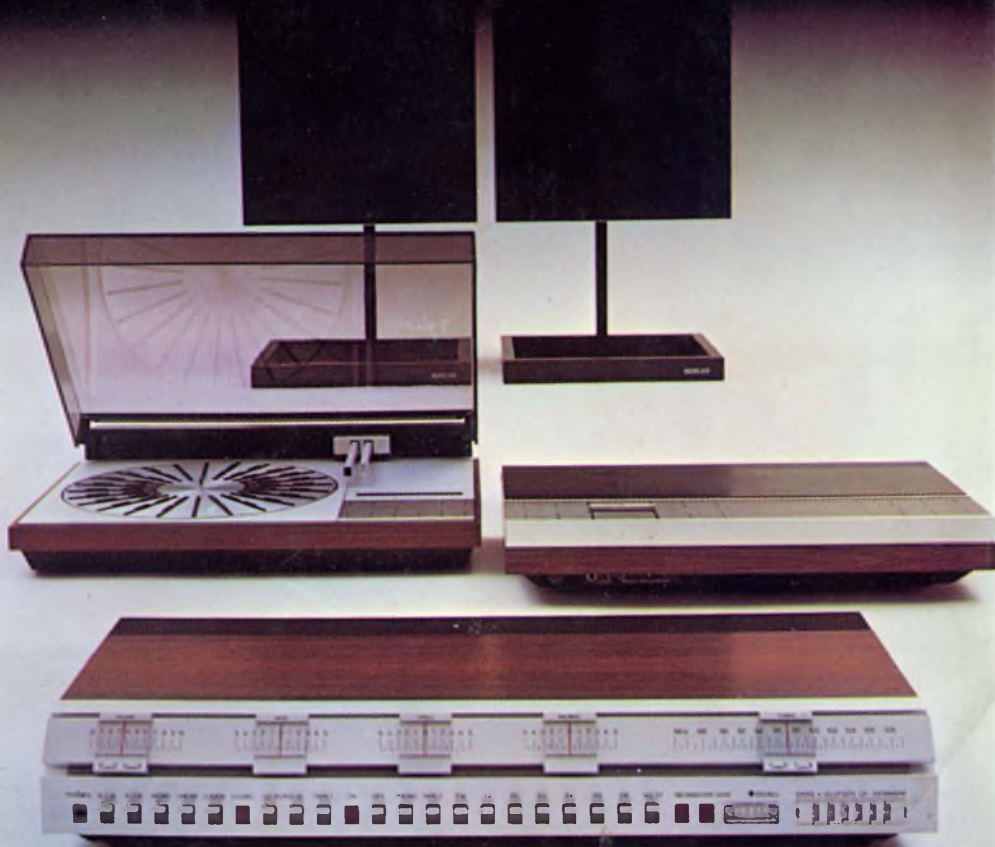


HIFI YEAR BOOK 1978

HIFI YEAR BOOK

1978

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



Bang & Olufsen

- We think differently

HIFI YEAR BOOK 1978

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What composer ever wrote hiss, wow or flutter into his scores?

Mozart didn't.
Beethoven didn't.
Wagner didn't.
Stravinsky didn't.
So why does some hi-fi equipment
insist on accompanying their music?
We don't know.
We just don't know.

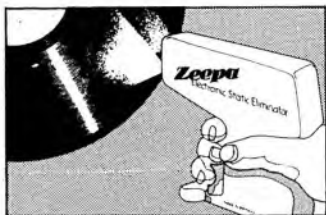
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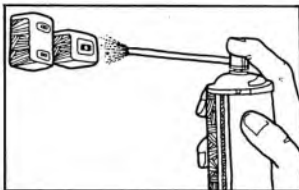


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Foreword

The economic crisis continues to hit the Hi-Fi trade with constant hammer blows, although reduction in VAT duty eased the pain a little. The cancellation of the 1976 Audio Fair was a real tragedy to trade and public alike and we rejoice that this annual treat is now restored.

Although this book aims to cover both ends of the Hi-Fi market we have upped the minimum price levels to exclude equipment which, although excellent for its price, is not really within the Hi-Fi bracket. Since we haven't facilities for testing and adjudging, this can only be done on a price basis, and I apologise to manufacturers and suppliers who may feel that their cheaper equipment is worthy of inclusion.

The Hi-Fi dealer section has been completely overhauled and entries listed under appropriate towns. The introduction of the new county boundaries has caused confusion among some readers and we felt that it would be easier all round to list the towns in alphabetical order.

You will notice, too, that many items are not priced. It is becoming increasingly common for manufacturers and importers to refuse to give hard and fast prices for products. As this is a general trade policy there is nothing that we can do, although I fully realise that this makes it difficult for prospective buyers to appraise equipment within their price ranges.

Prices, where quoted are those in operation at time of going to press, and prospective purchasers should check with their suppliers to ascertain current prices. Although every effort has been made to make this book as comprehensive as possible, we cannot take responsibility for any errors or omissions.

People are beginning to think that something important has just arrived



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Selection of radio tuners

by John Earl

YOU ARE NOT TAKING ADVANTAGE of the full potential of hi-fi if you are running your system without a radio tuner. For real hi-fi and stereo you must use the frequency modulation (FM) system of broadcasting. All hi-fi tuners are suitable for this, though some of them are equipped also with facilities for dealing with the amplitude modulation (AM) of stations transmitting in the other bands, such as the long, medium and short wavebands. You need not worry too much about what FM and AM mean; they are merely technical terms describing the technicalities by which the sound from the studio is carried to your home by the radio waves.

However, there are practical differences that you will encounter between the two systems; for example, with FM you will need a special type of aerial which may have to be mounted on the chimney stack and beamed on to the station group which is serving your area, rather like a TV aerial, while with AM you can usually get away with a less elaborate aerial. You will also need a special cable to connect the FM aerial to your tuner. In the UK we use what is known as coaxial cable, the same as we use to connect the TV aerial. Many hi-fi tuners and receivers are specially designed to accommodate coaxial cable. There is another type of aerial cable, though, sometimes called 300-ohm twin feeder, which is used in some other countries, including America and parts of Europe, which calls for a different kind of tuner input. A number of tuners and receivers imported into the UK may be equipped with this type of input. If you have a tuner or receiver like this you will not get the best results from it with coaxial cable.

There are several things you could do to overcome the problem. The obvious one would be to replace the coaxial cable with 300-ohm balanced twin feeder. This is costly and you may have difficulty in obtaining this sort of feeder. The alternative is to use either a special type of transformer between the coaxial cable and the 300-ohm aerial terminals or to connect the inner wire of the coaxial to one of the aerial terminals (leaving the other vac-

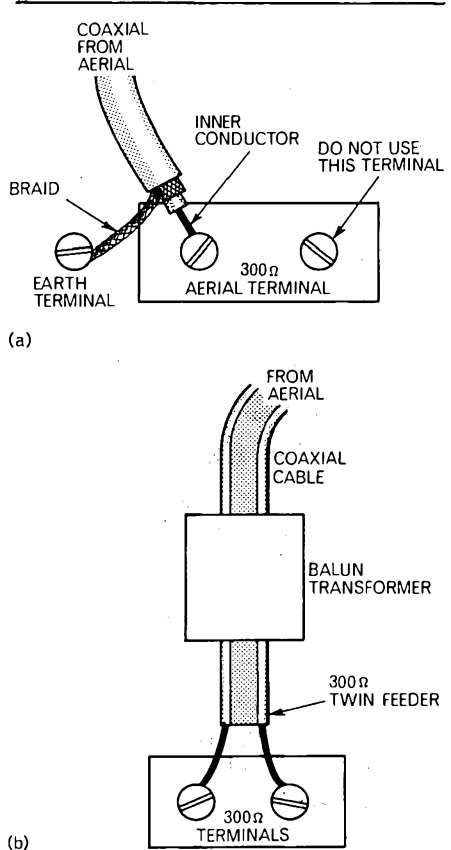


Fig. 1. It is important that the aerial is connected properly to the FM tuner. If your tuner has a coaxial input you can connect coaxial cable direct, if not, you can use one of the alternatives shown. That at (a) merely requires the inner wire of the aerial's coaxial cable to be connected to one of the 300-ohm terminals and the braid to an earthing terminal, while that at (b) uses a balun transformer between the aerial's coaxial cable and the two 300-ohm terminals.

ant) and the outer braid to an earthing terminal on the tuner. These schemes are shown in Fig. 1. The special type of transformer is known as a 'balun' and your hi-fi dealer should be able to procure one of these for you — it would be best to seek his advice, anyway.

Happily, tuner and hi-fi receiver manufacturers and distributors are becoming more enlightened in this respect and are now often producing equipment with the two types of aerial inputs.

For the best FM reception, particularly stereo, the aerial arrangements can be highly critical. It is best to regard the aerial as a part of the tuner or receiver, which indeed it is from the technical point of view. Hi-fi reproduction demands the lowest possible background hiss or noise, and it is one characteristic of the FM system that as the strength of the aerial signal applied to the tuner or receiver is increased so the background noise level falls. Clearly, then, the plan is to get as much aerial signal to the tuner as possible.

When you are reasonably close to the group of FM stations (transmitting Radios 2, 3 and 4) this may not be particularly difficult and the aerial may not have to be all that elaborate. At greater distances, though, more problems arise, *particularly on stereo because for low noise stereo the signal might have to be ten times as strong as that for low noise mono*. Above a certain strength, however, there is no further reduction in noise level, and any noise remaining is caused by the transmitter and tuner. Just how much signal your tuner will need to yield the lowest noise level depends on its sensitivity. Most modern *hi-fi* tuners and receivers are extremely sensitive, so sensitivity is not all that much of a problem these days. Nevertheless, if you are outside the service area of a transmitter group or wish to try your hand at picking up stations from some other part of the country — or from the Continent of Europe even — then you will have to look in greater detail at the sensitivity. You will also have to make sure that your aerial is as efficient as you can possibly get it.

This is another area where FM differs from AM. The FM radio waves are of very high frequency (vhf) and their normal distance of travel is far less than the radio waves used for AM broadcasting. This is why you can easily pick up foreign stations on the long, medium and short wavebands — the signal frequency is lower. The normal useful range of a main FM station is not much more than 50 to 60 miles, which is why it is necessary to have FM stations (and TV ones, come to that) dotted about all over the country.

