohms. Amplifier output: 20-100W. Dimensions: 24 × 28.5 × 54cm. Teak or walnut veneers. Price: to be announced.

Achromat Sigma

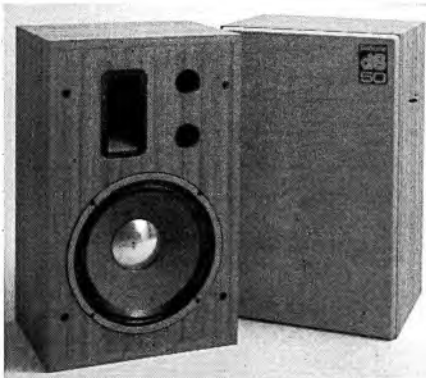
Reflex cabinet ABR loaded. Drive units: 203mm bass, 25mm dome HF, 260mm ABR. Crossover frequency: 4kHz. FR: 35Hz-22kHz. Imp: 4 to 8 ohms. Amplifier output: 20-100W. Dimensions: 30.3 × 32 × 68.6cm. Teak or walnut veneers. Use with Goodmans CS3 stand. Price: to be announced.

RB 65 ★

Infinite baffle speaker with drive units: 300mm bass, 130mm mid, 25mm dome HF. Crossover frequency: 1kHz, 6kHz. FR: 40Hz-20kHz. Imp: 4-8 ohms. Recommended amplifier output: 10-75W. Dimensions: 70 × 38 × 31cm. Teak or walnut effect finish. Supplied with 7 metre lead and connections. No rec. retail price.



Goodmans speakers



Goodmans dB50 Discoteque System



Goodmans RB65

■ GRUNDIG

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

System 5000 ★

Infinite baffle enclosure with units and crossover. Two bass/mid-range units and two treble. FR: 45Hz-20kHz. Imp: 4 ohms. HC: 35W. Finish: white globe with satin silver stand. No rec. retail price.

System 8000

IB enclosure with 4 drive units. Crossover frequency: 2,200Hz. FR: 45Hz-26,000Hz. Imp: 4 ohms. Recommended amplifier output: 50W. Diameter: 32cm. Anthracite/chrome finish. No rec. retail price.

Box 250

IB enclosure with 2 drive units. Crossover frequency: 3,000Hz. FR: 50Hz-20,000Hz. Imp: 4 ohms. Rec. amplifier output: 25W. Dimensions: 14 × 25 × 13cm. Finish: dark anthracite. No rec. retail price.

Box 550

IB enclosure with 2 drive units. Crossover frequency: 1,500Hz. FR: 40Hz-26,000Hz. Imp: 4 ohms. Recommended amplifier output: 35W. Dimensions: 23 × 39 × 21cm. Finish: anthracite. No rec. retail price.

Box 600

IB enclosure with 2 drive units. Crossover frequency: 900/4000Hz. FR: 40Hz-26kHz. Imp: 4 ohms. Amplifier output: 40W. Dimensions: 23

★ Indicates entry is illustrated

× 39 × 24cm. Simulated walnut finish. No rec. retail price.

Box 650

IB enclosure with 3 drive units. Crossover frequency: 1.000Hz. 4.500Hz. FR: 40Hz-26.000Hz. Imp: 4 ohms. Rec. amplifier output: 40W. Dimensions: 23 × 39 × 21cm. Finish: Anthracite. No rec. retail price.

Box 850

IB enclosure with 3 drive units. Crossover frequency: 900Hz. 4.000Hz. FR: 35Hz-26.000 Hz. Imp: 4 ohms. Rec. amplifier output: 50W. Dimensions: 28 × 45 × 24cm. Finish: Anthracite. No rec retail price.

Box 1000

IB enclosure with 3 drive units. Crossover frequency: 900Hz, 4.000Hz. FR: 32Hz-26.000Hz. Imp: 4 ohms. Rec. amplifier output: 60W. Dimensions: 30 × 48 × 30cm. Finish: anthracite. No rec. retail price.

Box 1500

IB enclosure with 3 drive units. Crossover frequency: 900Hz, 4.000Hz. FR: 32Hz-26.000Hz. Imp: 4 ohms. Rec. amplifier output: 60W. Dimensions: 30 × 48 × 27cm. Finish: anthracite. No rec. retail price.

Box 2500

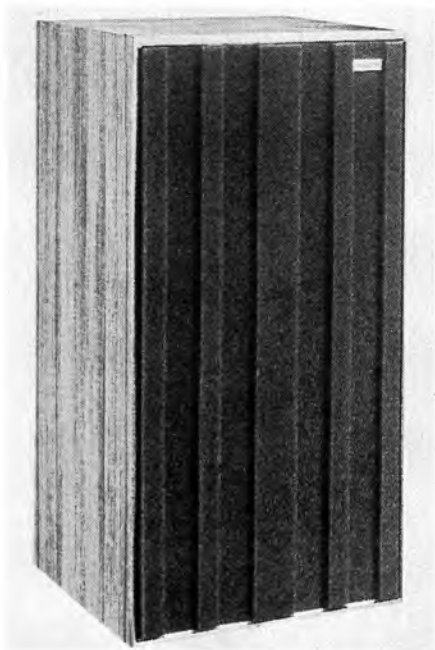
IB enclosure with 4 drive units. FR: 25Hz-26.000Hz. Imp: 4 ohms. Rec. amplifier output: 80W. Dimensions: 36 × 61 × 30cm. Finish: anthracite. No rec. retail price.

■ **HARBETH**

Harbeth Acoustics, 2a Nova Road, West Croydon, Surrey CR0 2TL. Tel: 01-681 7876.

HL ★

Reflex enclosure with 203mm and 25mm drive units. Crossover frequency: 2kHz. FR: 45Hz-



Harbeth HL speaker



Grundig Auditorama 5000



Hitachi HS 335

25kHz. Imp: 8 ohms. Rec. amplifier output: 100W. Dimensions: 33 × 30.5 × 63.5cm. Finish: teak or walnut. Features: new polypropylene copolymer bass/mid frequency unit. Price per pair: £270.00 teak or £272.00 walnut.

■ HITACHI

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

HS 335 ★

Enclosure: Damp based reflex. Volume of enclosure: 38 litres. Speakers: Woofer 9³/₄in. (25cm); Mid range: 4³/₄in. (12cm). Tweeter: Titanium domed 1in. (2.5cm). Frequency response: 45-18,000Hz (-8dB). 40-20,000Hz (-15dB). Crossover frequency: 600Hz, 3,000Hz. Imp: 6 ohms. Maximum input power: 50 watts maximum. Output sound pressure level: 91dB (1W, 1m). Dimensions (W × H × D): 12¹/₂in × 21¹/₂in × 12¹/₂in. (31.5 × 55 × 31.5cm). Weight: 28.6lbs (13kg). Cabinet: Simulated teak finish. Price: £94.00 (inc. VAT).

HS 450

IB 45 litres enclosure. Drive units: bass 28cm cone, mid 6cm cone, HF 2.5cm dome. Crossover frequency: 700Hz and 4,500Hz. FR: 38Hz-20kHz. Imp: 6 ohms. Amplifier output: 50W. Dimensions: 35.5 × 32 × 60.5cm. Walnut finish. Price: £120.00 each (inc. VAT).

■ IMF ELECTRONICS

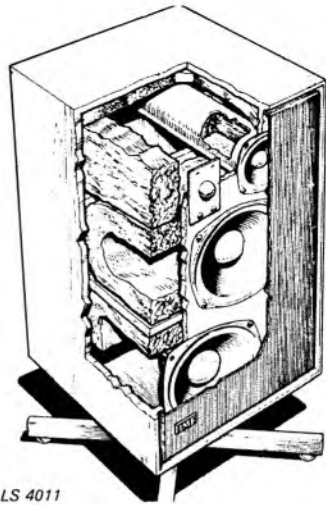
IMF Electronics Ltd, Westbourne Street, High Wycombe, Bucks. Tel: High Wycombe 35576.

Compact II

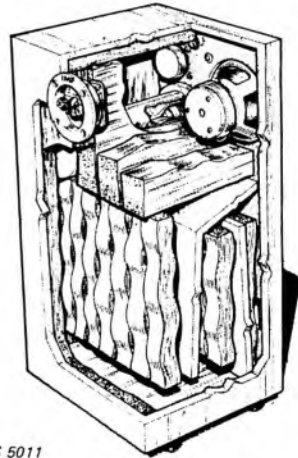
Reflex enclosure with units and crossover. 16.5 bextrene mid-range and bass unit with domed tweeter. Crossover frequency: electrical two way at 4kHz. FR: 35Hz-20kHz. Imp: 4-8 ohms. Efficiency: 99dB via pink noise at 1m on axis for 40W. Amplifier requirements: 15-40W. Dimensions: 38 × 23 × 24cm. Finish: teak or walnut woodgrain. Price per pair: £117.00 (inc. VAT).

Super-Compact

Reflex enclosure with units and crossover. 20.5cm bextrene bass unit and 10cm rolled surround impregnated cone and mid-range with domed tweeter. Crossover: electrical three-way at 375Hz and 3kHz. FR: 30Hz-20kHz. Imp: 4-8 ohms. Efficiency: 100dB via pink noise at 1m on axis for 40W. Amplifier requirements: 20-50W. Dimensions: 46 × 28 ×



IMF ALS 4011



IMF TLS 5011

30cm. Finish: teak or walnut woodgrain. Price per pair: £162.00 (inc. VAT).

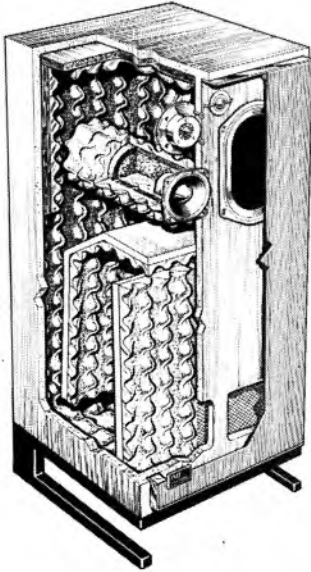
Studio ALS 40 II ★

Active line loudspeaker with units and crossover. 20.5cm bextrene bass unit, 20.5cm bextrene sub-bass unit and 10cm rolled surround impregnated cone mid-range with domed tweeter. Crossover: electrical four way at 150Hz, 375Hz and 3kHz. FR: 28Hz-20kHz. Imp: 4-8 ohms. Efficiency: 98dB via pink noise at 1m on axis for 40W. Amplifier requirements: 25-60W. Dimensions: 35 × 35 × 68cm. Finish: walnut. Price per pair: £306.00 (inc. VAT).

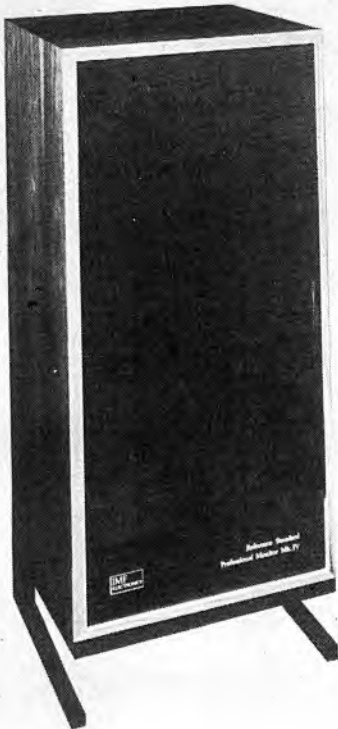
Studio TLS 50 II ★

Transmission line loudspeaker with units and crossover. 20.5cm bextrene bass unit, 10cm

★ Indicates entry is illustrated



IMF Monitor TLS 80 Mk II diagram



IMF Professional Monitor MK IV

rolled surround impregnated cone mid-range with domed tweeter and super tweeter. Crossover: electrical four way at 375Hz, 3kHz. FR: 23Hz to beyond audibility. Imp: 4-8 ohms. Efficiency: 97dB via pink noise at 1m on axis for 40W. Amplifier requirements: 30-70W. Dimensions: 36 × 38 × 92cm. Finish: walnut. Price per pair: £396.00 (inc. VAT).

Monitor TLS 80 II ★

Transmission line loudspeaker with units and crossover. Bass unit 31 × 21cm flat polystyrene diaphragm loaded by transmission line, mid-range 15.2cm plastic cone in separate line, 5cm tweeter and 2cm chemical dome super-tweeter. Crossover: electrical four way at approximately 375Hz, 3.5kHz and 13kHz. FR: 20Hz to beyond audibility. Imp: 4-8 ohms. Efficiency: 96dB via pink noise at 1m on axis for 40W. Amplifier requirements: 40-100W. Dimensions: 46 × 41 × 98cm. Finish: walnut. Supplied in matched 'mirror-image' pairs. Price per pair: £630.00 (inc. VAT). Inc. stands.

Reference Standard Professional Monitor Mk IV ★

Transmission line loudspeakers with units and crossover. Bass unit 30 × 21cm flat polystyrene diaphragm loaded by transmission line, midrange 15cm plastic cone in separate line, 4.5cm tweeter and 2cm chemical dome super tweeter. Crossover: electrical four way at 350Hz, 3kHz and 13kHz. Controls for filter, tilt and slope. Imp: 4-8 ohms. Efficiency: 96-98dB dependent on control settings via pink noise at 1m on axis for 40 watts. Amplifier requirements 50-150 watts. Dimensions: 101 × 43 × 50cm, allow height of 117cm on stand. Finish: walnut. Supplied in matched 'mirror-image' pairs. Price per pair: £927.00 (inc. VAT).

■ ISOPHON-WERKE

Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, SL9 9EW. Tel: Gerrards Cross 88447.

■ ITT

ITT Consumer Products (UK) Ltd, Chester Hall Lane, Basildon, Essex SS14 3BW.

8073

Reflex enclosure with drive units: 250mm, 37mm and 25mm. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 5-130W. Teak veneer finish. Features: arrival time compensation, treble control, mid-range control. No rec. retail price.



Jordan 1000 CB

8071

Reflex enclosure with drive unit: 137mm and 25mm dome. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 13-90W. Teak veneer finish. Features: arrival time compensation, treble control. No rec. retail price.

8072

Reflex enclosure with drive units: 200mm, 34mm, 25mm. FR: 50Hz-20kHz. Imp: 4, 8 ohms. Recommended amplifier output: 12.6-90W. Teak veneer finish. Arrival time compensation, treble and mid-range control. No rec. retail price.

Pedestal

Infinite baffle speaker with drive units: 2 × 210mm, 25mm dome. Crossover frequency: 500Hz, 1,750Hz. FR: 20Hz-20kHz ±0.25dB. Imp: 6 ohms. Recommended amplifier output: 20-100W. Dimensions: 28.75 × 28.75 × 82.5cm. Walnut/Teak. Sculptured radius corners on four sides, inlaid baffle, four quartered and inlaid top. Price: £458.00 (plus VAT).

■ JORDAN

E. J. Jordan Ltd. Stonyway,
Bovingdon Green, Marlow, Bucks. SL7 2JH.
Tel: Marlow 2526.

System 1000 CB ★

Two miniature bookshelf enclosures plus separate bass enclosure. Drive units: 50mm. Jordan Stereo Crossover. Crossover: 150Hz.

FR: 40Hz-22kHz. Output: 20W. Imp: 8 ohms. Dimensions: side cabinets: 20.3 × 19 × 10.2cm, bass cabinets 61 × 38 × 24cm. Finish in teak veneer with black acoustically transparent grille, set in gold trim. Price: £188.00.

System 2500 CB

As above but with larger bass enclosure 880 × 488 × 250cm. Price: £203.00 (plus VAT).

Co-Planar Suite

System utilises two formations of Jordan 50mm units to generate co-incidental plane wave radiation. This eliminates the usual concentrations of sound around the loudspeakers and opens up an effective full width sound area between the loudspeakers throughout which, the correct positions of all voices and instruments are maintained, largely, irrespective of the position of the listener. Matched L-R pairs each fitted with an array of four Jordan 50mm units. Dimensions: 14.5 × 12.4 × 5cm. Price: £387.00 (plus VAT).

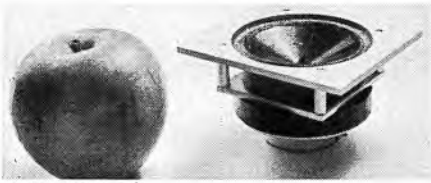
Minette 1000 RB

Comprises two Minette miniature loudspeaker enclosures and a 1000 RB remote bass enclosure. Very low frequencies are handled by the remote bass enclosure, which may be placed anywhere in the room even behind furniture. Irrespective of position of the bass enclosure, all bass sounds will appear to come from the Minettes. Price: £188.00 (plus VAT).

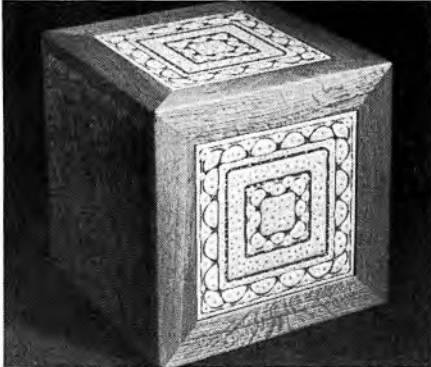
Minette 2500 RB

Similar to above but using larger 2500 RB

★ Indicates entry is illustrated



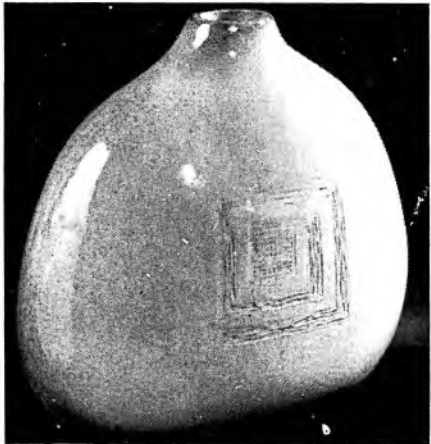
Jordan 50mm unit



Jordan Watts QU1310E Ceramic panelled loudspeaker



Jordan-Watts Juno



Jordan Watts Flagon

remote bass enclosure. Price: £203.00 (plus 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. Size: 68 × 32 × 17cm. FR: 30Hz-22kHz. Imp: 4, 8, 16 ohms. Output: 10-35W. Finish: teak or walnut. Price per pair: £107.40 (plus VAT).

Jodrell

Reflex enclosure. Twin Jordan-Watts module. Treble control fitted. FR: 30Hz-22kHz. Imp: 4, 8, 16 ohms. Output: 10-50W. Size: 76 × 35 × 22cm. Finish: teak or walnut. Price per pair: £154.00 (plus VAT).

Jupiter Centurion

Reflex enclosure. Imp: 4, 8, 16 ohms. Output: 15-100W. Forward facing. Incorporates four Jordan-Watts modular units and two HF units. FR: 30Hz-22kHz. Size: 88 × 38 × 27cm. Finish: teak or walnut. Price per pair: £230.00 (plus VAT).

Jupiter TLS/ABR

Transmission line speaker system. Output: 15-50W. Imp: 4, 8, 16 ohms. Forward-facing. Incorporates two Jordan-Watts modular units. Treble control incorporated. Enclosure lined with sheet lead. FR: 35Hz-22kHz. Size: 88 × 38 × 27cm. Finish: teak or walnut. Price: £99.00 each (plus VAT).

Jericho

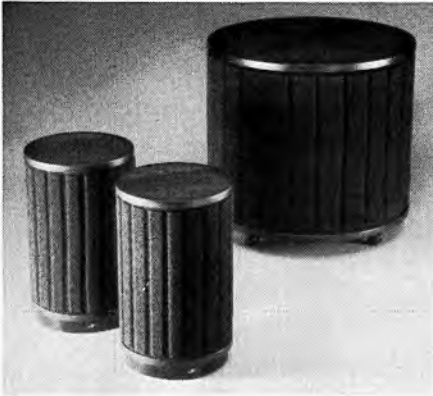
Reflex pop and rock music loudspeaker for clean sound at high power. 2 Jordan-Watts modules plus 13 × 9in. bass reinforcement. FR: 40Hz-20kHz. Output: 4 ohms. Dimensions: 76 × 34 × 22cm. Price per pair: £198.00 (plus VAT).

Qubique ★

Cuboid reflex 30cm with massive ceramic decorative panels for overall stiffness. Solid wood frame. Output: 15W RMS. FR: 35Hz-20kHz. Price per pair: £104.00 (plus VAT).

Jumbo

Infinite baffle with 15cm power handling 15W/RMS. Forward facing. Shelf or wall mounting. Incorporates one Jordan-Watts modular unit. FR: 70Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 10-30W. Size: 42 × 20 × 9cm. Finish: teak, walnut or white. Price per pair: £65.40 (plus VAT).



JR 149

Janet

Infinite baffle. FR: 70Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 10-20W. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair or Walnut. Size: 30 x 20 x 15cm. Price per pair: £65.40 (plus VAT).

Juno ★

Reflex enclosure with 15cm drive unit. Forward facing. Imp: 4, 8, 16 ohms. Output: 10-30W. Forward facing. FR: 40Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 10-30W. Size: 61 x 30 x 16cm. Finish: teak or walnut. Price per pair: £87.00 (plus VAT).

Juliet

Reflex cabinet with 15cm drive unit. FR: 40Hz-20kHz. Imp: 4, 8, 16 ohms. Output: 10-30W. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair or Walnut. Size: 40 x 25 x 23cm. Price per pair: £87.00 (plus VAT).

Flagon ★

Ceramic loudspeaker. 55Hz-20kHz. HC: 15W/RMS. Exclusive decorative pottery enclosure. Size: 36cm diameter. Weight: 10kg. Price per pair: £98.00 (plus VAT).

■ JOHNSON BRODY

National Sound Reproducers Ltd,
Parr Road, Stanmore, Middlesex.
Tel: 01-951 0222/5.

Specialist Cabinet

Loudspeakers built to customers' requirements.

■ JR

Tape Music Distributors Ltd,
114 Ashley Road, St Albans, Herts AL1 5JR.
Tel: St Albans 64337/9.

JR149 ★

Heavy gauge aluminium in a near cylindrical shape with discs at each end held under tension by a steel rod. 13cm bass unit, 2cm treble unit. Crossover frequency: 3kHz. Frequency range: 70Hz-20kHz ±3dB. 55Hz-20kHz ±4dB. Imp: nominally 15 ohms, minimum 8 ohms. Size: 37cm high, 23cm dia. Weight: 5.5kg. Declon foam circular grille capped top and bottom with decorative discs. Enclosure virtually non-resonant. Price per pair: £135.00. Wall brackets £10.00. (All plus VAT).

JR Super Woofer

Infinite baffle enclosure with drive units: 241mm. Crossover frequency: 12dB. FR: extending down to 30Hz. Imp: 8 ohms. Recommended amplifier output: 60W. Dimensions: 47 x 50cm dia. Teak, walnut, rosewood, yew. leather inlaid into rosewood finishes. Price: £165.00 (plus VAT).

■ JVC

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

SK-77

3-speaker acoustic suspension system. Drive units: 30cm free-edge cone, 13cm mid, 3cm tweeter. FR: 20Hz-20kHz. Power handling capacity: 170W. Dimensions: 62.5 x 37 x 26.3cm. No rec. retail price.

SK-55

3-speaker acoustic suspension system. Drive units: 25cm woofer, 9cm, mid, 6cm tweeter. FR: 35Hz-20kHz. Power handling capacity: 110W. Dimensions: 54 x 30.4 x 23.5cm. No rec. retail price.

SK-44

3-speaker acoustic suspension system. Drive units: 20cm woofer, 9cm mid, 6cm tweeter. FR: 40Hz-20kHz. Power handling capacity: 70W. Dimensions: 49.3 x 27.3 x 21cm. No rec. retail price.

SK-33

2-speaker acoustic suspension system. Drive units: 20cm woofer, 5cm tweeter. FR: 40Hz-20kHz. Power handling capacity: 50W. Dimensions: 45.6 x 25.3 x 20.5cm. No rec. retail price.

SX-311

Soft dome, wide-dispersion speaker system. Drive units: 25cm woofer, 5cm tweeter. FR: 30Hz-20kHz. Power handling capacity: 60W.

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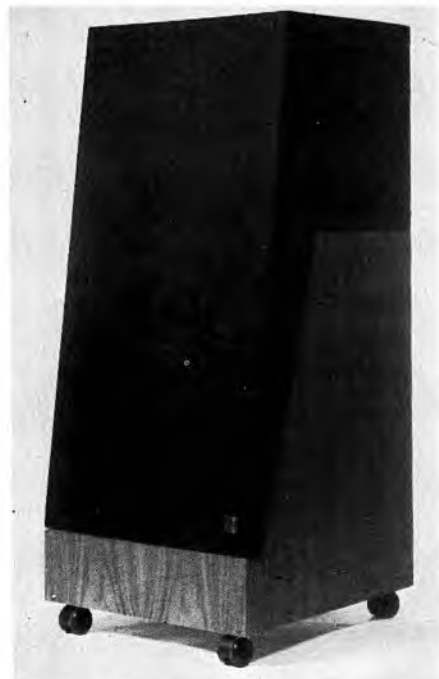


KEF 104

Dimensions: 52 × 31.5 × 29cm. No rec. retail price.

VS-5323

Multi-cellular horn variable bass-reflex system. Drive units: 25cm woofer, 10cm mid.



KEF 105

Horn tweeter. FR: 40Hz-20kHz. Power handling capacity: 50W. Dimensions: 58 × 30 × 32cm. No rec. retail price.

GB-1E Mark III

8-speaker omni-directional speaker system. Drive units: 13cm woofer, 7cm tweeter (4). FR: 35Hz-20kHz. Power handling capacity: 100W. Dimensions: 34.3cm dia. No rec. retail price.

■ KEF

KEF Electronics Ltd, Tovil,
Maidstone, Kent ME15 6QP.
Tel: Maidstone 672261.

Cantata

Free standing, supplied in mirror image pairs. Elliptical low frequency, 110mm mid frequency, 52mm high frequency. Crossover frequency: 250 and 3000Hz. Imp: 8 ohms. 15-150W. Size: 34 × 39 × 81cm. Teak or Walnut finish. Switchable controls for mid and high frequency. No rec. retail price.

Calinda

Free standing. Mechanical reflex. 200mm low frequency, 27mm high frequency. Elliptical bass radiator. Crossover frequency: 45Hz



KEF 105

acoustically coupled and 3,500Hz. Frequency range: 40-30,000Hz. Imp: 8 ohms. 15-100W. Size: 28 × 35 × 70cm. Teak or Walnut finish. Computer developed filter section. No rec. retail price.

Corelli

Compact, IB shelf enclosure. 200mm low frequency 27mm high frequency. Crossover frequency: 3,500Hz. Frequency range: 50-30,000Hz. Imp: 8 ohms. 25-50W. Size: 28 × 22 × 47cm. Teak or Walnut finish. Supplied in matched pairs. No rec. retail price.

Reference Series Model 104ab ★

Compact, floorstanding mechanical reflex. 200mm low frequency, 27mm high frequency. Elliptical bass radiator. Crossover frequency: 45Hz acoustically coupled and 3,000Hz. Frequency Range: 30-40,000Hz. Imp: 8 ohms. 15-100W. Size: 33 × 26 × 63cm. Weight: 16kg. Teak, Walnut. No rec. retail price.

105 ★

Infinite baffle enclosure with drive units: 300mm LF, 110mm mid, 52mm HF. Crossover frequency: 400Hz, 2,500Hz. FR: 30Hz-25,000Hz. Imp: 8 ohms. Recommended amplifier output: 40W. Dimensions: 41.5 × 45.5 × 96.5cm. Walnut finish. Variable geometry MF/HF section adjustable for rotation and elevation. LED indicator for correct orientation of head — also indicates peak level input. No rec. retail price.

■ LEAK

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

3020 ★

Reflex enclosure. Drive units: 1 × 130mm. Crossover frequency: 3kHz. FR: 62Hz-22kHz -3dB. Imp: 8 ohms. Amplifier output: 25W. Dimensions: 21 × 27 × 44cm. Teak or walnut finish. Time delay compensation. Price per pair: £139.00 (plus VAT).

3030

IB enclosure. Drive units: 2 × 130mm. Crossover frequency: 4kHz. FR: 60Hz-22kHz -3dB. Imp: 8 ohms. Amplifier output: 35W. Dimensions: 25 × 28.3 × 52cm. Teak or walnut finish. Price per pair: £185.10 (plus VAT).

3050 ★

IB enclosure. Drive units: 2 × 170mm. Crossover frequency: 4kHz. FR: 48Hz-22kHz -3dB. Imp: 8 ohms. Rec. amplifier output:



Leak 3020



Leak 3050

50W. Dimensions: 30 × 34 × 64cm. Teak or walnut finish. Price per pair: £262.62 (plus VAT).

3080

IB enclosure. Drive units: bass 1 × 250mm, mid 1 × 170mm. Crossover frequency: 3.5kHz, 450Hz. FR: 38Hz-22kHz -3dB. Imp: 8 ohms. Amplifier output: 80W. Dimensions: 34 × 43.8 × 84.5cm. Teak or walnut finish. Price per pair: £401.22 (plus VAT).

3090

Transmission line with 375mm woofer, 175mm lower mid, 100mm upper mid, 50 × 25 treble. Crossover frequency: 350, 7kHz, 2kHz. FR: 35Hz-26kHz ±3dB. Imp: 6 ohms. Rec. amplifier output: 10-120W. Dimensions: 50 × 37.5 × 119cm. Finish: Walnut. Features: environmental controls for low mid range, high mid range and the tweeter. Price per pair: £518.22 (plus VAT).

■ LINN-ISOBARIK

Linn Products Ltd, 235 Drakemire Drive,
Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.

★ Indicates entry is illustrated

DMS

Infinite baffle enclosure with 5 drive units. Crossover frequency: 400Hz and 3,000Hz. FR: 0.5Hz-25kHz. Imp: 6-8 ohms. Rec. amplifier output: 70W. Dimensions: 38 × 42 × 76cm. Finish: teak or walnut. Features: distortion typically less than 1% over entire range. Price per pair: £850.00 (plus VAT).

PMS

Similar specs to DMS. Output: 3 Naim audio NAP 250's. Price per pair: £1,050.00 (plus VAT).

■ LNB

LNB Audio Ltd, Duke Street,
Loughborough, Leics.
Tel: Loughborough 61229.

Para Lab 20 Series II

Labyrinth system employing B200/SP1022 bass unit plus KEF T27/SP1032 via 2-way crossover. FR: 30Hz-25kHz. Imp: 8 ohms. Output: 20-50W per channel into 8 ohms. Dimensions: 78.8 × 28 × 28.5cm. Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price per pair: £165.00 (plus VAT).

Mini Lab ★

Labyrinth system employing 165mm long throw bass unit plus 25mm dome treble unit via 2-way crossover. FR: 50Hz-25kHz. Imp: 8 ohms. Output: 15-30W per channel into 8 ohms. Dimensions: 47 × 22.8 × 20.3cm. Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price per pair: £70.00 (plus VAT).

Para Lab Super Series II

Labyrinth system employing 165mm long throw bass unit plus T27/SP1032 treble unit via 2-way crossover. FR: 40Hz-25kHz. Imp: 8 ohms. Output: 15-30W per channel into 8 ohms. Dimensions: 59.7 × 22.8 × 26cm. Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price per pair: £90.00 (plus VAT).

Lab 8

Labyrinth system with 200mm bass and Son Audax treble drive units. Crossover frequency: 3kHz. FR: 40Hz-25kHz. Imp: 8 ohms. Rec. amplifier output: 20-50W. Dimensions: 28 × 28.5 × 59.7cm. Finish: teak or walnut. Price per pair: £138.00 (plus VAT).

■ MARANTZ

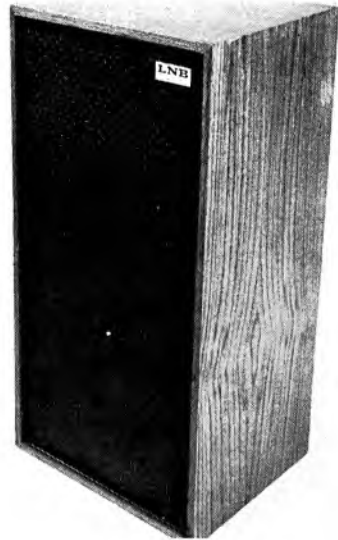
Audio UK Ltd, Debmarc House,
203 London Road, Staines, Middlesex.
Tel: Staines 50132.

4G

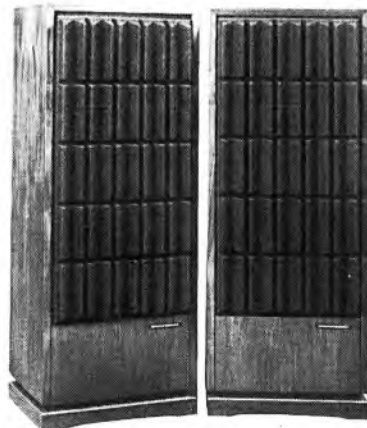
Two-way bookshelf. Drive units: 1 × 8in. woofer, 1 × 1 1/4in. tweeter. FR: ±5dB, 60Hz-15kHz. FR: 40Hz-18kHz. Imp: 8 ohms. Size: 28.5 × 21.25 × 48.5cm. Weight: 20lb. Teak or walnut finish. Price per pair: £66.67 (plus VAT).

5G

Two-way bookshelf. 1 × 8in woofer, 1 × 3/2in. tweeter. FR: ±5dB, 45Hz-16kHz. Frequency range: 35Hz-20kHz. Imp: 8 ohms. Size: 30.5 × 24 × 58.25cm. Weight: 23.5lb. Teak or walnut finish. 3 position. High frequency level selector switch. Price per pair: £100.44 (plus VAT).



LNB Mini Lab



Marantz HD 88

7G

Three-way bookshelf system. 1 × 12in woofer, 1 × 3 1/2in. mid range. 1 × 1 1/4in. tweeter. FR: ±5dB, 40Hz-20kHz. Frequency-range: 30Hz-20kHz. Imp: 8 ohms. Size: 36 × 29.5 × 65cm. Weight: 45lb. Teak or walnut finish. 3 position high-frequency level selector switch. 3 position mid-range level selector switch. Price per pair: £187.67 (plus VAT).

HD44

Infinite baffle speaker with 3 drive units. Crossover frequency: 2kHz, 8kHz. FR: 45Hz-18kHz ±3dB. Imp: 8 ohms. Output: 20-25W. Dimensions: 28.5 × 21.5 × 48cm. Walnut finish. Price: £108.44 (plus VAT).

HD55

Infinite baffle speaker with 3 drive units. Crossover frequency 1.2kHz, 4kHz. FR: 40Hz-20kHz ±3dB. Imp: 8 ohms. Output: 35-40W. Dimensions: 30 × 24 × 98cm. Walnut finish. Price: £194.67 (plus VAT).

HD66

Infinite baffle and/or reflex with 3 drive units. Crossover frequency: 1kHz, 4kHz. FR: 33Hz-20kHz ±3dB. Imp: 8 ohms. Output: 50-65W. Dimensions: 37 × 28 × 61cm. Walnut finish. Features: vari-Q pull out a high density acoustic form plug and the system becomes tune port reflex. Push it back into port to seal and speaker becomes air suspension or infinite baffle. Price: £276.44 (plus VAT).

HD77

Infinite baffle and/or reflex with 4 drive units. Crossover frequency: 500Hz, 3kHz, 8kHz. FR: 30Hz-23kHz ±3dB. Imp: 8 ohms. Output: 70-90W. Dimensions: 36 × 32 × 65cm. Walnut finish. Same features as HD66. Price: £397.33 (plus VAT).

HD88 ★

Infinite baffle or reflex with 5 drive units. Crossover frequency: 500Hz, 3kHz, 8kHz. FR: 25Hz-25kHz ±3dB. Imp: 8 ohms. Output: 90W-125W. Dimensions: 38 × 30 × 106cm. Walnut finish. Same features as HD66. Price: £572.44 (plus VAT).

■ MISSION ELECTRONICS

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

710 ★

2-way infinite baffle enclosure. Drive units: 210mm cone woofer, 25mm soft dome tweeter. FR: 40Hz-30kHz. Imp: 8 ohms. Output: 80W

*Mission 710**Mission 720*

programme, 120W peak. Dimensions: 52 × 29 × 26cm. Teak walnut or rosewood white finish. Price per pair: £127.00 (plus VAT).

720 ★

3-way infinite baffle enclosure. Drive units: 250mm plastiflex cone woofer, 105mm damped cone mid, 25mm soft dome tweeter. FR: 30Hz-30kHz. Imp: 8 ohms. Output: 100W programme, 150W peak. Dimensions: 67 × 32 × 32cm. Wood, walnut or teak finish. Price per pair: £225.00 (plus VAT).

730

3-way infinite baffle enclosure. Drive units: 250mm plastiflex cone woofer, 105mm damped cone mid, 25mm soft dome tweeter, 25mm nomex hard dome super tweeter. FR: 20Hz-40kHz. Imp: 8 ohms. Output: 135W programme, 200W peak. Dimensions: 90 × 32 × 32cm. Walnut or teak finish. Price per pair: £340.00 (plus VAT).

★ Indicates entry is illustrated



Monitor Audio MA5 Series II



Monitor Audio MA7

■ MONITOR AUDIO

347 Cherry Hinton Road,
Cambridge CB1 4DJ.
Tel: Cambridge 42898.

MA 1 series II

Reflex enclosure with units and crossover. One 13 × 9in. reinforced polystyrene wedge bass driver, one 7in. plastic cone mid-range, one synthetic dome, lin. tweeter. Crossover frequencies: 400Hz and 2.9kHz. FR: 45Hz-19kHz ±3.5dB. HC: 80W programme. Min. power: 20W. Imp: 8 ohms. Size: 30 × 13.5 × 15in. Weight: 60lb. Stand: 10in. high, steel frame with castors. Price per pair: £299.00 (plus VAT). Stand extra.

MA 3 series II

Reflex enclosure with units and crossover. One 13.5 × 9.2in. bass driver, one 7in. plastic cone mid-range driver, one damped mylar dome lin. tweeter. Crossover frequencies: 400Hz and 3.5kHz. FR: 45Hz-18kHz ±3dB. HC: 125W programme. Imp: 8 ohms. Size: 27¼ × 13¼ × 12½in. Highly damped enclosure with above average translation efficiency. Price per pair: £393.00 (plus VAT). Stand available.

MA 4

Reflex enclosure with units and crossover. One plastic cone base/mid-range driver 8in. dia. One synthetic dome tweeter lin. Frequency crossover: 3.2kHz. FR: 50Hz-18kHz ±3dB. Imp: 8 ohms (nominal). Sensitivity: 12W for 96dB at 1m. HC: 75W programme. Size: 23.5 × 12.5 × 11in. Weight: 32lb. Price per pair: £199.00 (plus VAT). Stand available.