You may wonder, then, why vhf was chosen

for FM. One reason is that to carry the hi-fi quality of FM a greater slice of radio space is required than for AM. Another is that the lower frequency AM bands are overloaded with stations already and it is just not possible to find free radio space demanded by FM. It would be possible to get hi-fi quality reproduction *via* AM, but then the bandwidth, again, would need to be increased for each station. Although the increase would be less than that required for FM, there is still insufficient space available. Indeed, to avoid AM stations jamming each other more than they do already (just listen to the top end of the medium waveband after dark!) it is necessary now for the AM broadcasters severely to curtail the bandwidth. This means that there is a severe cut in the high-frequency sounds transmitted, making the system as it stands completely useless for hi-fi reproduction. You can tell this for yourself by listening to Radio 2, say, on FM and then switching over to the same programme on AM. In the latter mode the reproduction is 'dull' with little or no upper-treble and no exciting music 'attack'. Neither is it easily possible to put two-channel stereo over the AM system (it is not impossible, but not practical as things stand).

If you are in the market for a radio tuner or hi-fi receiver, then, you must ask yourself whether you really want a model which includes lo-fi AM. There are times when AM provides certain programmes that are not available on the equivalent FM channel — when Radio 4 on FM changes over to educational broadcasts, for example! To some extent the AM part of a hi-fi tuner is something of a compromise (not always, as some designers are now putting greater effort into the AM side but the results can never be any better than the transmission quality!); some models (quite a few of them, in fact) settle for the medium waveband only. Others cater for the long waveband as well, while a lesser number are equipped also for shortwave reception, tuning over one particular band or several bands. This is the type of tuner or receiver which would appeal more to the guy who enjoys tuning in to distant stations, while also being interested in hi-fi.

For reception in the long and medium wavebands most tuners and receivers carry a ferrite rod aerial which is mounted either at the back on a swivel (sadly, not always), allowing the aerial, which is directional, to be adjusted for the best results, or inside somewhere. This sort of aerial is very effective on the long and medium wavebands, so avoiding the use of an external AM aerial. It is less effective on the short wavebands, so for the best results on



Fig. 2. A top-flight FM/AM tuner by Pioneer which includes some of the features explained in the text.

these an external aerial is essential. Sometimes there is a switch or some other form of coupling which allows the FM aerial to respond to the AM wavebands. Even when an inbuilt ferrite rod aerial is fitted, there are also terminals for connecting an external AM aerial and earth.

It is sometimes asked why a ferrite rod type of aerial is not used for FM. The answer is simply that the existing type of ferrite rod aerial is unsuitable for vhf signals. Research is in hand to try to rectify this, and it seems as though there is a strong possibility that a special version of this type of aerial will be available for FM in the not too distant future.

The FM system of broadcasting has other virtues that AM cannot provide. Electrical and car interference is minimised, and the buzz and whistles that you often experience on AM from your own or a neighbour's TV set are totally rejected by a good FM tuner or receiver. The distortion on loud sounds is far less on FM than on existing AM. The background noise level, assuming that you have a strong enough aerial signal, is also much lower on FM than AM. Moreover, on FM stations tend far less to interfere with each other even if they are close together or on top of each other. You have probably read about the *capture effect* of FM. This is a technical factor which means that when a wanted station is a little stronger than an unwanted one, the unwanted one is pushed right into the background and not heard. For the same condition on AM the wanted station would have to be very much stronger than the unwanted one.

With FM the strength difference need only be small, depending on the tuner's *capture ratio*. If you see from a tuner specification that the capture ratio is 1dB, then this would be

better from this aspect than one whose capture ratio is, say, 3dB. Look for the smallest dB number. The capture effect can also come into play in a different way. For example, vhf waves are more prone to reflection than lower frequency ones, so if you happen to be located in hilly country or in proximity to tall buildings or large structures the signal from the transmitter will reach your aerial not only by the direct route but also by a secondary route after the signal has been bounced off a hill, etc.

Your aerial will thus receive the direct signal followed a very small fraction of a second later by the reflected signal (because it goes a longer way round!). It is this sort of thing which produces 'ghosts' on TV screens. On FM it can give rise to a nasty brand of distortion called *multipath distortion*. Now, if your tuner has a low dB number capture ratio it will tend to reject the weaker reflected signal and hence minimise the distortion.

In this kind of situation, though, you should get qualified help with your aerial system. You will need one which is very directional so that it can be turned to provide the maximum discrimination against the reflected signal — so that the strength of the reflected signals will be as small as possible.

You will also need a directional aerial if you are some distance from the transmitter group, and to obtain the maximum signal the aerial will have to be beamed on to the station. This sort of aerial is made up of several rods or elements. Fairly close to a transmitter a single element (dipole) will often suffice, but even

this is directional when mounted horizontally (e.g., so that the dipole is parallel with the ground, as it needs to be for FM reception). Ten miles or so calls for two elements, twenty to thirty miles three elements and above this distance four elements can make the difference between mediocre and first rate stereo reception. These can be regarded only as rough guides, for the strength of the prevailing signal will depend on the strength of the transmitter and on how high you are placed above sea level.

You may also require an aerial of more elements than dictated by distance alone if you live in a heavily built-up area (in the middle of a town, for instance) or in an area which is shielded by trees, hills, etc. If you live at the bottom of a valley you may have extreme difficulty in getting good FM reception, particularly good stereo, unless you can mount the aerial at the top of a hill and feed the signal down to the tuner through low-loss coaxial cable. If this calls for a long length of cable you may have to amplify the signal at the start and possibly on the way down; but such an installation would require qualified assistance.

So far we have looked at the problems of getting as much signal as possible. Some people are plagued with the opposite problem. They get too much signal! Close to a powerful station or group of stations the signal field can be very high, and some tuners react when they are fed with more signal than they can usefully digest. What happens is that the strong signals 'beat' together inside the tuner and produce spurious signals which may occur on or very close to the dial setting of the wanted station, thereby causing interference. One type of such

interference is a 'bubbling' noise accompanied by distortion. Even if you do not suffer the 'bubbles' the overload due to the strong signals can manifest as distortion. You may also find that you can receive the same station at several points on the dial, which can sometimes be mistaken for signals coming from more distant transmitters.

If you are in this sort of trouble the best thing to do is to connect an *aerial attenuator* in the coaxial lead between the aerial and the tuner. Your hi-fi dealer will be able to supply simple plug-in attenuators, and possibly suggest the most suitable value to solve your problem. If you attenuate the signal too much your stereo will 'fizz'. The plan is to select an attenuator which cuts the overload effects without adding noise to the required stereo programmes.

You must understand, though, that an attenuator will reduce the strength of all signals — weak ones as well as the strong ones. Once you attenuate, therefore, you will not be able to pick up the weak signals from the more distant transmitters very well. If you want to receive weak signals as well as strong local ones you will have to select a tuner which does not overload very easily. You will also need one which is very selective. Tuners of this more specialised design cost more than the general run of tuners, and a good way to gain some experience of them is to investigate the tuner reviews published by the hi-fi magazines. Look for the models which have good front-end selectivity and third-order intermodulation performance and good overall selectivity. The better reviews contain this kind of information. For all these things look out for the highest dB numbers; it is only for capture ratio where the lowest dB number is best.

You will also need a model of high sensitivity which is indicated by the lowest aerial input voltage (in microvolts — μV) for a given signal-to-noise ratio in dB. In particular, look for the inputs required for a mono and stereo

Fig. 3. This Sansui FM/AM tuner is of the all-black look which is favoured by the wives of some enthusiasts. The AM signal is obtained from a ferrite rod aerial.



signal-to-noise ratio of 50dB. A really top-flight tuner may only need about $5\mu\text{V}$ for mono and $50\mu\text{V}$ for stereo. A less exacting design may call for $200\mu\text{V}$ mono and $2,000\mu\text{V}$ for stereo.

The net result of the tuner, of course, is the programme signal which will be fed to the amplifier (this feed happens automatically in a hi-fi tuner which integrates the tuner and amplifier). This must be of the highest possible quality, meaning that the following must be satisfied: mono and stereo distortion no greater than 0.5% at full modulation; background noise no smaller (in number) than 65dB when the aerial signal is adequate (this is the ultimate signal-to-noise ratio); stereo separation no less (in number) than 35dB at 1kHz; and frequency response essentially 'flat' from 40Hz to, at least 12.5kHz. If you will be tape recording from stereo radio make sure that the tuner has a good rejection (no less in number than 60dB) at the 19kHz pilot tone frequency of stereo. A good rejection here is desirable in any case because it helps to keep the distortion down and makes the tuner 'sound' better.

If you are really keen on trying to receive distant FM stations you will need to turn your aerial round, and the only way that you can do this successfully is to use an aerial rotator, which consists of an electric motor coupled to the mast which can be operated and controlled indoors. For such activities a tuner equipped with a good signal strength meter (in addition to the centre-zero FM tuning meter) is an asset. This should be the type that does not arrive at full-scale deflection on low signal strength; a logarithmic responding one is best. Some latter-day tuners have a button which changes the signal strength meter to a multipath meter, the deflection then showing how much reflected signal the tuner is receiving. For optimum results the aerial should be turned for the least reading.

Other things you pay for in expensive tuners include a very accurate tuning scale with good mechanical features devoid of slip or backlash and easy running bearings with flywheel assistance, an inbuilt 400Hz tone oscillator for setting the radio recording level prior to taping radio programmes, such as found in the recent Yamaha CT-410, digital tuned frequency read-out (this adds significantly to the cost but reads the station frequency very accurately), blend switching which reduces the noise on stereo when the signal is weak at the expense of stereo separation, muting which cuts the loud background hash when tuning between stations and so forth.

To summarise, remember that a tuner contains two sections, one section which proces-

ses the aerial signals and the other which looks after the 'sound' signal subsequent to its extraction from the radio signal. For good hi-fi both sections are important; but it is possible still to get good hi-fi under favourable reception conditions even though the first section falls below the state-of-art standard secured by the more expensive designs. In difficult reception areas, though, you will need a tuner with a very good front section as well.

There is a great deal more to FM tuners than often realised, which is why they range in price from £20 or so to £400 and £500 or more!

Use of cassette tapes

by Mike Lewis

AS A RESULT OF VAST IMPROVEMENTS in design and manufacture during the last few years, both in hardware and software, the cassette machine is now favoured by the majority of audio enthusiasts for home hi-fi use.

The open-reel machine has become, in contrast, a sophisticated tool for the professional, or for the dedicated enthusiast who needs the facilities of tape editing, multi-track recording, and the option of faster speeds.

Choosing tape for a reel machine is largely a matter of personal preference, and economics, together with the purpose for which the machine is to be used. There is comparatively little difference in performance between makes, and hence makers are concentrating on 5 inch, 7 inch and 10½ inch (NAB) spool sizes in three main qualities — studio master, so-called 'studio professional', and general-purpose high-dynamic types.

If you are in the habit of recording for long periods at speeds around 7½ or 15 inches per second, then the open-reel machine is the only medium.

But most of us cannot discriminate between the reproduction from an open-reel machine at 3¾ or 7½ ips and that from a good quality cassette machine at 1⅞ ips, provided that the right kind of cassette tape and the proper recording technique are used.

Whereas in earlier years the dynamic range and frequency response of cassette tape was limited by the 1⅞ speed, the tape coating and

the limited energy output, modern cassette tapes are so much improved that, especially with the use of Dolby, high quality reproduction with a minimum of background noise, aurally as good as that from an open-reel machine, is now possible.

The secret lies in selecting the most suitable tape for your particular machine. There are many variables, ranging from the physical quality of the tape itself to the performance available from the machine. The capabilities of the cassette deck, the tape, and the purpose for which both are to be employed must be equated against cost and personal preference.

One problem still bothering makers and users alike is the conflict between international tape recording standards. This affects both hardware and software; the hardware is set up in the factory against a standard with which some tapes may comply but not all, and vice versa.

The majority of cassette machines originate from the Far East, even though the designs and specifications may have come from the USA or Europe. In Europe the DIN standards prevail, in the USA those of the IEC.

Britain has no official standards as yet, and such that there are likely to be interpreted in differing ways. Such specifications also apply to tapes. Those made in the USA tend to

Fuji open-reel tapes



favour DIN if the product is to be exported to the UK, but those made in the Far East are intended primarily for Asia and America, and are therefore primarily compatible with Japanese-designed equipment. The main differences lie in the bias and equalisation factors.

Coatings

To-day's cassette tape coatings fall into three main categories — ferric oxide, chromium dioxide, and 'ferrichrome'. There are also tape coatings into which cobalt is introduced.

Ferric tapes are by far the most popular, being suitable in varying degrees of quality for a wide range of machines. Chrome tapes offer an increased frequency response at the high end, but require a different bias and equalisation setting from that used for ferric tape. Hence a changeover switch is needed on the cassette deck.

Ferrichrome falls between the two, and can be one of two types. The first is that in which the chrome material is introduced into the basic ferric as a 'mix'. In the second type a thin layer of chrome is superimposed upon the ferric base coating.

Some cassette decks include a *three-position* changeover switch to allow for the different characteristics of ferrichrome as compared with pure ferric or pure chrome. If your machine does not have this facility, then it is best to try such a tape in both the ferric and chrome positions (assuming the switching to be manual), unless the tape maker specifically recommends a switch position.

If your machine has *automatic* ferric-to-chrome switching (i.e. by a mechanism which 'senses' the special additional holes provided in a chrome cassette body, then the maker, if he is producing a ferrichrome type for which he considers the chrome position best, will wind the tape on to a chrome 'C-zero' as the cassette body is called.

These then are the basic choices of cassette tape. But among ferric tapes there can be wide differences in quality, dynamic range and frequency response. These factors are determined by the nature of the ferric coating and the manufacturing process.

The finer are ground the ferric particles, the density of the 'mix', the coating and bonding processes, drying and polishing, all contribute to the varying degrees of output energy, frequency response and dynamic range of the finished product.

Obviously a great deal of back-room research must be carried out both to produce better and better performance, and to maintain the quality of existing tapes. At the same time, materials used cost progressively more and



Philips compact cassette range



BASF LH Super

more, as do production costs. Both research and manufacturing costs have to be met and a profit still made by the maker, so that the prices of the various qualities of cassette must be in proportion.

Which brings us to the important point of balancing performance against cost, and deciding the best tape for the particular machine.

It works two ways. A high quality — and hence higher costing — tape will not show any appreciable improvement in performance over a general-purpose cassette when used in a low-cost portable mono recorder.

Conversely, the performance of a low-cost machine will compare poorly if a high quality tape is used in it as compared with the output from the same tape when used in a hi-fi deck.

And there are degrees of performance ac-

cording to the level of sophistication of the hardware.

Cassette 'rating' system

For this reason, a move to establish a 'rating' system for cassettes, giving their suitability with different types of cassette recorder, has been made by at least one maker, and the idea has been welcomed by the majority of makers. There are problems, however, not the least of which is knowing to which standard and to which tape parameters each make of cassette deck is set up to in the factory. In some extreme cases, the machine is not apparently set up to any recognised standard or tape!

All of which only further confuses the cassette machine owner. It would be simple for both tape and recorder makers to tell the buyer either to use brand X or to remain loyal to the brand he has found by experiment to suit his needs and machine the best. But this would inhibit the recorder owner from trying other brands which might change his choice and satisfy him better.

The 'rating' system groups machines and suitable cassettes into five categories (but does not include chrome, which, as we have seen, constitutes a group in itself, and is obviously only suitable for the machines which can do it justice).

It starts with mono portable recorders, and the lower-priced mono radio cassette recorders, for which a general-purpose low-cost tape is recommended.

The second group includes higher-priced radio recorders, budget unit audio systems and music centres, stereo radio recorders and 'mid-fi' stereo cassette decks. For these the 'extra-dynamic' type of ferric cassette is most suitable for the wider frequency range and better audio output quality available from such equipment.

Thirdly comes the same type of equipment but more sophisticated, with such features as noise-limiters, (DNL or Dolby), music centres with hi-fi radio tuners and record decks, and higher-quality bracket audio separates installations. These can accept SD ('super-dynamic').

Next come the higher-quality stereo cassette decks, with all facilities, intended for the serious home-user who, among other things, wishes to faithfully transcribe LPs or stereo FM broadcasts. For these, the cobalt-doped types, ferrichromes and the higher-dynamic and frequency range ferric cassettes are the best. The user may find that some cobalt and ferrichrome types produce better results with the 'chrome' switch operated.

For the 'live' recording enthusiast, however, and for the top-notch audiophile who

considers the extra expense worth while, and who wants — and expects — the equivalent of studio quality, and has the equipment with which to achieve this aim, then only the best cassettes must be his choice.

Certain makers produce cassette tape comparable with studio tape specifically for this class of user. Obviously these are the most expensive — for a C90 prices can be around the £3 mark, which is not much below the equivalent open-reel tape for the same running time.

However, bearing in mind that the cassettes used by both this and the previous group are often used to build up a 'library' of recorded music, then the relatively high cost of such a cassette compares favourably with that of an LP.

This is not so of the run-of-the-mill portable mono machine owner who may wish to use the same cassette over and over again for off-air medium wave 'pop'. For his purpose the lower-priced general-purpose cassette is ideal, even if he eventually discards it.

Before leaving this topic, mention should be made of the pre-recorded cassette. This is intended for use on all types of machine, and is usually recorded on an extra-dynamic medium-range ferric tape. The bulk-duplication technique used produces a cassette which often appears to have a lower playback level than that normally experienced by the user when making his own recordings.

Recorded tape producers — even when they also make blank cassettes — rarely indicate the kind of tape and the type of machine for which it is intended on the cassette — for obvious reasons. Hence the cassette when played back on some recorders sounds 'dull' and 'flat'. The answer to this is to experiment. Play the cassette back at a higher level than usual, switch out any noise limiter, operate the ferrichrome bias switch.

Remember that the largest market for the pre-recorded cassette is in the 'pop' and light music fields, to be played back on portable mono and mid-fi stereo machines. Hence the cassette is recorded for all-round use to produce acceptable results on the lower-priced mono as well as the hi-fi machine.

To sum up — you get what you pay for, both in hard and software. The higher the quality of the machine the better the quality of tape it deserves. Think of your recorder as a car — would you put two-star petrol in a new Jaguar and expect racing car performance? On the other hand, you would waste money pouring five-star petrol in to the tank of a beat-up jalopy!

Choosing a Hi Fi Music Centre

by Donald Aldous

A FEW years ago no self-respecting hi-fi addict would even contemplate the purchase of what is variously described as an *audio compact*, *unit audio* or more usually a *musicentre*. The accepted way for the devotee was to acquire each link in the hi-fi chain from a different manufacturer and then assemble these components into a system. These could be mounted on a shelf, or fixed in a cabinet to suit the room shape or other furniture, but often—if the distaff side of the household was well disposed—the bits and pieces would be left nude and exposed joined by wires all over the place.

This arrangement certainly meant that the hi-fi buff had a unique audio system, but unless he was technical enough to know about impedance matching and power output requirements, how to avoid hum loops and acoustic feedback, the final results might not come up to expectations.

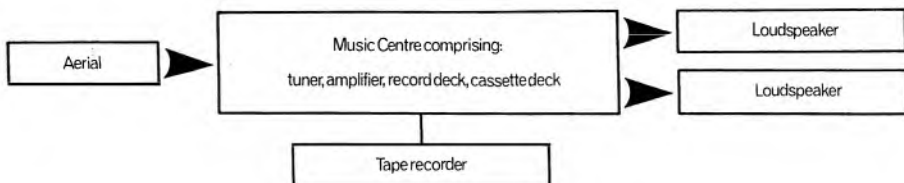
With the marked improvements today in musicentre performance, this traditional 'separates' method of putting together a hi-fi system, although not superseded for the affluent purist, can offer the music-lover an integrated, functional and physically attractive sound system, with no compatibility problems or trailing leads, except to the loudspeakers.

In our examination of the requirements for a good all-in-one system, let's start with the 'back end' or loudspeakers. Critics do find loudspeakers with compact system a target for unfavourable comment, usually because the manufacturer—in order to keep the total price down—may supply systems that do not do justice to the rest of the equipment. It must be mentioned that some musicentres are supplied complete with loudspeakers in the package deal, but with other makes the customer is allowed a choice.