MA 5 series II ★

Infinite baffle enclosure with units and crossover. One plastic cone bass/mid-range driver 8in. in diameter, one synthetic dome tweeter lin. Crossover: 2.9kHz. FR: 55Hz-19kHz ±3dB. HC: 50W programme. Min. power: 15W. Imp: 8 ohms. Size: 22 × 12 × 10in. Weight: 26lb. Price per pair: £150.00 (plus VAT). Stand available.

MA 7 ★

Compact reflex enclosure with units and crossover. One 6.5in. bass driver, one mylar dome lin. dome tweeter. Crossover: 3kHz. FR: 70Hz-20kHz ±4dB (overall), 40Hz-22kHz. HC: 30W programme. Min. power: 8W. Imp: 8 ohms. Size: 16 × 9 × 8in. Weight: 15lb. Price per pair: £97.00 (plus VAT).

MA 8

FR: 45Hz-20kHz ±3dB. Imp: 8 ohms. Crossover: 18dB/octave at 3.4kHz. Recommended amplifier rating 10-40W continuous per channel. Drive units: 16.5cm round, 25mm soft dome tweeter. Cabinet of high density wood panels with 12mm bituminous damping pads to rear and sides. Lin. thick polyurethane foam absorption layer. Available in matched pairs only in teak, walnut, black, white or rosewood finish. Price per pair: £119.00 (plus VAT).

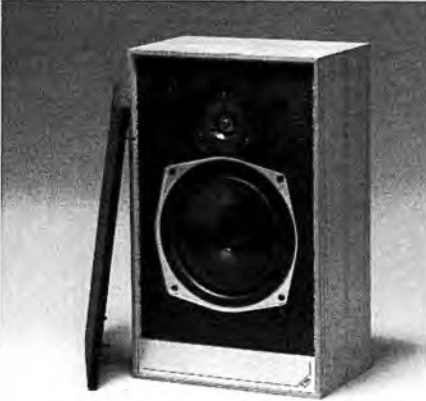
MA 10 Studio Professional

Reflex enclosure with drive units: 305mm L.F., 110mm mid, 38mm HF. Crossover frequency: 250Hz, 3kHz. FR: 50Hz-20kHz on axis at 35Hz and 25kHz. 40Hz-18kHz at 15 deg. vertical, 40Hz-16kHz at 30 deg. lateral. Dimensions: 38 × 38 × 80cm. Teak, walnut or

SPEAKER ENCLOSURES



Mordaunt Short Carnival Series 2



Mordaunt Short Festival Series 2



Mordaunt Short Pageant Series 2

rosewood finish. Price per pair: £585.00 (plus VAT).

■ MORDAUNT-SHORT

Mordaunt-Short Ltd, Durford Mill,
Petersfield, Hampshire GU31 5AZ.
Tel: Telogate (073 080) 721/2.

Carnival Series 2 ★

Infinite baffle. Bookshelf enclosure. Drive units: 208mm DSB 208 bass/mid frequency unit; 68mm cone high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 45-20,000Hz, 85-17,000Hz \pm 3dB. Imp: 8 ohms. 10-80W per channel. Size: 24.1 \times 14.5 \times 40cm. Weight: 5.9kg. Teak/walnut veneer. Dual DIN/push-lock connectors. Connecting plugs and leads supplied. Price: to be advised.

Festival Series 2 ★

Infinite baffle. Bookshelf enclosure. Drive Units: 208mm DSB 208 bass/mid, 19mm dome high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 35-25,000Hz, 75-20,000Hz \pm 3dB. Imp: 8 ohms. 10-90W per channel. Size: 27.9 \times 18.5 \times 45.4cm. Weight: 7.2kg. Teak/walnut veneer. Dual DIN/push-lock connector. Connecting plugs and leads supplied. Price: to be advised.

Pageant Series 2 ★

Reflex enclosure. Drive units 208mm DSB 208 bass/mid 25mm dome high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 25-25,000Hz. 65-20,000Hz \pm 3dB. Imp: 8 ohms. 15-100W per channel. Size: 33 \times 23 \times 53.3cm. Weight: 10.1kg. Teak/walnut veneer. Mid and upper frequency ranges controlled by separate switches. Dual DIN/push-lock connectors. Connecting plugs and leads supplied. Price: to be advised.

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks. SL1 3DR.

SB 390L

Infinite Baffle with drive units: 200mm, 90mm, 50mm. Crossover frequency: 3.5kHz., 8kHz. FR: 50Hz-25kHz. Imp: 4 ohms. Recommended amplifier output: 20W-45W. Dimensions: 30 \times 23.8 \times 48cm. Simulated rosewood and black grille. Speaker cable with 2 pin DIN plug supplied. Price per pair: £98.62 (plus VAT).

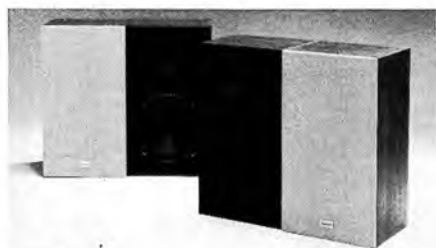
SB 61

Infinite Baffle with drive units: 160mm, 50mm.

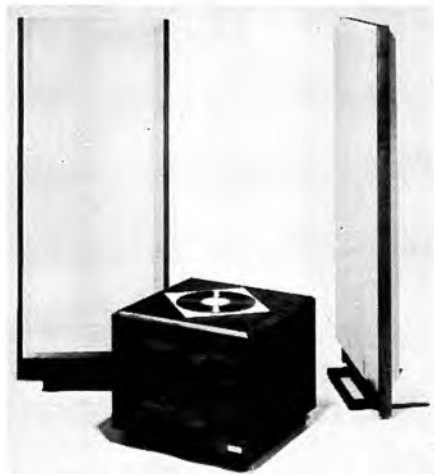
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Nightingale NM1



Nikko Speakers



Phase Linear Model III

FR: 70Hz-17kHz. Imp: 4 ohms. Recommended amplifier output: 15-40W. Dimensions: 22 × 27.5 × 44cm. Simulated rosewood and black grille. Speaker cable with 2 pin DIN plug supplied. Price per pair: £62.18 (plus VAT).

■ NIGHTINGALE

Nightingale Acoustics, 60a Green Street, Eastbourne, Sussex.
Tel: Eastbourne 30405.

NMI ★

Labyrinth enclosure with 280 × 204mm bass, 102mm mid and 25.4mm top units. Crossover frequency: 525, 3,550. Imp: 8 ohms. Output: 25-100W. Dimensions: 40.6 × 28.6 × 85.6cm. Finish: teak, walnut, rosewood, white. Price per pair: £385.00 (plus VAT).

■ NIKKO

Dowvall Audio Ltd, Ardfallen, Forthill, Magheraleave Road, Lisburn BT28 3BB.
Tel: Lisburn 2899.

NSP 40 ★

Closed type enclosure, 2-way speaker system. Drive units: 250mm woofer, 50mm tweeter. Crossover frequency: 5,000Hz. FR: 67Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 45W. Dimensions: 31 × 26.5 × 56.5cm. Walnut finish. Price: to be announced.

NSP 45 ★

Closed type enclosure, 3-way speaker system. Drive units: 250mm woofer, 130mm squawker, 30mm tweeter. Crossover frequency: 1,000Hz, 7,000Hz. FR: 57Hz-18kHz. Imp: 8 ohms. Recommended amplifier output: 50W. Dimensions: 31 × 26.5 × 56.5cm. Walnut finish. Price: to be announced.

■ NORDMENDE

Vessco Vision & Radio Ltd,
Vessco House, Unit 4, Blackwater Way,
Ash Road, Aldershot, Hampshire GU12 4DL.
Tel: Aldershot 312661/4.

LB 400

Drive units: 175mm bass, 19mm HF. Crossover frequency: 1,500Hz. FR: 45Hz-25kHz. Imp: 4 ohms. Output: 25W per channel. Dimensions: 23 × 18 × 33cm. Black finish. Price per pair: £93.33 (plus VAT).

■ PHASE LINEAR

C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51057.

Model III ★

4-way, 4-piece system (two upright panels, one 5 cu ft sub-woofer module and one electronic Motion Control). Drive units: 10 × HF, 4 mid-frequency, 4 × bass and 2 × sub-bass. FR: 24Hz-22kHz ±3dB. Imp: 6 ohms. Rec. amplifier output: 100-350W. Dimensions: Two panels each 60; 95 × 12.70 × 160cm. Sub-woofer model 55.88 × 55.88 × 47cm. Finish: Walnut. Features: Reproduces a fully three-dimensional sonic space with startling and precise image qualities. Price: £3,000 (plus VAT).

■ PHILIPS

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

RH541 ★

Motional feedback loudspeaker enclosure. 7in. woofer, 1in. dome tweeter. FR: 35-20,000Hz. Amplifier output: 30W. HD: <1%. Crossover frequency: 1.4kHz. Size: 22.9 × 18.4 × 29.4cm. Motional feedback system. Built-in 30W RMS amplifier. Black ash veneer finish. No rec. retail price.

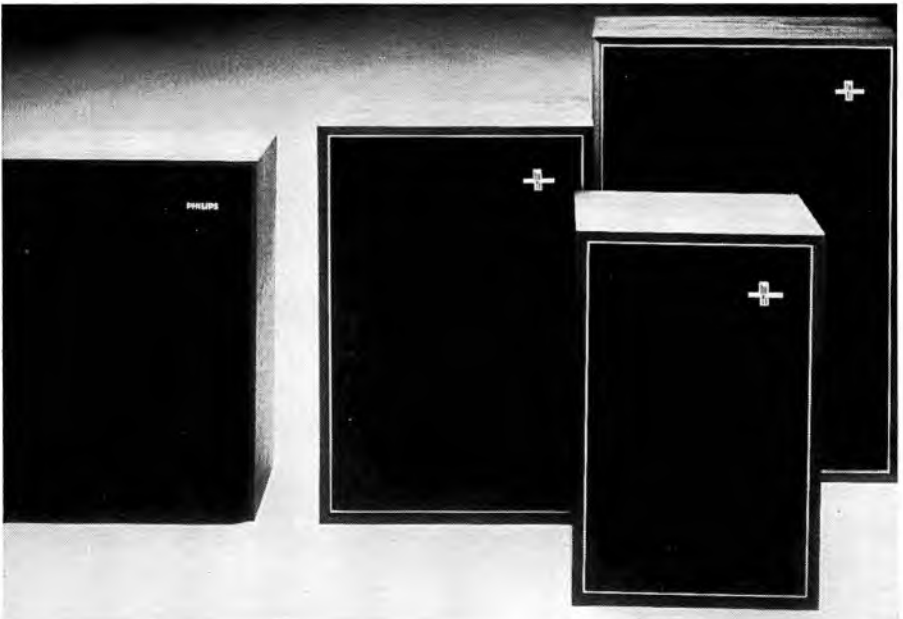
RH544

Motional feedback loudspeaker enclosure. 8in. woofer, 2in. dome squawker, 1in. dome tweeter. Amplifier output: 60W. Crossover



Philips RH541

frequencies: electronic crossover at 500Hz and passive crossover at 3kHz. Power consumption: 150W max. Size: 28.7 × 22.8 × 38.7cm. Black ash veneer finish. Motional feedback system. Two built-in amplifiers. 20W (treble), 40W (bass) RMS. Price: on application.



Philips (1-R) AH470, AH486, AH485, AH487

★ Indicates entry is illustrated

RH545

Infinite baffle enclosure with 12in. woofer, 2in. dome squawker, 1in. dome tweeter. Crossover frequencies: 500, 3,000Hz. FR: 20Hz-20kHz. Imp: 10K (balanced) 100K ohms (asymmetrical). Integral power amplifiers requiring only pre-amp. Dimensions: 55.5 × 42.2 × 76.2cm. Black ash finish. Motional feedback enclosure with extensive filters. 3 integral power amplifiers totalling 100W. Price: on application.

AH470 ★

Loudspeaker with 8in. woofer and 2in. tweeter. Power handling capacity: 20W. Imp: 4 ohms. FR: 40Hz-20kHz. Crossover frequency: 3,000Hz. Dimensions: 32 × 45 × 19.5cm. Japan Teak foil finish. Price: on application.

AH485 ★

Loudspeaker with 8in. woofer and 1in. tweeter. Power handling capacity: 35W. Imp: 4 ohms. FR: 45Hz-20kHz. Crossover frequency: 1,300Hz. Walnut veneer with dark brown cloth front. Dimensions: 26.5 × 41.5 × 21cm. Price: on application.

AH486 ★

Loudspeaker with 8in. woofer, 2in. dome squawker, 1in. dome tweeter. Imp: 4 ohms. Power handling: 60W. FR: 35Hz-20kHz. Crossover frequency: 900Hz, 3,000Hz. Finish in Walnut veneer with dark brown cloth front. Dimensions: 33 × 49.5 × 22.5cm. Price: on application.

AH487 ★

Loudspeaker with 8in. woofer, 8in. ABR, 2in. dome squawker, 1in. dome tweeter. Power handling capacity: 70W. FR: 30Hz-20kHz. Crossover frequency: 900Hz, 3,000Hz. Walnut veneer with dark brown cloth front. Dimensions: 39 × 59 × 22.5cm. Price: on application.

■ PIONEER

Shriro (UK) Ltd, Shriro House,
The Ridgeway, Iver,
Buckinghamshire SL0 9JL.
Tel: Iver 652222/7.

HPM 60E

Base reflex. Woofer 25cm, mid-range 10cm, tweeter 4.5cm. Super tweeter high polymer type. Crossover frequency: 1,200Hz, 4,000Hz, 12,000Hz. Frequency range: 35Hz to 25kHz. Sensitivity: 92.5dB/W (at 1m). Imp: 8 ohms. Maximum input power: 60 watts. Dimensions: 35 × 32.1 × 61cm. Weight: 17.5kg. Walnut finish. Price: on application.

HPM 40

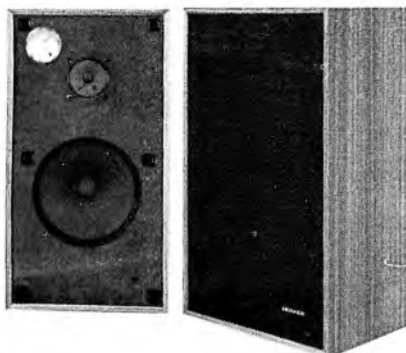
Base reflex. Woofer 25cm, tweeter 4.5cm. Super tweeter — high polymer type. Crossover frequency: 4,000/10,000Hz. Frequency range: 35Hz-25kHz. Sensitivity: 91dB/W (at 1m). Imp: 8 ohms. Maximum input: 40 watts. Dimensions: 32.5 × 31.7 × 57cm. Weight: 13kg. Walnut finish. Base and mid-range speakers use carbon fibre drive units. Price: on application.

HPM 100

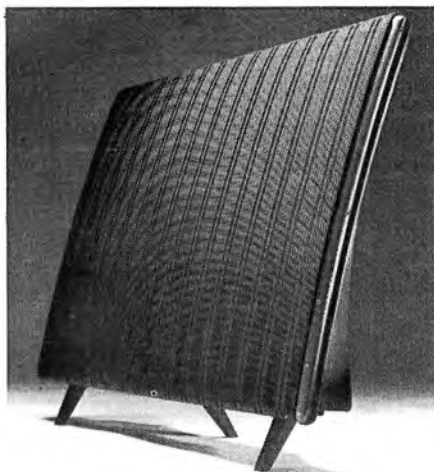
Base reflex enclosure with 300mm woofer, 100mm mid-range, 45mm tweeter and high polymer super tweeter. Crossover frequency: 1,200, 4,000, 12,000Hz. FR: 30Hz-25kHz. Maximum input power: 100 watts. Imp: 8 ohms. Dimensions: 39 × 39.3 × 67cm. Weight: 26.7kg. Walnut finish. Price: on application.

HPM 150

Base reflex enclosure with 390mm woofer,



Pioneer CS-313



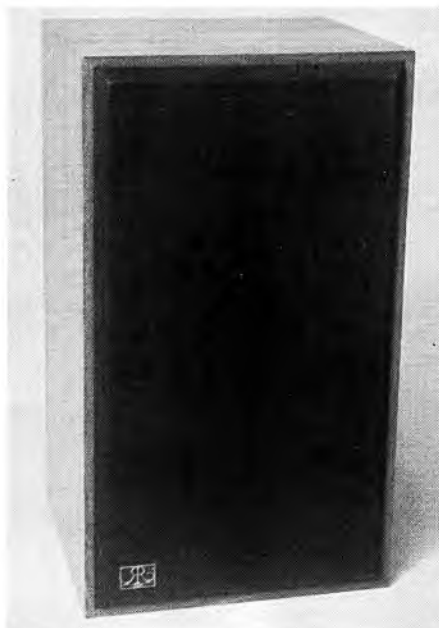
Quad Electrostatic

Celestion



The Celestion sound...hand-made to perfection.

Rola Celestion Limited, Ditton Works, Foxhall Road, Ipswich, Suffolk, England. Tel: 0473-73131.



Ram 100



Ram 200



Ram Bookshelf Mk II

110mm mid-range, 45mm tweeter and high polymer super tweeter. FR: 25Hz to 40kHz. Sensitivity: 92.5dB/W (at 1m). Imp: 8 ohms. Nominal input power 125 watts. Dimensions: 45 x 45 x 98.4cm. Walnut finish. Weight: 37.3kg. Price: on application.

CS 313A ★

Base reflex enclosure. Base 20cm tweeter 7.7cm. FR: 50Hz-20kHz. Sensitivity: 1W for 93dB (at 1m). Maximum input power 20 watts. Imp: 8 ohms. 2-drive units. Crossover frequency: 5kHz. Dimensions: 27 x 50 x 23cm. Weight: 6.4kg. Walnut finish. Price: on application.

■ QUAD

The Acoustical Manufacturing Co Ltd, St Peters Road, Huntingdon PE18 7DB. Tel: Huntingdon 52561.

Quad Electrostatic ★

Full range electrostatic loudspeaker. FR: 45Hz-18kHz. Imp: 15 ohms. Amplifier requirements: 15W min, 33 peak volts max. Dimensions: 88 x 27 x 79cm. Weight: 18kg. Finish: black or bronze anodised grille. Price per pair: £400.00 (plus VAT).

■ RAM

Ram Audio Marketing Ltd, Clarke Road, Mount Farm, Milton Keynes, Bucks. Tel: Milton Keynes 75764.

100 ★

Drive units: 1 x 200mm plastic cone plastiflex-doped, high loss PVA surround; 1 x 25mm dome HF radiator. Suggested amplified matching: 15-65W per channel. Nominal Imp: 4-8 ohms. FR: 55Hz-22kHz ±2dB. Dimensions: 19½ x 10 x 11in. Price: £149.43 per pair (inc. VAT).

Bookshelf Mk II ★

Drive units: 1 x 200mm plastic cone, plastiflex-doped, high loss PVA surround; 1 x 25mm dome HF radiator. Suggested amplified

★ Indicates entry is illustrated

matching: 12-50W per channel. Imp: 4-8 ohms. FR: 70Hz-22kHz \pm 2dB. Dimensions: 16 \times 9 \times 10in. Price: £123.00 per pair (inc. VAT).

200 ★

Drive units: 1 \times 25mm cambric dome HF unit; 1 \times 200mm Bextrene MR/IF driver 1 \times 250mm Bextrene passive radiator. Suggested amplifier matching: 15-75W per channel. Imp: 8 ohms. FR: 45Hz-22kHz \pm 2dB. Dimensions: 26 \times



Ram Mini Bookshelf



Ram 150

10½ \times 12½in. Price: £241.89 per pair (inc. VAT).

Mini Bookshelf ★

Acoustic suspension speaker with drive units: 162.5mm, 25mm. FR: 70Hz-22kHz. Imp: 4-8 ohms. Recommended amplifier output: 15-35W. Dimensions: 9 \times 7 \times 13in. Teak or Walnut finish. Price per pair: £101.49 (inc. VAT).

150 ★

Mechanical reflex speaker with drive units: 200mm, 25mm, 200mm. FR: 50Hz-22kHz \pm 2dB. Imp: 4-8 ohms. Recommended amplifier output: 15-70W. Dimensions: 11½ \times 10 \times 23in. Teak or Walnut finish. Price per pair: £188.14 (inc. VAT).

■ RAMCO

Rosetto Ltd, Glenford Works, Quay Road, Rutherglen, Glasgow G73 1RN.
Tel: 041-647 7578/9.

R.28-35

Hi-Fi loudspeaker enclosure. FR: 27Hz-25kHz. Imp: 8 ohms. Drive units: 8in. Woofer, 1in. dome tweeter. Output: 35W. Dimensions: 51 \times 25 \times 23cm. Price per pair: £96.60 (plus VAT).

R.38-40

Hi-Fi loudspeaker enclosure. Drive Units: 8in. Woofer, 2.5in. dome mid, 1in. dome tweeter. FR: 25Hz-25kHz. Imp: 8 ohms. Output: 50W. Dimensions: 51 \times 25 \times 23cm. Price per pair: £122.85 (plus VAT).

R.30-70

To handle heavy power levels and to fulfil requirements of larger listening rooms. Drive Units: 10in. Woofer, 2.5 dome mid-range, 1in. dome tweeter. FR: 22Hz-25kHz. Imp: 8 ohms. Output: 70W. Dimensions: 60 \times 32 \times 26cm. Price per pair: £158.55 (plus VAT).

R.32-80

Drive Units: 12in. Woofer, 2.5in. dome mid-range, 1in. dome tweeter. FR: 22Hz-25kHz. Imp: 8 ohms. Output: 80W. Dimensions: 72 \times 38 \times 28cm. Price per pair: £185.85 (plus VAT).

Other Ramco Speakers in the Range

R.20-45 £109.20, Gulliver 30 £53.55, Gulliver 32 £61.95 (all plus VAT).

■ REALISTIC

Tandy Corporation (Branch UK), Bilston Road, Wednesbury, West Midlands WS10 7JN.
Tel: 021-556 6101.

Optimus

Range of speakers varying in price from £99.00-£199.00. Details on application.

■ REVOX

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

BX 4100 ★

Infinite baffle with drive units: 8 × 122mm, 175mm, 19mm. Crossover frequencies: 600Hz, 4,000Hz. FR: 35Hz-25kHz. Imp: 4 ohms. Recommended amplifier output: 20-200W. Dimensions: 45 × 43.3 × 79cm. Walnut

finish. Features: Mid-range adjustable ±2dB. Treble adjustment ±2dB. Price per pair: £798.00 (plus VAT).

230 ★

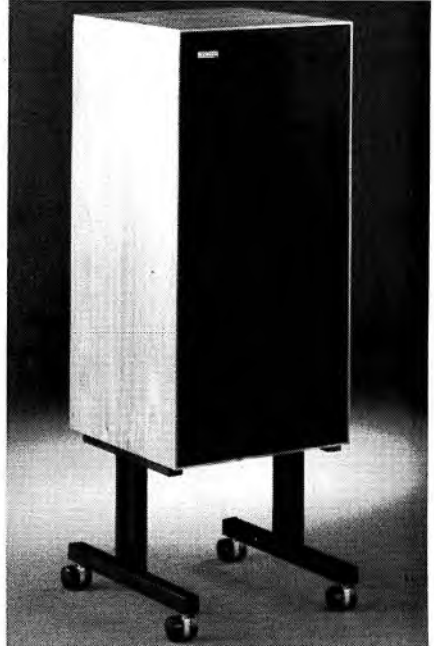
Infinite baffle with drive units: 2 × 122mm, 25mm. Crossover frequencies: 3,500Hz. FR: 40Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-40W. Dimensions: 24.5 × 22.2 × 40.5cm. Walnut finish. Price per pair: £190.00 (plus VAT).

BX 350 ★

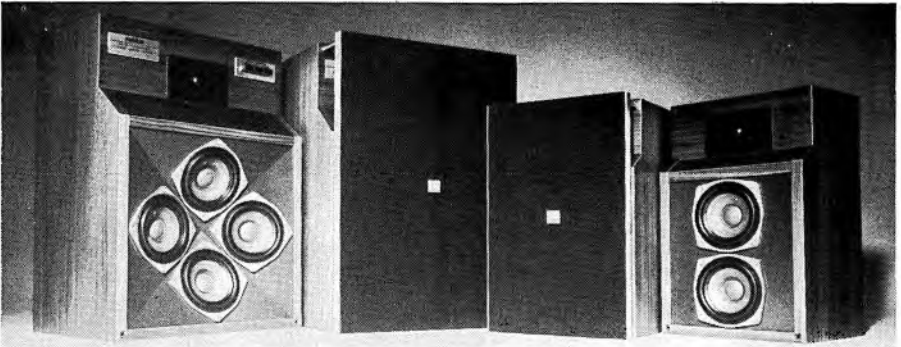
Infinite baffle with drive units: 4 × 122mm,



Revox BX4100

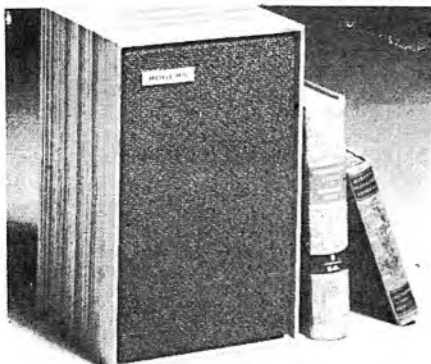


Rogers Export Monitor

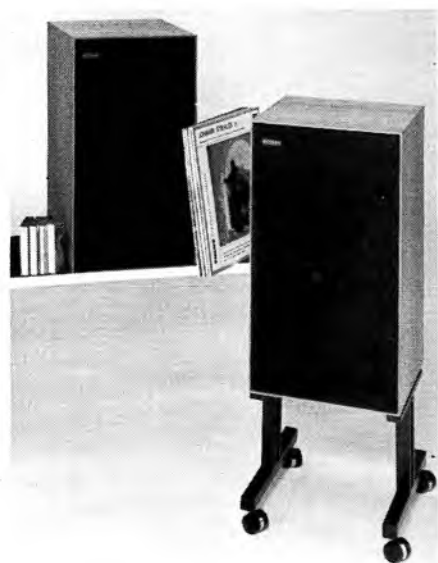


Revox BX 230 & BX 350

★ Indicates entry is illustrated



Rogers BRC Monitor LS3/5A



Rogers Compact Monitor

25mm. Crossover frequency: 3,200Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 10-80W. Dimensions: 35 × 29.5 × 52cm. Walnut finish. Features: Treble adjustable ±2dB. Price per pair: £280.00 (plus VAT).

■ ROGERS

Swisstone Electronics Ltd,
4-14 Barmeston Road, London SE6 3BN.
Tel: 01-697 8511.

Export Monitor ★

Three drive unit. Crossover with air-cored inductors and precision low loss capacitors. Imp: 8 ohms. Size: 30 × 30 × 63cm. Height with stand: approx. 93cm. Teak or walnut fin-

ish. Power handling: 50W RMS 100W speech and music. Price: £239.50 per pair (plus VAT).

BRC Monitor LS3/5A ★

Infinite baffle enclosure. FR: 70Hz-20kHz ±3dB. VCI: 15 ohms. Size: 300mm × 185 × 160mm. Weight: 5.5kg. Two drive units. Crossover 3kHz. Finish: teak, walnut, rosewood or black. Price: £154.00 per pair (plus VAT).

Compact Monitor ★

IB two drive unit enclosure using exclusive Rogers 205mm bass drive units and 25mm fabric dome tweeter. Power handling 40W RMS 80W speech and music. Finish: teak or walnut. Size: 27 × 27 × 56cm. Price: £169.50 per pair (plus VAT).

■ SKANTIC

Skantic (UK) Ltd, Station Road,
Edenbridge, Kent TN8 6EY.
Tel: Edenbridge 5231.

5061 ★

Loudspeaker with bass reflex cabinet. Three units: 25cm bass, 13cm middle, and 2.5cm dome tweeter. Handling capacity: 50W. In teak, walnut lacquer or rosewood. Price: on application.

4061 ★

Bass reflex cabinet with drive units: 165mm, 10cm, 25cm. Crossover frequency: 1,000 and 5,000Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 40W. Dimensions: 33 × 46 × 22cm. Teak, walnut, rosewood, white lacquer. Price: on application.

■ SMC

SMC Loudspeakers, 76 Bedford Road,
Kempston, Beds.
Tel: Bedford 854133.

Super Saturn

IB enclosure with drive units 210mm LF and 25mm HF. Crossover frequency: 3kHz. FR: 45Hz-25kHz DIN, 55Hz-20kHz ±3dB. Imp: 8 ohms. Output: 12-50W. Dimensions: 25 × 24 × 46cm. Teak or walnut finish. 9 element crossover. Price per pair: £114.67 (plus VAT).

AS 40 ★

IB enclosure with MR in its own line. Drive units: 250mm low, 115mm mid, 25mm high. Crossover frequency: 500Hz, 4kHz. FR: 35Hz-25kHz DIN, 45Hz-20kHz ±3dB. Imp: 8 ohms. Output: 25-100W. Dimensions: 32 × 36 × 64cm. Teak or walnut finish. Price per pair: £233.60 (plus VAT).



Skantic 5061



Skantic 4061



SMC AS40 with grille removed



SMC Supernova & Trolley

★ Indicates entry is illustrated



Sony G3



Sony G5

AL 50

Acoustic Labyrinth with drive units: 300 × 210mm low, 120mm mid and 19mm high. Crossover frequency: 500Hz, 3.5kHz. FR: 25Hz-40kHz (DIN), 35Hz-25kHz ±3dB. Imp: 8 ohms. Output: 15-100W. Dimensions: 38 × 43 × 73cm. Price per pair: £493.99 (plus VAT).

Supernova ★

Speaker with 250mm Bextrene cone LF, 25mm Audax soft dome crossover HF. Power handling: 35W. Finish in teak or walnut. Price: £175.56 (plus VAT). SN Trolleys £22.44 (plus VAT).

■ SONY

Sony (UK) Ltd, Consumer Information,
Sony Showroom, 134 Regent Street,
London W1R 6DJ.

Tel: 01-439 3879.

SS 1050

IB enclosure with 160mm bass and 50mm treble. Crossover frequency: 5kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Dimensions: 25 × 13 × 44cm. Teak or walnut finish. 2-way 2-speaker system with wall suspension possible. No rec. retail price.

SS 2030

IB enclosure with 200mm bass, 100mm mid and 50mm tweeter. Crossover frequency: 2,000Hz (6dB/oct), 5kHz (6dB/oct). FR: 45Hz-20kHz. Imp: 8 ohms. Dimensions: 28 × 23 × 50cm. Teak or walnut finish. Removable front. No rec. retail price.

SS 2050

Dimensions: 29 × 23 × 54cm. Other details as



Sony G7

SS 2030, except tweeter 5.25mm dome. FR: 45Hz-22,000Hz.

SS 2070

IB enclosure with 250mm bass, 100mm mid, 25mm tweeter. Crossover frequency: 800Hz, 4,000Hz. FR: 35Hz-22kHz. Imp: 8 ohms. Output: 50W. Dimensions: 31 × 27 × 54cm. Teak or walnut finish. Removable front. No rec. retail price.

SS-G3 ★

Infinite baffle enclosure with 250mm woofer, 80mm mid-range and 50mm tweeter. Crossover frequency: 900Hz, 5kHz. FR: 40Hz-20,000Hz. Imp: 8 ohms. Rec. amplifier output: 60W nominal handling power. Dimensions: 34.5 × 34 × 61.5cm. Finish: walnut. Features: mid-range and tweeter attenuators. No rec. retail price.

SS-G5 ★

Bass reflex speaker with 300mm woofer, 80mm mid-range and 25mm tweeter. Crossover frequency: 600Hz, 5.5kHz. FR: 35Hz-20,000Hz. Imp: 8 ohms. Output: 80W. Dimensions: 41.5 × 35 × 72cm. Finish: Walnut. Features: mid-range and tweeter attenuators. No rec. retail price.

SS-G7 ★

Bass reflex speaker with 380mm cone type woofer, 100mm mid-range and 35mm tweeter. Crossover frequency: 550Hz, 4.5kHz at 12dB/oct. FR: 30Hz-20,000Hz. Imp: 8 ohms. Output: 100W. Dimensions: 51 × 44.5 × 94. Finish: Walnut. Features: Mid-range and tweeter attenuators. No rec. retail price.

■ SPENDOR

Spendor Audio Systems Ltd, Unit 12, Station Road Industrial Estate, Hailsham, Sussex.
Tel: Hailsham 843474.

BCI ★

Reflex enclosure with units and crossover. One 200mm plastic cone bass driver, 26mm coil. Crossover: 3kHz and 13kHz. FR: 45Hz-25kHz (± 3 dB 60Hz-14kHz). Output: 55W. Imp: 8 ohms. Main driver based on BBC design with resin-bonded voice coil. Dimensions: 63.5 × 29.8 × 30.5cm. Finish: teak standard (rosewood, walnut or black oak to order). Price: on application. Trolley optional extra.

BCII ★

Reflex enclosure with units and crossover. One 200in. plastic cone bass driver, 40mm coil. Crossover: 3kHz, 13kHz. FR: 45Hz-25kHz (60Hz-14kHz ± 3 dB). HC: 50W peak programme. Imp: 8 ohms. Bass driver developed by Spendor with 1½in. diameter resin-bonded voice coil. Size: 25 × 11¼ × 12in. Finish: teak standard (rosewood, walnut or black oak to order). Price: on application. Trolley optional extra.

BCIII ★

Reflex enclosure with units and crossover. One 305mm bass driver, one 200mm mid-frequency unit. Crossover: 700Hz, 3kHz and 13kHz. FR: 30Hz-20kHz (50Hz, 14kHz ± 2 dB). HC: 70W peak programme. Imp: 8 ohms nominal. Dimensions: 80 × 39.4 × 39.4cm. Finish: teak (walnut, rosewood to order). Price: on application. Trolley optional extra.

SA1 ★

Mini monitor IB enclosure with Spendor plas-



Spendor BCI/II/III & SA1

tic cone 115mm radiating surface dia., SonAudax HD 12.8 D25. Crossover frequency: 3kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Output: 40W. Dimensions: 21.6 × 22.5 × 30.4cm. Finish: teak, walnut, rosewood, black oak. Price: on application.

■ STAG AUDIO

DTR Electronics Ltd, Torrington Street, Bideford, North Devon EX39 4DR.
Sole Distributor and Export Agent:
Lugton & Co Ltd, Cross Lane, Hornsey, London N8.

Ambassador 30

Bookshelf speaker with 110mm low/mid bextrene cone unit and 20mm dome tweeter. FR: 80Hz-20kHz ± 3 dB. Imp: 8 ohms. Output: 15-30W into 8 ohms. Dimensions: 38 × 24 × 17.8cm. Finishes in teak, walnut, rosewood, mahogany; other finishes are available to order and speaker cabinets can be veneered to match existing furniture. Prices per pair: Teak £145.00, Walnut £157.00, Rosewood £157.00, Mahogany curl £167.00, Burr walnut £186.00 (all plus VAT).

Statesman

Slimline stand mounted system with 200mm low/mid bextrene cone unit and 25mm dome tweeter. Crossover frequency: 3,500Hz. FR: 50Hz-20kHz ± 4 dB. Imp: 8 ohms. Output: 20-50W. Dimensions: 57 × 29 × 29.4cm. Finish in teak, walnut, rosewood, mahogany. Others to order and speaker cabinets can be veneered to match existing furniture. Price per pair: teak £225.00, walnut £243.00, rosewood £245.00, mahogany curl £258.00 burr walnut £279.00 (all inclusive of stand and all plus VAT).

★ Indicates entry is illustrated

Monarch

Floor standing reflex speaker. Drive Units: 200mm low/mid, 25mm dome tweeter. Cross-over frequency: 3,500Hz. FR: 50Hz-20kHz \pm 4dB. Imp: 8 ohms. Output: 20-70W into 8 ohms. Dimensions: 64.8 x 39.4 x 30.6cm. Finish: teak, walnut, rosewood, mahogany with others to order. Cabinets can be veneered to match existing furniture. Price per pair: teak £241.00, walnut £260.00, rosewood £264.00, mahogany curl £277.00 burr walnut £298.00 (all plus VAT).

■ STUDIOCRAFT

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

Model 110

Ported reflex enclosure with two drive units. Imp: 4 ohms. Amplifier requirements: 5W. Dimensions: 9 x 7½ x 14in. Weight: 13lb each. HC: 40W RMS. Sold in matched pairs. Finish: walnut grained effect veneer. Price per pair: £85.00 (plus VAT).

Model 220

Ported reflex enclosure with two drive units. One 8in. bass and one 1¾in. tweeter. Imp: 8 ohms. Amplifier requirements: 8-10W. Dimensions: 12 x 8 x 20in. Weight: 16lb each. Finish: walnut grained effect veneer. HC: 50W RMS. Sold in matched pairs. Price per pair: £112.00 (plus VAT).

Model 330

Ported reflex enclosure with three drive units. One 8in. bass and two 1¾in. tweeter in convex array. Imp: 8 ohms. Amplifier requirements: 10W. Dimensions: 13½ x 9 x 21½in. Weight: 20lb each. Finish: walnut grained effect veneer. HC: 60W RMS. Sold in matched pairs. Price: £146.00 (plus VAT).

Model 440

Infinite baffle enclosure with three units. One 10in. bass and two 3in. tweeters in convex array. Imp: 4 ohms. Amplifier requirements: 15W. Dimensions: 15½ x 11½ x 25½in. Weight: 24lb each. Finish: walnut grained effect veneer. HC: 100W RMS. Sold in matched pairs. Price: £199.50 (plus VAT).

All models covered by a 5-year parts and labour guarantee.

■ TANDBERG

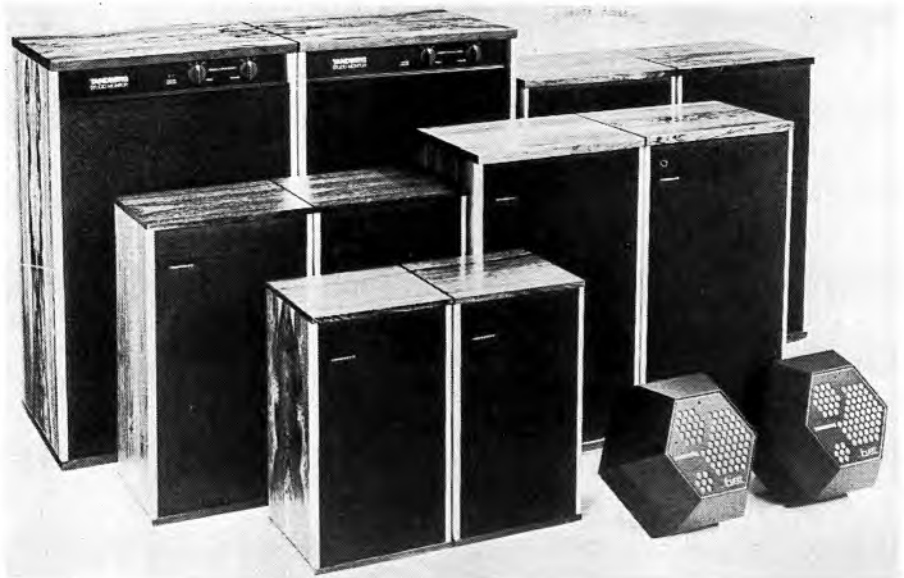
Tandberg (UK) Ltd, Farnell House, 81 Kirkstall Road, Leeds, LS3 1HR.
Tel: Leeds 35111.

TL3520 ★

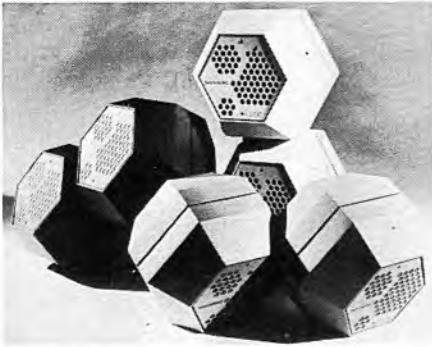
Closed cabinet. Drive units: 10, 3¾, 1in. dome. FR: 40-20,000Hz. Imp: 8 ohms. Max Power: 50W. Size: 35 x 20 x 50.5cm. Teak and Rosewood finish. Price per pair: Teak £192.00 Rosewood £209.71 (plus VAT).

TL2520 ★

Closed cabinet. Drive units: 8, 3¾, 2in. FR:



Tandberg Range



Tandberg Fasett



Tandberg Studio Monitor

45-20,000Hz. Imp: 8 ohms. Max Power: 40W. Size: 26 × 18 × 46.2cm. Teak and Rosewood finish. Price: Teak £227.00 (inc. VAT). Rosewood £248.00 (inc. VAT).

Studio Monitors ★

Closed cabinet. 12in., 2in. dome, tweeter 2 × 1in. dome. Crossover frequency: 600, 35,000Hz. FR: 25-20,000Hz. Imp: 8 ohms. Max Driving Power: 100W. Black or Teak finish. Price per pair: £586.00 Rosewood £625.00 (inc. VAT).

TL5020 ★

Closed cabinet. 12in., 5in., 2 × 1in. drive units. FR: 35-20,000Hz. Imp: 8 ohms. Max Driving Power: 60W. Size: 31 × 22.2 × 58cm. Teak and Rosewood finish. Price per pair: Teak £303.00. Rosewood £334.00 (inc. VAT).

Fasett ★

Closed cabinet. 5in. woofer 2 1/4in. tweeter. FR: 50-20,000Hz. Imp: 4 ohms. Max driving power: 25W. Size: 22 × 18 × 24cm. Orange, Black or White finish. Price per pair: £91.00 (inc. VAT).



Tangent TM3

TL1520 ★

Closed cabinet. 7in. woofer, 2in. tweeter. FR: 50-20,000Hz. Imp: 4 ohms. Max Driving Power: 30W. Size: 22 × 18 × 35cm. Teak and Rosewood finish. Price per pair: Teak £116.00. Rosewood £126.00 (inc. VAT).

■ **TANGENT**

Tangent Acoustics Ltd,
Hardwick, Cambs. CB3 7QY.

Monitor TM3 ★

Compact IB bookshelf system. Drive Units: 19mm tweeter, 140mm plastic cone mid/bass. Crossover frequency: 18 dB/octave. Imp: 8 ohms. Output: 45W per channel into 8 ohms. FR: 55Hz-30kHz ±3dB. Dimensions: 25.5 × 37 × 28.5cm. Finish in Teak or Walnut veneer with brown Vynair grille. Other finishes to order. Price per pair: £92.07 (plus VAT).

Monitor TM1 ★

Low-distortion Reflex system. Drive Units: 19mm tweeter, 140mm plastic cone mid/bass. Crossover frequency: 18dB/oct. Imp: 8 ohms. Output: 50W per channel into 8 ohms. FR: 40Hz-30kHz ±3dB. Dimensions: 30.5 × 63 × 31.8cm. Finish: teak or walnut veneer with grey Vynair grille. Other finishes to order. Price per pair: £135.36 (plus VAT).

Reference RS2

IB bookshelf system for studio and domestic use. Drive Units: 19mm dome tweeter, 140mm bextrene cone/mid/bass. Imp: 8 ohms. Output:

★ Indicates entry is illustrated



Tangent TM1

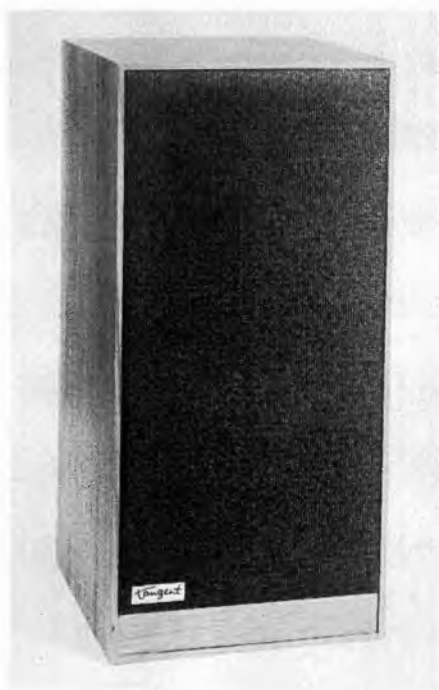
60W per channel into 8 ohms. FR: 52Hz-30kHz ± 3 dB. Dimensions: 25.5 \times 37 \times 28.5cm. Finish: teak or walnut veneer with brown Vynair grille. Other finishes to order. Price per pair: £144.75 (plus VAT).

Reference RS4 ★

Reflex system with cabinet braced and lined with acoustically absorbent plastic foam providing virtually anechoic conditions at critical mid-band frequencies. Drive Units: 19mm dome tweeter, 140mm bextrene cone mid/bass. Imp: 8 ohms. Output: 80W per channel into 8 ohms. FR: 39Hz-30kHz ± 3 dB. Dimensions: 30.5 \times 63 \times 31.5cm. Finish: teak or walnut veneer with brown Vynair grille. Other finishes to order. Price per pair: £212.91 (plus VAT).

Reference RS6

Three-unit bass-reflex system. Drive Units: 19mm tweeter, 140mm bextrene cone mid, 140mm bextrene cone bass. Imp: 8 ohms. Output: 100W per channel. FR: 35Hz-30kHz ± 3 dB. Dimensions: 30.5 \times 81 \times 31.5cm. Finish: teak or walnut veneer with brown Vynair grille. Other finishes to order. Price per pair: £289.65 (plus VAT).



RS4 Tangent

SPL 1

Infinite baffle enclosure with 25.4mm dome tweeter and 110mm bass/mid unit. Crossover frequency: 12dB/oct. FR: 95Hz-25.000Hz ± 3 dB. Imp: 8 ohms. Output: 50W per channel. Dimensions: 17.9 \times 19.7 \times 27.5cm. Finish: teak or walnut, others to order. Features: an efficient wide-range system with high power handling capacity and excellent dispersion characteristics. Price per pair: £58.62 (plus VAT).

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd. Bath Road, Slough. Tel: Slough 33311.

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 9 1/2in. woofer, one 5in. medium-level loudspeaker, one 1 1/4in. diameter medium-level loudspeaker, one 1 1/4in. diameter spherical tweeter. Size: 42 \times 30.7 \times 58cm. Finish: light matt walnut with genuine veneer or pearl-white finish. Stand included. Price: £129.00 (inc. VAT).

TL510

Two-way system. Rated capacity: 50W. FR: 40Hz-20kHz. Crossover frequency: 2,000Hz. Light-matt walnut or anthracite. Dimensions: 26.3 × 35.7 × 17.5cm. Price per pair: £138.00 (inc. VAT).

TL710

Three-way system. Rated capacity: 60W. FR: 30Hz-20kHz. Crossover frequency: 500Hz, 20,000Hz. Drive Units: 2055mm woofer, 130mm mid, 95mm tweeter. Dimensions: 33 × 46.5 × 23.5cm. Price per pair: £199.00 (inc. VAT).

■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Frimley Road, Frimley, Camberley, Surrey. Tel: Camberley 62222.

SS-200

Two-way infinite baffle system. 2 drive units. FR: 50Hz-20kHz. HC: 15W. Imp: 8 ohms. Size: 250 × 495 × 195mm. Price: £53.33 per pair (plus VAT).

SS-220

Two-way system. Pressure balance. Drive units: low 20cm, high 5cm concave. Crossover frequency: 4000Hz. FR: 35Hz-20kHz. Imp: 8 ohms. Size: 30 × 29 × 59.5cm. Weight: 11kg. Woodgrain finish. Removable grille. Price: £93.33 (plus VAT).

SS-470

Three-way system. Pressure balance. Drive units: low 25cm, mid 10cm, high 2cm. Crossover frequency: 1,000Hz-6,000Hz. FR: 35Hz-25kHz. Imp: 8 ohms. Size: 30.8 × 29.4 × 54.8cm. Weight: 15kg. Woodgrain finish. Removable grille, level control. Price: £156.56 (plus VAT).

SS-320

2-way system bass reflex. Drive units: 250mm free edge cone, 70mm. Crossover frequency: 2kHz. FR: 30Hz-20kHz -2dB. Imp: 6 ohms. Dimensions: 34 × 33 × 55cm. Finish: dark grey vinyl. Level control on high frequency driver. Price per pair: £160.00 (plus VAT).

SS-520

3-way system bass reflex. Drive units: 250mm free edge concave, 100mm free edge cone, 25mm carbon dome. Crossover frequency: 800Hz, 5kHz. FR: 30Hz-29kHz -2dB. Imp: 6 ohms. Level control on high frequency driver plus midrange. Sold in matched pairs left and right units. Price: £240.00 (plus VAT).



Trio LS880

■ TRIO

B. H. Morris & Co Ltd, Precision Centre, Heather Park Drive, Wembley, Middlesex HA0 1SU. Tel: 01-902 9422.

LS 202A

IB enclosure. Drive units: 160mm bass, 19mm tweeter. Crossover frequency: 1.7kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Output: 30W. Dimensions: 26 × 18 × 42cm. Simulated walnut finish. Price per pair: £58.66 (plus VAT).

LS 880 ★

IB enclosure. Drive units: 250mm bass, 100mm mid, 40mm tweeter. Crossover frequency: 1,200 and 7,000Hz. FR: 35Hz-20,000Hz. Imp: 8 ohms. Output: 60W. Dimensions: 33 × 29 × 60cm. Matt hammer finish. Variable mid and tweeter controls. Price: £266.66.

LS 990

Tuned port enclosure. Drive units: 330mm bass, 120mm mid, 25mm tweeter. Crossover frequency: 1,300 and 6,500Hz. FR: 32Hz-22kHz. Imp: 8 ohms. Output: 100W. Dimensions: 37 × 32 × 68cm. Matt hammer finish. Variable mid and tweeter controls. Price: £386.66.

■ VIDEOTONE

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

Minimax 2 (D132E)

Infinite baffle loudspeaker enclosure. Drive units: one 130mm woofer, one 100mm tweeter. Crossover frequency: 3.2kHz. FR: 50Hz-

★ Indicates entry is illustrated



Videotone GB1



Visonik D502

20kHz. Imp: 8 ohms. Amplifier requirements: up to 50W. Dimensions: 15 × 22 × 26cm. Weight: 4.3kg. Finish: teak, walnut. Output: 10-40W. Price: £55.00 per pair (plus VAT).

Supermax (D402E)

Infinite baffle loudspeaker enclosure. Drive units: two 260mm woofers, two 100mm mid-range units, two 25mm tweeters. Crossover frequency: 1.9kHz. FR: 30Hz-20kHz. Imp: 8 ohms. Amplifier requirements: 6-60W. Dimensions: 36 × 26 × 67cm. Weight: 21.5kg. Finish: teak with brown grille. Price: £160.00 per pair (plus VAT).

GB 1 ★

Infinite baffle speaker with drive units: 200mm bass, 35mm mid, 25mm dome tweeter. Crossover frequency: 2.5kHz, 7kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 15-80W. Dimensions: 11½ × 12½ × 24in. Teak finish. Price per pair: £235.00 (plus VAT).

GB 2

Reflex port loaded speaker with drive units: 130mm woofer, 2.5 dome Crossover frequency: 3kHz. FR: 40Hz-20kHz. Imp: 8 ohms. Recommended amplifier output: 15-40W. Dimensions: 10 × 11 × 19in. Teak/walnut foil finish. Price per pair: £85.00 (plus VAT).

■ VISONIK

Alban Electronic Supplies Ltd,
28 Spencer Street, St. Albans,
Herts AL3 5EG.
Tel: St. Albans 30236.

David 302

Infinite baffle speaker with 98mm cone woofer and 60mm cone tweeter. Crossover frequency: 2,000Hz. FR: 50Hz-22kHz. Imp: 4-8 ohms. Recommended amplifier output: 5-30W. Dimensions: 10.3 × 10.7 × 17cm. Finish: Grey/black grilles. Price per pair: £82.50 (plus VAT). MO (mobile model) £94.50 (plus VAT).

David 502 ★

Infinite baffle speaker with 98mm cone woofer and 19mm dome tweeter. Crossover frequency: 1,400Hz. FR: 45Hz-30kHz. Imp: 4, 8 ohms. Recommended amplifier output: 20-70W. Dimensions: 10.3 × 10.7 × 17cm. Grey/black grilles. Price per pair: £112.50 (plus VAT).

Sub I

Infinite baffle Bass unit for use with David 502. Drive unit: 30mm cone woofer. Crossover frequency: 160Hz, 1,400Hz. FR: 16Hz-30kHz. Imp: 6 ohms. Recommended amplifier output: 20-70W. Dimensions: 43 × 35.5 × 63.5cm. Grey finish. Price: £247.50 each (plus VAT).

David 60

Infinite baffle with drive units: 130mm cone woofer, 25mm dome tweeter. Crossover frequency: 1,400Hz. FR: 38Hz-25kHz. Imp: 4-8 ohms. Recommended amplifier output: 30-80W. Dimensions: 14.5 × 14.5 × 23cm. Grey finish. Price per pair: £127.50 (plus VAT).



Wharfedale E70 50

Linton XP2

Infinite Baffle enclosure with 1 treble, 1 mid and 1 bass unit. FR: 60Hz-20kHz. Imp: 6 ohms. Rec. amplifier output: 10-40W. Dimensions: 26 × 24 × 48cm. Finish: teak, walnut. Price per pair: £96.73 (plus VAT).

Glendale XP2

Infinite Baffle enclosure with 1 treble, 1 mid, 1 bass unit. FR: 50Hz-20kHz. Imp 6 ohms. Rec. amplifier output: 15-50W. Dimensions: 31 × 27 × 57cm. Finish: teak, walnut. Price per pair: £123.02 (plus VAT).

Teesdale SP2 ★

Reflex enclosure with 1 treble, 1 mid, 1 bass. Crossover frequency: 800Hz, 5kHz. FR: 40Hz-26kHz ±3dB. Imp: 6 ohms. Output: 10-40W. Dimensions: 34 × 28 × 58cm. Finish: Teak, walnut. Features: Isodynamic tweeter unit. Price per pair: ×167.24 (plus VAT).



Wharfedale Dovedale & Teesdale

Dovedale SP2 ★

Reflex enclosure with 1 treble, 1 mid, 2 bass units. Crossover frequency: 800Hz, 5kHz. FR: 35Hz-26kHz. Imp: 6 ohms. Output: 10-50W. Dimensions: 39 × 32 × 64cm. Finish: teak, walnut. Features: Isodynamic tweeter unit. Price: £226.90 (plus VAT).

E 50 ★

Reflex enclosure with 3 drive units. Crossover frequency: 800Hz, 7kHz. FR: 55Hz-18kHz ±3dB. Imp: 8 ohms. Output: 3-80W. Dimensions: 34 × 34 × 66.5cm. Finish: Walnut. Price per pair: £249.68 (plus VAT).

E 70 ★

Reflex enclosure with 4 drive units. Crossover frequency: 800Hz, 7kHz. FR: 50Hz-18kHz. Imp: 8 ohms. Output: 3-120W. Dimensions: 34 × 36 × 81.5cm. Finish: Walnut. Price per pair: £307.14 (plus VAT).

■ WHARFEDALE

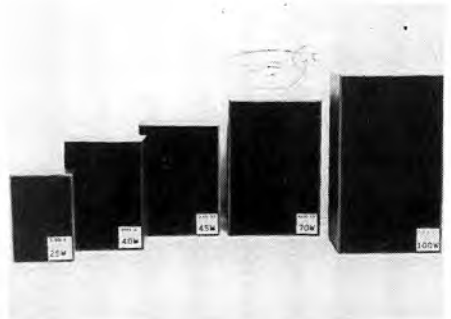
Rank Hi-Fi, PO Box 70, Great West Road, Brentford, Middlesex.
Tel: 01-568 9222.

Denton XP2

Infinite Baffle enclosure with 1 treble and 1 bass/mid. FR: 65Hz-18kHz. Imp: 6 ohms. Rec. amplifier output: 10-30W. Dimensions: 25 × 22 × 36cm. Finish: teak, walnut. Price per pair: £60.47 (plus VAT).

Shelton XP2

Infinite Baffle enclosure with 1 treble and 1 bass/mid drive unit. FR: 63Hz-20kHz. Imp: 6 ohms. Rec. amplifier output: 10-35W. Dimensions: 26 × 24 × 42cm. Finish: teak, walnut. Price per pair: £77.31 (plus VAT).



Wilona Range

★ Indicates entry is illustrated



Wifona Pop Sound

■ **WIFONA**

Paul Spring Electronics Ltd,
19-23 Masons Hill, Bromley, Kent BR2 9HD.
Tel: 01-464 0823.

LS III ★

Infinite speaker with drive units: 165mm, 87mm, 52mm. Crossover frequency:

800/3,000Hz. FR: 45Hz-18kHz. Imp: 4 ohms. Recommended amplifier output: 30W, 45W. Dimensions: 23 × 17.5 × 33cm. Finish: Genuine walnut. Price per pair: £52.90 (plus VAT).

LS IV ★

Infinite baffle speaker with drive units: 200mm, 87mm, 52mm. Crossover frequency: 800Hz, 3,000Hz. FR: 35Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 50W, 70W. Dimensions: 26.5 × 21 × 40cm. Genuine walnut cabinet. Price per pair: £66.50 (plus VAT).

LS V

Infinite baffle with drive units: 200mm, 120mm, 87mm, 52mm. Crossover frequency: 300Hz, 1,000Hz, 4,000Hz. FR: 30Hz-20kHz. Imp: 4 ohms. Recommended amplifier output: 75W, 100W. Dimensions: 27.5 × 22 × 48cm. Genuine walnut. Price per pair: £87.50 (plus VAT).

Pop Sound ★

Infinite baffle speaker with Disco lights. Drive units: 165mm, 57mm. Crossover frequency: 2,000Hz. FR: 50Hz-18,000Hz. Imp: 4 ohms. Recommended amplifier output: 30W, 40W. Dimensions: 25 × 21.5 × 36cm. Ebonised walnut cabinet. Contains switching amplifier with AGC and sockets for two coloured 40W reflector bulbs and mains connection, 2 threshold controls, 1 bulb flashes in sympathy with treble notes, the other with bass. Price: £93.50 (plus VAT).

Surround Sound

(Two channel decoders intended for use with four or more speakers)

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

Adastra Electronics Ltd, Unit 24,
Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

A.20 Quadraphonic Synthesizer

Converts two-channel stereo into enhanced 4-channel for high fidelity systems up to 10W. Flexible control with variable blending of front and rear set-ups, surround A/B phase switching and rear volume control. Dimensions: $6\frac{1}{2} \times 2\frac{3}{4} \times 5\frac{1}{2}$ in. Price: £17.16 (plus VAT).

■ ARNOLD ELECTRONICS

Janorhurst Ltd, Century House,
Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314525.

Quadrosound Unit

Gives effect of Quad sound without the expense of four channel amplified records. Finished in silver brushed aluminium case. Dimensions: $13 \times 7.5 \times 5.5$ cm. Price: £10.50 (plus VAT).

■ 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 rear speaker signals above this frequency. Size: $1.4 \times 1.9 \times 4.3$ in. Price: £14.00 (plus VAT).

■ GRAMPIAN REPRODUCERS LTD

Cowleaze Road, Kingston-upon-Thames,
Surrey KT2 6D2.
Tel: 01-549 5077.

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: 2.5W into 5 ohms and 600 ohms. Mains: 200-250V AC. Size: $18 \times 4\frac{3}{4} \times 5\frac{1}{4}$ in. Weight: 7lb. Price: on application.

■ GRUNDIG

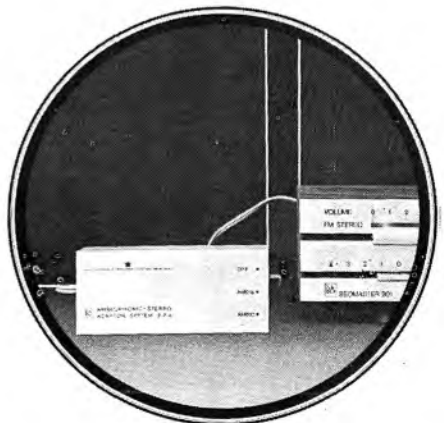
Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

Studio 2240 Quadraphonic

AM/FM quadraphonic receiver in cabinet with Dual 1228 record deck fitted with Shure M95G-LM cartridge. Variable tuning with 8 touch sensor pre-set stations on VHF. AFC SQ matrix and stereo decoder fitted. CD4 possible with optional plug-in module. Slide controls for balance (stereo and quadro), bass, treble and volume. Tuning meter for AM and FM. Rotary waveband selection. Output: $2 \times 27W$ sine (4 ohms) or $4 \times 15W$ sine.

■ JVC

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



Bang and Olufsen Ambio Control Unit

★ Indicates entry is illustrated

Q. Biphonic Sound

One of the problems in quadraphonic recording and playback has been the inability to create convincing side images with the normal square loudspeaker array (two in front, two at the rear). JVC engineers have developed a dual artificial head recording system which effectively recreates a 360° sound field around the listener. Side images are convincingly reproduced as if additional speakers were placed at left and right centres. Another benefit of Q. Biphonic is its ability to recreate accurately those images intended to be close at hand. For example, if a recording is made of a talker who moves in close to the dual artificial head array, the listener to the Q. Biphonic recording will perceive the source of that voice as being very close, perhaps only 30cm or so away from his head.

Two artificial heads are used for Q. Biphonic recording; they are placed in close proximity, 25 to 30cm apart. Both are facing forward, and there is a baffle between them. The front head is clearly forward oriented, the rear head less so. Each head produces a pair of binaural signals. These signals are not played back in binaural fashion; each pair is fed through a processing unit which incorporates complex equalizing and time delay to produce two pairs of signals suitable for quad loudspeaker presentation. The complex equalization effectively produces a 'binaural-to-stereophonic' transformation, thus enabling the artificial head signals to be appropriately played back over loudspeakers.

The technique produces phasors in space around the listener. Obviously, precise phase relationships in the original sound field must be maintained, and this means that all transmission channels used in the Q. Biphonic process must be free of relative phase shift. All-pass networks, which are the heart of many matrix quadraphonic systems (SQ, QS, BBC-H), cannot be used in this application because of the effect such networks would

have on the recreated sound field around the listener.

This technology is expected to add a new dimension to the discrete quadraphonic recordings, so that consumers will be enjoying the Q. Biphonic sound on CD-4 records, in the future. In such an eventuality the consumer will need no additional equipment but only a current CD-4 playback system.

Binaural-Phonic (Biphonic) sound

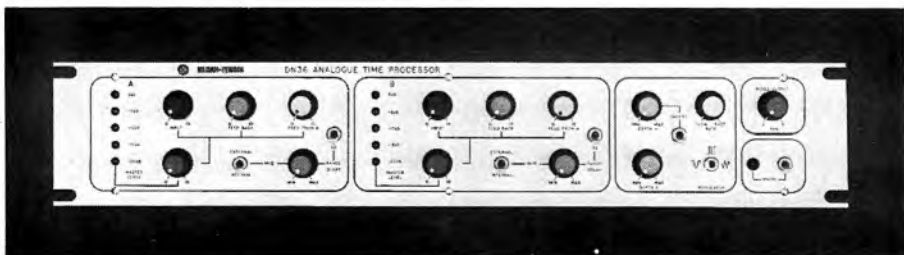
Binaural-Phonic (Biphonic) is derived from Q. Biphonic and is intended for two-channel playback over a normal stereo loudspeaker array. It involves a binaural-to-stereophonic transformation of an artificial head recording into a stereo loudspeaker pair. Again, this is accomplished by a complex equalizing and time delay, and the effect is to produce a convincing sound field from only a front pair of loudspeakers, which wraps around the listener over a 180° arc. As in the case of Q. Biphonic, phasors are created in the space around the listener's head, and all-pass phase shift networks cannot be used.

■ KLARK-TEKNIK

Klark-Teknik Research Ltd,
Summerfield, Kidderminster,
Worcs. DY11 7RE.
Tel: Kidderminster 64027.

DN 36 Analogue Time Processor ★

A dual-channel voltage controlled delay system. Delays can be set manually or controlled automatically. Built-in modulator allows delay length to be swept in various function patterns at variable rates and depths. Multipath feedback controls are included to enable the user to synthesize innumerable time-related effects including: reverberation, phasing, flanging, vibrato, chorus, single/double-repeat echo, Doppler shift, enhancement, modulated relay, ADT and many more. Level indicator shows max. level to -20dB in 5dB increments. Input Impedance: 10K ohms. Sensitivity: -10dB to



Klark-Teknik DW36



Neal 4-Channel Resolver



QED 1/1



Sugden Q51

+20dB. Output impedance: 50 ohms. Output level: adjustable to +22dB at Clipping Point. Delay time: 0.5m-50m continuously variable. FR: 20Hz-15kHz. Internal modulator range: 0.1Hz-10Hz continuously variable. Dynamic range: 90dB. Distortion: 0.2%, 0.5% at 3dB below Clipping level. Price: on application.

DN 34

Mono version with a built-in mixer. Price: on application.

■ NEAL

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE24 9NX.
Tel: South Shields 566321.

4 Channel Resolver ★

Unit designed to be fed from a stereo amplifier

and to supply four loudspeakers to give surround sound effects from SQ and QS records, stereo records and broadcasts and mono programme material. No power supply required. Front/rear balance control. Mode switch. Loudspeaker switch. Connection by DIN plugs. Size: 5½ × 5¼ × 1½in. high. Price: £18.50 (plus VAT).

■ QED

QED Audio Products Ltd,
112 Windmill Road, Sunbury-on-Thames,
Middlesex TW16 7HD.
Tel: Sunbury 87344.

Type 1/1 and 1/2 Quadraphonic Synthesiser ★

Suitable for recovering ambience information from stereo records, tapes, broadcasting. Includes volume and blend controls. A full report is available on request. Price: £14.50 (plus VAT).

Type 21/1 Surround Sound Adaptor

Improved version of above with extra features. Price: on application.

■ J. E. SUGDEN & CO LTD

Carr Street, Cleckheaton, West Yorkshire.
Tel: Cleckheaton 872501.

Q51 Four Channel Matrix Control Unit ★

Intended for adding to C51/P51 based system with additional P51 power amplifier, but will work equally well with any system. There are two basic sections — matrix decoder and tape facility section.

Tape Facility Section: Not 4-channel, being included only to increase versatility of the basic P51/C51. Permits connection of three tape recorders which can be played separately or simultaneously. Q51 is fitted with 6dB amplifier on tape monitor circuits together with closely matched volume control enabling user to adjust monitor level to match original signal level to render AB monitoring accurate and valuable. Tape Post Filter permits recordings to be made after the tone and filter controls should it be desired to doctor the frequency response prior to recording. Matrix Decoder: Will decode SQ, QS and BMX matrices for producing four channel from two channel encoded discs, tape or radio. It is equipped with a difference matrix, similar to the Hafler configuration and a Schieber matrix. Three balance controls. General: Styled to match C51 with brushed silver facia. Power is supplied from P51 power amplifier driving rear channels or, in the event of use with other amplifiers, any smooth 16-19 volt source or two PP9 batteries. Price: £96.00 (plus VAT).

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Tape Accessories

(For tape storage units in cabinet styling see under Hi-Fi Cabinets)

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

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

R101 Cassette Carrying Case

32 cassette version of R100 with double opening front and individual moulded tray holders. Size: 14½ × 3½ × 9in. Price: £3.90 (plus VAT).

R51

Tape splicer. Self-contained with instant cut and trim action. Spring-loaded arms secure tape to padded cutting block. Price: £1.62 (plus VAT).

R100 Cassette Carrying Case Mk II

Designed to hold 16 compact cassettes in rigid drop-front case. Finished in padded simulated leathercloth. Snap-fast closing. Slotted compartments and moulded handle. Finish: red, tan or black. Size: 14½ × 4¾ × 3¼in. Price: £2.52 (plus VAT).

R54

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: £3.78 (plus VAT).

R110/R111 Stako-Tape

Vertical and horizontal interlocking storage system in two versions: (R110) holding 10 cassettes; (R111) containing 8 8-track cartridges. Moulded cabinets in orange, white or black. Can be wall-mounted or used free-standing. Price: 80p (plus VAT).

Tape Spools

First grade plastic tape spools with standard tape threading facilities and of a design enabling them to fit all tape recorders. In sizes 2¾, 3, 4, 5, 5¾, 7in. Price: on application.

R40 Cassette Library Cases

Standard design to accommodate all compact cassettes with the flip lid moulded in clear material. Size: 110 × 70 × 17mm. Price: 10p each.

R45 Cassette Tape Tension Winders (M1111)

For manual winding of compact cassettes for editing and repair purposes. Neat moulded knobs in black with silver trim have hexagon shaped projections for fitting into the hub recesses of compact cassettes packed in pairs in top card see-through presentation. Price: 42p (plus VAT).

R55

Deluxe tape head demagnetizer with 1½in. angled probe for cassette and cartridge application. 1 metre lead. Moulded body. Overall length 5½in. Price: £3.96 (plus VAT).

R50

Cassette Head cleaner with impregnated tape for safe cleaning of cassette heads. Price: 42p (plus VAT).

R106

Carousel type rotating double sided rack accommodating 40 cassettes. Cabinet is finished in Teak, Rosewood or White. Price: £8.00 (plus VAT).

M105 Imp-Verta ★

Impedance converter enabling long lead, low impedance microphones to be used directly into input sockets of amplifiers and tape recorders. Conversion factor of 20:1. Jack socket connections. Internal 9V battery. Price: £6.00 (plus VAT).



Adastra Imp-Verta

★ Indicates entry is illustrated



Agfa Cutter Set



Agfa Plastic Library Boxes

■ **AGFA-GEVAERT**

Agfa-Gevaert Ltd, Great West Road,
Brentford, Greater London.
Tel: 01-560 2131.

Editing Accessory Kit

Price: £4.95 (plus VAT).

Splicing Tape Outfit ★

Price: 85p (plus VAT).

Splicing Tape

33ft 1/4in. wide. Price: 61p (plus VAT).

Leader Tape

80ft 1/4in. tape in red, green, white. Price:
£1.16½ (plus VAT).

Silver Stop Foil

33ft 1/4in. Price: £1.14 (plus VAT).

Plastic library boxes ★

No. 13 (5in.). 78p; No. 15 (5 3/4in.) £1.05; No. 17
(7in.) £1.30. All prices plus VAT.

Plastic spools

No. 13 (5in.) 52p; No. 15 (5 3/4in.) 61 1/2p; No. 18
(7in.) 64 1/2p; No. 26 (10 1/2in.) £3.03. Prices plus
VAT.

Metal spools

No. 13 (5in.) £2.65; No. 15 £3.31 (plus VAT).

Cassette head cleaner

Price: 87p (plus VAT).

Publications

Tape Recording Technique. Price: 75p.

Tape Recording Manual. Price: 75p.

Recording with Compact Cassettes. Price:
95p. Prices exclude postage and packing.

■ **AKAI**

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

Metal Reels

R-7M. 7in. reel, 180ft. LP tape. Long lasting,
made of aluminium. Price: £4.81 (plus VAT).

Dust Covers

DC44 for 4000DS Mk. II and 4000DB. Price:
£8.89 (plus VAT).

R7M

Long lasting 7in. empty metal reel with
polished satin alloy finish. Suitable for all open
reels. Price: £4.81 (plus VAT).

R10M

10 1/2in. professional empty reel with brushed
aluminium finish. Price: £7.55 (plus VAT).

RH12

Nob adaptor: 10 1/2in. reel adaptor for pro-
fessional use. Price: £14.26 (plus VAT).

RC18

Portable, lightweight, compact, enables
remote control operation of all operating
modes for the following tape machines:
GX650D, GX6300B, GXC570D, GXC760D.
An added use for this unit is absentee recording
when used in conjunction with a timer. Price:
£35.73 (plus VAT).

HC550 Cleaning Kit

This convenient head cleansing kit should be
used regularly to clean heads, capstans and
pinch wheels to prevent poor sound quality,
drop out and complete erasure; it also ensures
longer life of your tape machines. Price: £2.36
(plus VAT).

SK750

Splicing kit is an essential accessory for the tape enthusiast. The kit includes splicer, splicing tape, spare blades, spare plastic cutting boards and sensing tape. Price: £4.95 (plus VAI).

ST2A

Splicing tape is convenient for editing and repairing both open reel and cassette tape. Price: 56p (plus VAI).

DC44

Dust cover for 4000DS and 4000DB. Price: £8.89 (plus VAI).

DC34

Dust cover for CS34D. Price: £8.89 (plus VAI).

■ AUDIO MAGNETICS

AMSA Magnetics Ltd, Loverock Road, Reading, Berks. RG3 1JZ.
Tel: Reading 598036.

Head Cleaners

Cassette — 60p; cartridge — £1.39.

■ BASF

BASF United Kingdom Ltd,
Audio/Video Tapes Division,
Haddon House, 2-4 Fitzroy Street,
London W1P 5AD.
Tel: 01-637 8971.

Plastic Spools

Standard sizes: 8-26.5in. Prices: 38p-£3.06 (plus VAT).

Metal Spools

18cm £4.22; 22cm £6.05; 26.5cm £6.54 (all plus VAT).

Hinged lid plastic boxes

5 $\frac{3}{4}$ in. 90p and 7in. reels £1.18 (plus VAT).

Hinged Lid Plastic Boxes for LH Super Tape

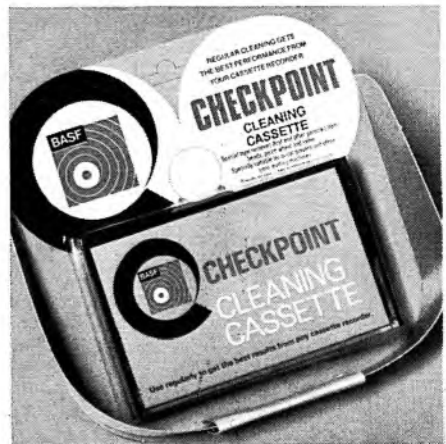
5in. — 86p; 5 $\frac{3}{4}$ in. — £1.00; 7in. reels £1.28.

Other Accessories ★

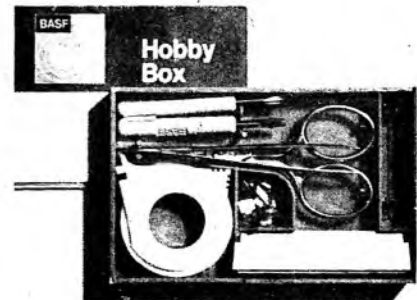
Empty C Box — 58p; C Box carrying handle — 78p; C Box mounting bracket — 78p; BR reel to reel cleaning tape — £2.68; CR cleaning cassette — £2.68; Profi-nab adaptor — £5.92; hobby box (reel to reel) — £4.88; hobby box (cassette) — £5.32; leader tape 300m/984ft — £4.94; leader tape 25m/80ft — £1.46; splicing tape 6.25mm × 25m (1/4in. × 80ft) — £2.32; splicing tape 12.50mm × 25m (1/2in. × 80ft) — £3.62; splicing set — £1.04; metallised foil



BASF Checkpoint Audio Accessories



BASF Checkpoint Cleaning Cassette



BASF Cassette Hobby Box

★ Indicates entry is illustrated



Bib Cassette Editor and Winder



Bib Tape Head demagnetizer



Bib Popular Cassette Care Kit

6.25mm × 25m (1/4in. × 80ft) — £3.94; leader tape set — £2.18; plastic tape clips (box of 10) — 70p; head alignment tape — £8.80; 7 pin microphone (9202/9302 model) — £7.92; mains lead (9202/9302 model) — £2.80.

BASF Checkpoint Accessories ★

Tape head cleaning kit — 80p; cleaning cassette — 76p; cassette tape splicing kit — £1.60; cassette tape editing kit — £2.50; cassette repair and care kit — £3.70; 50 cassette labels and 25 index cards — 90p; 2 cassette boxes, 2 index cards, 4 labels — 40p; cassette screwdrivers — 50p; cleaning fluid — 36p; salvage cassette — 60p; cassette splicing tabs — 80p; test cassette — £3.52; scissors and tweezers — 68p; chinagraph pencils (3) — 48p; reel-to-reel tape editing kit — £4.40; red and green leader tape (10m each) — 86p; clear leader tape (10m) — 60p; grey/white and red/white leader tape (10m each) — 86p; reel-to-reel splicing tabs — 68p; reel-to-reel tape clips (20) — £1.16; reel-to-reel tape splicing block — £2.00; complete cassette care kit — £4.70; complete reel-to-reel tape care kit — £10.28.

■ BIB

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts HP2 4RQ.
Tel: Hemel Hempstead 61291.

Ref. J. Compact tape and cleaning kit
Price: 95p (inc. VAT).

Ref. 65. Cassette storage rack
Holds 30 cassettes in their library cases. Finished in simulated teak. Price: £5.62 (inc. VAT).

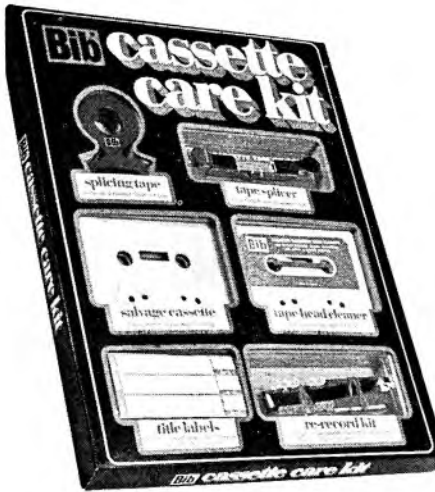
Ref. 78. Cassette fast hand winder
Very simple and easy to use, it winds a C90 cassette in 60 seconds. Saves batteries. Price: £1.19 (inc. VAT).