In fact, the potential purchaser must



Goodmans MCD 100



remember that the only flexibility left when buying a musiccentre is choice of loudspeakers—when not in the package—and perhaps the ability to change the pickup cartridge (if the shell is detachable on the arm). This upgrading is not always practicable, unless the cartridge is a comparable magnetic type, say, with roughly the same output voltage, or if you are exchanging a ceramic type for a low output magnetic, you will probably need to fit a pre-amplifier, which will demand some technical knowledge from you or your dealer.

Loudspeakers come in a variety of types and sizes, with some excellent British bookshelf models now on the market, although many musiccentres come with Japanese LS designs, which may or may not be acceptable to the British ear. The best advice on selection is to try to listen to several pairs attached to your choice of audio system as—apart from appearance and dimensions—sound appreciation is personal, although obviously technical standards do exist, which should be met.

The elements of a musiccentre usually consist of a radio tuner (always with VHF/FM, but additionally perhaps AM/medium/long and a short-wave band); tape cassette deck, sometimes with Dolby, DNL or both noise reduction methods; facilities in some designs for switching (which can be auto) for normal and C₉O₂ tape; a belt driven or direct drive turntable; and an amplifier. For completeness, we must mention the JVC cassette noise reduction system, known as ANRS, and its musiccentre, Model MF-55LS, has press keys for independent switching of equalisation and bias level. This facility means that the unit can work with ferric and chrome tapes.

Turning now to the 'front end' or radio tuner section, the 88 to 108 MHz FM band is covered, and the AM bands are often fed from an internal ferrite aerial, although it may be necessary to use an external wire aerial to get a good signal in poor reception areas. Usually a flat ribbon aerial is provided for the VHF/FM section, which should be oriented to get the optimum signal. A properly sited Band 2 aerial is always a good investment. A useful feature

on some systems (for example, the JVC MF-55LS model) is a 'beat cut' switch that helps to defeat whistles from adjacent stations on the AM long and medium wavebands.

On most models, the FM section has a stereo decoder fitted, and a red panel light shows when a stereo transmission is being received. Inter-station noise muting can be switched in or out, as on the JVC MF-1845L.

To assess the performance of the radio tuner, apart from making measurements or checking specifications with reviews in the technical Press, all the purchaser can do is to tune in a few stations and listen for the quality, particularly the presence of background noise/hiss and distortion on the stereo sounds, compared with mono sources, and check to see if station drifts off tune?

The next important link to check is the record deck, particularly the turntable. Freedom from Wow and Flutter, and intrusive rumble noise are features that need to be kept to low percentages for the sensitive music



National Panasonic SG-3090

lover to get maximum pleasure from playing gramophone records. Apart from the quality on a familiar orchestral LP, there are several good test discs available (such as HFS 75) for checking performance, and your dealer might allow you to play a record or two on your chosen system. In simple language, try to get a silent running turntable free from warble on sustained notes.

The deck mechanism will vary, according to model and make, ranging from the de luxe Grundig RPC500 system, fitted with a Dual 1228 deck, and Shure M95MG-LM magnetic cartridge, to modest BSR or Garrard single-play turntables supplied with ceramic cartridges and turnover stylus. If you have a collection of vintage 78 rpm discs, you will have to discover whether your turntable will rotate at this speed, as most of the more expensive systems only revolve at 33 $\frac{1}{3}$ and 45 rpm. The flip-over LP/78 cartridge and stylus are useful in this instance, but, in general, the fidelity of the magnetic cartridge is to be preferred. This means that unless you have a detachable shell or a cartridge on which the stylus assembly is easily changed, playing 78s presents a problem.

As an example of another type of record deck, the Ferguson Model 3470 system, Studio 6, incorporates an auto-manual 3-speed auto-changer, with ceramic stereo cartridge and cueing-lever. On the Garrard GA150 musicentre, the record player has been specially developed for use on this unit—it is belt driven, has a 4-pole synchronous drive motor, and damped pickup arm lowering action.

Another source of signal is the tape cassette deck, which in most machines is Japanese in origin, except in certain Continental designs. The facilities on the best tape decks include stereo tracks, Dolby noise reduction, normal and chrome tape selection, separate equalisation and bias switches, cue and review facility, twin VU meters for levels, digital tape counter (with zero reset and auto cut-off). All these features are available on, for instance, the Toshiba SM 3500 musicentre.

The Telefunken Studio Centre 5030 has electronic servo control of the motor, and LED recording level display and LED tape motion and function indication, as has the Grundig centres RPC.300 and 500. Again for the purchaser's viewpoint, play a pre-recorded cassette on the machine, but transfer a radio programme to blank tape cassette, and copy a disc on to tape, and make a comparison by switch-over to the original. If the contrast is too obvious, with limited treble response and muddy bass end, look for another system, but discover whether the correct tape is being



Toshiba SM-3150

employed, as differences can be attributed partly to the wrong grade of cassette.

At this juncture, one must be reminded that copying music, plays, etc., 'off-air' and from gramophone records does present copyright problems, but a partial solution is to buy an MCPS licence (cost £1.62, inc. VAT) which gives you the right to copy commercially bought discs on to tape at home. Details from Mechanical-Copyright Protection Society Ltd., Elgar House, 380 Streatham High Road, London, SW16.

Amplifier output powers range from a modest ten watts, which if an *RMS* figure and reasonably undistorted, will suffice for a small living room, rising to 50 watts per channel, and over. A few instances will indicate the range: Decca Audio 2, 12 watts per channel; the Aiwa AF-5050 is given as 17 watts per channel; the Goodmans MCD100 offers 35 watts per channel, into 4 ohms. The big Telefunken system, 5030, delivers 30 watts into 4 ohms, and the Grundig RPC500 has the same output, but all these figures must relate to impedance of LSs being fed, and whether sine wave (*RMS*) or music power.

The more advanced musicentres are considered by the manufacturers as compact hi-fi systems, and in their impressive specifications incorporate such features as slider controls, FM station pre-selection and recall by sensor touch buttons, FM automatic muting, and output sockets to feed LSs to stereo room 1, or room 2, ambiophonic sound room 1, stereo room and room 2. It is even possible on one design—the Telefunken 5030—to have microphone mixing, and the tinted cover opens within the depth of the unit. This is an important feature for wall unit installations, and how much space is required to lift the acrylic or wooden lid (as in the Dynatron Concerto HFC209 model) must be determined for your



Dynatron Norfolk 1010 CR

housing conditions.

As one of the reasons for purchasing a musiccentre must be to get away from the maze of little boxes and interconnecting wires, undoubtedly the housing of the system is important. Few can be regarded as pieces of furniture, and dimensions will have to be checked for individual requirements, but if you are willing to make the outlay, the systems can be housed in period cabinetry. Examples of this presentation can be found in the Dynatron range (the Dorchester musiccentre), the Queen Anne styled systems by Van der Molen (known as the Lambourne and the Havering) and the Hacker MC600D in Chippendale style desk. Outside of this styling, the teak-sided look predominates, with optional matching stands on which to mount the musiccentres which are useful and not unattractive.

Glancing at the economics, the system should be cheaper than separate hi-fi equipment, as the components can be mounted in one box, and one power supply can operate the entire system, but if you want to upgrade the system—apart from loudspeakers and perhaps the pickup cartridge—you cannot do so. So it pays to buy the best you can afford in the first place, as the human listening faculty soon accepts a quality standard and wants something better.

Remembering one still gets, as with every other commodity, only what one pays for, the final costing will be determined by the facilities offered, how much power per channel, and the type of loudspeakers provided, or bought separately. As a rough guide, the National Panasonic's latest musiccentre (Model SG-3090) is priced at £419.92, with two microphones, but without loudspeakers. The Decca Audio 2 is around £250, and the Goodmans MCD 100 is listed at £366, minus LSs, but can be bought for less. Another good system, the Rotel RM5010, is offered at £425, without LSs, but is discounted in certain stores. This model has a Dolby deck, belt drive disc turntable, and 25W. per channel amplifier. No loudspeakers. Philips Electrical have designs of this type, including Model RH953, with a modest 10W. output, belt driven turntable, and GP400 Super M cartridge, for about £320, complete with speakers. Sony have several systems, including the HMK70, 20 watts per channel, Dolby cassette deck, and two loudspeakers, SS-51771 three-unit types, supplied for approximately £480.

A compact, integrated home entertainment centre can reach a technical standard today that can be called high fidelity, and for its sheer convenience can widen the musical horizons of many budding disc and tape enthusiasts.

The Art of Sound Recording

by Arthur W. J. G. Ord-Hume

PARADOXICALLY perhaps, the similarity between a tape-recorder with microphones and a Meccano set is much greater than may at first appear. The novice with a Meccano set makes a few simple models at first. If he likes it and gets the hang of what can be done with it, he will go on and make some spectacular models. The tape recorder is the same and the enthusiast will find almost boundless delight in experimenting and improving his abilities with it.

Recording is a daunting subject to many people. They may have seen pictures of the professional recording studio with wall-to-wall tape machines, multi-channel mixers, dozens of inputs from microphones, other record sources and exotic devices loosely termed radiophonics but usually meaning either a synthesizer or a wizard's box of electronics. They probably also know that the latest electronic reverberation unit for studio use retails at a cool £8,000. What chance, you may wonder, can the amateur have of making anything approaching the standard of such studio equipment!

The short answer is that the chances are pretty good and I am not letting too many secrets out of the bag when I tell you that some of the expensive devices in the studio do nothing which you cannot do yourself — all they do is perform it infinitely quicker and easier, but the end result is similar.

Why all the mumbo-jumbo surrounding recording? Well, the simple answer is that any fool can record sound. You need neither expertise nor fantastic equipment, just a cheap recorder and a microphone. Recording sound is kid's stuff.

Where the skill really comes in is recording the sounds which you want and *only* those! The main problem is that if we compare the human ear with even the finest microphone, the ear scores hands down. The reason is that the human amplifier is the brain and this means that humans possess a unique feature so far

unmatched by electronics — that of total discretion. As an example, if you are talking to a friend in a crowded train clattering over points with everybody else talking at once, although some of the other extraneous sounds are considerably louder than the voices of you and your friend, you can "tune" to each other's voices and hear quite well what is being said. Now substitute a pair of microphones for your respective ears and see what happens! The voices become lost.

The human ear and brain, therefore, represent an ideal which you must strive to synthesize. Another problem is that extraneous noises on a recording tend to be much more noticeable for the very reason that they are not expected and therefore they can be distracting.

The purpose of this chapter is not to advise you which equipment to buy, nor to suggest how much you should spend. What it really exists to do is (a) to help you decide on the type of equipment you should buy, and (b) to give you a few pointers on how to use it. I repeat what I said in my opening remarks, namely that tape recording, other than just making those illegal copies of gramophone records and radio broadcasts, is a creative art and teaching creative art is no easy task. It does, for a start, call for some initiative and receptiveness on the part of the student.

How to go about recording? Well, it is a bit of a chicken-and-egg situation for the first question is just what do you want to record? If it is, say, drama and live concerts, then you need a different equipment mix from that recommended if you are going to practise multi-tracking with a single guitar and voice. Again, a very rich source of recorded sound is field work, i.e. open air, for which you need thoroughly portable equipment that will stand some inevitably rough usage.

There are two elements in the recording chain which need careful evaluation. Both represent your major cash expenditure. The first is the tape recorder. The second is the choice of microphones, for you will need two (if you intend to record in stereo) and preferably several other microphones, ideally in pairs but not necessarily so, of differing characteristics.

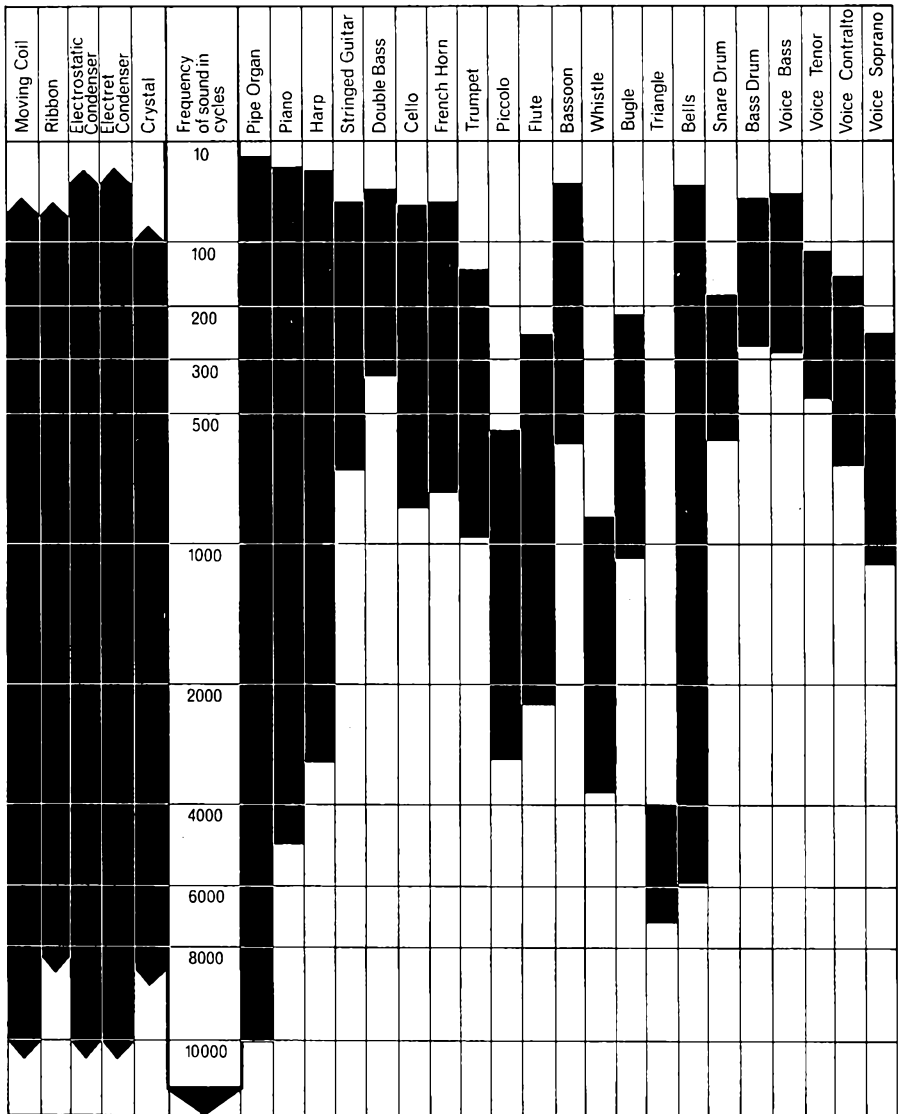
Recorder first. Do you intend to edit your tapes? If the answer is yes, then, unless you have another recorder to dub your recording onto, an open-reel, also known as reel-to-reel, recorder is essential. On a point of quality of sound reproduction, there is today little difference between the quality of a good Dolby-equipped cassette deck and a reel-to-reel recorder operating at 7½ ips, assuming you are using the right tape. More on tape later.

Cassette recorders do not entirely preclude tape editing: it is just that much harder and more fiddly to do because the tape is narrower and, since it moves past the recording head at only 1 7/8 ips, there is virtually no margin for

error in cutting. Of course, cassettes for editing can only be recorded on one side, but that also goes for open-reel tapes.

There are today some very good portable stereo cassette decks with Dolby which work from throwaway or rechargeable batteries with the added advantage of a mains adaptor for indoors use. And for any serious work with a cassette recorder, Dolby is really to be considered very high on the list of desirable qualities since it cuts out much of the inevitable tape "surface noise".

The frequency ranges of most musical instruments are set out in the right-hand portion of this block chart. To the left is the frequency capability of principle types of microphone. Note that different microphones within the same type, i.e. condenser, crystal, etc. have varying frequency handling capabilities. This means that some are better suited to some sounds (e.g. human speech) than others which may be better at reproducing music.



If you want to be completely flexible in your work, then open-reel it has to be. Ideal qualities to aim for are 5 in minimum spool size, stereo or mono operation, battery or rechargeable-cell power source, and ease of use in any position. There are several models currently available which fill the bill. They are available at prices comparable to the average good home recorder — it may sound a bit on the expensive side but remember that they can double for a mains-operable home recorder and you can playback through your main amplifier using a suitable patchcord. The very top professional portables offer a choice of speeds up to 7½ ips and record either half track or half-track stereo.

For use indoors only, then the answer is to buy a really top-quality tape deck which will fit in with your amplifier and other hi-fi equipment. There is a wide choice ranging from around £150 to whatever you want to pay. The best names in the recorder-making business can be found here, but there are a few very good mid-priced decks which can quite well form the hub of an amateur sound studio. Again common features are speeds of 3¾ and 7½ips and, for ease of editing as much as for fidelity in music, you should prefer a 7½ ips tape speed facility. A good four-track machine today, offering two-track stereo in both directions, *when used with the proper tape* can offer formidable performance.

Most of the many hi-fi magazines offer regular buyer's guides to recorders and enable you to tick off the features you seek before you visit the shop and actually start evaluating the equipment. And that's the next point — make sure that you find the recorder of your choice easy to use, see that it performs all that you want in a straightforward manner, and, above all, never start any serious work with it until you have thoroughly understood exactly how to use it. And don't buy a recorder with extra features you are never likely to use — it is a waste of money.

Now we come to the question of microphones and accessories. Microphones come in three families, electro-dynamic, electrostatic (also called condenser) and piezo-electric (also called crystal). In the first family live the moving coil and ribbon microphones. Moving coil microphones are tough and take some rough handling in their stride. These have a good frequency response and a fairly high output but the big advantage for field work is that as this type is a low impedance unit, you can use it with an extension cable without loss of efficiency. Ribbon microphones are also low impedance and have excellent frequency response but, and it is a big one, they are prone to

damage if knocked. Furthermore, they are unsuitable for most outdoors applications since they pick up both wind sounds and cable and case handling sounds. Strictly for the studio when you can use them with a stand.

Electrostatic or condenser microphones have always been recognised for their versatile frequency response but also the dual disadvantages of high cost and a need for careful handling. Then along came the electret condenser unit, a much more practical and reliable type with all the advantages of the condenser microphone and few of the liabilities. There is a wide range available to suit most requirements and purses.

The crystal microphone has long been the mainstay of the purely amateur end of amateur recording. It has the advantage of being cheap, widely available and possessed of a fair frequency response. A good crystal model, properly used and with practice, can produce some quite good results but, as you may have deduced, it is the electret microphones which I believe should have pride of place in the enthusiast's shopping list. Of course, there are other types, depending on what you want to use them for. Dynamic microphones, capacitor microphones, Lavalier microphones, gun microphones . . . Spend as long as you think you need — and then more — on your choice.

If you want to specialise in nature recordings, then a parabolic reflector is a necessity. This is a polished dish which collects sound and reflects it into the microphone. The gun microphone, which can be aimed at a sound source, can do much the same thing, but at a much greater cost. And whereas your gun unit can only be used for semi-distant point-sounds, your ordinary microphone can be used for a variety of tasks without the parabolic reflector. And don't forget to see that your chosen microphone has a windshield.

One more point on microphones. There are three basic behaviour patterns to be watched for. The first is omni-directional, the second is bi-directional and the third is uni-directional and all refer to the areas of sound source which the unit will record. Because the shape of the recording area is drawn around a central point, the performance is shown by what is called a *polar curve*. The omni-directional has a polar curve extending more or less equally 360deg. around the centre. The bi-directional has a dumbbell shaped polar curve picking up with equal clarity in front or behind, but not at the sides. The uni-directional has a heart-shaped polar curve, picking up all its sound from the front and virtually nothing from behind. It is sometimes referred to as a *cardioid* for this

reason. This means that it is ideal for recording in a place where there may be extraneous sounds such as in the concert hall or the theatre.

For recording music live, or for something like an amateur dramatic production, you should use at least two, preferably three or four microphones in order to ensure the sensation of space in your recording, otherwise you can fall into the mistake of having perfect channel separation—and nothing in the middle! So the next thing to think about is a mixer. Anything with fewer than six channels is not quite good enough. Prices vary from around £50 to several hundred pounds. Buy the best you can afford, and see that it is silent in operation, and here I mean *electronically* silent. Channel switching and muting must not be accompanied by tell-tale clicks.

Armed with tape recorder, microphones and a mixer, what are the remaining points to watch for? Extension cables for a start. If you extend a microphone cable, you can alter the performance of the microphone. Check carefully, with the makers if necessary, to see that the microphones of your choice will work with your recorder and check on the characteristics expected with a lengthened lead. You will notice that you can buy extension leads for everything except microphones for just this reason.