Ref. 51A. Cassette care kit ★
Contains: head cleaner, salvage cassette and re-record kit, editing and joining kit. Price: £4.37 (inc. VAT).

Ref. 31. Cassette head cleaner
Price: 70p (inc. VAT).

Ref. 73. Cassette rotarack
Holds 40 cassettes in their containers. Price: £3.97 (inc. VAT).

26A Cassette Tape Recorder Care Kit
Contains: 1/8in. splicer, splicing tape, tape piercer, 9 cassette labels, 3 tape winders, 2



Bib Cassette Care Kit

tape cutters, polishing cloth and cassette head cleaner. Price: £3.26 (inc. 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: £2.85 (inc. VAT).

34 Cassette Case

High quality black padded PVC case, with carrying handle. For 12 cassettes. Price: £2.42 (inc. VAT).

D/2 Flex Tidies

Shortens without cutting inter-unit cables, speaker leads and mains flex. Price: (pack of 5) 48p (inc. VAT).

20 Recording Tape Splicer

For use with $\frac{1}{4}$ in. tape. Fitted with clamps for holding tape for diagonal or butt splices. Price: £1.73 (inc. VAT).

Ref. 83. Cassette title and container labels

Contains 20 cassette body labels and 10 library container edge labels. Price: 48p per pack (inc. VAT).

Ref. 23. Tape Editing Kit

Essential for quick and accurate editing. Kit contains $\frac{1}{4}$ in. (6.3mm) tape splicer, 12 tape reel labels, razor cutter, splicing tape, tape marker and instructions, all in plastic wallet. Price: £2.48 (inc. VAT).

Ref. 30A. Cassette Tape Splicer

For use with $\frac{1}{8}$ in. (3.2mm) tape. With full instructions. Price: £1.43 (inc. VAT).

Ref. 37. Luxury Cassette Carrying Case

Fitted with a moulded inner tray to hold 30 cassettes in their containers for easy selection. Covered in a simulated pig-skin PVC with carrying handle. Approximate size: 15in. long \times 8 $\frac{1}{2}$ in. wide \times 3 $\frac{1}{4}$ in. high. Price: £4.32 (inc. VAT).

Ref. 62. Cassette Head Cleaner

Essential for regular cleaning of tape heads, capstan and roller. Pack contains blue tape head applicator and white tape head polisher tools, bottle of special formula cleaning fluid and full instructions. Price: 63p (inc. VAT).

Ref. 84. Cassette Editor and Winder Unit ★

For easy, trouble-free editing, splicing and tape transfer, including fast tape winding. Made in metal, measures approximately 9 $\frac{1}{4}$ \times 6 $\frac{1}{4}$ in. (23 \times 16cm), fitted with four protective feet. Complete with splicing tape, tape cutter, spare empty cassette and full instructions. Price: £6.05 (inc. VAT).

Ref. 90. Tape Head Demagnetizer ★

Suitable for cassette, cartridge or reel-to-reel machines. Attractively styled and simple to use. Designed for 240V 50 cycle operation. B.S.I. approved. Price: £4.95 (inc. VAT).

Ref. 95. The Bib Book of Hi-Fi

A hardback book containing 123 pages and over 50 illustrations on a wide range of Hi-Fi topics. Price: £1.98 (VAT exempt).

Ref. 93. Combined Cassette Head Cleaner/Demagnetizer

Cleans and demagnetizes tape heads in one simple operation. Price: £2.70 (inc. VAT).

Ref. 98. Cassette Editing and Splicing Kit

Contains tape splicer, tape cutters, tape piercer, reel of splicing tape and tape winder/remover. Neatly packed in hinged box complete with full instructions. Price: £2.48 (inc. VAT).

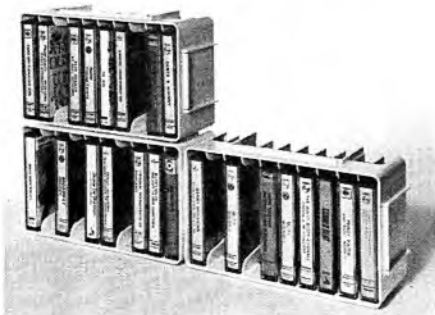
Ref. 99. Universal Tape Head Maintenance Kit

Features a unique cleaning tool with interchangeable parts allowing access to heads of all cassette, cartridge or reel to reel machines. Kit also includes cleaning and polishing pads, anti-static cleaning liquid, cleaning brush, cleaning cloth and inspection mirror. Price: £2.48 (inc. VAT).

★ Indicates entry is illustrated



Bib 150A



Cambra Cassette Stakotape



Cambra 80 cassette cabinet

Ref. 104. Popular Cassette Care Kit ★

Contains a cassette storage tray for ten cassettes, the Bib fast hand tape winder, cassette head cleaner and replacement title labels. Price: £2.93 (inc. VAT).

Ref. 108. Cassette Opener and Salvage Kit

For transferring tape from a damaged cassette to another. Contains a salvage cassette, a cassette opener, tweezers, two screwdrivers, and full instructions. Price: £1.94 (inc. VAT).

Ref. 150A. Universal Head Cleaning and Editing Kit ★

For regular tape head maintenance this cleaning tool has interchangeable angled extensions permitting access to difficult tape heads, capstan and pinchwheels. Fitted with absorbent felt cleaning pads and dampened with cleaning fluid. Inspection mirror and cleaning brush supplied. Simple for editing and splicing. All packed in storage case with operating instructions. Price: £4.50 (inc. VAT). Tape Head Cleaning Tool is available separately with pads and anti-static fluid. Price: 99p (inc. 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: 50p including postage.

■ **CAMBRA CASES LTD**

260 Church Road, Leyton, London E10 7JQ.
Tel: 01-556 1916.

No. 29 ★

Cassette tray holding 36 cassettes in individual divisions. Free standing or wall mounted in attractive smoke finish. Provides easy access and product identification.

Music Mobile Model 111

Record and cassette storage unit holding 150 LP records and 69 cassettes in individual divisions. Extra area for small accessories. Fitted castors and translucent hinged lift-off lid. Packed in knockdown form.

Stakotape storage units ★

Each individual unit holds ten cassettes or eight cartridges. Free standing or wall mounted. Interlocking horizontally and vertically and available in five attractive colours: orange, white, black, smoked, brown. Many other cases and cabinets to hold both records and cassettes. Details on request.

■ **CONDOR**

Condor Electronics Ltd,
100 Coombe Lane, London SW20 0AY.
Tel: 01-946 0033.

Audio Accessory Packs ★

C107 Tape edit + care system.
C115 Cassette care pack.
C118 Tape Head + Capstan Cleaning Kit.
Details and Prices on application.

■ **CONTEK MAGNETICS LTD**
 32 Eveline Road, Mitcham, Surrey.
 Tel: 01-648 5156.

Head Cleaners

Contek head cleaner. Price: 95p (plus VAT).
 Audio Gold Head Cleaner. Price: 60p (plus VAT).



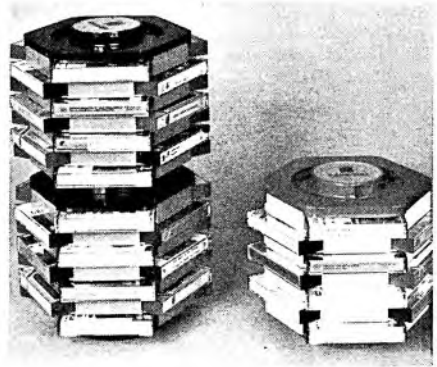
Cambra 29 Cassette tray



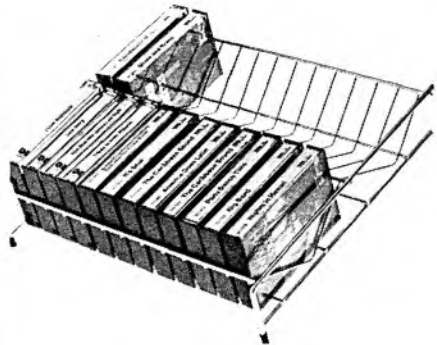
Condor Cassette Care



Condor Audio Accessories



Crown Merton Cassbar 5066



Crown Merton Cassette 24 5056 brass plated wire cassette holder

■ **CROWN MERTON**

T. I. Crown Merton 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: £4.99 (inc. VAT).

Keyboard Cassette 5067

Modern plastic cassette storage unit. Holds 10 cassettes, special add and stack feature to form library system. Price: £2.49 (inc. VAT).

Cassette 24 5056 ★

Compact brass or chrome wire cassette holder. Holds 24 cassettes. Also available for 36 cassettes. Price: £2.95 and £3.94 respectively.

Casstennette. Ref. 5084

Compact cassette storage unit. Add & stack feature to form library system. Holds 10 cassettes. Price: £1.75.

★ Indicates entry is illustrated

Cassette 42, Ref. 5086

Elegant plastic cassette storage case holding 42 cassettes. Slide away handle with unique locking feature for easy carrying. Price: £6.94.

■ **EAGLE**

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

TD79 Tape Head Demagnetiser

250V AC mains operation. Price: £2.50 (plus VAT).

TD 83 ★

Cassette head demagnetiser. 240V AC operation, suitable for compact cassette recorders and players. Price: £3.20 (plus VAT).

■ **FERROGRAPH**

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX.
Tel: South Shields 566321.

Defluxer

For depolarising heads, capstans and guides. Ensures maximum signal/noise ratio. Prevents hiss and protects tapes from cumulative background noise. Price: £10.00 (plus VAT).

Carrying case for Logic 7 recorders

Waterproof canvas case with zip fastener. Price: £40.00 (plus VAT).

Endless loop cassette

Permits Ferrograph to be operated continuously on an endless loop of 8 min duration at 7½in. Price: £18.00 (plus VAT).

Ferrotape spools

Aluminium, anodised grey. Prices: 7in. £2.50 (plus VAT); 8½in. £3.00 (plus VAT).

NAB adaptor

Converts cine centred spool carrier to NAB centred. Price: £5.00 (plus VAT).

Remote control unit

Duplicates main operating controls for Logic 7 recorders: run, pause, record/cancel, wind/reverse, stop. Price: £40.00 (plus VAT).

Dust cover

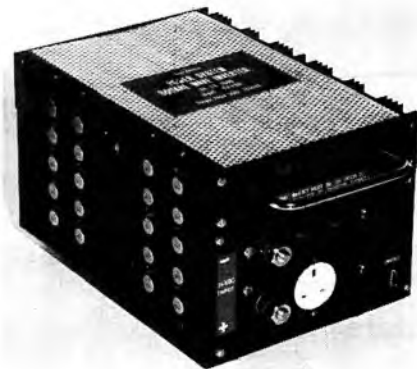
Rigid transparent cover to protect recorders. Price: Series 7 £18.00 (plus VAT); Logic 7 £20.00 (plus VAT).

■ **GARDNERS TRANSFORMERS LTD**

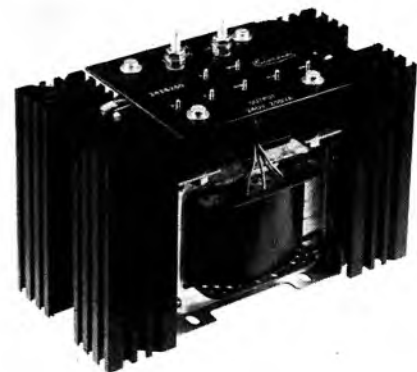
Christchurch, Dorset BH23 3PN.
Tel: Christchurch 2284.



Eagle TD83 Tape Head demagnetiser



Gardners Inverter



Gardners Invertamod

Invertamod Inverters ★

The Invertamod Range provides 220 or 240V AC 50Hz and has been designed with economy, reliability, flexibility and efficiency as basic features.

Input, either 12, 24 or 50 Vdc (nominal) Output frequency, 45Hz to 400Hz (pre-settable). Rating from 50W to 4000W. Overload capability 150% full load. Protection, short circuit and reverse polarity. Operating temperature range 0 to 50°C. Load regulation better than 10%.

The unit can also be fitted with an automatic changeover unit to switch from mains to battery in the event of mains failure. Full specification sheet on request. Prices: on application.

■ **KELSONICS**

Kelsonics Ltd, Kelsey House,
Wood Lane End,
Hemel Hempstead, Herts HP2 4RQ.
Tel: Hemel Hempstead (0442) 61291.

K10 Rapid-Winder ★

Battery operated. Winds a C60 cassette in approx. 30 seconds. Size 4 × 3½ × 2¾in. Weight: 1lb. Power: 6V DC batteries. Price: £9.98 (inc. VAT).

K11 Erase-Sure ★

Cassette/cartridge erasing unit totally self-contained. Will instantaneously erase previous recordings. Just pass the tape slowly across Erase-Sure erasing field and it becomes clean and silent. Dimensions: 4 × 3½ × 2¾in. Weight: 1lb. Power: AA or HP7 batteries. Price: £9.98 (inc. VAT).

■ **LEDA**

Leda Audio Accessories Ltd,
7 Thane Works, Thane Villas
London N7 7NU.
Tel: 01-607 1107/8.

LA 19 Cassette Head Cleaner

LA 20 Cassette Care Pack ★

LA 21 Tape Cleaning Fluid
30cc bottle.

LA 22 Tape Head and Capstan Cleaner

Includes specially designed cleaning and polishing stick for removing stubborn deposits from operational parts of all tape recorders. Also 30cc tape cleaning fluid.

LA 27 Splicing Block

Professional block accurately machined for ¼in. and cassette tape widths. Features 45 deg



Kelsonics K10 & K11



Leda Cleaning Kit



Leda Music Centre Care System

and 90 deg cutting guides. non-slip base and cutter.

LA 31 Supa Care Pack Pack 2

Custom styled storage case holding Splicing Block, Splicing Tape, Cutters, Cassette Head Cleaner, Polishing Stick and Fluid. Everything permanently stored for the cassette enthusiast.

■ **LYRICHORDS**

N. Miers & Co Ltd, 28 Piercing Hill,
Theydon Bois, near Epping,
Essex CM 16 7LE. Tel: 037-881 2611.

Tape Accessories

8-track cartridge demonstration and test tape £2.48 (plus VAT); 8-track cartridge tape head cleaner £1.10 (plus VAT); tape head cleaning kit for reel-to-reel and cassette recorders 90p (plus VAT); ½in. cassette splicing and editing kit £1.99 (plus VAT); cassette salvage kit 48p (plus VAT); universal modification kit £1.50 (plus VAT).

★ Indicates entry is illustrated



Metrosound Cassette Salvage Kit

■ MEMOREX

Memorex (UK) Ltd, Hoechst House, 50 Salisbury Road, Hounslow West, Greater London. Tel: 01-570 7716.

Accessories

Cass. H.C. kit — £1.16; cass 8-T head cleaner — £1.24; record cleaner — £2.20. (All plus VAT).

■ METROSOUND

Metrosound Audio Products Ltd, Freedex House, 4-10 North Road, London N7 9HN. Tel: 01-607 8141.

M.4 Klenztape kit

Patented head cleaner. Kit comprises ribbed cleaning tape, two special spools and bottle of Klenztape fluid. Price: £1.20 (plus VAT).

M.17 Metro-Splicing Block

Professional precision metal splicing block for 1/4in. tape, supplied with non-magnetic cutter blade. Price: £1.26 (plus VAT).

M.18 Leader tapes

Choice of six colours, approximately 40ft of leader tape, wound on to plastic mini-spool. Price: 52p (plus VAT).

M.19 Stop foil

Metallic tape for actuating electronic auto stop mechanisms for tape recorders. Approximately 15ft on mini-spool. Price: £1.05 (plus VAT).

M.20 Jointing tape

1/4in. wide, approximately 12ft on mini-spool. Price: 52p (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: £1.94 (plus VAT).

M.71 Cassette Deck Care Kit

Presented in special purpose permanent storage case containing head cleaner, cassette head cleaning spatula with brush and velet polisher, cassette head cleaning fluid, multi-purpose duster and spare spatula velvets. Price: £2.20 (plus VAT).

M.32 Head Cleaner Cassette

Complete cassette conforming to international specification; loaded with silicone impregnated, non-abrasive, fibrous tape; contained in plastic library case. Price: 75p (plus VAT).

M.39 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: £1.72 (plus VAT).

M.62 Cassette Salvage Kit ★

Kit contains one complete compact cassette, splicing block, editabs, hub key and cutter to facilitate easy and economical repair of damaged cassettes. Price: £1.00 (plus VAT).

M.70 Tape (1/4in.) Edit Kit

Professional machined splicing block, with leader tape, splicing tape and cutters in a storage case. Price: £1.94 (plus VAT).

M.91 Compact Kit

Cassette and disc cleaners combined in a storage unit. For owners of complete music systems. Price: £3.14 (plus VAT).

M.86 Tape Head Cleaner Kit

A bottle of tape head cleaning fluid and two special cleaning spatulas with brush and polishing pads are provided. Price: 80p (plus VAT).

M.92 Music Centre Kit

Head cleaner cassette, fluid and spatula with record cleaning arm and ioniser in a storage case. For the owners of quality music centres. Price: £5.50 (plus VAT).



Caseset (MT8)



Cassette Library (MT11)



Cartridge Library (MT17)



Cartridge Carousel (MT15)

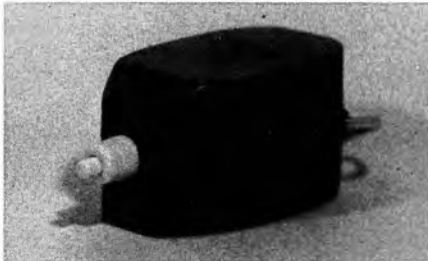


Cassette Library Box (MT15)



Add 'N' Stac Cartridge Storage (MT13)

Musonic Accessories — Cassette Library Box MT 16/Add N Stac Cartridge Storage MT13



Osmabet Bulk Tape Eraser

■ **MUSONIC**
S & B Trading, 34-38 Verulam Road,
St Albans, Herts AL3 4DF.
Tel: St. Albans 50611.

MT5
Cassette cleaner in library box.

MT6
Cartridge head cleaner.

MT7
Cartridge head and capstan cleaner.

MT12
Cassette storage. Each module holds 8 cassettes and can be interlocked in a variety of ways.

MT13 ★
Add 'n' stac for 6 cartridges.

MT14
Cassette carousel for 32 cassettes.

MT16 ★
Empty cassette library box.

MT18
Cassette cleaner without library box.

MT20
Pack of 10 spare cassette index cards.

MT25
Tape cleaning head kit. Cleaning tool, fluid; can be used as a jointing block.

MT26
Cassette tape splicing block.

■ **OSMABET**
Osmabet Ltd, 46 Kenilworth Road,
Edgware HA8 8YG. Tel: 01-958 9314.

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. In addition, the eraser can be used for the instant removal of residual magnetisation of recording heads, in the majority of cases without the removal of recording head protective covering. Is suitable for all sizes of tape reels or cassettes. Price: £4.75 (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. New additions to the range are screw fixing blank cassettes, cassette head cleaners and dynamic microphones. All items individually blister-packed for over the counter or self-service sales.

Tape Selector
Designed to permit two tape recorders to record and play back without being disconnected from the amplifier. Size: 5½ × 1¼ × 2¾in. Finish: brushed aluminium. Price: £6.75 (plus VAT).

See Pickup Accessories and Speaker Acces-

★ Indicates entry is illustrated

series Sections for details of other QAS equipment.

AC/DC Adaptor

220/240V mains AC to 6V, 7.5V or 9V DC. Polarity change switch neon on/off mains switch manufactured to BS 415 and ideal for powering tape recorders, calculators, transistor radios, etc.

■ QED

QED Audio Products Ltd,
112 Windmill Road,
Sunbury-on-Thames, Middlesex TW16 7HD.
Tel: Sunbury 87344/5.

Type 14/1 Variable Attenuator ★

When connecting various pieces of Hi-Fi equipment, it is sometimes necessary to attenuate the input or output to avoid overload. This attenuator is designed to overcome the problem by providing four adjustable level controls that can be 'set' in minutes. The device is connected in series with the audio lead. DIN to 4 phono. Price: £4.50 (plus VAT).

Type 14/2 Variable Attenuator ★

As above except DIN to DIN. Price: £4.90 (plus VAT).

Type 3/1 Tape Switching Unit ★

Allows up to three tape machines (cassette, cartridge, or reel-to-reel) to be connected and used with a Hi-Fi system without changing leads by hand. Size: 13 × 10 × 5cm. Price: £13.29 (plus VAT).

Type 22/1 Tape Switching Unit (2-way) ★

New slim line unit suitable for connecting and controlling up to two tape decks. Built-in 'compatibility controls' to allow any matching between decks. Rocker switch operation. Price: £12.00 (plus VAT).

■ REVOX

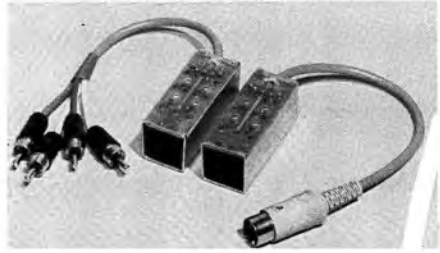
F. W. O. Bauch Ltd, 49 Theobald Street,
Borehamwood, Herts. WD6 4RZ.
Tel: 01-953 0091.

Slide Synchronizer

For use with automatic projectors. Switching pulses are recorded on the second track while tape remains laced in its normal path. For A77. Price: £42.00 (plus VAT).

Remote Control

For A77 controls all operating modes. May be used in conjunction with electric timers. Price: £24.57 (plus VAT). For G35 start-stop only. Price: £9.66 (plus VAT). A77 control with



QED Attenuators 14/1 & 14/2



QED Tape Switching Unit



QED 22/1 Tape Switching Unit

three position thumb-switch for play/stop/repeat. Price: £109.20 (plus VAT).

Empty Reels

7in. dia. with slotted driving hole as per cine spec, made of anodised aluminium. 10.5in. dia. with NAB hole made of anodised aluminium.

Library Boxes

Made of high-impact plastic. Lid hinges to one side allowing easy removal of stored tape reel. Several boxes may be assembled to form a practical storage unit.

Tape Cutting and Splicing Block

May be installed directly over sound heads in place of head cover. For lateral or diagonal cutting, permitting use of wide or narrow splicing tape. Price: £4.26 (plus VAT).

Cleaning Kit

Special liquid and tools for keeping recorder and tape heads in perfect condition. Price: £1.48 (plus VAT).

Cutter Set

For splicing and editing operations. Consists of 1 splicing block, 1 antimagnetic scissors, splicing tabs, 1 grease pencil — all in handy case. Price: £5.62.

Remote Control

For B77, controls all tape transport functions and set/record facilities for slide synchronisation. Built-in Off/Play/Record switch for use with electric timers. Price: £56.00 (plus VAT).

Varispeed Control

For B77, coarse and fine control of tape speed. The unit gives a speed variation from 2.5 to 11 i/s Price: £46.00 (plus VAT).

■ ROSS ELECTRONICS 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: 48p (plus VAT).

8-Track Cartridge Carry Case

Similar to above. Holds 10 cartridges. Price: £1.60 (plus VAT).

RE527K Tape Head Demagnetiser

Removes gradual build-up of residual magnetism from tape heads by briefly applying tip to heads in cassette and reel-to-reel recorders. Operates from mains supply. Totally enclosed and insulated. Price: £2.76 (plus VAT).

RE528K

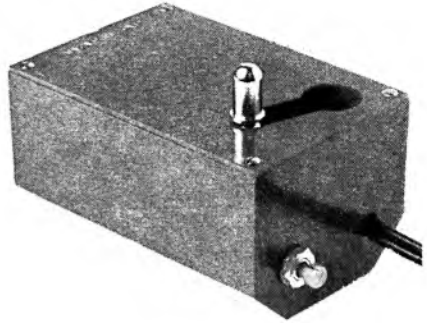
Construction and operation similar to RE-527K but equipped with specially shaped pole piece designed to reach into cassette recorder head without dismantling case parts. Price: £3.38 (plus VAT).

RE537K ★

Bulk tape eraser for cassettes, 8-track cartridges and open reel tape up to 7in. diameter. Totally enclosed in a tough plastic case with foldaway reel spindle. For 230/250 volts AC operation. Price: £10.20 (plus VAT).

RE632

Cassette head care kit. Comprises: special cleaning and polishing tool to safely remove stubborn oxide deposits from record and erase



Ross Electronics RE-537K

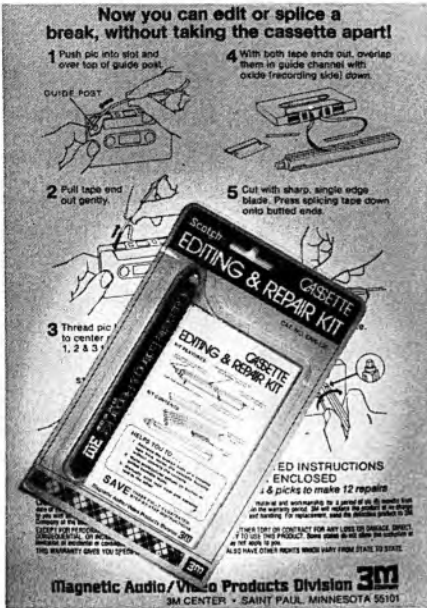


Ross Electronics RE-634



Ross Electronics RE464 Car Cassette Care Kit

★ Indicates entry is illustrated



Scotch Editing & Repair Kit

heads, cleaning fluid, and a cassette head cleaner to prevent build-up of cassette head deposits. Price: 96p (plus VAT).

RE634 ★

Cassette editing and salvage kit, providing practical and economical repair of valuable cassette recordings, plus editing facility. Kit comprises: 5-screw fixing replacement cassette case, leader and splicing tape, splicing block and two cutters. Price: £2.40 (plus VAT).

RE464 ★

Designed to facilitate servicing of in-car cassette player mechanisms. Kit contains: miniature torch with angled lens, dental mirror with universal joint to view tape head condition, cleaning tool with detachable straight or angled brush, cassette head cleaner, cleaning fluid and spare brush. In plastic storage case with 2-part Velcro strips for simple in-car fixing. Price: £4.10 (plus VAT).

■ SCOTCH

3M United Kingdom Ltd, 3M House, Wigmore Street, London W1A 1ET.
Tel: 01-486 6622.

Editing and Repair Kit ★

Splicing block with adhesive-tipped polyester strips. Splicing is simplified by means of tabs and cutting guides which can give professional finish. Price: £1.52 (plus VAT).



Sony SB200E



Sony SB300

■ SOLUS PRODUCTS

Solus Products, Post Office Lane, Market Harborough, Leics.
Tel: Market Harborough 66242.

DA 3000 Disco antistat

Disc cleaning kit, comprising bath with cleaning brushes, 1 litre bottle of antistatic cleaning fluid, refill funnel, drying rack, record clamp. Designed for the cleaning (and completely removing static) of batches of records. Does not leave residue. Price: Approx. £15.70 (plus VAT).

QC 3050 Quick cleaner

Disc cleaning kit, comprising cleaning pad, antistatic liquid spray. For cleaning individual records and removing static. Price: Approx. £3.75 (plus VAT).

■ SONY

Sony (UK) Ltd, London Showroom, Consumer Information Service, 134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874.

SB200 ★

The SB200 is a SOS and echo adaptor for three head stereo tape recorders which have an independent channel monitoring facility. It provides a simulated echo effect or a full sound on sound facility. This enables you, for example, to record a guitar backing on one track and

then playback the guitar recording and while monitoring this through headphones, to add a piano melody, both then being recorded on the other track. This process can be repeated adding different instruments, each time transferring the recording from track to track.

SB300 ★

SB300 is a tape deck selector, which will be invaluable to anyone possessing more than one tape recorder but with insufficient tape inputs and outputs on his amplifier. The SB300 permits up to 3 tape recorders to be connected to a standard amplifier. Simply by selecting the appropriate buttons it is possible to record, and playback using any desired combinations of your units. Full A-B, monitoring is possible from all recorders providing the amplifier is equipped with a tape monitor switch.

Tape Spools

R5A empty spool 5in; R7A empty spool 7in; R11A empty 10½in NAB spool.

Recorder, Cassette Accessories ★

RAD 1 10½in. NAB reel adaptor; RE3 endless cassette, size 90m. RE4 endless cassette, size 46m. BE7 cassette eraser. BE9H cassette eraser and micro cassette cover. DP16 dust cover for TC377. DP24 dust cover for TC138SD. DP25 dust cover for TC177SD. DP27 dust cover for TC645. DP28 dust cover for TC135/136SD. DP30 dust cover for TC765/766.2. FS6 foot switch. HE3 tape head demagnetiser. Carrying cases. RM15, RM30 remote control switches. SB 200E — switch box (S.O.S. & Echo) for 3-head tape recorders. SB300 — switch box — interconnect/monitor 3 tape recorders. BP28 rechargeable battery for TC510-2; BP8 rechargeable battery for TC153SD, TC158SD, TC520CS, TC525; CK15 cassette stand designed to hold 15 tapes, hinged cases.

■ TANDBERG

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

Spools

Empty metal spool boxed. 7in. — £4.00; 10½in. — £7.00 (inc. VAT).

Slide Synchroniser

Model 3 can be used with any automatic slide projector and stereo tape recorder, and also with mono recorder equipped with free head output. Price: £81.00 (inc. VAT).

Head Cleaning Kit

Price: £2.00 (inc. VAT).



Sony DP30 Dust Cover for TC766-2/TC765



Sony CK15

■ TAPE RECORDER SPARES LTD

206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844/5/6/7.

Large range of spares and accessories for all makes of tape recorder. Catalogue and details on request.

■ 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.

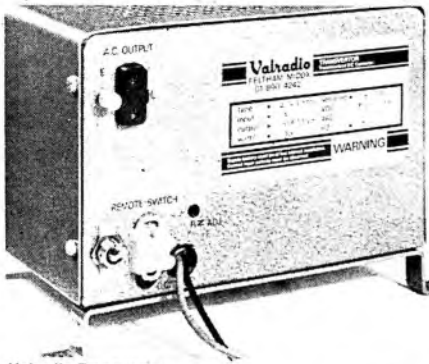
DC converters

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 1,000W AC. Prices from £39.

Transverter C12/30S ★

Input 12V DC. Output 50Hz ± ¼Hz sine wave at 30W. Suitable for positive or negative

★ Indicates entry is illustrated



Valradio Transverter



WAL Bulk Eraser



Weircliffe Bulk Eraser



Zeepa De-magnetizer



Zeepa Tape Head and Stylus Cleaner

earthed input. Built-in switch and socket. Supplied complete with input lead. Size: 8 × 6 × 6in. Weight: 8lb. Price: approximately £75.00.

Transverter D12/120S

Input 12V DC. Output: 115-230V 50Hz ± ¼Hz sine wave at 120W. Price: approximately £130.00.

Transverter D12/200S

Input 12V DC. Output: 115-230V 50Hz ± ¼Hz sine wave at 200W. Price: approximately £170.00.

Transverter D12/400S

Input 12V DC nominal. Output 115-230V 50Hz ± ¼Hz sine wave at 400W. Price: approximately £330.00.

Frequency changer

AC-DC. Suitable for records, films, television programme special effects. Price: (200W) from about £250.00.

■ WAL

A. C. Farnell Ltd, Kenyon Street, Sheffield S1 4BD. Tel: 0742 78901.

Wal Bulk Tape Eraser ★

Primarily for erasure of reel magnetic recording tapes when tape recorder erasure head function was not always satisfactory. Also for compact cassettes, computer and video tapes. Works by application of strong magnetic field across material for erasure. Operated by spring loaded push button. Will erase a 7in. tape in 20 seconds. Price: £25.50 (plus VAT).

■ WEIRCLIFFE

Amos of Exeter Ltd, Weircliffe Court, Exwick, Exeter, Devon.
Tel: Exeter 72132.

Magnetic Tape Bulk Eraser ★

Capable of erasing any saturated tape or film up to 2in. video on any tape of reel up to 14½in. dia. to a level of better than -80dB in 10-14 seconds. Price: on application.

■ ZEEPA

Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

Tape Head and Stylus Cleaner ★

Aerosol spray for cleaning both tape heads and styli. Price: £1.65 (inc. VAT).

Magnetic Head Demagnetiser ★

Suitable for both 240V and 110V with built-in pilot light. Price: £9.95 (inc. VAT).

Tape Amplifiers and Mixer Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ADASTRA

Adastra Electronics Ltd, Unit N22,
Cricklewood Trading Estate, Claremont Road,
London NW2 1TU.
Tel: 01-452 6288/9.

M103

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 £9.00 (plus VAT).

M101

Transistor 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: £9.00 (plus VAT).

M104

Six-channel stereo mixer/amplifier. 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 transistor circuit. Special RIAA 50K socket. Power supply: internal battery. Weight: 3³/₄lb. Price: £44.40 (plus VAT).

■ EAGLE

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

PRE 38

Tape or microphone booster pre-amplifier for increasing record/playback signals from/to amplifier. Inputs and outputs are phono sockets. Variable output. Price: £9.10 (plus VAT).

GD 580

7 in/2 out stereo mixer with built-in headphone amplifier, studio type slider controls and lever cue controls. Inputs: two stereo PU's 3mV 47K, aux 200mV 100K, microphone (mono mixes across both channels). Cross fade control between turntables, 'talkover' switch, low filter. Headphone level control. Power supply: 240V AC. Suitable for console mounting or freestanding (wooden end checks available extra). Size: 26 × 12 × 19cm. Price: on application.

GM 560

6 in/2 out stereo microphone mixer, studio type slider controls. Power supply: 240V AC. (Available also in battery-operated form, model GM 450.) Suitable for console mounting or freestanding (wooden end checks available extra). Size: 26 × 12 × 19cm. Price: on application.

GM 540

4 in/1 out mono microphone mixer, studio type slider controls. Power supply: 240V AC. (Available also in battery-operated form, model GM 430.) Suitable for console mounting or freestanding (wooden end checks available extra). Size: 26 × 12 × 19cm. Price: on application.

GH 520

Graphic equaliser with slider controls at 60Hz, 240Hz, 1kHz, 3.5kHz and 10kHz. Defeat switch. Inputs for two turntables, auxiliary and microphone (mono). Two 'high' level outputs, one 'low' level output. Power supply: 240V AC. Wooden end checks available extra. Size: 26 × 12 × 19cm. Price: on application.

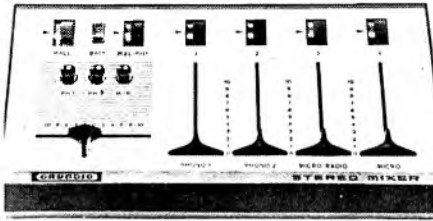
■ GRUNDIG

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

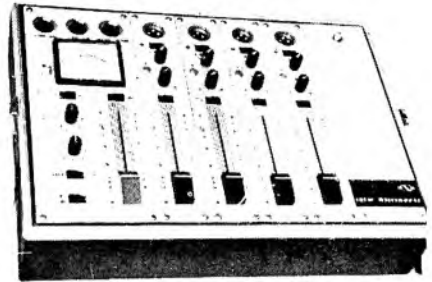
Mixer 422 ★

Transistorized stereo mixer for four inputs. Three coarse level controls. Directional control and control for reverberation unit. Four microphone preamplifiers fitted. Channel separation: mic 50dB, PU 35dB. Response: 40Hz-20kHz ±2dB. Powered by two 9V bat-

★ Indicates entry is illustrated



Grundig 422 Mixer



Sennheiser M101



Allen and Heath Minimixer

SD 12 — 2 Stereo mixing console

Semi-modular construction. Format: 12 into 2 + 1 + 1. Output: programme, foldback, echo send. Headphones: 500mW per channels into 8 ohms. Input sensitivity: -61dB for +4dB programme output. FR: 40Hz-20kHz ± 1.5 dBmic, 20Hz-20kHz ± 1.5 dB line. Noise: equiv input noise at full gain -124dB. Output noise at full gain -60dB. Input attenuation: 0-60dB continuously variable. Input clipping level: mic level — not possible under normal conditions; line level ± 15 dBm. Distortion: mic in less than 0.4%, line in less than 0.05%. Equalisation: ± 12 dB at 12kHz, 2.6kHz, 700Hz, 150Hz. Input impedance: mix 1K at 40dB gain; line 50K bridging, echo 10K. Output impedance: less than 100 ohms, rec load imp 600 ohms or greater. Dimensions: 10.9 x 52.5 x 71.2cm.

■ MINIMIXER

Allen and Heath Ltd, Pembroke House, Campsbourne Road, London N8.
Tel: 01-340 3291.

Minimixer ★

Six channel stereo mixer with dual line return. Mechanical double sided printed circuit board with board mounting components used throughout. Matt black stoved steel case. Size: 22.3 x 29.8 x 3.8cm. Input sensitivity: continuously variable from better than -50dB at 100K with accessory transformer better than -72dB at 200 ohms. Input: better than -122dBm at 200 ohms. Output level: 0dBm (0.775V) at 500 ohms. Headroom + 14dB. Output noise better than -68dBm. Line return: 2 inputs feeding left and right busses. Variable from -10dBm at 8K. Bass and treble control as per input channels. FR: 30Hz-15kHz. Distortion: less than 0.2%. Price: miniature mixer £185.00, MPS 2500MA £34.00. In line mic transformers (cannon type) £8.50, auxiliary box £53.00, monitor box £53.00, pro-limiter (mains powered) £71.00. All plus VAT.

56-2

Designed for production of tape collages for radio, TV and films. Ideal for DJ's, broadcasting units and production companies. Details on application.

SD — 2 Stereo mixing console

Semi-modular construction. Format: 12 into 2 + 1 + 1. Output: programme, foldback, echo send. Headphones: 500mW per channels into 8 ohms. Input sensitivity: -61dB for +4dB programme output. FR: 40Hz-20kHz ± 1.5 dBmic, 20Hz-20kHz ± 1.5 dB line. Noise: equiv input noise at full gain -124dB. Output noise at full gain -60dB. Input attenuation: 0-60dB continuously variable. Input clipping level: mic level — not possible under normal conditions; line level ± 15 dBm. Distortion: mic in less than 0.4%, line in less than 0.05%. Equalisation: ± 12 dB at 12kHz, 2.6kHz, 700Hz, 150Hz. Input impedance: mix 1K at 40dB gain; line 50K bridging, echo 10K. Output impedance: less than 100 ohms, rec load imp 600 ohms or greater. Dimensions: 10.9 x 52.5 x 71.2cm.

S6-2

Designed for production of tape collages for radio, TV and films. Ideal for DJ's, broadcasting units and production companies. Details on application.