Tape is the next thing to consider. It seems strange that, having spent so much on equipment and filled with exemplary ideals on its use, so many amateurs then go and buy the cheapest tape they can find. First see what the makers of your recorder have to say about the bias which it is set to and find out which tape they recommend. Then buy only that tape or its equivalent. And don't always be fooled into buying the most expensive tape—it quite simply may not be able to be used with your recorder for best results. The chromium dioxide tapes introduced a few years ago are now, in almost all cases, bettered in performance by other tapes of less abrasive formulation.

The title of this chapter is *The Art of Sound Recording*. All I have talked about so far is selecting equipment. Let me reassure you that this is the major foundation upon which your art will be built.

So what about some practical examples of recording? I will detail four typically representative examples which will cover most normal recording. First is recording the human voice in solo, then in duo. Second is recording a solo musical instrument. Third is recording a choir or group of instrumentalists. Fourth and finally is how to make a subject recording in the open.

1. Human voice, single. Recorded too close to the speaker, the normal speaking voice can sound boomy and, at the other extreme, full of shrill sibilants. At too great a distance, you have to bring up the volume of the recorder and this enhances the hollowness characteristic of the room. Supposing you are recording a talk, select a room with plenty of soft furnishings and a thick carpet. Seat your speaker at a table and position one or two microphones before him. If you use two, this gives plenty of latitude should the speaker move his head excessively. Ideally use omni-directional condenser ones which cover the frequency response of the human voice. Distance from speaker to microphone should be about two feet, somewhat closer if you are using a moving-coil microphone. When ready to record, see that the script pages are loose (never stapled so they have to be turned), fanned out and with the lower left corners bent up so that the speaker can slide each page to his left as he completes it. Next, stop the clock, take the receiver off the telephone, choke next door's dog and hope that Concorde doesn't fly over. Don't move about the room while recording. Many's the squeaking floorboard undetected until heard on tape.

Human voice, duo. If you are recording a talk or conversation in stereo, then place the two speakers about five feet apart and proceed exactly as in (1) above. If recording in mono, try not to have both speakers fighting for the same microphone: still use two and mix the inputs. Use a similar technique for taping two singers.

2. Solo musical instrument. Here comes the start of your creative recording! The sound emerges from different types of instruments in different places. A guitar, for instance, produces its sound at right angles to the strings in line with the sound-hole (and also at a point underneath the belly which the player's body shields), whereas a brass instrument produces its sound in line with the bell. A little experiment will pay off. Recording a grand piano is best done using three microphones, two for close-miking the treble and bass, and a third for ambient sound from a point about centre at a distance of about five feet from the centre of the lid. Always notice how the tonal quality of an instrument's sound can be altered by the position of the microphone.

For a soft solo instrument, place the microphone as close to the instrument as is practicable without enhancing any mechanical noise of the instrument itself. If for stereo, then try placing a second microphone up to six feet

away. This technique can produce some really spectacular results and put impressive "body" into the recording but, and here is the problem, you can under certain conditions create an "out-of-phase" situation which can be detected as an odd lumpy sound effect. You must match inputs from each microphone when using this technique and this is easiest achieved with the mixer and the headphones.

For brass and woodwind, avoid the direct-line-of-sound positioning. Musicians move their instruments around and this will produce marked changes in apparent volume. It is better to record from about 45deg. to one side.

Incidentally, instruments such as electric guitars and electronic organs produce sound signal outputs which are far higher than the inputs in most tape-recorders and therefore connection will probably have to be made via an attenuating lead if you want to feed them in direct as a line input.

3. Group of performers. Use at least three microphones and remember that if one performer is on percussion, this channel will need recording at a lower effective level. Because percussion sound will also be picked up by the other microphones, try separating the percussion to, say, another part of the room. Adjust your microphones for a true stereo image—and watch for that all-too-easy to get "hole in the middle" effect.

4. Sound out of doors. If you are interviewing out of doors, or covering a sports event, or taping sound effects on all but the calmest of days, always use a windshield. For mono recording of a moving sound source such as a train, aircraft or racing car, do not be afraid to adopt the photographer's trick and follow through with the hand-held microphone. This helps to minimise the sudden peak and decline of a moving sound source. For moving sound sources like this, it is always an advantage to be able to have a "dummy run" to check recording levels. Nothing is worse than an ideal start and finish—the middle blotted out by overload distortion. With an even sound source, such as an engine-note, you can resort to the careful, steady adjustment of recording volume during actual recording but the problem with this is that the ambience of the sound changes. Always try to get the recording volume right beforehand—and then avoid altering it unless absolutely vital. And remember that a Vu-meter which peaks into the red means loss of recording quality.

The hardest sounds to record in the open air are the very quiet ones. The indescribable rushing sound of a calm summer's evening, the

distant skylark and the rooks cawing, sheep on the hillside bleating, the soft plashing of calm sea ripples on a gravel beach—record these faithfully, and you are a master! Of course, a parabolic reflector helps, so does the ability to hold your breath while recording at high volume settings.

Recording is a matter of infinite patience, a lot of practice, and the ability to know not just when you have produced a good piece of tape but how to analyse why you have just wasted a fine opportunity and muffed a recording. To some it will always remain a mystery.

Finally, treat your equipment the way an artist looks to his paint and canvas. There really is no hard and fast set of rules to help you to perfection. There are, admittedly, a few guidelines, but the rest is up to you to make what you can of the modern technology available to you from the hi-fi store.

Quadraphonic Broadcasting: Why Matrix H?

by David Meares

The BBC has recently commenced a year of experimental quadraphonic broadcasts using the Matrix H₁ quadraphonic system. The decision to use this system was based on nearly five years of experiments and investigations by different departments within the BBC. This article puts forward some of the technical arguments which influenced this decision.

Before discussing the more technical points, however, there is one essential artistic question which is seldom asked and even less frequently answered — “why quadraphony”. What does quad offer to the listener that is not available already, and is it worth having? Quad offers two almost equally opposite experiences to its audience. First, given a good programme source, it can transport the listener closer to that “good-seat-in-the-concert-hall” experience than is possible with stereo or mono reproduction. Second, it can create the unnatural by placing the listener in the middle of an acoustic event, be it musical or dramatic. The listener can be surrounded by musical instruments, or actors, and thus become far more involved in the programme than is otherwise possible. Quad therefore offers almost unbelievable scope to any adventurous producer to create new experiences for his audience. Is quad worth it? The reaction to the BBC's experimental quad broadcasts in 1974 which used two transmitters, one for the front and one for the back, left no doubt. Although criticism may have been levelled at programme selection and specific mixes/balances, all correspondents said that they enjoyed being able to listen to quad.

Given such a one-sided argument the BBC had to consider whether, and if so how, it could broadcast quadraphony. Obviously the two-transmitter exercises could not be considered to be a permanent solution because of the incredible redundancy/duplication for both broadcaster and listener alike. Quad would have to be presented in a form that would enable it to be transmitted over a single transmitter, preferably of the existing stereophonic type, and if a stereo transmitter was to be used then it should also continue to serve the stereo

and mono audiences unaffected by its additional quad function, i.e. compatibility was essential.

Such considerations by the BBC and others, had already at the time of the 1974 experimental broadcasts given rise to many proposals (1) (2) which would enable quad signals to be broadcast and/or recorded on discs. For the broadcaster these may be conveniently grouped into three categories, which are given the numerical, shorthand notation of 4-4-4, 4-3-4 and 4-2-4 systems. Using this notation (l-m-n) the first number in each hyphenated group (l) indicates the number of the premixed input signals at the point of origin. The second number (m) indicates how many audio channels are required by that system for recording or transmitting the signals. The third number (n) indicates how many audio channels (and usually how many loudspeakers) are available at the listening point. Matrix H, as currently being used by the BBC, falls into the 4-2-4 category, but as will be shown later, it has been designed in such a way that there exists around Matrix H a hierarchy of systems that include 4-2-4, 4-3-4 and 4-4-4 options. What, however, are each of the categories capable of achieving and at what expense?

4-4-4 systems

Information theory states that four independent audio signals can only be conveyed from one point to another if four independent audio channels are available to carry the signals. On this basis therefore 4-4-4 systems should be the only ones capable of providing quadraphony. The flaw in this argument is that it assumes as a first step that quadraphony requires four independent audio signals. This however is a very debateable point and much has been written about it (3), (4), (5). There is no argument however that if four audio channels are available for transmission or recording then the programme production task in some ways becomes easier. There are however many penalties for this additional freedom.

The Band II channels have been organised and allocated to make efficient use of the Band

in covering the country with VHF audio programme transmissions. Such efficiency does not include sufficient redundancy to allow the additional audio signals to be multiplexed onto a single carrier (fig. 1 shows one method) without the modulation levels and service areas being seriously reduced. The main cause for the potential reduction of service areas, is the 4-4-4 system's susceptibility to radio frequency noise and interference. Relative to stereo reception of a pilot-tone stereo transmission, quadraphonic reception of a 4-4-4 transmission is estimated to be nearly 13dB more susceptible to adjacent channel (100kHz) interference.

A quad listener however could be expected to improve his situation by buying a better aerial system but, unless he was favourably situated relative to the transmitter, his quadraphonic reception would remain inferior to stereo. Now what of the stereo and mono listeners? In transferring some of the allowable deviation from the existing M and S channels into a third, T, and a fourth, Q, channel the service areas for the stereo and mono listeners would be reduced. For 4-4-4 systems that allow equal percentage deviation for M, S, T and Q, the mono and stereo listeners are estimated to be between 7 and 10dB more prone to noise and interference. Thus the introduction of a 4-4-4 system would seriously affect existing service coverage merely to serve a minority quad audience. This was a trade-off that the BBC could not accept and so alternative solutions had to be considered.

4-3-4 systems

4-3-4 systems were evolved to overcome the problems associated with the presence of the Q signal in the multiplex channel. At the receiver the Q signals is in that part of the band subject to the highest noise components (the triangular noise spectrum pertains) and in an area closer to the adjacent channel and thus more susceptible to its interference than the other three signals. Eliminate the need for the Q signal and its problems are also removed.

As fig. 1 shows, the 4-3-4 systems employ the existing M and S signals already used in the pilot tone system and also use a further signal, T, modulated in quadrature to the S signal on the 38kHz suppressed carrier. The redistribution of available deviation causes similar, though reduced, problems to those caused in the case of 4-4-4 systems. The sensitivity to noise and interference of 4-3-4 reception is estimated to be 6dB worse than conventional stereo reception of a stereo transmission. Similarly stereo (and mono) reception would be between 4.5 and 5dB more sensitive to noise and interference when the transmission changes from stereo to quad. Thus once again service areas with the present standards of reception, would be drastically reduced for all listeners, whether mono, stereo or quad.

There is one further problem, not yet mentioned, that 4-4-4 and 4-3-4 systems share, that is that the presence in the transmitted signal of the T signal could affect the performance of less-well-aligned stereo receivers (6). If, in a conventional stereo receiver, the reintroduced

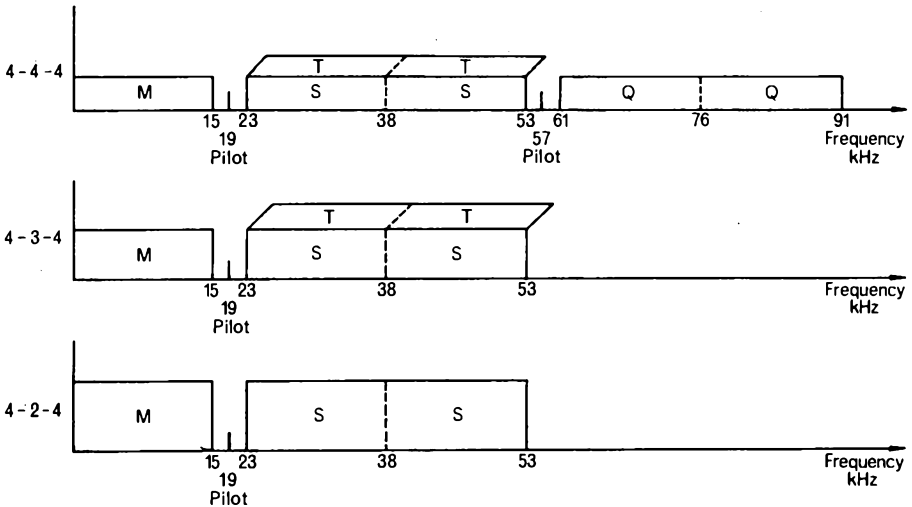


Fig. 1.

subcarrier is incorrect in phase (by say ϕ), then the amplitude of the signal decoded from the S channel will be reduced by a ratio proportional to cosine ϕ , i.e. it will only decrease slightly even for relatively large angles ϕ . However if the transmission standard was now changed to include a T signal there would be an increase of crosstalk from the third channel given by a ratio proportional to sine ϕ , i.e. a rapidly increasing function for small angles.

In conventional stereo receivers errors in the phase of the reintroduced subcarrier are compensated by adjusting a crosstalk control. This introduces a controlled amount of anti-phase crosstalk, thus optimising the inter-channel separation. Such compensation would do nothing to eliminate the crosstalk from the third channel. Tests both in the UK and in Europe have shown that a significant number of stereo receivers exist that are working satisfactorily but with a misaligned subcarrier phase. These would be adversely affected by the presence of a T signal as outlined above.

In recognition of such problems, variations on the 4-3-4 theme have been proposed. These make use of a bandlimited third channel (to reduce susceptibility to noise and interference) and/or a reduced level of modulation on the third channel (to reduce the effect on existing stereo and mono service areas and stereo receivers) (7). There exists however a law of diminishing returns and a great deal would have to be given up by the quad listener in order to minimise the change to the stereo and mono listener. Obviously however such suggestions must be considered seriously by the BBC: if new frequency allocations or a new broadcast band became available then these ideas might have greater possibilities.

4-2-4 systems

Within the constraints of existing Band II engineering, therefore, the techniques most applicable are the channel reduction techniques employed in the 4-2-4 systems. Such systems use the conventional stereo networks with no changes to either the transmitter or receiver. All changes take place either at the studio in the form of the 4-2 encoder or after the stereo receiver (or disc player) in the form of a 2-4 decoder. Service areas, modulation levels, etc., are substantially unaffected by a change to quad. On the other hand compatibility is not always guaranteed by 4-2-4 systems. Essentially the two encoded signals have three separate functions to fulfil. Added together they must give good mono; at least 90% of BBC broadcasts are still received in mono. They must also, with no additional signal processing, provide optimum stereo for the seri-

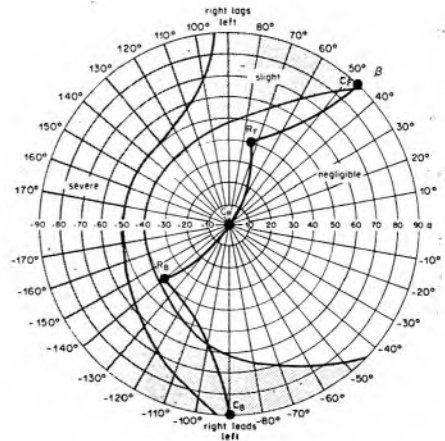


Fig. 2.

ous stereo listener. Finally they must be capable of being decoded to provide a worthwhile quad service.

Many 4-2-4 systems have been investigated over the years but they all failed one way or another to provide either compatible stereo and mono or sufficiently good quad. As stated elsewhere a way through this impasse only became apparent after extensive studies of quad-related properties of hearing showed how to combine compatibility and decodability. The result was Matrix H (8), (9).

Matrix H is essentially defined by its encoding equation thus:-

$$\begin{bmatrix} L \\ R \end{bmatrix} = \begin{bmatrix} 0.94 / 10^\circ, & 0.34 / 65^\circ, & 0.94 / -25^\circ, & 0.34 / -115^\circ \\ 0.34 / -65^\circ, & 0.94 / -10^\circ, & 0.34 / 115^\circ, & 0.94 / 25^\circ \end{bmatrix} \begin{bmatrix} L_F \\ R_F \\ L_B \\ R_B \end{bmatrix}$$

which is shown pictorially in fig. 2. Based on this several forms of decoder have been designed. The most simple form is the linear decoder, made by taking the complex conjugates of the elements of the encode equation and rearranging them to become:-

$$\begin{bmatrix} L_F \\ R_F \\ L_B \\ R_B \end{bmatrix} = \begin{bmatrix} 0.94 / -10^\circ, & 0.34 / 65^\circ \\ 0.34 / -65^\circ, & 0.94 / 10^\circ \\ 0.94 / 25^\circ, & 0.34 / -115^\circ \\ 0.34 / 115^\circ, & 0.94 / -25^\circ \end{bmatrix} \begin{bmatrix} L \\ R \end{bmatrix}$$

Other techniques involve the use of a non-linear or programme dependent decoders. Of several techniques already investigated, the most promising to date is one which varies the decoding matrix according to directional information in the input signals (10). One such decoder (11) is given by the equations:-

$$L'_f = [0.94 f (L_T - R_T / 67^\circ) + l 1.28 R_T / 67^\circ] / -20^\circ$$

$$R'_f = [-0.94 f (L_T - R_T / 67^\circ) + r 1.28 L_T] / -50^\circ$$

$$L'_b = [0.94 b (L_T + R_T / 67^\circ) - l 1.28 R_T / 67^\circ] / 25^\circ$$

$$R'_b = [0.94 b (L_T + R_T / 67^\circ) - r 1.28 L_T] / -95^\circ$$

Where f , b , l and r are the variable elements. It has also been shown possible (12) to modify some of the decoders that are already on the market, so that they will decode Matrix H transmissions. Although the results might not be expected to be as good as those from a purpose built Matrix H decoder, the author of that article reported "excellent results".

Since its development Matrix H has been subjected to continuing comprehensive tests and it is still coming out as the best viable choice for broadcasting. Perhaps the most telling tests were those carried out at one of the BBC Maida Vale studios at the beginning of 1976 in which four proponents of 4-2-4 systems other than Matrix H were invited to submit their equipment for comparative tests (9). In the event three proponents accepted, which together with Matrix H and 4-4-4 "discrete" quad made a total of five systems to be evaluated. The tests comprised asking producers and studio managers, many of them already skilled in quad programme making, to bring along one of their multi-track recordings to the studio in which the equipment was assembled. They were asked to decide in advance how they wanted the finished programme to sound in quad, stereo and mono, (i.e. stage layouts in quad and stereo), and then mix an excerpt of the programme through each anonymous system in turn, and assess the ability of each system to achieve their intentions. Finally several weeks later, many of the producers were asked to reassess their mixes as listeners, i.e. with no mixing controls available so that the ease or difficulty of obtaining a result did not influence their judgement.

The results were very revealing. Obviously as originally assessed under production conditions the 4-4-4 was extremely easy to use and consequently was rated highly. On average Matrix H was judged to be less easy to use but also capable of giving good results. When the latter assessments of the "listeners" were

available, the same people judged Matrix H quad to be almost as good as 4-4-4 quad and its stereo and mono to be better than that from the 4-4-4 system. This is shown in fig. 3 which gives the average listener results for serious music. These are shown as markers on a linear preference scale which runs from "bad" to "good". The centre mark in each result is the average and the length of each mark is twice the standard error. As can also be seen Matrix H was judged to be significantly better than the other 4-2-4 systems.

Matrix H developments

Since the time of those tests, further developments have been made to Matrix H, particularly on the decoding. As initially evaluated, Matrix H used an adapted commercial programme-dependent decoder which had been modified so as to work reasonably well with H format input signals. Obviously it was anticipated that superior results could be expected from a purpose built Matrix H decoder, and as already mentioned this has now been substantiated (11). In operation the programme dependent decoders, of the sort currently preferred for Matrix H, examine the incoming signals at any instance to deduce the true direction of the loudest signal. They then vary the decoding matrix to enhance the directionality of those sounds at the expense of the directionality of the other sounds. One, of several, problems associated with such a decoder is that there are times in most programme items when the control circuits are unable to deduce which of the signals is predominant. Thus

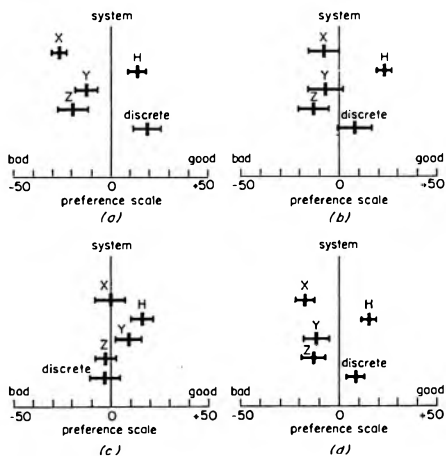


Fig. 3. Results of "Listener" test for Serious Music a) Quad, b) Stereo, c) Mono, d) Overall.

rather than enhance the directionality of a signal chosen at random, the decoder goes into a quiescent state which in many instances gives fundamentally the same decoding as the appropriate linear decoder. By developing a programme dependent decoder around the linear Matrix H, the decoding of complex sound fields, such as the ambience of a concert hall, has been substantially improved.