■ **SENNHEISER ELECTRONIC**

Distributors: Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, SL9 9EW. Tel: Gerrards Cross 88447.

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 AB powered capacitor (mics). Output: unbalanced +6dB at 60 ohms. Prefade listening using ML101 mixer monitoring unit. PPM. Slider-type faders. Separate bass and treble controls switchable to channel four or to mixed output. Treble control: ± 12 dB at 15kHz, bass control +10dB -14dB at 40 Hz. Power supply: two 9V EverReady cells type 276 or equivalent, or 18V from other equipment. Price: on application.

■ **SHURE ELECTRONICS LTD**

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

M64-2E

Stereo preamplifier to provide $7\frac{1}{2}$ i/s NAB equalization for tape decks containing no elec-

tronics. Full specification and price in Amplifier Section.

M68FCE

Five-channel mono mixer/pre-amplifier to accept dynamic, ribbon or condenser type microphones. Inputs: four microphone low impedance balanced or high impedance unbalanced plus one auxiliary high level input. Controls: five input volume controls plus master volume control which adjusts level of all inputs. Outputs: high or low impedance microphone level and high level auxiliary output. Mains or external battery powered: $2\frac{3}{4} \times 11\frac{3}{8} \times 5\frac{1}{4}$ in. Price: £82.08 (plus VAT).

■ **SONY (UK) LTD**

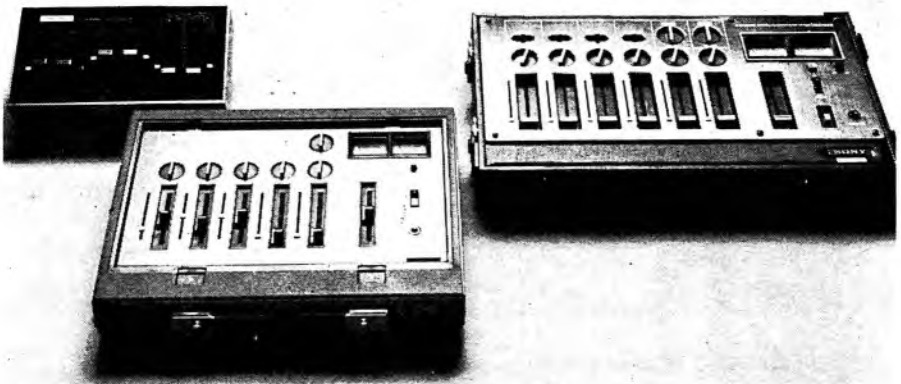
London Showroom, Consumer Information Service,
134 Regent Street, London W1R 6DJ.
Tel: 01-439 3874

MX8 ★

Passive six-channel stereo mixer for microphone or line inputs. Inputs: six-channel inputs (passive type). Impedance: Mic low. Sensitivity: -50dB (2.1mV). Impedance: Line 82K. Sensitivity: -5dB (435mV). Output impedance: line 280 ohms. Output level: -60dB (0.775mV). General: Dimensions (approx.): 23.8 x 7.6 x 14.8cm including projecting parts. Weight (approx.): 3lb 2oz (1.4kg). Supplied accessories: 2 x PCI plug adaptor.

MX510 ★

Battery operated five-channel stereo mixer with mic, line and phono inputs; one pan-pot



Sony MX8/MX510/MX650

★ Indicates entry is illustrated



Teac DBX 117 Dynamic Range Enhancer



Teac DBX 122

and twin VU meters. Inputs: five-channel inputs. Impedance: Mic low. Sensitivity: -72dB (0.2mV). Impedance: Line 100K . Sensitivity: -22dB (60mV). Impedance: Phono 50K . Sensitivity: -51dB (2.2mV). Outputs: two-channel outputs. Impedance: Line 10K . Output level: -5dB (435mV). Impedance: Headphone $8\ \text{ohm}$. Output level: -24dB (47mV). Frequency response: $30\text{-}25,000\text{Hz}$. S/N ratio: 60dB . General. Power requirements: DC 12V , $8 \times \text{HP11}$ batteries. Dimensions (approx.): $34.8 \times 7.5 \times 24\text{cm}$ including projecting parts. Weight (approx.): $6\text{lb } 10\text{oz}$ (3kg). Semi-conductors: 20 transistors, 5 diodes. Supplied accessories: RK74 connecting cord.

MX650 ★

Battery operated six-channel stereo mixer, with mic, line and phono inputs; 2 pan-pots, twin VU's and line-up oscillator. Inputs: six-channel inputs. Impedance: Mic low. Sensitivity: -72dB (0.2mV). Impedance: Line 100K . Sensitivity: -22dB (60mV). Impedance: Phono 50K . Sensitivity: -51dB (2.2mV). Impedance: Cascade $50\text{K}\ \text{ohm}$. Sensitivity: -5dB (435mV). Outputs: two-channel outputs. Impedance: Line 10K . Output level: -5dB (435mV). Impedance: $600\ \text{ohm}$. Output level: -60dB (0.775mV). Impedance: Headphone $8\ \text{ohm}$. Output level: -24dB (49mV). Frequency response: $30\text{-}25,000\text{Hz}$. S/N ratio: 60dB . General. Power requirements: DC 12V ,

$8 \times \text{HP11}$ batteries. Dimensions (approx.): $45.2 \times 8.3 \times 25\text{cm}$ including projecting parts. Weight (approx.): $9\text{lb } 8\text{oz}$ (4.3kg). Semi-conductors: 27 transistors, 7 diodes. Supplied accessories: RK74 connecting cord. No rec. retail price.

TEAC

Teledyne, High Street, Houghton Regis, Beds.
Tel: Houghton Regis 603 151.

Model 2A

Mixer with 6 inputs and 4 outputs. Imp: 30K unbalanced. FR: $30\text{Hz-}20\text{kHz} \pm 2\text{dB}$. Dimensions: $8.3 \times 33.2 \times 26\text{cm}$. No rec. retail price.

DBX 117 ★

Dynamic range enhancer. Continuously adjustable to ratio of 1.4:1. Expansion: continuously adjustable to ratio 1:2. Input noise: 90dB below 1V . Input level: 30V . Input imp: 50K . Dimensions: $9.5 \times 14.6 \times 22.9\text{cm}$. No rec. retail price.

119

Dynamic range enhancer. Details on application.

122★

2-channel noise reduction system. Dynamic range noise to peak ratio: 110dB . Imp: 50K . Will feed tape recorder inputs 5K or greater. Max output level: 7V at 1kHz in 5K load. Compression/expansion scope: 2:1. FR: $30\text{Hz-}20\text{kHz}$. Price on application.

124

4-channel system. Details on application.

128

Combination unit 124/119 — details on application.

UHER

Uher Ltd, 28 Spencer Street, St. Albans, Herts.

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: $20\text{Hz-}20\text{kHz}$. Slider faders with directional control, muting switches and 1kHz generator. Powered by PP3 battery or Z131 mains unit. Price: $\text{£}97.59$ (plus VAT).

Tape Decks and Recorders

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ AEG-TELEFUNKEN

Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

M 12A

Studio tape recorder, easily transportable and compact using 1/4in. tape. Mono operation with or without pilotone. Stereo or two track can be supplied with built-in mixer with twin VU meters, one mic input and one line input per channel. Provision for powering 48V mics. Push button selection, full logic to prevent tape damage. Remote control, tape timer, ferrite heads and ceramic guides. Tape speeds: 19/38cm/sec or 9.5/19cm/sec. W and F: 38cm/sec $< \pm 0.05\%$, 19cm/sec $< \pm 0.08\%$, 9.5cm/sec $\pm 0.10\%$. FR: 38cm/sec. 30Hz-16kHz ± 1.5 dB, 60Hz-16kHz ± 1.0 dB, 19cm/sec. 30Hz-16kHz ± 2.0 dB, 60Hz-16kHz ± 1.0 dB. Output: +4dBm (max +12dBm). S/N ratio: A weighted 38cm/sec: mono > 67dB, stereo > 64dB, two track > 62dB. 19cm/sec: mono > 69, stereo > 66, two track > 65. 9.5cm/sec: mono > 66, > 63, stereo > 63 two track. Capstan synchronous pole switched reel 6-pole special motor. 3 or 4 heads dependent upon model. Max. spool capacity: 10 1/2in. Dimensions: 48.3 x 44.4 x 20.8. Price: on application.

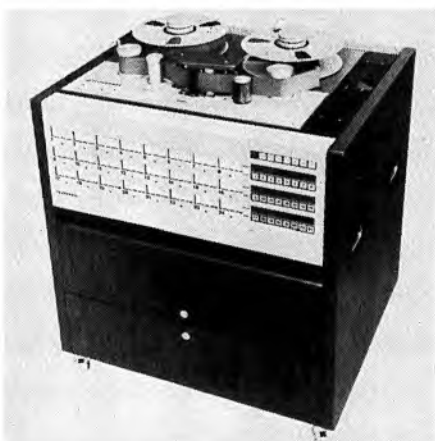
M 15A Multitrack ★

Studio multitrack master recorder available as follows: 1in. tape 8-track: 1/2in. tape 16, 24, 32-track. Machines can be supplied rewired for additional tracks and can be NAB or CCIR or NAB/CCIR switchable. They can be fitted with sync. amplifiers to provide a separate sync. output. Telcom C4 noise reduction systems can be fitted inside the machine up to 24 tracks. Tape speeds: 19/38cm/sec or 38/76cm/sec. W and F: 38 and 76cm/sec $< \pm 0.04\%$, 19cm/sec $< \pm 0.06\%$. FR: 76cm/sec. 60Hz-18kHz ± 1.5 dB (sync. relay

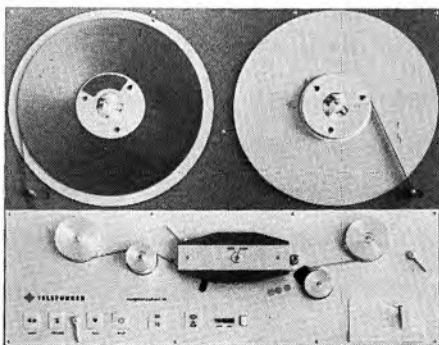
80Hz-15kHz); 38cm/sec 30Hz-18kHz ± 1.5 dB (sync. relay 40Hz-15kHz); 19cm/sec 30Hz-15kHz ± 1.5 dB (40Hz-10kHz). Output: +6dBm or +15dBm by internal adjustment. S/N ratio: 38 and 76cm/sec = 8/16TK 24/32TK, 63dB, 62dB. 19cm/sec 59dB, 58dB. Capstan electronically commutated DC quartz motor. Special AC types. Three heads. Max. spool capacity: 12 1/2in. dia. 10 1/2in. at 30 ips. Dimensions: 80 x 68 x 92cm. Price: on application.

M 15A ★

Studio Master recorder. Tape timer with LED readout. Mono, mono with pilotone, stereo or two-track on 1/4in. tape. NAB or CCIR equalisation. All functions selected by solid state switches. Full logic control. Fail safe operation of all functions. Variable spooling both directions. True time indication at both speeds. All functions fully remotely controllable. Varispeed unit available with LED digital readout of % speed shift. Autolocate unit available with provision to store. Nine tape positions



AEG-Telefunken M15A multitrack



AEG-Telefunken M15A

★ Indicates entry is illustrated



Ampex MM-1200

and shuttle facility. Tape speeds: 7.5 and 15 ips. W and F: 15 ips = $\pm 0.04\%$; 7.5 ips = $\pm 0.06\%$. FR: 15 ips 30 Hz-16kHz ± 1.5 dB, 60Hz-16kHz ± 1 dB. 7.5 ips 30Hz-15kHz ± 1.5 dB, 60Hz-10kHz ± 1 dB. Output: adjustable between 6 to +15dBm. S/N ratio: 65dB at 7.5 and 15in./sec. 'A' weighted. Capstan DC brushless reel, 2 special motors. Three heads. Max spool capacity: 10 $\frac{1}{2}$ in. NAB. Dimensions: 64.5 \times 52.5 \times 30.8cm. Price: on application.

■ AKAI

Rank Audio Visual, Rank Hi-Fi,
Great West Road, Brentford, TW8 9HB.
Tel: 01-568 9222.

GX 630 DB

Four track 2 channel stereo/monaural system. Tape speeds: 7 $\frac{1}{2}$, 3 $\frac{3}{4}$ ips. W and F: $< 0.06\%$ at 7 $\frac{1}{2}$, $< 0.09\%$ at 3 $\frac{3}{4}$ ips. FR: 30-25,000Hz at 7 $\frac{1}{2}$, 30-19,000Hz at 3 $\frac{3}{4}$. Distortion: $< 0.5\%$. Output power: 0.775 Volts (line 2), 30mV (phone 1). S/N: better than 50dB. Crosstalk: better than 45dB (stereo). Bias Frequency: 100kHz. Motors: 2-speed AC servo control auto motor and 6-pole eddy current for reel drive. No. of Heads: 6. Forward and reverse, playback, record and erase. Max tape capacity: 4,200 feet. Dimensions: 44 \times 24 \times 47cm. Price: £597.47 (plus VAT).



Ampex ATR-100

GX 215D

4-track, 2 channel stereo. Tape speed: 3 $\frac{3}{4}$, 7 $\frac{1}{2}$. W and F: 3 $\frac{3}{4}$ $< 0.18\%$, 7 $\frac{1}{2}$ $< 0.17\%$. FR: 3 $\frac{3}{4}$ 30Hz-19kHz, 7 $\frac{1}{2}$ 30Hz-25kHz. S/N ratio: > 56 . No. of heads: 3. Maximum spool capacity: 7in. Dimensions: 38 \times 29.5 \times 39cm. Price: £358.49 (plus VAT).

GX 6500

4-track 2 channel stereo. Tape speeds: 3 $\frac{3}{4}$, 7 $\frac{1}{2}$, 15. W and F: $< 0.07\%$, 0.055%, 0.04%. FR: 30Hz-20kHz, 30Hz-26kHz, 30Hz-30kHz. S/N ratio: > 58 . No. of Heads: 3. Maximum spool capacity: 10 $\frac{1}{2}$ in. Dimensions: 52.4 \times 25.8 \times 42.2cm. Price: £831.91 (plus VAT).

■ AMPEX

Ampex GB Ltd. Acre Road, Reading,
Berks RG2 0QR. Tel: Reading 85200.

MM-1200 ★

Professional multi-track recorder. Full specifications and prices on request.

ATR-100 ★

Professional multi-track recorder. Full specifications and prices on request.

■ FERROGRAPH

North East Audio Ltd,
Simonside Works, South Shields,
Tyne and Wear NE34 9NX.
Tel: South Shields 566321.

Series 76: 'Logic 7'. Push-button control with electronic interlocks by logic circuits.

7602H

1/2-track, high speed stereo tape unit, with preamp only. Speeds (cm/sec): 38, 19, 9 1/2. Max spool size: 10 1/2 in. W and F: 0.08% (38), 0.10% (19), 0.15% (9 1/2). S/N ratio: better than 60dB (0.17% unweighted). FR: 30Gz-20Hz ±2dB (38), 30Hz-17kHz ±2dB (19), 40Hz-14kHz ±3dB (9 1/2). Motors: one synchronous and two constant torque. Mains: 200-250V 50Hz AC or 117V 60 Hz (suffix A). Three heads, PB multiplay, AB comparison, adjustable tape tensioning. Size: 20 1/4 × 17 1/2 × 10 in. Price: £533.00 (plus VAT).

7602DH

Same specification as 7602H, but includes Dolby 'B'. Price: £633.00 (plus VAT).

7622H

Same specifications as 7602H but with power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4 in. Price: £613.00 (plus VAT).

7622DN ★

Same specifications as 7602H but with power amps and Dolby 'B'. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4 in. Price: £713.00 (plus VAT).

7604H

1/4-track, high speed stereo tape unit with preamps only. Same specifications as 7602H. Price: £533.00 (plus VAT).

7604DH

1/4-track, high speeds stereo tape unit with Dolby 'B' and preamps. Same specifications as 7602H. Price: £633.00 (plus VAT).



Grundig Tk547



Grundig Tk747



Ferrograph 7622DH

7624H

1/4-track, high speed stereo tape unit with power amps. Same specification as 7602H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4 in. Price: £613.00 (plus VAT).

7624DH

1/4-track, high speed stereo tape unit with Dolby 'B' and power amps. Same specification as 7602H. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4 in. Price: £713.00 (plus VAT).

■ **GRUNDIG**

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

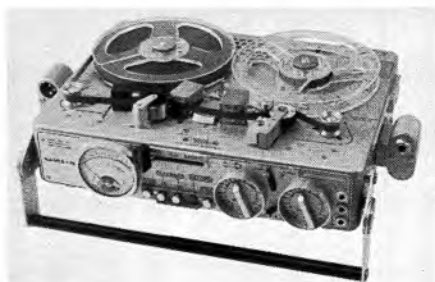
TK/747 ★

1/4-track stereo tape recorder. Speeds (cm/sec): 19, 9 1/2, 4 3/4. Max spool size: 7 in. W and F: 0.07% (19), 0.12% (9 1/2), 0.2% (4 3/4). S/N ratio: <54dB (19), <52dB (9 1/2), <45dB (4 3/4). FR: 40Hz-18kHz (19), 40Hz-15Hz (9 1/2), 40Hz-8kHz (4 3/4). Level indication: VU. Inputs: mic 1mV 100K, radio diode 3mV 30K, phono

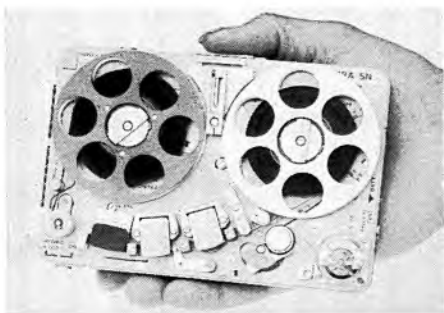
★ Indicates entry is illustrated



Nagra 4.2



Nagra IS



Nagra SN



Nagra E

100mV/1M ohms. Outputs: line 800mV 20K, speakers 7W/4 ohms, phones 2V/100 ohms. Facilities for synchronous, multiplay and echo recordings. Automatic or manual recording level control. Mains: 110-240V. Size: 49.7 × 30.7 × 15.2cm. Weight: 27½lb. No rec. retail price.

TK/547 ★

Stereo tape recorder. W and F: 0.07% (19), 0.12% (9½). S/N Ratio: <54dB (19), <52dB (9½). FR: 40Hz-18kHz (19), 40Hz-15kHz (9½). VU meter. Inputs: mic 1mV 100K, radio diode 5mV 50K, phono 100mV 1M. Outputs: line 1V/10K, speakers 7W/4 ohms. One motor. Main: 110-240V. Dimensions: 41.8 × 30 × 15.4cm. No rec. retail price.

TS 1000/4

¼-track semi-professional. Tape speeds: 4.75, 9.5cm/s, 19cm/s. Full details on request.

TS 945

¼-track semi-professional. Details on request. No rec. retail price.

■ NAGRA

Distributed by: Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW. Tel: Gerrards Cross 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. 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%. Price on application.

Model 4.2L

Full-track mono version with pilotone. Inputs from two mics and line. Line output: 4.4V 600 ohms. S/N ratio: -67 to -70dB depending on speed and tape. Visual pilotone indicator. Pilotone input level 0.5-25V. Price: on application.

Model 4.2LSP

As Model 4.2L but excluding pilotone facility.
Price: on application.

Model IV-SL

1/2-track model with pilotone. Preamplifiers switchable to suit all types of microphone. Output: IV 600 ohms. Special Nagra master 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 pilotone channel to permit pilotone and cue speech recording. Pilotone level IV. Price: on application.

Miniature Nagra SN ★

Full-track battery-operated professional stereo recorder. Speeds: (model SNN-2) 3 3/4, 1 7/8 i/s; (model SNS-2) 1 7/8, 5/16 i/s. Spool capacity: 154m standard tape, 308m 12.5 micron tape. W and F: 3 3/4 i/s ± 0.1%, 1 7/8 i/s ± 0.15% (both to DIN 45 507). S/N ratio: 3 3/4 i/s 603dB (ASA 'A' with tape); 1 7/8 i/s 55dB (ASA 'A' with tape). FR: 80Hz-15kHz ± 2dB. Replay char: CCIR. Meter level indicator. Inputs:

microphone, current input from 200 ohms or greater (3µA RMS, max level 100µA RMS). Alternative line input for normal modulation level from 100 ohms source -160mV RMS. Outlets: line 600mV across 1K, headphones. One DC series commutator motor. Size: 5 3/4 × 4 × 1 1/8 in. approximately. Price: on application.

IS ★

Compact, battery operated mono portable tape recorder of modular construction equipped with two microphone inputs and switchable input filters. DC servo-controlled motor. Monitoring headphones switchable to either tape or direct. Tape speed: 7 1/2 ips. W and F: 0.15%. FR: 50-15,000Hz. Output power: 4.4V into 600 ohms. S/N: 68dB ASA weighted ref 320nWb/mm. Bias frequency: 120kHz. DC brush type motor. Three heads. Maximum spool capacity: 5in. Dimensions: 10 3/4 × 8 × 3 1/8 in. Price: on application.

IS-DE

Identical to IS-D version but with universal microphone preamplifier (for dynamic and

Butterworth Books

Beginners Guide to Audio

I.R. Sinclair

1977 190 pages 186 x 123mm Illustrated
0 408 00274 3 £2.75 US \$5.50

Master Creative Tape Recording

John Gardner

1977 144 pages 216 x 138mm Illustrated
0 408 00244 1 £2.50 US \$5.00

Master Electronics in Music

T.D. Towers

1976 128 pages 216 x 138mm Illustrated
0 408 00262 X £2.50 US \$5.00

Master Hi-Fi Installation

Gordon J. King

1976 160 pages 216 x 138mm Illustrated
0 408 00237 9 £2.50 US \$5.00

BUTTERWORTH & CO

(PUBLISHERS) LTD

Borough Green, Sevenoaks,
Kent TN15 8PH



Master Hi-Fi Loudspeakers and Enclosures

D. Berriman

1978 128 pages approx. 216x138mm
Illustrated 0 408 00369 3
£2.50 approx. US \$5.00 approx.

Master In-Car Entertainment

Vivian Capel

1977 128 pages 216x138mm Illustrated
0 408 00286 7 £2.50 US \$5.00

Master Stereo Cassette Recording

I.R. Sinclair

1976 120 pages 216x138mm Illustrated
0 408 00238 7 £2.50 US \$5.00

Questions and Answers On Hi-Fi

C. Brown

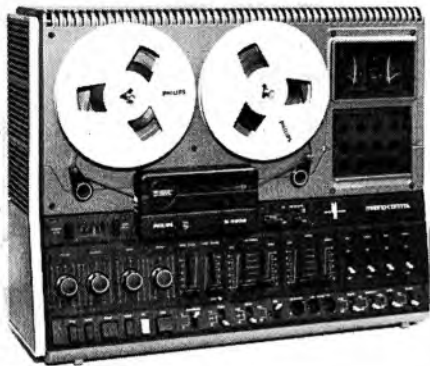
1974 104 pages 165x111mm Illustrated
0 408 00136 4 £1.15 US \$2.50

Radio, TV and Audio Technical Reference Book

S.W. Amos

1977 1172 pages 222x141mm Illustrated
0 408 00259 X £24.00 US \$48.00

★ Indicates entry is illustrated



Philips M4506

capacitor microphones), level metering switchable to modulometer, super VU-meter or PV-meter, reference generator supplied as an option.

IS-DT

Identical to IS-DE version, but with two tape speeds, 7½ and 3¼in. A combined circuit with automatic level control and reference generator is supplied as an option.

IS-LT

Same as IS-DT but with Pilotone.

E ★

Low cost professional portable tape recorder. Power supply 12 HPZ batteries fitted internally, or external mains unit. Single speed mono, non-pilot only. One line input, one microphone input, microphone input switchable to accept either 200 ohms dynamic or A-B powered capacitor microphone. Single DC servo controlled motor. Built-in monitor loudspeaker. Monitor headphones switchable between tape and direct. A 3-frequency 2-level reference generator allows the adjustment of bias record gain and equalisation without need for external measuring instruments. Tape speed: 7½ips. W and F: ±0.1% to DIN 45507. FR: 50Hz-15kHz. Output: 0.94V for 320mWb/m. S/N ratio: 62dB ASA 'A' weighted. DC brush type motor, 3 heads. Maximum spool capacity: 5in. lid closed, 7in. lid open. Dimensions: 31.5 × 22.6 × 10.4cm. Price: on application.

■ PHILIPS

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

N4506 ★

Stereo open reel tape deck with comprehensive input facilities, post fading, variable ind speed, cueing, integral pre-amplifier for motional feed-back loudspeakers. Tape speeds: 7½, 3¼, 1⅞ips. W and F: 7½ < 0.1%, 3¼ < 0.15%, 1⅞ < 0.3%. DIN or 7½ < 0.05%, 3¼ 0.07%, 1⅞ < 0.2%. FR: 7½ 35Hz-25kHz, 3¼ 35Hz-19kHz, 1⅞ 35Hz-11kHz. Output: 1V line, 1V for MFB enclosures. S/N: 7½ > 60dB, 3¼ > 60dB, 1⅞ 58dB. Three heads. Dimensions: 55.7 × 21 × 43.7cm. No rec retail price.

■ PIONEER

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

RT 707

Rack mountable 7in. open reel front loading auto reverse four track two channel. Tape speeds: 19cm/s and 9.5cm/s. W and F: Less than 0.05% at 19cm/s, less than 0.08% at 9.5cm/s. FR: 20Hz-28kHz at 19cm/s, 20Hz-20kHz at 9.5cm/s. Output: Line 450mV/700mV/50K. Headphones 70mV/80 ohms. S/N: more than 58dB. Distortion: less than 1% at 19cm/s. Bias frequency: 125kHz 2 by STD/LH Bias Selectors. 2 by EQ STD/LH Selectors. Motors: 3, 1 by FG AC Servo for capstan 2 by 6-pole induction motors for reel drive. 4 tape heads. Maximum spool capacity: 7in. Price: on application.

RT 2022 ★

Two track two channel 10½in. open reel tape deck consisting of transport unit RTU 11/2T and 1 TAU 11 pre-amplifier. Tape Speeds: 38cm/s and 19cm/s. W and F: No more than 0.04% wrms at 38cm/s. No more than 0.08% wrms at 19cm/sec. FR: 30Hz-28,000Hz plus or minus 3dB at 38cm/sec. 40Hz-20,000Hz plus or minus 3dB at 19cm/sec. Pre-amplifier output: 450mV/930mV/50K ohms. S/N: more than 57dB. Bias frequency: 125kHz. Variable range of bias current against (FIX) position. Motors: 3, 1 by synchronous motor for capstan, 2 by induction for reel drive. 3 tape heads. Maximum spool capacity 10in. NAB. Price: on application.

RT 2044 ★

Four-track four-channel open-reel tape deck consisting of 1 RTU 11/2T transport unit, 2 TAU 11 pre-amplifiers and 1 JT 2044T quarter track head unit. Other specifications the same as RT 2022.

■ **REVOX**

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

Series 77 ★

Stereo tape recorder. Tape speed: $3\frac{3}{4}$ i/s and $7\frac{1}{2}$ i/s max deviation from nominal $\pm 0.2\%$. W and F: total RMS, weighted 0.04% at $7\frac{1}{2}$ i/s and 0.05% at $3\frac{3}{4}$ i/s. Weighted peak to peak flutter as per DIN 0.08% at $7\frac{1}{2}$ i/s and 0.1% at $3\frac{3}{4}$ i/s. Tape slip: not exceeding 0.2%. Max spool size:

up to 10 $\frac{1}{2}$ in. (minimum hum diameter 2 $\frac{3}{8}$ in.). Operating position: horizontal, vertical or inclined. S/N ratio: weighted as per ASA-A, readings via tape: $7\frac{1}{2}$ i/s better than 66dB (4 track 59dB). Crosstalk (at 1kHz): mono better than 60dB, stereo better than 45dB. Inputs (per channel): mic, low impedance 50-600 ohms. 0.15mV, high impedance up to 100K, 2.5mV, radio 2.5mV; aux 35mV. All inputs have an overload margin of 40dB (1:100). Outputs (per channel: amplifier max 2.5V; Internal impedance 2.5K; headphones, volume adjustable, load impedance 200 ohms or more. Power amplifier: optional plug-in amplifiers. 2 \times 8W continuous RMS power. 2 \times 10W music power as per IHFM. Power requirements: voltage selector for 110-250V. 50-60Hz operation without need for conversion, consumption 70-100W. Various versions as follows:

Model 1102 or 1104

Chassis in teak surround, no output amplifiers, $\frac{1}{2}$ or $\frac{1}{4}$ -track. Price: £497.00 (plus VAT).

Model 1122 or 1124

Chassis in teak surround with output amplifiers, $\frac{1}{2}$ or $\frac{1}{4}$ -track. Price: £546.00 (plus VAT).

Model 1302 or 1304

Chassis in metal encasement for rack mounting, no output amplifiers, $\frac{1}{4}$ or $\frac{1}{2}$ -track. Price: £486.00 (plus VAT).



Pioneer RT 2022 transport unit



Pioneer RT 2044 transport unit



Revox 77 Series

★ Indicates entry is illustrated



Revox A700



Revox A700 with A720 digital tuner and A722 power amp



Revox B77 with B760 digital tuner and B750 compact amp



Revox B77

Model 1322 or 1324

As 1302/4, but with 10W output amplifiers, $\frac{1}{2}$ or $\frac{1}{4}$ -track. Price: £536.00 (plus VAT).

Model 1222 or 1224

Complete recorder in suitcase with amplifiers and four speakers, $\frac{1}{2}$ or $\frac{1}{4}$ -track. Price: £573.00 (plus VAT).

Model DL1132 or DL1134

As 1102 and 1104 but with Dolby B noise reduction system. Price: £649.00 (plus VAT).

Model DL1332 or DL1334

As 1302 and 1304 but with Dolby B noise reduction system. Price: £638.00 (plus VAT).

All models available in High Speed series ($7\frac{1}{2}/15\text{i/s}$).

A700 ★

Stereo tape recorder. Tape speed: 15i/s, $7\frac{1}{2}\text{i/s}$ and $3\frac{3}{4}\text{i/s}$. Weighted peak flutter: at 15i/s less than 0.08%, at $3\frac{3}{4}\text{i/s}$ less than $\pm 0.06\%$, at $7\frac{1}{2}\text{i/s}$ less than $\pm 0.1\%$. FR (via tape): 15i/s 50Hz-18kHz $\pm 1.5\text{dB}$; $7\frac{1}{2}\text{i/s}$ 50Hz-15kHz $\pm 1.5\text{dB}$; $3\frac{3}{4}\text{i/s}$ 50Hz-10kHz $\pm 1.5\text{dB}$. Equalisation: S/N: (ASA-A) referred to peak recording level (+6VU), 15i/s better than 65dB, $7\frac{1}{2}\text{i/s}$ better than 63dB. Inputs: mic stereo, balanced 50-6000 ohms; position Low: 0.15mV 6K; position High: 1.8V 6K. Phono 2.5mV 50K; radio 3mV 33K, $2 \times 40\text{mV}$ 100K. All inputs have an overload margin of 40dB (1:100). Outputs: output level from a peak-level recording at +6VU. Lines A and B 1.55V 5K. $1 \times$ radio (DIN): 0.775V, 10K; $2 \times$ headphone: max 4.9V 100 ohms; $1 \times$ power amplifier: max 3.1V 100 ohms, including remote mains switching for A722. Price: £1,200 (plus VAT).

B 77 ★

Stereo tape recorder available in half or quarter track. Tape speed: $3\frac{3}{4}$, $7\frac{1}{2}\text{ips}$. W and F: $3\frac{3}{4}$ less than 0.1%, $7\frac{1}{2}$ less than 0.08%. FR: $3\frac{3}{4}$ 50Hz-10kHz $\pm 1.5\text{dB}$, $7\frac{1}{2}$ less than 0.08%. Output: 1.55V at +6dB above 0 VU adjustable with present control, max attenuation 26dB. S/N ratio: $3\frac{3}{4}$ better than 63dB ($\frac{1}{2}$ track), 59dB ($\frac{1}{4}$ track). $7\frac{1}{2}$ better than 66dB ($\frac{1}{2}$ -track), 62dB ($\frac{1}{4}$ -track). Three motors, three heads. Max spool capacity: 10.5in. Dimensions: 45.2 \times 20.7 \times 41.4cm. Price: £550.00 (plus VAT).

■ SONY

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



Sony TC645



Sony TC 880-2

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 ±0.09% at 7½i/s; ±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 ±3dB, 30Hz-20kHz DIN, SLH tape 30Hz-25kHz ±3dB, 30Hz-24kHz DIN, normal 3¾i/s 20Hz-17kHz -15dB, 40Hz-13kHz DIN, SLH tape 3¾i/s 20Hz-20kHz -15dB, 40Hz-16kHz DIN. THD: 1.2%. Inputs: mic low 0.2mV (-72dB) line 60mV (-22dB) 100K, DIN 10K. Size: 370 × 378 × 224mm. No rec. retail price.

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 ±0.04% DIN, 15i/s ±0.03% DIN. S/N ratio: 60dB SLH tape. FR: normal 7½i/s 25Hz-20kHz ±2dB. FeCr tape 25Hz-30kHz ±2dB, normal 15i/s 25Hz-30kHz ±2dB. FeCr tape 20Hz-40kHz ±2dB. Inputs: mic low -72dB (0.2mV), line -22dB (60mV) 100K. AC servo-controlled, direct-drive system motor. Mains: 240V AC. No rec. retail price.

TC 510-2 ★

Two-track portable stereo tape deck working from battery, battery pack, mains (adaptor supplied), car battery. Speeds: 19, 9cm/s. W and F: ±0.05% at 19cm/s, ±0.08% at 9.5cm/s. FR: 30Hz-25,000Hz ±3dB at 19cm/s, 30Hz-16,000Hz ±3dB. Output: 435mV at 100K. S/N Ratio: 64dB (FeCr tape) — 19cm/s. Low, med, high bias switch. DC servo motor. Three heads. Spool capacity: 5in. Dimensions: 33 × 30 × 14cm. No rec. retail price.

TC 765

Four-track open-reel tape deck, closed loop dual capstan drive with AC servo control, logic control panel and remote control facility. Speeds: 19, 9.3cm/s. W and F: ±0.04% at 19cm/s, ±0.08% at 9cm/s. FR: 30Hz-25,000Hz ±3dB at 19cm/s; 30Hz-18,000Hz -3dB at 9cm/s. Output: 435mV-100K. S/N ratio: 58dB — SLH tape 19cm/s, 61dB FeCr tape 19cm/s. Low, mid, high bias switch. Switching for normal, special, FeCr, etc. Three motors. Three heads, spool capacity 10½in. Dimensions: 45 × 24 × 53cm. No rec. retail price.

TC 766-2

Two-track open-reel tape deck, closed loop dual capstan drive with AC servo control, logic control panel and remote control facility. Speeds: 38, 19cm/s. W and F: 0.018% at 38cm/s, 0.04% at 19cm/s. FR: 30Hz-30,000Hz ±3dB at 38cm/s; 30Hz-25,000Hz at 19cm/s. Output: 435mV-100K. S/N Ratio: 61dB — SLH tape at 38cm/s, 64dB FeCr tape 38cm/s. Low, med, high bias switch. Three motors. Four heads. Spool cap: 10½in. Dimensions: 45 × 24 × 53cm. No rec. retail price.

■ TANDBERG

Farnell House, 81 Kirkstall Road, Leeds LS3 1HR.
Tel: Leeds 351111.

10 X ★

Tape speeds: 15, 7½, 3¾ips. W and F: 0.07%, 0.09%, 0.05% peak or 0.04%, 0.06%, 0.11% weighted. FR: 30Hz-30kHz (15), 30Hz-26kHz (7½), 30Hz-20kHz (3¾) at DIN 45500; 30Hz-25kHz (15), 30Hz-22kHz (7½), 40Hz-18kHz

★ Indicates entry is illustrated



Tandberg 10XD

$(3\frac{3}{4}) \pm 3\text{dB}$. Three motors, four heads. Maximum spool capacity: $10\frac{1}{2}\text{zin}$. Dimensions: $43.5 \times 18.5 \times 45\text{cm}$. Price: £617.78 (plus VAT).

■ TEAC

Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds.
Tel: Dunstable 603151.

2300SX

$\frac{1}{4}$ -track, two channel stereo or mono recorder with tape speeds of $7\frac{1}{2}$, $3\frac{3}{4}\text{ips}$. W and F: 0.08% ($7\frac{1}{2}$), 0.10% ($3\frac{3}{4}$). FR: $7\frac{1}{2} = 30\text{Hz}-28\text{kHz}$ $3\frac{3}{4} = 30\text{Hz}-20\text{kHz}$. S/N ratio: 58dB. Output: 2 link $0.3\text{V}/\text{load}$ impedance 10K or more, 1 stereo headphone jack 8 ohms. Three motors, three heads. Maximum spool capacity: 7in . Dimensions: $44 \times 210 \times 39.2\text{cm}$. Price: £372.00 (plus VAT).

A 7300

$\frac{1}{4}$ -track reel-to-reel, 2 channel stereo or mono. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}\text{ips}$. W and F: 0.05% at $7\frac{1}{2}$, 0.08% at $3\frac{3}{4}\text{ips}$. FR: $25-28,000\text{Hz}$ at $7\frac{1}{2}$, $25-20,000\text{Hz}$ at $3\frac{3}{4}$. Distortion: overall 0.8% at 1000Hz normal operating level. S/N: 58dB. Erase, record, playback. Max. spool capacity: $10\frac{1}{2}\text{zin}$. Dimensions: $54.8 \times 44 \times 24.6\text{cm}$. No rec. retail price.

A 7300/2T

Reel to reel, 2 track recorder, stereo or mono. Tape speeds: 15 , $7\frac{1}{2}\text{ips}$. W and F: 0.04% at 15 , 0.05% at $7\frac{1}{2}$. FR: $25-30,000$ at 15 , $25-28,000$ at

$7\frac{1}{2}$. Distortion: Overall 0.08% at $1,000\text{Hz}$ normal operating level. S/N: 60dB. Erase, record and playback heads. Max. spool capacity: $10\frac{1}{2}\text{zin}$. Dimensions: $54.8 \times 44 \times 24.6\text{cm}$. No rec. retail price.

A-7300 RX

Professional stereo tape deck with DBX system. Tape speeds: 15 , $7\frac{1}{2}\text{ips}$. W and F: 0.04% at 15 , 0.05% at $7\frac{1}{2}$. FR: $25-30,000\text{Hz}$ at 15 , $25-28,000\text{Hz}$ at $7\frac{1}{2}$. S/N: 60dB, 100dB at DBX in. One direct drive DC servo capstan motor. Erase, record and playback heads. Max. spool capacity: $10\frac{1}{2}\text{zin}$. Price and further details: on application.

A 3300 SX

$\frac{1}{4}$ -track, 2-channel stereo or mono recorder with tape speeds of $7\frac{1}{2}$, $3\frac{3}{4}\text{ips}$ ($\pm 0.5\%$). W and F: 0.06% at $7\frac{1}{2}$, 0.09% at $3\frac{3}{4}$. FR: $30\text{Hz}-28\text{kHz}$ at $7\frac{1}{2}$, $30\text{Hz}-20\text{kHz}$ at $3\frac{3}{4}$. Output: 2 line $0.3\text{V}/\text{load}$ impedance 10K or more, stereo headphone jack 8 ohms. S/N ratio: 58dB. Three motors, three heads. Maximum spool capacity: $10\frac{1}{2}\text{zin}$. Dimensions: $44 \times 44 \times 21\text{cm}$. Price: £490.00 (plus VAT).

A 3340 S

4-track, multi-channel with simil sync. Tape speeds: 15 , $7\frac{1}{2}\text{ips}$ ($\pm 5\%$). W and F: 0.04% at 15 , 0.06% at $7\frac{1}{2}$. FR: $30\text{Hz}-30\text{kHz}$ at 15 , $30\text{Hz}-28\text{kHz}$ at $7\frac{1}{2}$. Output: 2 stereo headphone jacks (one front, one rear), impedance 10K output level 0.775V . S/N ratio: 55dB. Three motors, three heads. Maximum spool capacity: $10\frac{1}{2}\text{zin}$. Price: £779.00 (plus VAT).

A 2300 SD

$\frac{1}{4}$ -track, two channel stereo or mono recorder with tape speeds $7\frac{1}{2}$ and $3\frac{3}{4}\text{ips}$. W and F: 0.08% at $7\frac{1}{2}$, 0.10% at $3\frac{3}{4}$. FR: $30\text{Hz}-28\text{kHz}$ at $7\frac{1}{2}$, $30\text{Hz}-20\text{kHz}$ at $3\frac{3}{4}$. Output: 2 line, $0.2\text{V}/\text{load}$ impedance 10K or more, 1 stereo headphone jack. S/N: 60dB, but can be improved with Dolby. Three motors, three heads. Maximum spool capacity: 7in . Dimensions: $44 \times 39.2 \times 21\text{cm}$. Price: £420.00 (plus VAT).

■ UHER (UK) LTD

28 Spencer Street, St. Albans, Herts.
Tel: St. Albans 30236/7.

Accessory

Scene marker module No. Z521. Price: £9.73 (plus VAT).

4200 Report Stereo IC

Transistor mains/battery stereo tape recorder. $\frac{1}{2}$ -track. Speeds: $7\frac{1}{2}$, $3\frac{3}{4}$, $1\frac{1}{8}$, $1\frac{1}{16}\text{ips}$. Max



Uher SG521



Uher 4000 Report

spool 5in. W and F: $7\frac{1}{2}$ /s 0.2%, $3\frac{3}{4}$ /s 0.25%, $1\frac{7}{8}$ /s 0.35%, $1\frac{5}{16}$ /s 0.56%. H and N: $7\frac{1}{2}$ /s -57dB; $3\frac{3}{4}$ /s -55dB- $1\frac{7}{8}$ /s -53dB. FR: $7\frac{1}{2}$ /s 35Hz-20kHz; $3\frac{3}{4}$ /s 35Hz-16kHz; $1\frac{7}{8}$ /s 35Hz-8kHz; $1\frac{5}{16}$ /s 35Hz-5kHz (all to DIN 45-500). Replay char: NAB. Level indicator: two meters. One motor. Pause. Digital position indicator. Monitoring. Parallel track replay. Size: 11 x 3 x 8in. Price: £348.84(plus VAT).

4400 Report Stereo IC

$\frac{1}{4}$ -track version of 4200. Specification almost identical. Price: £348.84 (plus VAT).

Uher 5000 Universal

Mains $\frac{1}{2}$ -track mono recorder. Speeds: $3\frac{3}{4}$, $1\frac{7}{8}$, $1\frac{5}{16}$ /s. FR: 40Hz-15kHz ± 3 dB at $3\frac{3}{4}$ /s. Max spool: $5\frac{3}{4}$ in. W and F: $3\frac{3}{4}$ /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

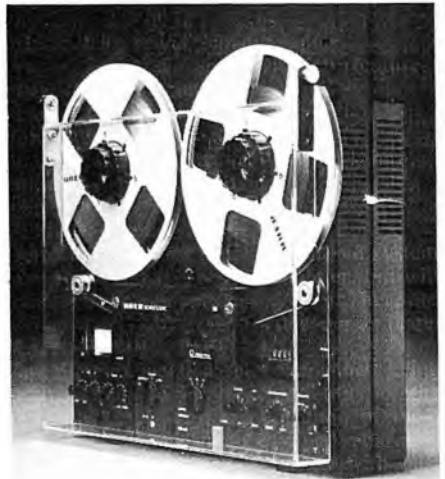
transcription accessories available. Price: approximately £302.64 (including VAT).

SG521 ★

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: $7\frac{1}{2}$, $3\frac{3}{4}$, $1\frac{7}{8}$ /s. Max spool size: 7in. W and F: $7\frac{1}{2}$ /s 0.05%, $3\frac{3}{4}$ /s 0.10%. Hum and noise: $7\frac{1}{2}$ /s -57dB/2-tracks (-55dB/4-tracks), $3\frac{3}{4}$ /s -55dB/2-tracks (-53dB/4-tracks), $1\frac{7}{8}$ /s -55dB/2-tracks (-53dB/4-tracks). FR: $7\frac{1}{2}$ /s 30Hz-20kHz, $3\frac{3}{4}$ /s 30Hz-15kHz, $1\frac{7}{8}$ /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 tracks) 2 x 800mV across 15K, line (4 track) 2 x 600mV across 15K. Speaker: 2 x 6W (sine) across 4 ohms. Features: Input mixing, vertical and horizontal operation, interchangeable plug-in head assemblies, add-on automatic level control module (optional accessory), matt black finish and tinted perspex cover. Price: £309.00 (plus VAT).

SG561

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: $7\frac{1}{2}$, $3\frac{3}{4}$, $1\frac{7}{8}$, $1\frac{5}{16}$ /s. Max spool size: 7in. W and F: $7\frac{1}{2}$ /s $\pm 0.04\%$, $3\frac{3}{4}$ /s $\pm 0.10\%$, $1\frac{7}{8}$ /s $\pm 0.20\%$. Hum and noise: $7\frac{1}{2}$ /s -58dB/2-track (-56dB/4-track), $3\frac{3}{4}$ /s -57dB/2-track (-55dB/4-track), $1\frac{7}{8}$ /s -56dB/2-track (-55dB/4-track). FR:



Uher SG631 Logic

★ Indicates entry is illustrated



Uher S6521 Royal

7 $\frac{1}{2}$ /s 20Hz-20kHz, 3 $\frac{3}{4}$ /s 20Hz-15kHz, 1 $\frac{7}{8}$ /s 20Hz-9kHz. All figures to DIN specification 45 500. Level indicators: 2 VU meters. Inputs: mic 0.12mV-70mV 200 ohms, radio 1.2mV-110mV 47K, phono (1) 40.0mV-2.8V, phono (2) 200mV \pm 18V. Outputs: monitor: 2 \times 0.65V across 15K, line 2 \times 600mV across 15K, speaker 2 \times 10W (sine) across 4 ohms. Audio output with internal speakers: 6W per channel

(sine). Features: pause, inching, straight through amplifier, horizontal or vertical operation, A-B monitoring, input mixing, echo, sound with sound, sound on sound, dia-pilot slide synchronising, separate replay bass and treble controls, matt black finish and tinted perspex cover. Price: £402.00 (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 $\frac{7}{8}$, $\frac{15}{16}$ /s. W and F: 7 $\frac{1}{2}$ /s 0.20%, 3 $\frac{3}{4}$ /s 0.25%, 1 $\frac{7}{8}$ /s 0.35%. Hum and noise: 7 $\frac{1}{2}$ /s -57dB, 3 $\frac{3}{4}$ /s -55dB, 1 $\frac{7}{8}$ /s -53dB. FR: 7 $\frac{1}{2}$ /s 35Hz-20kHz, 3 $\frac{3}{4}$ /s 35Hz-16kHz, 1 $\frac{7}{8}$ /s 35Hz-8kHz, $\frac{15}{16}$ /s 35Hz-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. pool size, operation from dry batteries, rechargeable 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. Price: £290.00 (plus VAT).

PLAY-FAIR

Record Accessories. Stylus Timers, Stylus Cleaners, Antistatic Cleaning Pads, Antistatic Fluid, Discodusters (Record Changer and Single Player models), Record Care Kits, Record Cleaners, Record Cleaning Arms, Conductive Fibre Record Brush, Record Sleeves. **Tape Accessories.** Tapehead Cleaning Fluid, Tape Cassettes and Cartridges, Cassette and Cartridge Cleaners, Cassette Index Cards, Tape Head and Capstan Cleaners, Cassette and Cartridge Carrying Cases, Cassette Care Kits.

MICRO-DIAMOND and MICRO-SAPPHIRE

Replacement Styli. Most Comprehensive range of replacement styli, including many Japanese types. Best quality, reliable service, keen prices. Also Micro-Diamond retipping service.

DRY-SPLICE and TAPE ACCESSORIES

(Tapes, Spools and Plastic Tape Boxes).

TAPE HEADS

Woelke Magnetbandtechnik (Germany)
Cassette Heads, $\frac{1}{4}$ " Studio Heads, $\frac{1}{2}$ "-2" Studio Heads, Film Heads and Mini-Cassette Heads.

Manufacturers and Distributors:

LENNARD DEVELOPMENTS LTD

**206, Chase Side, Enfield,
Middx. EN2 0QX
Tel. (01) 363 8238**

SG 631 Logic ★

Professional standard with OMEGA drive — a non pinch roller drive system. Speeds: 19, 9.5 and 4.7cm/s. W and F: 19cm/s 0.04%, 9.5cm/s 0.1%, 4.7cm/s 0.20%. FR: 20Hz-25kHz at 19, 20Hz-16kHz at 9.5, 20Hz-10kHz at 4.75%. Output: DIN 750mV 15K ohms, monitor 750mV 15K ohms, headphone 1.7V 200 ohms. Switching for Fe tapes. Four motors, 2 heads. Max pool cap: 10 $\frac{1}{2}$ in. Dimensions: 51 \times 40 \times 14.6cm. Price: £589.50 (plus VAT).

Test Tapes and Discs

(see also Music Centres section)

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ 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. Equalization: 35 μ 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 1/2in. tape. Price: on application.

Calibration Test Tape 38

Same specification as Tape 38-25 above but on 1/4in. 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. 1/4in. tape. Reference frequency: 1kHz. Gap adjustment recording: random noise. Equalization: 35 μ s. Gliding tone: 63Hz-10kHz. Price: on application.

Reference Tape 19-25

Full-track recording. Speed: 7 1/2i/s. 1in. tape. Wound on NARTB core. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalization: 70 μ s. Gliding tone: 31.5kHz. Price: on application.

DIN Reference Tape 19S (Studio)

Same specification as Reference Tape 19-25 but on 1/4in. tape. Price: on application.

DIN Reference Tape 19H (Amateur)

Full-track recording. Speed: 7 1/2i/s. 1/4in. tape type PE31. Spool with 3 1/4in. diameter.

Magnetic coating in. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalization: 50/1590 μ s. Gliding tone: 31.5Hz-18kHz. Price: on application.

DIN Reference Tape 9.5

Similar to Tape 19H above except speed 3 3/4i/s and reference frequency 333Hz. Gliding tone: 31.5Hz-12.5kHz. Price: on application.

Test Cassettes

CC-Type. Standard reference and service cassettes used tone control and adjust the playback characteristics of cassette recorders. Price and details on application.

■ AMPEX

Ampex Great Britain Ltd,
Acre Road, Reading, Berks RG2 0QR.
Tel: Reading 85200.

For all pro audio tapes, including CCIR and NAB test tapes 1/4in. to 2in. Prices and details of specifications on request.

■ BIB

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts HP2 7EP.
Tel: Hemel Hempstead 61291.

Ref: 53

Test cassette. Price: £2.85 (inc. VAT).

■ CRESCENT RECORDS

Avon Recording Services,
29 Belvedere, Bath BA1 5HR.
Tel: Bath 312082.

Demonstration Tape

Engineered to the highest standards possible with copying of the original masters done on a one to one basis using professional mastering equipment. A reference level, azimuth section and full frequency run are included to ensure that the recorder used is correctly aligned. These tones comply closely with known reference standards, typically within one decibel. The recorded configuration is such that it can be played on either two or four track machines, slight bass lift may be noticeable on the latter due to infringement. This will be of the order of one or two decibels at 40Hz. The magnetic tape used is professional LP matt backed. Programme duration is 43 mins. A wide range of instruments is represented and the recorded sound is mainly free of colouration effects. Distortion is extremely low and positional accu-

★ Indicates entry is illustrated

racy very precise. Simple pair and coincident microphone technique is used to ensure an accurate sound picture with depth of perspective. Price: £18.00 (or £19.50 overseas).

■ LYRICHORD

N. Miers & Co Ltd, 29 Piercing Hill,
Theydon Bois. Nr. Epping.
Essex CM16 7LE.
Tel: 037-881 2611.

8-track cartridge demonstration and test tape
£2.48 (plus VAT).

■ METROSOUND AUDIO PRODUCTS LTD

Freedex House, 4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

MT63 Cassette Azimuth Alignment Tape

For accurate alignment of cassette deck
play-back heads. Price: £2.50 (plus VAT).

MT73 Cassette Frequency Response Test Tape

Required for the precise checking of accu-
racy of tones produced from cassette
machines. Price: £10.00 (plus VAT).

MT74 Reel to Reel Azimuth Alignment Test Tape

To allow for correct setting of replay heads
on open reel recorders. Price: £4.00 (plus
VAT).

MT75 Reel to Reel Dolby Tone Test Tape.

A specially produced tape for correct setting
up and calibration of reel to reel recorders in
corporating Dolby noise reduction systems.
Price: £3.50 (plus VAT).

MT76 Reel to Reel Frequency Response Test Tape

Essential for the precise checking of accu-
racy of tones produced from open reel recor-
ders. Price: £10.00 (plus VAT).

M48 Dolby Tone Test Cassette

A specially produced pre-recorded tape for
correct setting up, alignment and calibration
of high quality Dolby cassette players. Price:
£2.50.

■ PHILIPS

Philips Electronics and Associated Industries
Ltd,
604 Purley Way, Croydon,
Croydon CR9 4DR.
Tel: 01-686 0505.

checking and adjusting tape speed and the
azimuth setting of the record/playback head.
Range: 6.3kHz $\pm 1\%$ tone with 800Hz pulses.
Equalisation: 120 μ s + 1,500 μ s. Price: £8.82
(plus VAT).

Head Cleaning Cassette 811/CCT ★

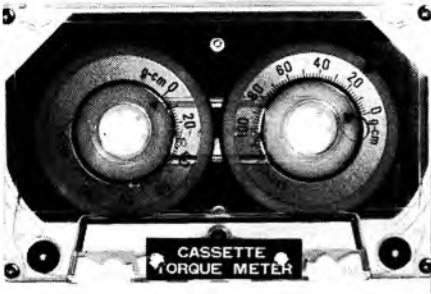
It is inevitable that the slight friction between
tape and tape-heads/guides should grind



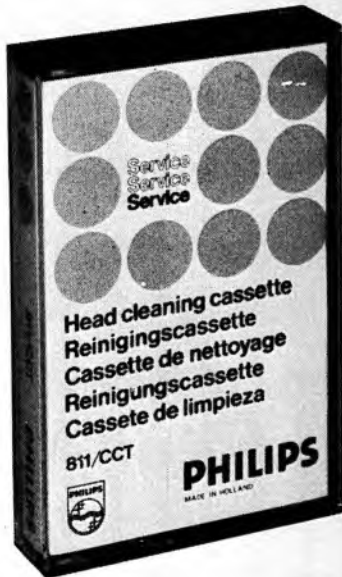
Philips Testcassette 397.37001



Philips 812/MCT



Philips Cassette Torque Meter

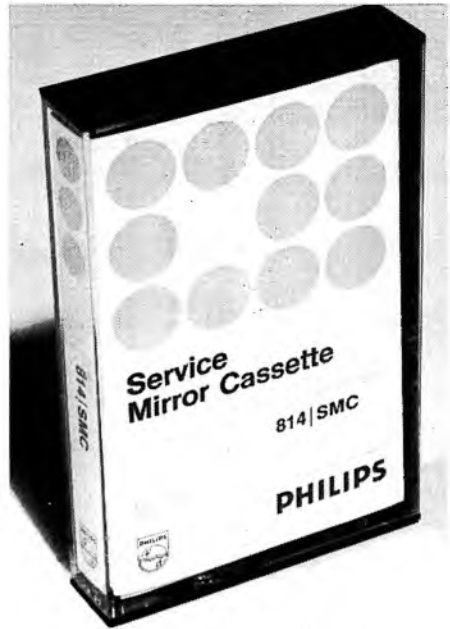


Philips Head Cleaning Cassette

small amounts of material off the tape and certain low quality types are more prone to this problem than others. Particles adhere to heads reducing tape contact degrading both recording and playback. Normally the Head Cleaning Cassette can cope but where build-up becomes excessive, cleaning with alcohol is necessary. Price: 59p (inc. VAT).

Testcassette 812/MCT ★

The azimuth setting of the record/playback head may be adjusted using 812/MCT which has an 8kHz tone recorded on one of its tracks. Only if the record/playback head is accurately set so that it is vertical to the running direction of the tape will high frequencies, which includes the 8kHz tone, be reproduced properly. Price: £2.73 (plus VAT).



Philips Service Mirror Cassette

Mirror Cassette 814/SMC ★

Devices which enables visual check to be made on state of tape guide and pressure roller as well as providing check on recording/playback and erase heads for wear and/or contamination. Adjustments can then be made as necessary to ensure tape runs in straight path past the heads and capstan with a minimum of twisting and bending. Price: £23.20 (plus VAT).

Torque Meter ★

The Torque Meter Cassette type 811/CTM (Code number 395 30054) indicates the applied torque of both spindles under the following advantageous conditions: (a) measurement under normal operating situation. (b) use in recorders with automatic stop mechanism without having to make special changes. (c) measurement without the need to dismantle the recorder. With practice and experience the torque values obtained can provide a good indication of the actual cause of the trouble such as slipping drive belts, faulty capstan bearing, incorrect adjustment of pressure roller, etc. The Torque Meter is placed in the recorder like any normal cassette, then the recorder is switched to either the record or playback mode, tape-up or

★ Indicates entry is illustrated

take-up spool of the meter, the other spool indicating the counter torque. Price: £27.82 (plus VAT).

Philips Cassette Service Set 801/CSS

The 801/CSS is an improved version of the well-known 800/CSS, with the added advantages of a new styling to provide better read out facilities and greater stability. The unit, together with test cassette 812/MCT which is supplied, can be used to check and adjust the tape speed of a recorder, as well as the alignment of the record/playback head. For adjustment of the tape speed, the test cassette is inserted in the cassette recorder, and the 50Hz pre-recorded test signal reproduced is fed-back to the meter unit in the 801/CSS, where it is compared with the frequency of the mains. The recorder is adjusted for optimum tape speed when the swing of the meter pointer is at minimum. Price: £22.00 (plus VAT).

Test cassettes for compact cassette recorders

TC/CT: Cross Talk Cassette. Ref. 600/14801 £6.50.

TC/A 10: Azimuth 10kHz. Ref. 600/14201. £8.82.

TC/FL3: Wow and Flutter 3000Hz. Ref. 600/13301. £3.82.

TC/FL3.15: Wow and Flutter 3150Hz. £14.00.

TC/R: Reference Tapes. Ref. 600/11101. £7.30.

TC/QR: Hi-Fi Reference Tape. Ref. 600/12901. £6.32.

TC/A6.3: Azimuth 6300Hz. Ref. 600/13201. £7.50.

TC/FR: Frequency Response. Ref. 600/14301. £89.10.

TC/QFR: Hi-Fi Frequency Response. Ref. 600/13001. £95.00.

■ QUADROFILE

Hi-Fi News & Record Review,
Link House, Dingwall Avenue,
Croydon CR9 2TA.
Tel: 01-686 2599.

Quadrophonic Comparison Record

A unique disc on which all four quadrophonic systems are collected on one double album for comparison. Ideal for setting up any quadrophonic system. Four identical sides have been cut from four channel tape master and contain nine extracts with a total running time of approx. 24 mins. Sleeve notes cover the background, systems, music, and production. Price: £7.00 (inc. p&p). Price to Europe: £8.00. Price to USA: £10.00.

■ SHURE ELECTRONICS LTD

Eccleston Road, Maidstone, Kent ME15 6AU.

Tel: Maidstone 59881.

These records provide an effective means of cartridge evaluation through a variety of technical measurements. Shure engineers have developed four records for testing track-ability, stylus wear, channel balance, phasing and anti-skating. TTR 110 is designed for listening tests at home; the other three for use with professional test equipment.

TTR 102 Phono Cartridge Test Record

Primarily designed for Shure dealers, this 33 $\frac{1}{3}$ rpm test record is ideal for testing low frequency tracking. The record also includes a 400/4,000Hz intermodulation test signal and bands for checking crosstalk at 1kHz and 10kHz. Price: £9.33 (plus VAT).

TTR 103 Phono Cartridge Trackability Test Record — Professional Equipment required

This 45 rpm 12in. laboratory standard test record is designed for use with sophisticated measuring equipment. TTR 103 contains three tests for trackability: (a) 10.8kHz pulsed high-frequency test with 270Hz repetition rate trackability and distortion test; (b) 1,000Hz plus 1,500Hz mid-frequency trackability and distortion test; (c) 400Hz plus 4,000Hz low-frequency trackability and distortion test.

Three inspection methods are suggested: distortion measurements, an oscilloscope examination, and listening. Instructions on usage are included with the record. Price: £9.33 (plus VAT).

TTR 109 Level and Crosstalk Test Record

Professional Equipment required

This 33 $\frac{1}{3}$ rpm 12in. record provides 12 bands of 1kHz Left and right reference levels at 5cm/sec recorded velocity. May be used as a crosstalk test. Designed for professional use. Instructions are included. Price: £6.42 (plus VAT).

TTR 110 'An Audio Obstacle Course — Era III' — Listening Test Record

This 33 $\frac{1}{3}$ rpm test record provides the most demanding and definitive audio tests for high fidelity cartridges. The total level range is the same as the TTR 101, but the increments of increased velocity are refined (6dB from first to second level; 2dB for the remaining three levels). The TTR 110 includes recordings of difficult-to-track instruments, with complete orchestral and vocal ensembles from commercial recordings plus level, balance and phasing checks. Complete instructions are included. Price: £4.09 (plus VAT).

Unit Audio: Record Systems

(see also Music Centres section)

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 140.

■ ALBA (RADIO AND TELEVISION) LTD

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

8070

Tuner/Amplifier/Record player. Band coverage; 87-104MHz, 1640-520kHz, 270-158kHz. VHF sensitivity: better than 1 microVolt (IHF). Ceramic IF Filter (AM and FM). FM distortion less than 0.5%. VHF aerial: 75 ohm co-ax. Audio power output: 10W × 10W rms both channels driven. THD: less than 0.2% at all levels up to rated maximum. Range of Tone Controls: ± 12dB. BSR: 172 D1 Record Deck. Speeds: 33, 45, 78 rpm. W and F: less than 0.2%. Cartridge: Ceramic. Stylus: Sapphire. Loudspeaker drive unit: 16.5cm dia full range. Impedance: 8 ohms. Centre unit dimensions: 59.8 × 36.9 × 15.2cm. Loudspeaker dimensions: 26 × 16.5 × 36cm. Matching black and teak finished cabinets. Price: on application.

■ ALPHA

Highgate Acoustics Ltd,
38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4936.

GF3500

Stereo combination unit with FM radio 2 ×

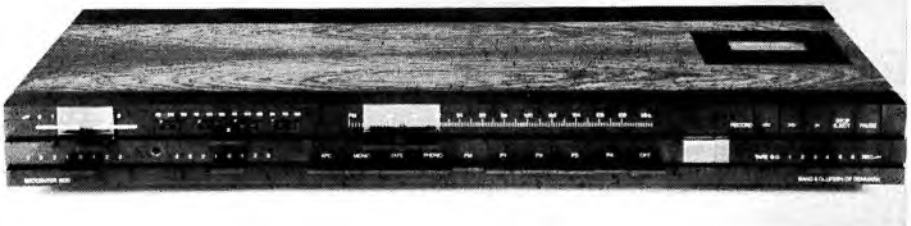
18W RMS. Power output: 2 × 18W RMS. Harmonic distortion: less than 0.1% at 10W. Frequency response: 20Hz-25kHz. Hi filter: -8dB at 15kHz. Loudness: +8dB at 50kHz, +6dB at 10kHz. Bass: ± 12dB at 50Hz. Treble: ± 12dB at 10kHz. Tape input: 250mV-3V max. Tape output: 250mV. Headphones: 8 ohms Jack. FM sensitivity: 1.8µV. Aerial (2 sockets): 75 ohms and 300 ohms. Tuning range: 87.5-108MHz. Stereo crosstalk: better than 35dB. Signal/Noise ratio: better than 60dB. Image rejection: better than 50dB. Mains voltage: 240V A/C. Cabinet: Teak finish. Price: £129.00 (plus VAT).

■ BEOCENTER

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

Beocenter 1600 ★

2 × 22W stereo amplifier plus FM radio tuner and cassette recorder. Dimensions: 8.5 × 66 × 26cm. Power supply: 110, 130, 220, 240V AC/50Hz. Power consumption: 20-170W. Radio section: tuning range: FM band, 87.5-108MHz plus 4 pre-sets. Sensitivity: < 1.8µV/75Ω IEC. < 2.5µV/75Ω IHF. Limiting: < 1.5µV/75Ω/-3dB ± 40kHz. Signal/noise > 65dB DIN 45 500. Selectivity: > 55dB IHF. Frequency response 20-15,000Hz ± 1.5dB DIN 54 500. Harmonic distortion < 0.5% DIN 45 500. Channel separation > 30dB DIN 45 500. Pilot suppression: > 35dB/19kHz and 38kHz. Amplifier section: power output: 2 × 22W RMS/4Ω. 2 × 40W music power/4Ω. Harmonic distortion: < 0.1% at 50mW/1kHz. < 0.5% at full output/1kHz. Frequency response: 20-30,000Hz ± 1.5dB DIN 45 500. Inputs: Phono: 2.5mV/47KΩ. Tape: 140mV/700K. FM aerial: 75 and 240Ω. Outputs: speakers: 2 stereo pairs DIN/4Ω. Headphones: Maximum 8V/200Ω. Tape: 100mV/100KΩ. Signal/noise: phono: > 50dB/50mW. Tape: > 60dB/50mW. Tone controls: Bass: ± 17dB at 40Hz. Treble: ± 14dB at 12.5kHz. Cassette section: system compact cassette/C60-C90. Wow/flutter: < ± 0.3% DIN. > ± 0.15% WRMS. Speed



Beocenter 1600

★ Indicates entry is illustrated

deviation $> \pm 1.5\%$. Fast forward/rewind 90 secs. (C60). Frequency response: 40-12,500Hz. DIN 45 500. Signal/noise: $> 52\text{dB}$ (CrO_2). DIN 45 405. Erasure: $> 65\text{dB}$. Outputs: radio: $800\text{mV}/22\text{K}\Omega$. Aux: $50\text{mV}/22\text{K}\Omega$. Tape head: super permalloy record/playback. Tape types: chromium dioxide/iron oxide swit-able. Special features: electronic stop at end of tape. Diadic light recording level indicator. Accessory: Telescopic FM aerial type 8902010. Price: £245.00 (plus VAT).

2800

Amplifier, tuner and record player. Amplifier: $2 \times 25\text{W}$ into 4 ohms. FR: 20Hz-35kHz. Damping Factor: > 50 . Inputs: tape, PU. Outputs: tape, headphones. Tuner covers FM/AM with 4 presets on FM. Variable tuning. Sensitivity: $90\mu\text{V}$. S/N: $> 60\text{dB}$. Fully auto record player with electronic servo drive system. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $< \pm 0.09\%$. Rumble: $> 62\text{dB}$. Pickup: MMC 3000 with compliance: $25 \times 10^{-6}\text{cm}/\text{dyne}$. Dimensions: $50 \times 12 \times 37\text{cm}$. Price: £260.00 (plus VAT).

■ FIDELITY RADIO LTD

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

UA9 ★

Player and AM/FM radio in unit combining black and teak look finish. Push button controls. Player unit has a single play autodeck, cueing device and stereo ceramic cartridge with turnover stylus. Sockets for speakers, AM and FM aerials and auxiliary tape recorder playback, and record. Complete with tinted, removable, hinged, transparent lid, and FM indoor aerial 300 ohms. BSR multispeed single play deck with stereo ceramic cartridge, turnover sapphire stylus, and cueing device. Performance: MW 525-1625kHz, 572-184 metres. Sensitivity $400\mu\text{V}/\text{metre}$ at 1MHz for 20dB signal to noise ratio. LW 150-250kHz, 2000-1200 metres. Sensitivity $1\text{mV}/\text{metre}$ at 200kHz for 20dB signal to noise ratio. FM 87.5-108MHz. Sensitivity better than $15\mu\text{V}$ for 3dB from limiting. FM stereo channel separation 25dB at 1kHz. Output power: 8 watts per channel RMS into 4 ohms. S/N ratio: 55dB with tone controls flat. FR: 40Hz to 15kHz $\pm 3\text{dB}$ tone controls flat. Tone controls (in relation to flat response): Bass +12dB -17dB at 100Hz. Treble +13dB -13dB at 10kHz. Auxiliary: input sensitivity 50mV into 50K. Output sensitivity 100mV at low impedance. Speakers: Two units each with $203\text{mm} \times 128\text{mm}$. Impedance 4 ohms. Dimensions: $16.6 \times 54 \times 38\text{cm}$. Speakers: $20.5 \times 12.5\text{cm}$. Price: £95.56 (plus VAT).



Fidelity UA 9



Skantic 3935



Skantic 2064



Skantic 2541

■ SKANTIC

Skantic (UK) Ltd, Station Road,
Edenbridge, Kent TN8 6EY.
Tel: Edenbridge 5231.

0541

Output: 10W RMS. Ready for connection to ambiophonic sound system simulated four-channel reproduction. FM stereo radio with illuminated indicator. 3 speed semi-auto record player with BSR SCMM cartridge. Adjustable stylus pressure. AFC. Sockets for stereo headphones, tape recorder. Speakers: pair of 10W 13cm dynamic. Acrylic dust cover. Available in red, white, black. Price: on application.

3935 ★

Output: 34W total RMS. Ready for connection to ambiophonic box for simulated four-channel reproduction. FM stereo radio with five preset programmes, pointer instrument tuning indicator. Skantic record player with Pickering V15/AT-2 magnetic cartridge. Adjustable anti-skating and stylus pressure devices. Sockets for stereo headphones and tape recorder. Loudness compensation control. Pair of speakers 20W each with 20cm bass and 2.5cm dome tweeter. Acrylic dust cover. Available in teak, walnut. Price: on application.

2064 ★

Output: 40W RMS. Modular construction with built-in facility for simulated four channel reproduction. FM, MW radio with stereo decoder and 5 preset programmes on FM. Skantic record player with Excel ES70F magnetic cartridge and single lever action. Anti-skating and adjustable stylus pressure devices. AFC. Sockets for stereo headphones and tape recorder. Loudness compensation control. Pair of speakers each with 16.5cm bass and 2.5cm dome tweeter. Acrylic dust cover. Available in black or white. Price: on application.

2541 ★

Output: 50W RMS. Built-in facility for simulated four-channel reproduction. Stereo radio with four pre-set programmes on FM and pointer instrument tuning indicator. Semi-auto record player with Shure M75B-M magnetic cartridge, 16 pole belt driven synchronous motor. Adjustable anti-skating and stylus pressure. AFC. Sockets for stereo headphones and tape recorder. Loudness compensation control. Speakers: 40W each handling capacity, 26cm bass, 10cm middle range and 2.5cm dome tweeter. Acrylic dust cover. Price: on application.



Skantic 3061



Skantic 4051

3061 ★

Output: 60W RMS. Built-in facility for simulated four-channel reproduction. FM stereo radio with four sensor controls, pointer instrument tuning indicator. Skantic record player with Pickering XV/15/350 magnetic cartridge and single lever action. Anti-skating and adjustable stylus pressure devices. AFC. Socket for stereo headphones and tape recorder. Loudness compensation control. Speakers each with 16.5cm bass, 10cm middle, 2.5cm dome tweeter. Acrylic dust cover. Available in teak, walnut, rosewood, black or white. Price: on application.

★ Indicates entry is illustrated

4051 ★

Output: 88W RMS. Built-in facility for simulated four-channel reproduction. FM stereo radio with 7 touch sensitive buttons for programme selection, light emitting diode indicator. Semi-auto record player with Ortofon FF150 magnetic cartridge. Adjustable anti-skating and stylus pressure. AFC. Sockets for tape recorder, stereo headphones and additional speakers (six in all). Filter control and loudness compensation. 3-unit speakers 50W handling capacity, each with 25cm mass, 13cm middle, 2.5 dome tweeter. Acrylic dust cover. Price: on application.

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd,
217 Bath Road, Slough, Berks. SL1 4AW.
Tel: Slough 872101.

Electronic Centre 6001 ★

Telefunken deck with speeds of 33 $\frac{1}{3}$ and 45 rpm. Shure 91ED cartridge with diamond stylus. Amplifier: output 2 × 60W. Tuner: FM/L/M/S. Sensor waveband switchover. Main unit: dimensions: 68 × 37.6 × 18.5cm. Plastic, black and silver. Price: £579.00 (plus VAT).



Telefunken Electronic Centre 6001

Electronic Centre 5001

Output: 2 × 30W. Complete modular chassis. FM/AM with AFC. FR: 20Hz-20kHz ± 5dB. Presets on 7 FM Stations. LED frequency display. Slide controls for volume, balance, bass, treble. Belt drive turntable with speeds 33 $\frac{1}{3}$, 45 rpm. Shure M75MG magnetic cartridge. Cueing lever, anti-skate control. Finish: black and silver. Dimensions: 70.6 × 17.3 × 36.3cm. Speakers recommended: TL510. Price without speakers: £339.00 (plus VAT).

Unit Audio: Tape Systems

(See also Music Centres section)

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 140.

■ AIKO

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs ST5 0SW.
Tel: Newcastle 615131.

ATP-711 ★

Stereo cassette recorder system with speakers. Output: 10W per channel. Twin mics, headphone socket. FR: 50Hz-12,000Hz. W and F: 0.3%. Keyboard cassette operation. Controls: sliders for tone, volume, balance with push button power. Tape counter and dual VU meters plus auto stop. Price: £101.61 (inc. VAT).

■ AKAI

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

AC 3500L Casseiver

Amplifier: 25W into 8 ohms. FR: 30Hz-15kHz. THD: 0.5%. Radio Tuner with band coverage: 88MHz-108MHz. Tape Deck with Dolby. W and F: 0.08%. Speakers not supplied. Dimensions: 50 × 40 × 15.7cm. Features: wood veneer with brushed aluminium fascia. Price: £302.53 (plus VAT).

■ AIWA

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

AF3060 Casseiver

Amplifier: 24W + 24W into 8 ohms. FR: 20Hz-30kHz. Radio Tuner with band cover-

age: VHF, L, M, S. Tape Deck with Dolby. W and F: 0.1%. Main unit measures 48 × 32.1 × 14.7cm. Features: three position tape selector, mic mixing. Price: £264.76 (plus VAT).

AF 3090 Casseiver ★

Amplifier: 40W + 40W into 8 ohms. FR: 10Hz-80kHz. Radio Tuner with band coverage: VHF, L, M, S. Tape Deck with Dolby. W and F: 0.5%. Main unit: 56 × 41 × 16cm. Features: separate three position tape selector. Price: £408.76 (plus VAT).

■ BANG AND OLUFSEN (UK) LTD

Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester 2159.

Beocenter 4000

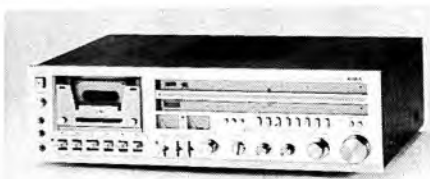
FM/AM receiver and cassette recorder. Amplifier output: 2 × 40W into 4 ohms. FR: 20Hz-30kHz +1.5dB. S/N: >60dB. Inputs: PU, tape. Output: Tape, headphones. Two pairs loudspeakers/switchable. Tuner covers FM/AM. Variable tuning with 5 FM presets. Cassette System: C60, C90. FR: 30Hz-15kHz. LED record level indicator. Dimensions: 65.5 × 8.5 × 31cm. Finish in teak or rosewood. Price: £460.00 (plus VAT).

Beocenter 2600

FM/AM receiver and cassette recorder.



Aiko ATP-711



Aiwa Casseiver AF3090

★ Indicates entry is illustrated

Amplifier output: 2 × 25W. FR: 20Hz-35kHz. Damping Factor: >50. Tuner covers FM/AM. Variable tuning with 4 presets on FM. Cassette System: C60, C90. W and F: <±0.2%. S/N: 64dB. FR: 30Hz-14kHz. Dimensions: 68 × 9 × 27cm. Finish: Teak or rosewood. Price: £320.00 (plus VAT).

■ FERGUSON

Thorn Consumer Electronics Ltd,
284 Southbury Road,
Enfield, Middlesex.
Tel: 01-363 5353.

3925B

Amplifier output: 7.5W per channel into 8 ohms. FR: 50Hz-35kHz. Radio covering FM/AM bands. Front loading cassette deck with W and F: less than 0.35%. Speakers: 16.5cm bass, 8cm, tweeter. Sizes: 20 × 18 × 37cm. Finish: teak with silver front. Overall dimensions: 55 × 30 × 15cm. No rec. retail price.

3926

Amplifier output: 20W per channel into 8 ohms. FR: 40Hz-20kHz. Radio covering FM/AM bands. Front loading cassette deck with W and F less than 0.25%. Speakers: one bass, one tweeter. Sizes: 24 × 20 × 46cm. Finish: teak and silver front. Overall dimensions: 59 × 33.6 × 13.5cm. No rec. retail price.

■ SONY (UK) LTD

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

TC 144CS ★

4-track, 2-channel. Tape speed, 17 $\frac{1}{2}$ ips (4.8cm/s). Wow & Flutter: 0.1%, 0.2% DIN. S/N ratio, 51dB (normal), 55dB (FeCr), 53dB (CrO₂), 48dB (normal DIN). Frequency response: 30-13,000Hz (normal) 30-15,000Hz (CrO₂), 30-15,000Hz (FeCr), 40-10,000Hz (normal), 40-13,000Hz (DIN, CrO₂) 40-13,000Hz (FeCr). Total harmonic distortion, 2%. Inputs: mic, line, phono input, rec/PB, DIN. Outputs: line, rec/PB, DIN, headphone.

TC 520 CS

Bias frequency: AC bias 85kHz. Tracks system: 4-track, 2-channel. Tape speed: 17 $\frac{1}{2}$ ips (4.8cm/s). Wow & Flutter: 0.26% at 4.8cm/s). S/N ratio: 45dB. Frequency response: 50-10,000Hz (normal), 50-13,000Hz (CrO₂). Total harmonic distortion: 2.5%. Inputs: Mic, time, record P/B, DIN. Outputs: line, Rec/PB; DIN; Headphone power output: 1 watt × 2. Speaker: 4in. (100mm) diameter. Motor: DC. Heads: 1 × rec/PB head, 1 × erase head. Power requirements: AC 240V, 50Hz. Power



Sony TC-144 CS



Sony HBT 89

consumption 14 watts. Dimensions (approx.): 11 $\frac{1}{8}$ (W) × 3 $\frac{5}{8}$ (H) × 9 $\frac{3}{4}$ (D) in, 280 × 90 × 245mm incl. projecting. Weight (approx.): 7lb 8oz (3.4kg). Supplied accessories: AC mains lead, RK50H connecting cord, F99B microphone, demonstration tape, carrying case, shoulder strap, cleaning kit. No rec. retail price.

HST 89 ★

Amplifier:

Output: 12W per channel. Inputs: phono, mic, tape. Outputs: rec out, speaker, headphone. FR: 40Hz-20,000Hz ±1dB. S/N ratio: phono 60dB, mic 55dB, tape 70dB.

Cassette Section:

Four-track, 2-channel. Speeds: 4.8cm/s. FR: 40Hz-12,500Hz ±3dB normal or 40Hz-16,000Hz ±3dB FeCr, CrO₂. S/N: 50dB normal. Harmonic distortion: 2%.

FM Section:

Tuning: 87.5-108MHz. Sensitivity: 22μV. S/N: 65dB. Harmonic Distortion: stereo 1% at 400Hz. Stereo separation: 40dB. FR: 50Hz-15,000Hz ±3dB.

AM Section:

Tuning: 530-1605kHz Medium, 150-350kHz Long, 5.8-15.8MHz Short. Sensitivity: 200μV Med, 500μV long, 30μV short.

General:

Dimensions: 48.1 × 14.7 × 37.6cm. Accessories supplied: 1 ribbon antenna, mains lead, head changing set and AM antenna wire. No rec. retail price.

Stop Press

The following information was received after the main body of the book was passed for press.

Aerials FM/VHF

■ LEGEND

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

LA 903

FM Aerial and Spade Terminals. Suitable for frequencies 88-108MHz and consisting of twin flat 300 ohms ribbon cable formed into a traditional 'T' pattern. At aerial centre and ends are simple fixing points to permit attachment to skirting board or wall.

LA 904

FM Aerial and Plug. Details as above.

Amplifiers

■ GOLD STAR

Gold Star, Room 332, High Holborn House, 52-54 High Holborn, London WC1.

GSA-8500

Integrated stereo amplifier with power output of 50W into 8 ohms. THD: 0.2%. FR: 10Hz-40kHz. Inputs: phone, tuner, aux, tape monitor. Controls: speaker selections, duplicate and monitor switch for deck to deck dubbing, loudness switch, muting switch, bass, treble, balance, volume, phone sensitivity selector. Dimensions 42 × 15.5 × 33.5cm. Price: on application.

■ LENTEK AUDIO

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

Moving Coil Cartridge Pre-amplifier

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

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks SL1 3DR.
Tel: Slough 27516

SU-2400

Integrated amplifier with output: 30W into 4 ohms. THD: 0.8%. FR: 15Hz-30kHz (-3dB). Inputs: phono, tuner, aux, tape. Damping Factor: 20 (4 ohms) 40 (8 ohms). Controls: volume, bass, treble, balance, loudness. Dimensions: 41.5 × 25 × 10.5cm. Features: two direct read-out power meters, 41 step volume control, tape monitor. Price: £79.95 (plus VAT).

■ SANSUI

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

AU-717

Integrated amplifier with output of 85W × 2. THD: 0.025%. Damping Factor: 60. Dimensions: 43 × 16.8 × 38.9cm. Features: advanced design incorporating low inherent transient intermodulation distortion enabling negative feedback to be reduced to minimum.

AU-517

Integrated amplifier with output of 65W × 2. As above.

AU-317

Integrated amplifier with output of 50W × 2. FR: 5Hz-70kHz. THD: 0.03%. Rated power output 72W into 4 ohms. Dimensions: 43 × 11 × 34cm.

AU-217

Integrated amplifier with output of 30W × 2. FR: 10Hz-50kHz. THD: 0.06%. Dimensions: 43 × 11 × 34cm.

AU-117

Integrated amplifier with output of 15W × 2. THD: 0.17%. FR: 10Hz-40kHz. Dimensions: 43 × 11 × 34cm.

★ Indicates entry is illustrated

AX-7

Audio mixing amplifier for recording or direct amplification. Input from 4 mics, 2 guitars and phono. THD: 0.1%. FR: 10Hz-20kHz. Dimensions: 43 × 11 × 28.5cm.

AU-1100A

Integrated amplifier with output of 11W × 2. THD: 0.05%. FR: 5Hz-80kHz. Features: pre-amp and power amp separated, low distortion through phono equaliser. Dimensions: 46 × 17.6 × 40.7cm.

AU-9900A

Integrated amplifier with output 85W × 2. As above.

CA-2000

Stereo pre-amplifier. FR: 10Hz-80kHz. THD: 0.03%. Dimensions: 46 × 16 × 31cm.

BA-2000

Power amplifier with output 110W × 2. THD: 0.03%. FR: 20Hz-20kHz. Dimensions: 46 × 16 × 37.5cm.

Cassette Deck

■ GOLD STAR

Gold Star, Room 332, High Holborn House, 52-54 High Holborn, London WC1.

TCD-1500

Front-loading stereo cassette deck with Dolby system. W and F: 0.8%. FR: 30Hz-14kHz normal, 30Hz-15kHz with CrO₂. Two VU meters. Inputs: mic, line in, record/playback. Outputs: line, record/playback, headphone. Dimensions: 42 × 15.5 × 33.5cm. Price: on application.

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks SL1 3DR. Tel: Slough 34522

RS-612

Front loading cassette deck. W and F: ±0.12% or ±0.25% DIN. S/N ratio 65dB (Dolby in). Timer facility for record and playback. Separate bias and equalisation switching. Two VU meters. Level control, electronically controlled DC motor and Dolby. Price: £110.95 (inc. VAT).

■ SANSUI

Vernitron Ltd, Thornhill, Southampton SO9 5QF. Tel: Southampton 44811

SC-5100

Direct-O-matic cassette deck with non-jam front loading, 4 track rec/playback tape lead-in, tape type selector, Dolby. Auto stop. W and F: 0.05%. FR: 20Hz-17kHz (CrO₂). S/N ratio 67dB with Dolby. Finish: Walnut. Dimensions: 49.6 × 20.5 × 32.5cm.

SC-3100

W and F: 0.06%. FR: 25Hz-16kHz (CrO₂). FR: 25Hz-16kHz. S/N ratio 67dB with Dolby. Walnut finish. Features as SC-5100. Dimensions: 45.6 × 19.8 × 32.2cm.

SC-2100

W and F: 0.08%. FR: 25Hz-16kHz (CrO₂). S/N ratio: 67dB with Dolby. Finish: Walnut. Features: as SC-5100. Dimensions: 45.6 × 19.8 × 32.2cm.

SC-1100

W and F: 0.08%. FR: 30Hz-16kHz (CrO₂). S/N ratio: 64dB with Dolby. Finish: Walnut. Features: as SC-5100. Dimensions: 45.1 × 17 × 30.2cm.

SC-5110

W and F: 0.05%. FR: 20Hz-17kHz (CrO₂). S/N ratio: 67dB with Dolby. Finish: matt black. Features: as SC-5100. Dimensions: 49.6 × 20.5 × 32.5cm.

SC-3110

W and F: 0.06%. FR: 25Hz-16kHz (CrO₂). S/N ratio: 67dB with Dolby. Features: as SC-5100 with adaptor for rack-mounting. Finish: matt black. Dimensions: 43 × 17.1 × 32.2cm.

SC-2110

W and F: 0.08%. FR: 25Hz-16kHz (CrO₂). S/N ratio: 67dB with Dolby. Features: as SC-5100 with adaptor for rack mounting. Finish: matt black. Dimensions: 43 × 17.1 × 32.2cm.

SC-1110

W and F: 0.08%. FR: 30Hz-16kHz. S/N ratio: 64dB with Dolby. Finish: matt black, with adaptor for rack-mounting. Dimensions: 43 × 16 × 30.2cm.

■ SANKYO

Webland International, Unit 4, 129 Waltham Green Court, Moore Park Road, London SW6. Tel: 01-385 9478

STD-1700

Front loading cassette deck with Dolby. W and F: 0.15%. FR: 40Hz-12kHz normal, 40Hz-14kHz CrO₂ or FeCr tape. S/N ratio 55dB (Dolby off) improves by 5dB at 1kHz and 10dB at 5kHz with Dolby. Inputs: line in, mic. Outputs: line out, headphone. Dimensions: 36 × 15 × 25cm.

STD-1800

Front loading cassette deck with Dolby. W and F: 0.08%. FR: 40Hz-12.5kHz normal or 40Hz-15kHz CrO₂, FeCr tape. S/N ratio: 55dB Dolby off. Improves by 5dB at 1kHz and 10dB at 5kHz with Dolby. Inputs: line in, mic. Outputs: line out, headphone. Dimensions: 40 × 15 × 25cm.

STD-1900

Front loading cassette deck with Dolby. W and F: 0.07%. FR: 30Hz-13kHz normal or 30Hz-16kHz, CrO₂, FeCr tape. S/N ratio: 56dB Dolby off. Improves by 5dB at 1kHz and 10dB at 5kHz with Dolby. Inputs: line in, mic. Outputs: line out, headphone. Dimensions: 43.5 × 13.8 × 29.8cm.

Headphones

■ SANSUI

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

SS-100

Omni-dynamic type, with distortion only 0.3% at 94dB. FR: 20Hz-20kHz. Slim and light.

SS-80

Dynamic type comprising two-³/₈in. dynamic speakers with extra light polyester film sub-cones. Separate volume and tone controls for each channel. Height and angle fully adjustable. FR: 20Hz-20kHz.

SS-60

Dynamic type for use with large and small amps. Accepts up to 5W. FR: 20Hz-20kHz.

SS-40

Dynamic type with polyester film full-range cones. FR: 20Hz-20kHz. Weight: 450gm.

SS-30

Dynamic type, lightweight. FR: 20Hz-20kHz. Input up to 500mW.

Hi-Fi Cabinets**■ TOSHIBA**

Toshiba (UK) Ltd, Toshiba House,
Girling Way, Great South West Road,
Feltham, Middlesex.
Tel: 01-751 1281.

Matched System in Vertical Rack ★

Simulated wood finish storage cabinet with glass-fronted record and tape storage compartment to take turntable, power amplifier, pre-amplifier, front-loading Dolby cassette deck. Complete but without speakers the 330 system is priced: £546.50 (inc. VAT).



Toshiba Vertical Rack

■ SANSUI

Vernitron Ltd, Thornhill,
Southampton.
Tel: Southampton 444811

GX-5 Audio-Rack

Provides mounting facilities for Sansui amplifier, tuner, cassette-deck, turntable and audio-mixer with EIA mounting system.

Scotch Master III ★

For FeCr switch position. Unique patented dual-layer construction which increases both low and high frequency sensitivity over chromium dioxide and ferric oxide tapes. 3dB increase in maximum output at low frequencies and 2dB at high frequencies over chrome cassettes. Prices approx £2.00 for a C90.

Music Centres**■ BANG AND OLUFSEN**

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

4600 ★

Integrated AM/FM tuner/amplifier, stereo recorded player and cassette recorder. Output: 2 × 25W, 3 wavebands with 4 presets on FM. Electronic servo drive motor. Cassette system C60-C90. W and F: <0.2%. S/N with Dolby: 64dB. FR: 30Hz-14kHz. Dimensions: 66 × 12 × 37cm. Finish in teak or rosewood. Price: £420.00 (plus VAT).



Beocenter 4000

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd,
107-109 Whitby Road, Slough,
Berks SL1 3DR.
Tel: 34522

SG 1030L

DC Belt drive, auto return record deck. Ceramic cartridge. Amplifier output: 10W per channel into 4 ohms. FR: 20Hz-20kHz. Radio tuner covers FM, L, M. Tape Deck W and F: 0.15%. Dimensions of speakers: 26 × 45 × 16.5cm. Main unit in simulated teak and aluminium. Dimensions: 60 × 35.2 × 16.5cm. Features: external tape monitor, aerial sockets, mechanical pause, oil damped eject, oil damped cueing. Price: £164.40 (plus VAT).

SG 1090L

DC Belt drive, auto return record deck. Magnetic Cartridge. Amplifier output: 14W into 4 ohms. FR: 20Hz-40kHz -3dB. Ratio tuner covers FM, L, M. Tape Deck with Dolby 'B'. W and F: 0.15%. Two-way speakers measuring 26 × 20 × 40cm. Main unit in black and silver measures 60.1 × 37.2 × 17.1cm. Features: chrome switch, mechanical pause, tape monitor, aerial sockets, dust cover, oil damped cueing. Price: £236.89 (plus VAT).

SG 3060L

FG servo belt drive, auto return record deck. Magnetic cartridge. Amplifier output: 20W into 4 ohms. FR: 20Hz-50kHz -3dB. THD: 1%. Radio tuner covers FM, L, M. Tape deck with Dolby 'B'. W and F: 0.15%. Two-way speakers measuring 26 × 20 × 40cm. Main unit in black and silver measures 62 × 41.3 × 17cm. Features: 4 presets on FM, external tape monitor, chrome switch, built-in loudness, mechanical pause. Price: £295.96 (plus VAT).

SG 3090

FG servo belt drive, strobe, auto return record deck with magnetic cartridge. Amplifier output: 35W into 4 ohms. FR: 10 Hz-25kHz ± 1.5dB. THD: 1%. Radio tuner covers FM, L, M, S. Tape Deck with Dolby 'B', full auto stop, W and F: 0.1%. Recommended speakers: 5B 309L. Main unit in simulated rosewood and black measures 74 × 41.6 × 18.3cm. Features: 6 FM sensor presets, separate bias and equalisation. Peak reading LED, A/B speaker switch, FM mono switch, high filter, loudness, tape monitor, mechanical pause. Dust cover. Price: £373.29 (plus VAT).

Pickup Accessories**■ BIB**

Bib Hi-Fi Accessories Ltd, PO Box 78,
Hemel Hempstead, Herts HP2 7EP.
Tel: Hemel Hempstead 3636

Static Reducer Electronic 3000 ★

Gives controlled operation with both audio and visual signals, being a safe way of neutralising static charge. Electronic 3000 is battery powered and operates from a single HP11 cell. Both audio and visual signals indicate that the instrument is functioning correctly, and length of discharge time is under direct control by means of a simple push button. 3000 comes in a permanent storage box complete with free sta-

★ Indicates entry is illustrated

tic tester for use before and after Bib Groov-Stat treatment. Price: £9.98 (inc. VAT).



Bib Electronic 3000

■ FORMULA 4

Mayware Ltd, 15 Heather Walk, Edgware, Middlesex HA8 9TS. Tel: 01-958 9421

Stylus Pressure Gauge

Incorporates water level indicator for measuring from 0.1gm to 3gm. Will measure existing playing weight or can be used to adjust arm to a required tracking force. Price: on application.

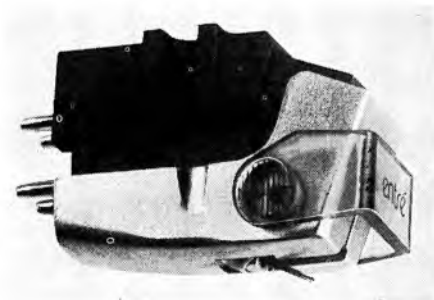
Pickup Cartridge and Arms

■ LENTEK AUDIO LTD

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

Entré 1 ★

Stylus elliptical .3 × 0.8m. Compliance: 10×10^{-6} cm/dyne. FR: 10Hz-50kHz. Channel balance: within 1dB at 1kHz. Output: 0.2mV at 5cm/sec 1kHz. Channel separation: 28dB at 1kHz. Tracking force: 1.8g + 0.3g. Total mass: 5.8g. Price: £87.50 (plus VAT).



Lentek Entre 1 cartridge

■ ULTIMO

Onlife Research Inc, 33 Staunton Road, Kingston-upon-Thames, Surrey KT2 51N. Tel: 01-546 1434

DV38/20A.20B

Moving coil cartridge with Shibata Diamond stylus. Weight: 9.6gm. Compliance: 8.17×10^{-6} cm/dyne. FR: 20Hz-30kHz ± 2 dB, 50kHz -3 ± 2 dB. Output: 2mV at 1kHz, 5cm/sec.

10X

Moving coil cartridge with elliptical stylus. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 1.8mV at 1kHz, 5cm/sec. Weight: 9.5gm.

10A

Moving coil cartridge for stereo or CD4 with conical stylus. Weight: 9.6gm. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-40kHz. Output: 2mV at 1kHz, 5cm/sec.

20C

Moving coil cartridge with Line Contact stylus. Weight: 9.5gm. Compliance: 10×10^{-6} cm/dyne. FR: 20Hz-50kHz. Output: 0.18mV.

Radio Tuners

■ NATIONAL PANASONIC

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR. Tel: Slough 34522

ST-2400

Stereo tuner receiving FM, M waves. Sensitivity: 1.5 μ V, S/N ratio: 65dB (mono) 58dB (stereo). Price: on application.

GOLD STAR

Room 332, High Holborn House, 52-54 High Holborn, London WC1.

GST-1000

Stereo FM/AM tuner with variable tuning. Sensitivity mono: 30 μ V. Sensitivity stereo: 40 μ V. Signal meter for field strength and multipath, tuning meter for centre tune. S/N Ratio stereo: 65dB. Dimensions: 42 × 14.4 × 33.5cm. Voltage: AC 110/220V 50/60Hz. Price: on application.

■ SANSUI

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

TU-9900

FM Sensitivity: $0.9\mu\text{V}$. THD: 0.08% . Auto noise canceller. Finish: matt black. Dimensions: $46 \times 16 \times 31\text{cm}$.

TU-717

AM/FM stereo tuner. FM sensitivity: $0.96\mu\text{V}$. Distortion: 0.07% stereo. Selectivity: 80dB. S/N ratio: 80dB. Dimensions: $43 \times 16.8 \times 40.2\text{cm}$.

TU-217

AM/FM stereo tuner. FM sensitivity: $1.2\mu\text{V}$. THD: 0.13% . S/N ratio in stereo 68dB. FM sensitivity: $1.2\mu\text{V}$. Dimensions: $43 \times 11 \times 30.7\text{cm}$.

Receivers

■ AUDIO PRO

Audio Pro Hi-Fi Ltd,
Cast House,
Sandy Lane, Moston Road,
Sandbach, Cheshire CW11 9HT.
Tel: Sandbach 7520.

TA 150 ★

AM/FM receiver with 5 presets on FM. Pre-amp FR 18Hz-280kHz. Power amp FR: 10Hz-200kHz $\pm 0.5\text{dB}$. Controls: bass, mid, treble. Tuner sensitivity better than $1.0\mu\text{V}$ at 75 ohms. Dimensions: $49.5 \times 26 \times 11.5\text{cm}$. Price: on application.

■ SANSUI

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

9090-DB

AM/FM receiver. Output: 125W per channel with Dolby. FM sensitivity $0.9\mu\text{V}$. THD: 0.1% . Dimensions: $54 \times 18.2 \times 39.7\text{cm}$. Four meters.

8080-DB

AM/FM receiver with power output 85W per channel. Dolby system. FM sensitivity: $0.9\mu\text{V}$. Four meters. Dimensions: $54 \times 18.2 \times 39.7\text{cm}$.

QRX-9001

Similar to 9090-DB plus low noise surround-sound matrix decoder for broadcasts and recordings. Output: 120W per channel stereo or 60W per channel (quad). Dimensions: $60 \times 17.4 \times 41.5\text{cm}$.

G-5000

AM/FM receiver with output: 45W per channel. THD: 0.05% . FR: 5Hz-50kHz. FM sensitivity: $1.1\mu\text{V}$ with less than 0.2% distortion. Dimensions: $46.4 \times 18.1 \times 40.8\text{cm}$.

G-3000

AM/FM receiver with output of 26W per channel. Also with tuner and amplifier sections. FM sensitivity: $1.2\mu\text{V}$ with less than 0.15% distortion. Dimensions: $43.3 \times 15.3 \times 35.2\text{cm}$.



Mary Stavin (Miss World) and Tony Broom (Gen. Mgr. of Audio-Pro) inspect the TA 150

★ Indicates entry is illustrated

G-2000

AM/FM receiver with output of 16W per channel. FM sensitivity: $1.2\mu\text{V}$. Distortion: 0.15%. Dimensions: $43.3 \times 15.3 \times 35.2\text{cm}$.

■ SANKYO

Webland International, Unit 4,
129 Waltham Green Court,
Moore Park Road, London SW6.
Tel: 01-385 9478

SRC 4040

AM/FM receiver. FR: 20Hz-15kHz +0.5 -1.5dB. THD: Stereo 0.3%, mono 0.15%. S/N ratio: stereo 68dB, mono 78dB. AM section has receiving range of 525-1,605kHz, sensitivity $300\mu\text{V/m}$ and S/N ratio of 60dB. Amplifier output 40W into 8 ohms or 45W into 4 ohms. THD: 0.05% -3dB at rated output or 0.05 at rated output. Damping Factor: 50. Dimensions: $43.5 \times 14.6 \times 34.5\text{cm}$.

SRC-2020

AM/FM receiver. FR: 20Hz-15kHz +0.5dB -1.5dB. THD: 0.3% stereo, 0.15% mono. S/N ratio: stereo 68dB, mono 78dB. AM section has receiving range of 525-1,605kHz, sensitivity $300\mu\text{V/m}$ and S/N ratio of 60dB. Amplifier output 20W into 8 ohms or 25W into 4 ohms. THD: 0.05% -3dB at rated output or 0.05% at rated output. Damping Factor: 40. Dimensions: $43.5 \times 14.6 \times 34.5\text{cm}$.

Record Decks

■ THORENS

Metrosound Audio Products Ltd,
Freedex House, 4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

TD 166 II

Belt drive deck with pickup arm, base and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: less than 0.06%. Rumble: -65dB DIN 'B'. Turntable of zinc alloy measuring 30cm dia. 16-pole synchronous motor. Pickup arm: Low mass 7.5g, 9in. Isotrack. Features: aluminium sheet base, hinged lid. Price: £95.00 (plus VAT).

TD 160 II BC

As above except additional feature: programmed for SME arm. Price: £89.00 (plus VAT).

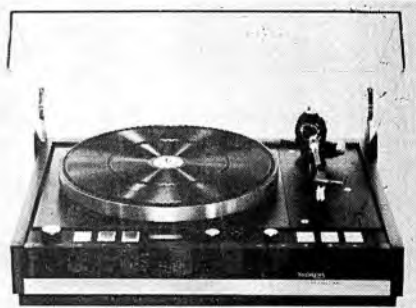
126 IIIC ★

Belt drive transcription turntable with fully

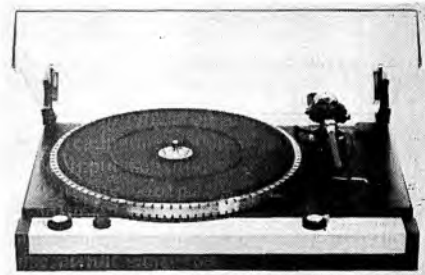
electronic controls, pickup arm, plinth and hinged cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $\pm 0.05\%$. Rumble: better than -72dB DIN 'B'. Zinc alloy turntable measuring 30cm dia. DC motor with 72-pole tachogenerator. Pickup arm: effective mass 7.5g, bearing friction <15mg, magnetic skating compensation. Price: £280.00 (plus VAT).

TD 126 III BC

As above without pickup arm. Price: £230.00 (plus VAT).



Thorens TD 126 Mk III



Thorens TD 110

TD 110 ★

Belt drive transcription turntable fitted with pickup arm, hinged cover and plinth. Speeds: $33\frac{1}{3}$, 45 rpm, switched electronically with load-compensating automatic pitch control. W and F: $\pm 0.05\%$. Rumble: better than -68dB DIN 'B'. Turntable measuring 30cm dia. DC motor governed by 72-pole tachogenerator. Pickup arm: length 222mm, effective mass 7.5g, bearing friction <15mg. Magnetic skating compensation. Features: four-point ortho-inertial suspension damped in all directions. Price: £135.00 (plus VAT).

TD 115

As above with velocity sensing electronic shut-off and lift-off. Price: £155.00 (plus VAT).

■ SANSUI

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

SR-838

Quartz-locked direct-drive. W and F: 0.025%. Servo-controlled motor. Dimensions: 49 × 16.7 × 39cm.

SR-636

PLL servo control unit. W and F: 0.028%. S/N ratio 63dB. Rumble: 71dB. Dimensions: 49 × 16.7 × 39cm.

SR-535

Direct-drive auto turntable. 20-pole, 30-slot brushless motor. W and F: 0.038%, S/N ratio 57dB. Rumble: 67dB. Transparent removable dust cover. Dimensions: 46 × 16.6 × 37cm.

SR-333

Direct-drive manual turntable. 20-pole motor, servo control. W and F: 0.035%, S/N ratio 60dB. Dimensions: 46 × 15.3 × 37.3cm.

SR-232

Belt-drive turntable with auto tonearm return. 4-pole motor. W and F: 0.07%. S/N ratio 50dB. Rumble: 58dB. Dimensions: 43 × 14.5 × 35.6cm.

Speaker Accessories

■ EAGLE

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

CN28

L/C 2-way crossover. Nominal imp: 8 ohms. Nominal capacity: 15W RMS. Crossover frequency: 3kHz. Price: £1.30 (plus VAT).

CN212

L/C 2-way crossover. Nominal imp: 8 ohms. Nominal capacity: 40W RMS. Crossover frequency: 3kHz. Price: £2.30 (plus VAT).

CN312

L/C 3-way crossover. Nominal imp: 8 ohms. Nominal capacity: 40W RMS. Crossover frequency: 800Hz/3kHz. Price: £4.15 (plus VAT).

FF30

L/C 3-way crossover. Nominal imp: 8 ohms. Nominal capacity: 25W RMS. Crossover fre-

quency: 1kHz/5kHz. Variable resistance controls to midrange and tweeter. External mounting. Price: £8.95 (plus VAT).

Speaker Enclosure

■ LENTEK AUDIO

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

Monitor

Transmission line with 1 × 11.82/8.25in. bass driver, 1 × 5.5in. mid, 1 × 27mm high plus super tweeter. Crossover frequencies: 400Hz, 3.5kHz, 10kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Power handling: 50W per channel. Dimensions: 107.3 × 40.6 × 39.4cm. Price per pair: £351.11 (plus VAT).



Lentek Loudspeaker System S4

S4 ★

Two-way system with 200mm bass/mid and 25mm hemispherical dome tweeter. Crossover frequency: 18dB/octave at 2.5kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Dimensions: 49.5 × 25 × 25.5cm. Finish: Walnut with dark

★ Indicates entry is illustrated

brown grille, cabinets supplied in matched pairs and veneered on all surfaces. Amplifier requirement: 25W to 75W. Price per pair: £200.00 (plus VAT). Optional stand available on request.

■ GRIFFIN

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

Studio Electronic 85

Five-speaker system with level controls, variable enclosure damping, three built-in power amplifiers. Bass frequency response of 22Hz-30kHz -4 +2dB.

Griffin 27

Aperiodic 27 incorporates new crossover design featuring degrees of inherent mid-range and treble damping and coil control previously only obtainable by tri-amplification. FR: 30Hz-25kHz \pm 2dB. Suitable for 30-100W amplifiers.

Griffin 25

Omega two and Omega three give a choice of 2 or 3-way systems for use with high powered amplifiers ranging from 15-100W per channel.

Griffin 15

Alpha Two is a compact speaker intended for use with high performance amplifiers ranging from 5-60W per channel. FR: 50Hz-17.5kHz \pm 2dB. Price per pair: £93.00 (plus VAT).

■ SANSUI

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

SP-X 8000

160W max input power 4-way 6-speaker system. 40.6cm woofer. FR: 25Hz-23kHz. Dimensions: 44.9 \times 66.7 \times 28.0cm.

SP-X 7000

130W max input power 4-way 5-speaker system. 30.5cm woofer. FR: 30Hz-23kHz. Dimensions: 38.9 \times 63.9 \times 28cm.

SP-X 6000

100W max input power, 3-way system with 25.5cm woofer. FR: 30Hz-23kHz. Dimensions: 38.9 \times 63.9 \times 28cm.

SP-L 800

300W max input power, dual woofer linear-

response 30Hz-25kHz. Dimensions: 43 \times 83.5 \times 36cm.

ES-207

Drive units: 200mm cone woofer, 25mm dome tweeter. Crossover frequency: 2.5kHz, 40Hz. FR: 25Hz-35kHz. Imp: 8 ohms. Dimensions: 28.2 \times 59.3 \times 28.1cm.

ES-205

Drive units: 16.5cm woofer and 6.5cm tweeter. Crossover frequency: 2,000Hz. FR: 40Hz-20kHz. Imp: 8 ohms. Dimensions: 25 \times 48 \times 24.1cm.

ES-203

30W max input power, 2-way, 2-speaker system bass reflex. FR: 50Hz-20kHz. Dimensions: 24.5 \times 47.5 \times 20.2cm.

■ OMAR

Omar Skinner & Sons,
Warfield Park Workshops, Warfield Park,
Bracknell, Berks RG12 6RG.

Goring

Small bookshelf speaker with 16.5cm bass mid-range unit, 58mm dome/cone treble. FR: 60Hz-20kHz. Imp: 8 ohms. Finish: teak or walnut. Dimensions: 35.5 \times 22.8 \times 19.7cm. Price per pair: £51.47 (inc. VAT).

Wendover

Medium size bookshelf speaker with 21cm bass and 58mm dome/cone treble. FR: 50Hz-20kHz. Imp: 8 ohms. Finish: teak or walnut. Dimensions: 45.8 \times 28 \times 24.2cm. Price per pair: £65.82 (inc. VAT).

Winchester

Medium sized bookshelf speaker. Drive units: 21cm bass, 10cm mid and 25mm treble. Crossover: 1,500Hz and 4.5kHz. FR: 40Hz-22kHz. Imp: 8 ohms. Finish: teak or walnut. Dimensions: 51.3 \times 28 \times 24.2cm. Price: £85.22 (inc. VAT).

Lincoln

Drive Units: 21cm bass, 12.2cm mid and 25mm treble. Crossover: 900Hz, 4.5kHz. FR: 45Hz-22kHz. Imp: 8 ohms. Finish: teak or walnut. Dimensions: 54.8 \times 30.2 \times 24.5cm. Price: £129.95 (inc. VAT).

CR 251

Bookshelf monitor with drive units: 21cm bass and 25mm treble. Crossover: 3.5kHz. FR: 90Hz-22kHz. Imp: 8 ohms. Finish: teak or walnut. Dimensions: 51.3 \times 28 \times 24.2cm. Price per pair: £91.97 (inc. VAT).

CR 501

Floor standing monitor. Drive units: 21cm bass, 38mm mid and 25mm treble. Crossover: 900Hz, 4.5kHz. FR: 35Hz-22kHz. Finish: teak or walnut. Dimensions: 81.5 × 37 × 30.5cm. Price per pair: £195.47 (inc. VAT).

CR 455

Floor standing monitor. Drive units: 38mm, mid 36mm and treble 25mm. Crossover: 900Hz, 4.5kHz. Imp: 8 ohms. FR: 40Hz-22kHz. Finish: teak or walnut. Dimensions: 57.5 × 31.7 × 24cm. Price per pair: £151.88 (inc. VAT).

CR 451

Floor standing monitor. Drive units: 10in. bass, 5in. mid and 1in. treble. Crossover: 500Hz, 4.5kHz. FR: 40Hz-22kHz. Imp: 6 ohms. Finish: teak or walnut. Dimensions: 57.5 × 31.7 × 24cm. Price per pair: £145.13 (inc. VAT).

■ TANGENT

Tangent Acoustics Ltd, 4 Viking Way, Bar Hill, Cambridge CB3 8EL.
Tel: Crafts Hill 81377

TM1

Monitor speaker with Drive units: 14cm mid/bass and 19mm dome tweeter. Imp: 8 ohms. Output: 50W per channel into 8 ohms. FR: 40Hz-30kHz ±3dB. Finish: teak, walnut with grey Vynair grille. Other finishes to order. Dimensions: 30.5 × 63 × 31.5cm. Price per pair: £152.28 (inc. VAT).

TM3

Monitor speaker with Drive units: 14cm bass/mid and 19mm dome tweeter. Imp: 8 ohms. Output: 45W per channel into 8 ohms. FR: 55Hz-30kHz ±3dB. Finish: as TM1. Dimensions: 25.5 × 37 × 28.5cm. Price per pair: £103.58 (inc. VAT).

RS2

I.B. bookshelf speaker with drive units: 19mm dome tweeter, 140mm cone mid/bass. Imp: 8 ohms. Output: 60W per channel into 8 ohms. FR: 52Hz-30kHz ±3dB. Finish: teak or walnut veneer, others to order. Dimensions: 25.5 × 37 × 28.5cm. Price per pair: £162.84 (inc. VAT).

RS4

Reflex system with drive units: 19mm dome tweeter, 140mm cone mid/bass. Imp: 8 ohms. Output: 80W per channel into 8 ohms. FR: 39Hz-30kHz ±3dB. Finish: teak or walnut, others to order. Dimensions: 30.5 × 63 × 31.5cm. Price per pair: £239.52 (inc. VAT).

RS6

Reflex system with three drive units: 19mm dome tweeter, 140mm cone mid, and 140mm cone bass. Imp: 8 ohms. Output: 100W per channel into 8 ohms. FR: 35Hz-30kHz ±3dB. Finish: teak or walnut, others to order. Size: 30.5 × 81 × 31.5cm. Price per pair: £325.86 (inc. VAT).

SPL1

Bookshelf speaker with two drive units: 25.4mm dome tweeter and 110mm mid/bass. Imp: 8 ohms. FR: 95Hz-25kHz ±3dB. Output: 50W per channel into 8 ohms. Finish: walnut or teak, others to order. Dimensions: 17.9 × 27.5 × 19.7cm. Price per pair: £65.95 (inc. VAT).

Stands

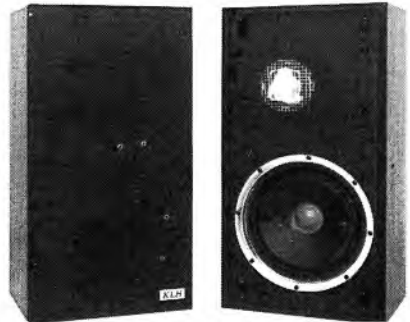
For TM1, RS4, RS6. Price per pair: £25.87 (inc. VAT).

■ KLH

Webland Group of Companies, Unit 4, 129 Waltham Green Court, Moore Park Road, London SW6.
Tel: 01-385 9478

KLH 311

Size: 16 × 12 × 8.75in. Weight: 21lb. Impedance: 8 ohms. Minimum 8W RMS. Max. 90W short duration. 8in. woofer, 2.25in. cone tweeter. Frequency: 50-18,000Hz. Price: £97.00 per pair (inc. VAT).



KLH317

KLH 317 ★

Size: 23 × 12 × 9.75in. Weight: 30lb. Impedance: 8 ohms. Min. 10W RMS. Max. 100W short duration. 10in. woofer, 2.25in. cone tweeter. Frequency: 45-18,000Hz. Price: £147.00 per pair (inc. VAT).

KLH 363

Size: 24 × 13 × 12.5in. Weight: 42lb. Imp-

★ Indicates entry is illustrated

edance: 8 ohms. Min. 15W RMS. Max. 150 watts short duration. 3-way speaker system. 12in. woofer, 5in. midrange, 2.25in. cone tweeter. Frequency: 30-22,000Hz. Price: £220.00 per pair (inc. VAT).

KLH CL3

Size: 26 × 14 × 11.5in. Weight: 53lb. Impedance: 8 ohms. Min. 20W RMS. Max. 100W RMS. 10in. megaflux woofer, 2.5in. cone tweeter, 2in. cone tweeter. Frequency: 35-20,000Hz ± 3.5dB. Price: £275.00 per pair (inc. VAT).

CB8

Size: 19.5 × 11 × 7.25in. Weight: 27lb. Impedance: 8 ohms. Min. 8W RMS. Max 75W RMS. 8in. megaflux woofer, 2.5in. cone tweeter. Frequency: 47-18,000Hz ± 4dB. Price: £169.00 per pair (inc. VAT).

CB10

Size: 19.5 × 14.75 × 7.25in. Weight: 35lb. Impedance: 8 ohms. Min. 10W RMS. Max 100W RMS. 10in. megaflux woofer, 2.5in. cone tweeter. Frequency: 40-18,000Hz ± 4dB. Price: £240.00 per pair (inc. VAT).



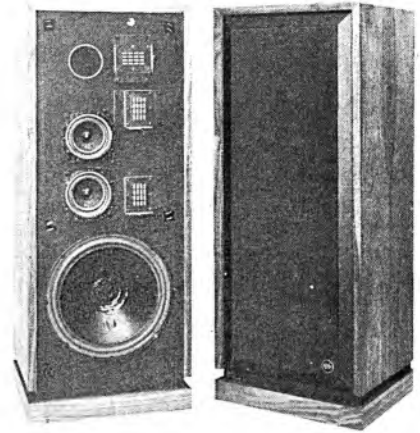
KLH CL4

CL4 ★

Size: 27 × 14.25 × 13in. Weight: 59lb. Impedance: 8 ohms. Min. 25W RMS. Max. 150W RMS. 10in. megaflux woofer, 4.5in. cone midrange, 1in. dome tweeter. Frequency: 30-22,000Hz ± 3dB. Price: £360.00 per pair (inc. VAT).

SCX2

Size: 27 × 14 × 21in. Impedance: 8 ohms. Min. 25W RMS. Max. 200W RMS. 2 DVR tweeters. 4.5in. cone midrange, 12in. megaflux woofer. Frequency: 30-30,000Hz ± 2.5dB. Price: £599.99 per pair (inc. VAT).



KLH SCX3

SCX3 ★

Size: 38 × 13.5 × 15in. Weight: 96lb. Impedance: 8 ohms. Min. 30W RMS. Max. 400W RMS. 3 DVR tweeters, 2 × 4.5in. cone midranges, 12in. megaflux woofer. Frequency: 26-33,000Hz ± 2dB. Price: £799.00 per pair (inc. VAT).

MOTOROLA

Pulsar Developments Ltd,
Spracklen House, Dukes Place,
Marlow, Bucks. SL7 2QH.
Tel: Marlow 73555.

Models available:

KSN 6001A, 6005A, 6010A, 6016A, 6020A, 6023A, 6025A. Full details on application.

Directory of Brand Names

Where the brand is the same as the name of the supplier please refer to the Directory of Manufacturers and Suppliers.

A

Accuphase. Pyser Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA.
Tel: Edenbridge 864111.

Acos. Cosmocord Ltd, Eleanor Cross Road, Waltham Cross, Herts EN8 7NX.
Tel: Waltham Cross 27331.

ADC. BSR (ADC Europe), Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

AEG-Telefunken. Professional Tape Decks, Hayden Laboratories Ltd, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

Aiko. Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs, ST5 0SW.
Tel: Newcastle 615131.

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

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

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

Ambassador. Stereosound Productions Ltd, Capital Works, 12-14 Wakefield Road, Brighouse, Yorks AD6 1PQ.

Ameron. Macinnes Laboratories Ltd, Macinnes House, Carlton Park Industrial Estate, Saxmundham, Suffolk IP17 2NL.
Tel: Saxmundham 2262/2615.

Ampex. Solus Products, Post Office Lane, Market Harborough, Leics.
Tel: Market Harborough 66242.

Apollon. Dowvall Audio Ltd, Ardfallen, Fort Hill, Magheraleave Road, Lisburn BT28 3BB. Tel: 023 82 2899.

Appolo Stands. Grabern Audio, 139a Brighton Road, Coulsdon, Surrey CR3 2NJ.
Tel: 01-660 4780.

AR. Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds. LU5 5QL.
Tel: 0582 603151.

A & R. Amplification and Recording (Cambridge) Ltd, French's Hill, French's Road, Cambridge CB4 3NP.
Tel: Cambridge 54507.

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

Arnold. Janorhurst Ltd, Shortmead Lane, Biggleswade, Beds.
Tel: Biggleswade 314252.

ATC. Acoustic Transducer Co Ltd, Pier House Laundry, Strand-in-the-Green, London W4.
Tel: 01-995 3654.

AudioPacks. Tape Recorder Spares Ltd, 206-210 Ilderton Road, London SE15 1NS.
Tel: 01-639 7844.

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

AVF. Audio & Vision Furniture Ltd, Lane Street, Bradley, Bilston, West Midlands WV14 8UT.
Tel: Bilston 47371-4.

B

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

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

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

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

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

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

BIC Venturi. British Industries Company, 60-61 Leslie Park Road, Croydon, Surrey CR0 6TP.
Tel: 01-636 2631/2.

Breuer Dynamic. Linn Products Ltd, 235 Drakemire Drive, Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.

BSR McDonald. BSR Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

C

CEC. Uher Ltd, 28 Spencer Street, St Albans, Herts. Tel: St Albans 30236.

Celestion. Rola Celestion Ltd, Ditton Works, Foxhall Road, Ipswich, Suffolk IP3 8JP.
Tel: Ipswich 73131.

Cerwin-Vega. C. E. Hammond & Co Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

Colton. S. & B. Trading, 34-38 Verulam Road, St Albans, Herts AL3 4DF.
Tel: St Albans 50611.

Connoisseur. A. R. Sugden & Co (Engineers) Ltd, Connoisseur Works, Atlas Mill Road, Brighouse, Yorks HD6 1ES.
Tel: Brighouse 712142.

Crescent Records. Avon Recording Services, 29 Belvedere, Bath BA1 5HR.
Tel: Bath 312082.

Crown Merton. T. I. Crown Merton Ltd, Station Road, Merton Abbey, London SW19 2NJ.
Tel: 01-542 1012.

Crown Radio. York Electronics Ltd, 73 Grosvenor Street, London W1X 9DD.
Tel: 01-629 8368.

Curb Hi-Fi. Janorhurst Ltd, Century House, Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

D

Dahlquist. Hayden Laboratories Ltd, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

Dansk. Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW.
Tel: Newcastle 615131.

Designcraft. QED Audio Products Ltd, 112 Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HD.
Tel: Sunbury 87344/5.

Disc-A-Vac. Janorhurst Ltd, Century House, Shortmead Street, Biggleswade, Beds.
Tel: Biggleswade 314252.

Dual. Audiodecks Ltd. PO Box 7,
Sandbeck Way, Wetherby, W Yorks
LS22 4YS.
Tel: Wetherby 5477.

Grouvac. R. I. Audio,
Kernick Road, Penryn, Cornwall
TR10 9DQ.
Tel: Penryn 72753.

Linn-Isobarik. Linn Products Ltd,
235 Drakemire Drive, Glasgow G45 9SZ.
Tel: 041-634 3860.
Linn-Sondeck. Linn Products Ltd,
235 Drakemire Drive, Castlemlk,
Glasgow G45 9SZ.
Tel: 041-634 3860.
Lux. Howland-West, 3.5 Eden Grove,
Londun N7 8EQ.
Tel: 01-609 0293.
Lyrichord. N. Miers & Co Ltd,
38 Piercing Hill, Theydon Bois, near
Epping, Essex CM16 7LE.
Tel: 037 881 2611.

E

Elac. Paul Spring Electronics Ltd, 19-23
Masons Hill, Bromley, Kent BR2 9HD.
Tel: 01-464 0823.

Emperor. MMG Associates,
19 St. Andrews Road, Malvern, Worcs.
Tel: Malvern 63555.

Empire Scientific. Hayden Laboratories
Ltd, Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

Encore. Artifauct Design Ltd,
35 Queen Street, Henley-on-Thames,
Oxon RG9 1AR.
Tel: Henley 6037/8.

Erase-sure. Kelsonics Ltd, Kelsey
House, Wood Lane End, Hemel
Hempstead, Herts HP2 4QR.
Tel: Hemel Hempstead 61291.

Exator. Audio Workshops Ltd,
33 London Road, Southborough,
Tunbridge Wells, Kent TN4 0PG.
Tel: Tunbridge Wells 39222.

Excel. Kelsonics Ltd, Kelsey House,
Wood Lane End, Hemel Hempstead,
Herts HP2 4RQ.
Tel: Hemel Hempstead 61291.

F

Ferguson. Thorn Consumer Electronics,
284 Southbury Road, Enfield, EN1 1TJ.
Tel: 01-366 1155.

Ferrograph. North East Audio
Equipment Ltd, Simonside Works, South
Shields, Tyne & Wear NE34 9NX.
Tel: South Shields 566321.

Fidelity Research. Wilmex Ltd,
Compton House, New Maldon, Surrey
KT3 4DE.
Tel: 01-949 2545.

Formula 4. Tone Arm, Mayware Ltd,
15 Heather Walk, Edgware, Middlesex
HA8 9TS.
Tel: 01-458 9426.

Fuba. Audio Workshops Ltd,
33 London Road, Southborough,
Tunbridge Wells, Kent TN4 0PG.
Tel: Tunbridge Wells 39222.

Fuji. Pyser Ltd, Fircroft Way,
Edenbridge, Kent TN8 6HA.
Tel: Edenbridge 864111.

G

Gale. Rukesary, 23 Briton Place, London
W1X 7AB.
Tel: 01-499 9966.

Grace. Linn Products Ltd,
235 Drakemire Drive, Glasgow G45 9SZ.
Tel: 041-634 3860.

H

Harman-Kardon. Tannoy,
St. Johns Road, Tyler Green,
High Wycombe, Bucks.
Tel: Penn 5221.

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

Heathkit. Heath (Gloucester) Ltd,
Bristol Road, Gloucester GL2 6EE.
Tel: 0452 29451.

I

Isophon-Werke. Hayden Laboratories
Ltd, Hayden House, Churchfield Road,
Chalfont St. Peter, SL9 9EW.
Tel: Gerrards Cross 88447.

J

Jennings. Janorhurst Ltd, Century
House, Shortmead Street, Biggleswade,
Beds.
Tel: Biggleswade 314252.

Johnson Brody. National Sound
Reproducers Ltd, Parr Road, Stanmore,
Middx HA7 1PZ.
Tel: 01-951 0222/4.

JR. Tape Music Loudspeakers Ltd, 114
Ashley Road, St Albans, Herts AL1 5JR.
Tel: St Albans 64337/9.

K

Koss. Tape Music Distributors Ltd,
114 Ashley Road, St. Albans, Herts
AL1 5JR.
Tel: St Albans 64337.

L

Leak. Rank Audio Visual,
PO Box 70, Great West Road, Brentford,
Middx TW8 9HB.
Tel: 01-566 9222.

Lenco. C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey
KT14 7LA.
Tel: Byfleet 51051.

Marantz. Audio UK Ltd,
Debmarc House, 203 London Road,
Staines, Middx.
Tel: Staines 50732.

Maxell. Natural Sound Systems,
10 Byron Road, Wealdstone, Harrow,
Middx.
Tel: 01-863 8622.

Metrocare. Metrosound Audio Ltd,
Audio Works, Cartersfield Road,
Waltham Abbey, Essex EN9 1JF.
Tel: Lea Valley 712712.

Minimixer. Allen & Heath Ltd, Pem-
broke House, Campsbourne Road, Lon-
don W8.
Tel: 01-340 3291.

Mushkiller. Antiference Ltd, Aylesbury,
Bucks.
Tel: Aylesbury 82511.

Musonic. S & B Trading, Stylus House,
33-38 Verulam Road, St Albans, Herts,
AL3 4DF.
Tel: St Albans 50611/2.

N

NAD. Pyser Ltd, Fircroft Way, Eden-
bridge, Kent TN8 6HA.
Tel: Edenbridge 864111.

Nagaoka. Kelsonics Ltd, Kelsey House,
Wood Lane End, Hemel Hempstead,
Herts HP2 4RQ.
Tel: Hemel Hempstead 61291.

Nagra. Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

NEAL. North East Audio Ltd,
Simonside Works, South Shields, Tyne &
Wear NE34 4NX.
Tel: South Shields 566321.

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

Nikko. Dowvall Audio Ltd, Ardfallen,
Fort Hill, Magheraleave, Lisburn
BT28 38B.
Tel: 02382 2899.

Nurmende. Vessco Visinn & Radio Ltd,
Unit 4, Blackwater Way, Ash Road,
Aldershot, Hants GU12 4DL.
Tel: Aldershot 321661.

O

Optonics. Sharp Electronics (UK) Ltd.
107 Hulme Hall Lane, Manchester
M10 8HZ.
Tel: 061-205 7321.
Orpheus. SGM Electronics.
4a Lenten Street, Alton, Hants
GU34 1JG
Tel: Alton 82882.

P

Peerless. Ross Electronics.
32 Rathbone Place, London W1P 1AS.
Tel: 01-580 7112.
Phase Linear. C. E. Hammond & Co Ltd.
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.
Philips. Microphones, Pye Business
Communications Ltd, Cromwell Road,
Cambridge CB1 3HE.
Tel: Cambridge 45191.
Pickering. Highgate Acoustics.
38 Jamestown Road, London NW1 7EJ.
Tel: 01-267 4937.
Pioneer. Shriro (UK) Ltd.
Shriro House, The Ridgeway,
Iver, Bucks SL0 9JL.
Tel: Iver 652222.
Pixall. Milty Products Ltd.
New Mansion House,
173/191 Wellington Road South,
Stockport, Cheshire SK1 3HA.
Tel: 061-480 8142.
Plustron. Plustronics Ltd.
Hempstalls Lane, Newcastle, Staffs
ST5 0SW.
Tel: Newcastle 615131.
PWB. QED Audio Products Ltd.
112 Windmill Road,
Sunbury-on-Thames, Middx TW16 7HD.
Tel: Sunbury 87344/5.

Q

QAS. Quality Audio Supplies, Wollaton
Road, Beeston, Notts. NG9 2PB.
Tel: Nottingham 256141.
Quad. Acoustical Manufacturing Co Ltd,
St. Peter's Road, Huntingdon, Hunts
PE18 7DB. Tel: Huntingdon 52561.
Quadrafle. Hi-Fi News & Record
Review, Link House, Dingwall Avenue,
Croydon CR9 2TA.
Tel: 01-686 2599.

R

Ramen. Rosetto Ltd, Glenford Works,
Quay Road, Rutherglen, Glasgow
G73 1RN.
Tel: 041-647 7578.
Realistic. Tandy Corporation (Branch
UK), Bilston Road, Wednesbury, West
Midlands WS10 7JN.
Tel: 021-556 6101.

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

Rogers. Swisstone Electronics Ltd.
4-14 Barmeston Road, SE6 3BN.
Tel: 01-697 8511.

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

S

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

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

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

SEAC. Zeepa Instruments Ltd,
15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

SEAS. Radio Components Ltd
12 High Oakes, St Albans, Herts.
Tel: St Albans 51108.

Sennheiser. Hayden Laboratories Ltd.
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.

Sonus. C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 51051.

Sounds Professional. F. W. O. Bauch Ltd.
49 Theobald Road, Burnham Wood,
Herts.
Tel: 01-953 0091.

Stag Audio. DTR Electronics Ltd,
Torrington Street, Bideford, North
Devon EX39 4DR

Stanton. Wilmax Ltd,
Compton House, New Malden
KT3 4DE.
Tel: 01-949 2545.

Stax. Wilmax Ltd, Compton House, New
Malden, Surrey KT3 4DF.
Tel: 01-949 2545.

Studiocraft. Bose (UK) Ltd,
Milton Regis, Sittingbourne, Kent.
Tel: Sittingbourne 7534/5.

SWA. E. and W. Magee Ltd.
Spring Gardens, Bigbury,
Kingsbridge, Devon TQ7 4AP.
Tel: Bigbury-on-Sea 323.

Syncalette. Adastra Electronics Ltd,
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288

Synchrotape. Adastra Electronics Ltd,
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288

T

Teac. Teledyne Acoustic Research,
High Street, Houghton Regis,
Dunstable, Beds.
Tel: 0582 603151.

Technics. National Panasonic (UK) Ltd
107-109 Whitby Road, Slough
Bucks SL1 3DR
Tel: Slough 27516

Telefunken. AEG-Telefunken (UK) Ltd.
Bath Road, Slough, Bucks.
Tel: Slough 33311.

Tenorex. Condor Electronics.
100 Coombe Lane, London SW20.
Tel: 01-946 0033.

Thurens. Metrosound Audio Products
Ltd, Freedex House, 4-10 North Road
London N7 9HN.
Tel: 01-607 8141.

Triu. B. H. Morris & Co (Radio) Ltd.
Precision Centre, Heather Park Drive,
Wembley, Middx HA0 1SU.
Tel: 01-902 9422.

Tristen. Danil Engineering Co.
Old Teme Bridge, Lower Wick,
Worcester WR2 4BY.
Tel: Worcester 425595.

Tungsram. Highgate Acoustics
38 Jamestown Road, London NW1.
Tel: 01-267 4936.

TVA. Thames Valley Audio Accessories
31b Rose Street, Wokingham, Berks.
Tel: 0734 790265/783771.

U

Ultimo. Condor Electronics
100 Coombe Lane, London SW20.
Tel: 01-946 0033.

Ultra. Thorn Consumer Electronics Ltd,
284 Southbury Road, Enfield EN1 1TJ.
Tel: 01-366 1155.

Unisound. Condor Electronics Ltd,
100 Coombe Lane, London SW20.
Tel: 01-946 0033.

V

Vac-O-Rec. Condor Electronics Ltd
100 Coombe Lane, London SW20.
Tel: 01-946 0033.

Vis Onik. Uher Ltd.
28 Spencer Street, St Albans, Herts
AL3 5EG.
Tel: St Albans 10236.

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

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

W

Wal. A. C. Farnell Ltd.
Kenyon Street, Sheffield S1 4BD.
Tel: 0742 78907.

Weircliffe. Amos of Exeter Ltd.
Weircliffe Court, Exwick, Exeter,
Devon. Tel: Exeter 72132.

Wifona. Paul Spring Electronics Ltd,
19-23 Masons Hill, Bromley, Kent
BR2 9HD.
Tel: 01-464 0823.

Directory of Makers and Suppliers

A

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

Acoustic Transducers Co Ltd,
Pier House Laundry,
Strand-on-the-Green, London W4.
Tel: 01-995 3654.

Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

AEG-Telefunken (UK) Ltd,
217 Bath Road, Slough, SL1 4AW.
Tel: Slough 872101.

Aerialite Aerials Ltd,
Whitegate, Broadway,
Chadderton, near Oldham,
Greater Manchester. OL9 0QE.
Tel: 061-656 1111.

Agfa-Gevaert,
Great West Road, Brentford,
Greater London.
Tel: 01-560 2131.

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

AKG Acoustics Ltd,
191 The Vale, London W3.
Tel: 01-749 2042.

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

Richard Allan Radio Ltd,
Bradford Road, Gomersal, Cleckheaton,
West Yorkshire, BD19 4AZ.
Tel: Cleckheaton 872442.

Allen and Heath Ltd,
Pembroke House, Campsbourne Road,
London N8.
Tel: 01-340 3291.

Amdio Ltd,
26 Reading Road South, Fleet,
Aldershot, Hants.
Tel: Fleet 3566/7316.

Amos of Exeter Ltd,
Weircliffe Court, Exwick,
Exeter. EX4 2AG.
Tel: Exeter 72132.

Amplex Great Britain Ltd,
Acre Road, Reading, Berks. R92 0QR.
Tel: Reading 85200.

Amplification & Recording (Cambridge) Ltd, French's Mill, French's Road,
Cambridge C34 3NP.
Tel: Cambridge 54507.

AMSA Magnetics Ltd,
121 Loverock Road, Reading,
Berks. RG3 1JZ.
Tel: Reading 598036.

Amstrad Consumer Electronics Ltd,
1-7 Garman Road, London N17 04F.
Tel: 01-801 4431.

Antiference Ltd,
Bicester Road, Aylesbury,
Bucks. HP19 3BJ.
Tel: Aylesbury 82511.

Ariston International (Electronics) Ltd,
Mayhole KA 19 7BH, Scotland.
Tel: Mayhole 82424.

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

Artifact Designs Ltd,
35 Queen Street, Henley-on-Thames,
Oxon RG9 1AR.
Tel: Henley 6037/8.

Audio UK Ltd,
Debmarc House, 203 London Road,
Staines, Middx.
Tel: Staines 50132.

Audiodecks Ltd,
PO Box 7, Sandbeck Way, Wetherby,
W. Yorks. W22 4YS.
Tel: Wetherby 5477.

Audio Kraft (Alarms) Ltd,
8a Clarence Road, South Benfleet,
Essex.
Tel: Benfleet 58944.

Audio Pro (Hi-Fi) Ltd,
CASL House, Sandy Lane,
Moston Road, Sandbach, Cheshire.
Tel: Sandbach 7520.

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

Audiomaster Ltd,
22 Bridge Path, Watford,
Herts. WD2 4BZ.
Tel: Watford 23010.

Audio & Vision Furniture Ltd,
Lane Street, Bradley, Bilston,
West Midlands WV14 8UT.
Tel: Bilston 41371.

Audio Workshops Ltd,
33 London Road, Southborough,
Tunbridge Wells, Kent, TN4 0PG.
Tel: Tunbridge Wells 39222.

Avon Recording Services,
29 Belvedere, Bath BA1 5HR.
Tel: Bath 312082.

B

B.G.W.,
12a Waltham Green Court,
Moor Park Road, London SW6.
Tel: 01-385 9478.

Badger Sound Services Ltd,
46 Wood Street, Lytham St. Annes,
Lancs. FY8 1QG.
Tel: St. Annes 729247.

Baker Loudspeakers Ltd,
Bensham Manor Road Passage,
Thornton Heath, Surrey.
Tel: 01-684 1665.

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

BASF United Kingdom Ltd,
Audio/Video Tape Division,
Haddon House, 2-4 Fitzroy Street,
London, W1P 5AD.
Tel: 01-637 8971.

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

Beyer Dynamic (G.B.) Ltd,
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath 51003.

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End, Hemel
Hempstead, Herts, HP2 4RH.
Tel: Hemel Hempstead 61291.

B. + J. Imports,
66 Woodcock Hill, Kenton,
Harrow. HA3 0JF.
Tel: 01-907 6667.

Black Knight Rumblecure,
Bank Top, Currier Lane,
Ashton-under-Lyne, Lancs. OL6 7TA.
Tel: 061-330 2836.

Bose (UK) Ltd,
Trinity Trading Estate,
Milton Regis, Sittingbourne,
Kent ME10 2PD.
Tel: Sittingbourne 75341/2.

British Industries Corporation,
60-61 Leslie Park Road, Croydon,
Surrey CR0 6TP.
Tel: 01-656 2631/2.

BSR Ltd,
Powke Lane, Cradley Heath,
Warley, Worcs. B64 5QH.
Tel: Cradley Heath 65191.

BSR (ADC Europe),
Powke Lane, Cradley Heath,
Warley, Worcs. B64 5QH.
Tel: Cradley Heath 65191.

B & W Loudspeakers,
Meadow Road, Worthing, BN11 2RX.
Tel: Worthing 205611.

C

Calrec Audio Ltd,
Hanningroyd Lane, Hebden Bridge,
Yorks. HX7 7DD.
Tel: Hebden Bridge 2159.

Cambra International Ltd,
260 Church Road,
London E10 7JQ.
Tel: 01-556 1916.

Cambridge Audio Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

Castle Acoustics Ltd,
Park Mill, Shortbank Road,
Skipton, Yorks.
Tel: Skipton 5333/4.

Catronics Ltd,
Communications House,
20 Wallington Square, Wallington
Surrey.
Tel: 01-669 6700.

Celef Audio,
130 Thirk Road,
Borehamwood, Herts.
Tel: 01-953 8933.

Chartwell Electro Acoustics Ltd,
2 Commonside East, Mitcham,
Surrey. CRA 1HX.
Tel: 01-648 4494/5 and 01-640 7420/7.

Chave Innovations Ltd,
The Granary, Jackass Lane, Keston,
Kent. BR2 6AH.
Tel: 0689-52051.

Clark Speakers,
122 Hull Road, Anlaby,
North Humberside, HU10 6UV.
Tel: Hull 656706.

Click Systems Ltd,
Low Moor Road, Kirkby-in-Ashfield,
Notts. NG17 7LH.

Condor Electronics Ltd,
100 Coombe Way, London SW20 0AY.
Tel: 01-946 0033.

Contek Magnetics Ltd,
32 Eveline Road, Mitcham, Surrey.
Tel: 01-648 5156.

Cosmocord Ltd,
Eleanor Cross Road, Waltham Cross,
Herts. EN8 7NX.
Tel: Waltham Cross 27331.

D

Danil Engineering Co,
Old Teme Bridge, Lower Wick,
Worcester, WRS 4BY.
Tel: Worcester 425595.

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

Decca Special Products,
Ingate Place, Queenstown Road,
London SW8 3NT.
Tel: 01-622 6677.

Dowall Audio Ltd,
Ardfallen, Fort Hill, Magheralave Road,
Lisburn BT28 3BB.
Tel: (023 83) 2899.

DTR Electronics Ltd,
Torrington Street, Bideford,
North Devon EX39 4DR.

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

E

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

Enigma Audio,
136a Portland Road, Hove,
Sussex BN3 5QL.
Tel: Brighton 723979.

Environmental Sound,
Northallerton, North Yorks.
Tel: Northallerton 5434/5.

Eumig (UK),
14 Priestley Way, London NW2 7TN.
Tel: 01-450 8070.

Expert Pickups,
PO Box 3, Ashhead, Surrey. KT21 2QD.
Tel: Ashhead 76604.

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

F

Falcon Acoustics Ltd,
Tabor House, Norwich Road,
Mulbarton, Norwich, Norfolk NR14 8JT.
Tel: 05087.8272.

A. C. Farnell Ltd,
Kenyon Street, Sheffield S1 4BD.
Tel: Sheffield 78901.

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

Fons International (Electronics) Ltd,
Maybole KA19 7BH, Scotland.
Tel: Maybole 82424.

G

Gardners Transformers Ltd,
Christchurch, Dorset. BH23 3PN.
Tel: Christchurch 2284.

Garrard Engineering Ltd,
Newcastle Street, Swindon,
Wilts SW1 2LH.
Tel: Swindon 3581.

GEC (Radio & Television) Ltd,
Langley Park, Slough, SL3 6DP.
Tel: Slough 22201.

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

Golding Products Ltd,
Anglian Lane, Bury St. Edmunds,
Suffolk IP32 6SS.
Tel: Bury St Edmunds 64011.

Goodmans Loudspeakers Ltd,
Downley Road, Havant.
Hants. P09 2NL.
Tel: Havant 486344.

Grabern Audio,
139a Brighton Road, Coulsdon,
Surrey CR3 2NJ.
Tel: 01-660 4780.

Grundig International Ltd,
Newlands Park, London. SE23 5NQ.
Tel: 01-659 2468.

H

Hacker Sound Ltd,
Norrey's Drive, Cox Green,
Maidenhead, Berks. SL6 4BP.
Tel: Maidenhead 22261/5.

G.K.C. Hadcock,
Audio Division, The Old Vicarage,
Doveridge, Derby, DE6 5NN.
Tel: Uttoxeter 2452.

C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet,
Surrey KT14 7LA.
Tel: Byfleet 51051.

Hanimex (UK) Ltd,
Hanimex House, Dorcan, Swindon,
Wilts. SN3 5HW.
Tel: Swindon 26211.

Harbeth Acoustics,
2a Nova Road, West Croydon.
Surrey CR0 2TL.
Tel: 01-681 7676.

Hayden Laboratories Ltd,
Churchfield Road, Chalfont St Peter,
Bucks., SL9 9EW.
Tel: Gerrards Cross 88447.

Heath (Gloucester) Ltd,
Bristol Road, Gloucester GL2 6EE.
Tel: 0452 29451.

Hi-Fi News & Record Review,
Link House, Dingwall Avenue,
Croydon CR9 2TA.
Tel: 01-686 2599.

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

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

Holder Pearce Ltd,
66 Grove Road, Eastbourne,
Sussex, BN21 4UH.
Tel: Eastbourne 26565.

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

I

IMF Electronics Ltd,
Westbourne Street,
High Wycombe, Bucks.
Tel: High Wycombe 35576.

ITT Consumer Products (UK) Ltd,
Chester Hall Lane, Basildon,
Essex SS14 3BW.
Tel: Basildon 3040.

J

Janorhurst Ltd,
Century House, Shortmead Street,
Biggleswade, Beds.
Tel: Biggleswade 314252.

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

E. J. Jordan Ltd,
Stonyway, Bovingdon Green,
Marlow-on-Thames, Bucks. SL7 2JH.
Tel: Marlow 2526.

Jordan-Watts Ltd,
Benbow Works, Silverdale Road,
Hayes, UB3 3BW.
Tel: 01-573 6928.

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

K

Kef Products Ltd,
Tovil, Maidstone, Kent, ME15 6QP.
Tel: Maidstone 57258.

Kelsonics Ltd,
Kelsey House, Wood Lane End,
Hemel Hempstead, Herts. HP2 4RQ.
Tel: Hemel Hempstead 61291.

Klark-Teknik Research Ltd,
M.O.S. Industrial Site, Summerfield,
Kidderminster, Worcs. DY11 7RE.
Tel: Kidderminster 64027/63467.

L

Lecson Systems Ltd,
Burrell Road, St Ives,
Hunts. PE17 4LE.
Tel: St Ives 64124.

Leda Audio Accessories Ltd,
7 Thane Works, Thane Villas,
London N7 7NN.

Leda Tapes,
75 Holloway Road, London N7 8JZ.
Tel: 01-602 4420.

Lentek Audio Ltd,
Edison Road, Industrial Estate,
St. Ives, Cambs. PE17 4LF
Tel: St. Ives 6225.

Linn Products,
235 Drakemire Drive, Castlemilk,
Glasgow, G45 9SZ, Scotland.
Tel: 041-634 3860.

L.N.B. Audio Ltd,
Duke Street, Loughborough, Leics.
Tel: Loughborough 61229.

M

MacInnes Laboratories Ltd,
Carlton Park, Saxmundham,
Suffolk IP17 2NL.
Tel: Saxmundham 2262.

Maplin Electronic Supplies,
PO Box 3, Rayleigh, Essex SS6 8LR.
Tel: Southend 715155.

Marantz Audio (UK) Ltd,
Debmarc House, 203 London Road,
Staines, Middx.
Tel: Staines 50732.

Maxview Aerials Ltd,
Setch, King's Lynn, Norfolk.
Tel: Watlington 376/591.

Mayware Ltd,
15 Heather Walk, Edgware, HA8 9TS.
Tel: 01-958 9421.

Memorex (UK) Ltd,
Hoechst House, 50 Salisbury Road,
Hounslow West, TW4 6JN.
Tel: 01-570 7716.

Metrosound Audio Products Ltd,
Freedex House, 4-10 North Road,
London N7 9HN.
Tel: 01-607 8141.

M.M.G. Associates
19 St. Andrews Road, Malvern,
Worcs. WR14 3PR.
Tel: Malvern 63555.

N. Miers & Co Ltd,
28 Piercing Hill, Theydon Bois,
Epping, Essex, CM16 7LE.
Tel: 037-881 261 1/2.

Milty Products Ltd.
New Mansion House,
173/191 Wellington Road South,
Stockport, Cheshire SK1 3UA.
Tel: 061-480 8142.

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

Monitor Audio Ltd,
347 Cherry Hinton Road,
Cambridge, CB1 4DJ.
Tel: Cambridge 42898.

Keith Monks (Audio) Ltd,
26-30 Reading Road South, Fleet,
Aldershot, Hants.
Tel: Fleet 7316/3566.

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

Mordaunt-Short Ltd,
Durford Mill, Petersfield,
Hampshire GU31 5AZ.
Tel: Rogate (073 080) 721/2.

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middx. HAD 1SU.
Tel: 01-902 9422.

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

N

Naim Audio Ltd,
11 Salt Lane, Salisbury,
Wilts. SP1 1DT
Tel: Salisbury 3746

National Panasonic (UK) Ltd,
101-109 Whitby Road Trading Estate,
Slough, SL1 3DR.
Tel: Slough 34522.

National Sound Reproducers Ltd,
Parr Road, Stanmore,
Middlesex HA7 1P2
Tel: 01-951 0222/4.

Natural Sound Systems Ltd,
10 Byron Road, Wealdstone,
Harrow, Middx. HA3 7TL
Tel: 01-863 8622.

Nightingale Acoustics,
60a Green Street,
Eastbourne, Sussex
Tel: Eastbourne 30405.

North East Audio Ltd,
Simonside Works, South Shields,
Tyne & Wear NE34 4NX.
Tel: South Shields 566321.

O

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.

Period High Fidelity Ltd,
Clivemont Road,
Cordwallis Trading Estate,
Maidenhead, Berks
Tel: Maidenhead 21221

Philips Electrical Ltd,
Arundel Great Court,
8 Arundel Street, London WC2R 3DT.
Tel: 01-836 4360.
City House, 420-430 London Road,
Croydon, Surrey, CR9 3QR.
Tel: 01-689 2166
Video Division, 19 Commerce Way,
Purley Way, Croydon, Surrey.
Tel: 01-688 7766

**Philips Electronic and Associated
Industries Ltd,**
604 Purley Way, Waddon, Croydon
CR9 4DR.
Tel: 01-686 0505.

Plustronics Ltd,
Hempstalls Lane,
Newcastle, Staffs. ST5 0SW.
Tel: Newcastle 615131

Premier Industries Ltd,
343/345 High Street,
Cheltenham, Glos. GL50 3HS.
Tel: Cheltenham 58985/52999.

**Professional Tape Marketing Associates
Ltd,**
Cassette House, 57 Mason Park
Crescent, Edgware, Middx. HA8 7LY.
Tel: 01-951 0488.

P.W.B. Electronics Ltd,
1 Norfolk Gardens, Leeds LS7 4PP.
Tel: Leeds 682550

Pye Business Communications Ltd,
Cromwell Road,
Cambridge, CB1 3HE.
Tel: Cambridge 45191.

Pye Ltd,
137 Ditton Walk, Cambridge CB5 8QD.
Tel: Teversham 2781

Pyser Ltd,
Fircroft Way, Edenbridge,
Kent, TN8 6HA.
Tel: Edenbridge 864111.

Q

QFD Audio Products Ltd,
112 Windmill Road,
Sunbury-on-Thames,
Middx. TW16 7HD
Tel: Sunbury 87344/5.

Quality Audio Supplies,
Wollaton Road, Beeston,
Notts. NG9 2PB.
Tel: Nottingham 256141.

R

Radio Components Ltd,
12 High Oakes, St Albans, Herts
Tel: St Albans 51108.

Ram Audio Marketing Ltd,
Clarke Road, Mount Farm,
Milton Keynes, Bucks
Tel: Milton Keynes 75764.

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

Rega Research Ltd,
Swames Industrial Estate,
Ashingdon Road, Rochford, Essex.
Tel: Southend 546674.

R.I. Audio,
Kerrick Road, Penryn,
Cornwall TR10 9DQ.
Tel: Penryn 72753

Rola-Celestion Ltd,
Ditton Works, Foxhall Road,
Ipswich, Suffolk, IP3 8JP.
Tel: Ipswich 73131.

Rosetto Ltd,
Glenford Works, Quay Road,
Rutherglen, Glasgow G73 1RN.
Tel: 041-647 7578/9.

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

Rukesary Ltd,
23 Bruton Place, London W1.
Tel: 01-499 9966.

S

Sanyo Marubeni (UK) Ltd,
Sanyo House, 8 Greycaine Road,
Watford, Herts. WD2 7UQ.
Tel: Watford 46363.

S. & B. Trading,
Stylus House, 34/38 Verulam Road,
St. Albans, Herts. AL3 4DF.
Tel: St Albans 50611/2.

Selmore Engineering Industries Ltd,
24 Mulberry Street, Tower Hamlets,
London. E1 1EH.
Tel: 01-247 3344.

SGM Electronics,
4a Lenton Street, Alton,
Hants. GU3 1HG.
Tel: Alton 82882

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

Shriro (UK) Ltd,
Shriro House, The Ridgeway,
Iver, Bucks. SL10 9L.
Tel: Iver 652222/7.

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

Skantec (UK) Ltd,
Station Road, Edenbridge,
Kent, TN8 6EY.
Tel: Edenbridge 5231.

SMC Loudspeakers,
76 Bedford Road, Kempston, Beds.
Tel: Bedford 854133.

SME Ltd,
Steyning, Sussex BH4 36Y
Tel: Steyning 814321.

Sonus Products,
Post Office Lane,
Market Harborough, Leics.
Tel: Market Harborough 66242.

Son-Audex Loudspeakers Ltd,
Woodside Avenue, Eastleigh,
Hants. SO5 4YD.
Tel: Southampton 611444.

Sony (UK) Ltd.
Consumer Information,
Sony Shorwoom,
134 Regent Street, W1R 6DJ.
Tel: 01-439 3874

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

South Western Agencies,
Spring Gardens, Bigbury,
Kingsbridge, Devon TQ7 4AP.
Tel: Bigbury 323.

Spendor Audio Systems Ltd,
Unit 12, Station Road Industrial Estate,
Hailsham, Sussex BN27 2ER.
Tel: Hailsham 843474.

Paul Spring Electronics Ltd,
19-23 Masons Hill, Bromley,
Kent BR2 9HD.
Tel: 01-464 0823.

Stereosound Productions,
Capital Works, 12-14 Wakefield Road,
Brighouse, Yorks. HD6 1PQ.
Tel: Brighouse 4355.

Strathern Audio Ltd,
Kennedy Way Industrial Estate,
Belfast, Northern Ireland.
Tel: Belfast 611100.

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, West Yorkshire HD6 1ES.
Tel: Brighouse 712142.

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

Swisstone Electronics Ltd,
4-14 Barmston Road, London.
SE6 3BN.
Tel: 01-697 8511.

T

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

Tandy Corporation (Branch UK),
Rilston Road, Werneshury,
West Midlands, WS10 7JN.
Tel: 021-556 6101.

Tannoy Products Ltd,
St John's Road, Tyler Green,
High Wycombe, Bucks. HR10 8AR.
Tel: Penn 5221

Tape Music Distributors Ltd,
114 Ashley Road, St Albans,
Herts. AL1 5JR.
Tel: St Albans 643379

Tape Music Loudspeakers Ltd,
114 Ashley Road, St Albans,
Herts. AL1 5JR.
Tel: St Albans 64337/9.

Tape Recorder Spares Ltd,
206-210 11derton Road,
London, SE15 1NS.
Tel: 01-639 7844/5/6/7.

TDK Tape Distributor (UK) Ltd,
Pembroke House, Wellesley Road,
Croydon, Surrey.
Tel: 01-688 7372.

Teledyne Acoustic Research,
1 High Street, Houghton Regis,
Dunstable, Beds. LU5 5QJ.
Tel: Dunstable 60315 i.

Teleradio Co (Edmonton) Ltd,
325 Fore Street, London N9.
Tel: 01-807 3719.

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

Thames Valley Audio Accessories,
Malkville Ltd, 31b Rose Street,
Wokingham, Berks.
Tel: Wokingham 790265.

Thorn Consumer Electronics Ltd,
284 Soundbury Road, Enfield,
Middlesex. EN1 1TJ.
Tel: 01-366 1155.

T. I. Crown Merton Ltd,
Station Road, Merton Abbey,
London SW 19 2NJ.
Tel: 01-542 1012.

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

Toshiba (UK) Ltd,
Toshiba House, Frimley Road,
Frimley, Camberley, Surrey.
Tel: 0276 62222.

U

Uher Ltd,
28 Spencer Street, St Albans, Herts.
Tel: St Albans 30236/7.

V

Valradio Ltd,
Browells Lane, Feltham, TW13 7EN.
Tel: 01-890 4837/4242.

Van Der Molen Ltd,
101 Hainault Road, Romford,
Essex, RM7 7NU.
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 2956.

Vesco Vision & Radio Ltd,
Unit 4, Blackwater Way,
Ash Road, Aldershot,
Hants. GU12 4DL.
Tel: Aldershot 312661.

Videotone,
98 Crofton Park Road, London, SE4.
Tel: 01-690 1914/5.

Volt Loudspeakers,
14 Tudor Court, Castle
Way, Hanworth, Middx.
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Wye Electronics Ltd,
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