Looking to the future, one development which will certainly be of interest to the designer of quad decoders will be the introduction of analogue solid-state delay lines. Even by the time this article goes to press, suitable devices may be available which when used in a decoder would allow the control circuits to decide what to do before the audio signals pass the control elements. Such ideas are not new, they have been used for many years in professional limiters or companders, but so far devices are not of high enough quality and at low enough price to be applicable to domestic equipment. When they do come they will certainly find an application in this field.

Conclusions

From a very wide range of contenders Matrix H has been selected by the BBC as the most suitable system to meet both the present and possible future requirements of quad broadcasting. It has been subjected to a great number of tests and assessments both by the BBC and by a significant number of other European broadcasters and so far it has been found to work well. Accordingly the BBC has started an extended series of experimental broadcasts. It is hoped that this will give a clear indication of both the public's and the industry's opinion of quad in general and Matrix H in particular.

Acknowledgements

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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.

★★ **BARTOK:** *Opera "Bluebeard's Castle". Tatiana Troyanos, Siegmund Nimsgern, BBC Symphony Orchestra cond. Pierre Boulez. CBS 76515 £3.49. Cassette 40 - 76518 £3.69.*

Boulez's account of Bartok's one-act melodrama is sung in Hungarian. Not knowing a word of this language I cannot comment on diction but both soloists have splendid voices. The orchestra plays beautifully and the recording gives a minimum amount of inter-movement, just enough to keep the parts clear. This opera is rarely seen on stage being a static piece more in the nature of a symphonic story and well suited to the gramophone. Side break comes in the middle of the garden scene and for a sampler try the part just after the break — the opening of the seventh door where the organ joins in to give maximum excitement. This is superb stuff!

BEETHOVEN: *Sonata No. 14 in C sharp Min Op 27 No. 2; Sonata No. 8 in C Min Op 13; Sonata No. 23 in F Min Op 57. John Lill. Enigma Classics. VAR 1001 £3.49.*

Beethoven's three most popular sonatas pose problems. Here is the first flowering of the Romantic Movement, but how romantic should they be? The composer's detailed

instructions are of little help on a modern concert grand so, inevitably, we get a wide variety of interpretation. John Lill takes a deadpan approach to the *Moonlight* First Movement but manages to produce a beautiful flowing performance using the "raised dampers" as instructed by Beethoven. At times he takes the *pp* marking too literally so that at bars 23 and 27 the melody is lost. There is power and authority in the Finale, although some runs could be crisper. *Pathétique* is a straightforward work in the Haydn style. The first movement is well-nigh perfect, the famous Andante goes well and the Rondo is clearly articulated but curiously restrained with a weak finish. *Appassionata* brings out the best in Lill, and the deliberate opening only adds fire to the loud arpeggios at bar 51. The upward arpeggios at bars 123-129 sound clumsy but Beethoven must take some of the blame and on the whole this is a fine performance. John Lill is a cultured, aesthetic musician, but this concentration on tonal beauty sometimes deprives the music of excitement, and when he does let rip the result is often loss of clarity. Nevertheless these performances match any others available. The recording is good except for a pronounced pre-echo before the final stretta of the *Appassionata* first movement.

BEETHOVEN: *Piano Trios Op 1, Nos. 1 and 3. George Malcolm Piano Trio. Crescent ARS 108. Price £2.30.*

Surely there has never been an Opus 1 like this. Beethoven was studying under Haydn who undoubtedly gave him much assistance, but the daring innovations surely rocked the older and more conservative Master. It was customary for a Piano Trio to have only three movements. Beethoven not only wrote four, but introduced straight-away his Scherzo (No. 1 in E flat) instead of the usual Minuet. He also gave the Cello a separate line although Haydn always doubled the Piano Bass. Op 1 No. 1 still retains many Haydn characteristics but Op 1 No. 3 is a dramatic piece, very "modern" for



its time. The modern performer has difficulty in trying to prevent the concert grand from swamping the two string players. George Malcolm is successful but the result is at times "pretty-pretty"; elegant but lacking drive. The Trio blend nicely together and the recording, like most others I have sampled from this new company, is good.

★★ **BEETHOVEN:** *Septet in E flat Op 20/Fugue for String Quartet in D Op 137.* Vienna Philharmonic Chamber Ensemble. DGG 2530 799. Price £3.59.

Beethoven's early wind works display charm and vivacity in the Mozart vein and Op 20 is the most ambitious being in six movements. The jog-trotting easy style hides impeccable ensemble work and fine playing of the group. Cellist Adalbert Skocic and hornist Roland Berger are outstanding, but the most consistent work comes from violinist Gerhard Hetzel and the smooth clarinet of Alfred Prinz. The Minuet turns up again in the easy Piano Sonata Op 49 No. 2. Filler is the short Fugue for String Quartet published in 1817. Recording is superb.

BENDA: *Flute Concerto in E Min/RICHTER:* *Flute Concerto in D.* Vladislav Brunner, Slovak Chamber Orchestra directed by Bohdan Warchal. Opus 9111 0375. Price £2.75.

Czech flautist Vladislav Brunner is fast making a reputation behind the Iron Curtain. The two works are in Galante style and have immediate appeal. Benda worked at the Prussian Court with King Friedrich II and famous flautist J. J. Quantz, while Richter was based at Mannheim

alongside classical pioneers such as Dittersdorf. Brunner has a warm appealing approach and although he is recorded rather closely, there is much to admire.

★★ **BIZET:** *Carmen (complete).* Tatiana Troyanos, Placido Domingo, José Van Dam, Kiri te Kanawa. Boys of Haberdashers' Aske's School, John Alldis Choir, London Philharmonic Orchestra conducted by Sir Georg Solti. Decca D11D3. Price £9.95. Cassette: K11K33.

Superb new *Carmen* prepared by Solti from the dialogue version of Choudeu plus additions from the recently discovered Oeser score. I like the way in which Solti gradually builds up the tension. The opening of Act 1 is taken very lightly, with loving care given to many overlooked sections such as the first appearance of the cigarette girls. This is almost like operetta and not until mid-way through Act 2 are we gripped by the drama. Tatiana Troyanos sings well although her vocal diction is far from clear. Hers is a serious fascinating creature, not a coquette and not really a slut, and her dialogue is most convincing. Placido Domingo sings to his usual high standard but even he cannot raise Don José above a cardboard figure. José Van Dam does not always sound comfortable and his Escamillo really needs more punch. Micaela needs only to sing sweetly and this Kiri Te Kanawa does to full measure. The chorus crowd scenes are expertly directed and are full of life, and the dialogue, particularly from the supporting cast, is natural. Both choir and orchestra cannot be faulted and the recording is impeccable.



BRAHMS: *Clarinet Trio in A Min Op 114. Gabrielli Trio:* plus **WEBER:** *Grand Duo Concertante in E flat for Clarinet and Piano. Keith Puddy and Ian Brown. Enigma Classics VAR 1021 £3.49.*

Brahms composed his Clarinet Trio during a summer holiday at Ischl and memories of Mozart prompted the use of the A-keyed instrument. This is a placid, pleasant work, not quite up to the usual high standard of Brahms's chamber music. Perhaps the unusual combination of Clarinet, Cello and Piano strained his inspiration. Gabrielli Trio (Keith Puddy, clarinet; John Streets, piano; Keith Harvey, cello) do not seem completely at ease. First movement sounds contrived, the lovely Adagio fails to take fire and the Allegretto could be more lilting with a definite beat to Ländler Trio. Clarinet tone at times is strident. Backing is Weber Grand Duo, a three-movement sonata for clarinet and piano dating from 1815-16. Here Keith Puddy is joined by Ian Brown. The work is new to me and I enjoyed it immensely. Recording is adequate but I cannot whole-heartedly recommend the Brahms.

★ **BUTTERWORTH:** *A Shropshire Lad, Banks of Green Willow, Two English Idylls.*

BRITTEN: *Variations on a theme of Frank Bridge. Academy-of-St.-Martin-in-the-Fields directed by Neville Marriner. Argo ZRG 860 Price £3.50. Cassette KZRC 860 £3.75.*

A record of contrasting English music. Side 1 is devoted to the calm serenity of George Butterworth opening with his Rhapsody based on the song *Loveliest of Trees* from *A Shropshire Lad*. There follows the *Banks of Green Willow* based on two folk tunes in the best tradition of English music à la Vaughan-Williams. The *Two Idylls* are, frankly, substandard. On side 2 is the effervescence of youthful Britten in a tribute to his teacher Frank Bridge. A masterpiece, brilliantly played and recorded to demonstration standard. A pity about the *Two Idylls!*

★ **CORELLI:** *Twelve Concerti Grossi Op 6. Slovak Chamber Orch. Cond. Bohdan Warchal. Opus 9111 0442-0444. Price £2.75*

First of a batch of Czech recordings on Opus label distributed by Rediffusion Records is this double album devoted to Corelli, the Roman counterpart of the Venetian master Vivaldi. Although dating from the same period, Corelli's music is more solid and predictable and he invariably used two violins and cello as the concertino group. This solid stuff is matched



by a good solid performance from the Slovak Chamber Orchestra, who sound a fairly large ensemble. They are directed by Bohdan Warchal who also plays first violin in the concertino. Recording has clean surfaces and can be recommended.

★ **DOWLAND:** *First Booke of Songes 1597. Consort of Musicke directed by Anthony Rooley. L'Oiseau-Lyre DSLO 508/9. Price £7.00.*

This fills a gap in the catalogues, is neatly performed, perfectly acceptable, but somehow fails to take wings. Dowland was a great traveller and well versed in the styles of France, Germany and Italy and this collection reveals his great variety of talent. And yet I feel that there is not enough contrast. The singers are superb and special praise must go to tenor Martyn Hill. Intonation and diction in ensembles is perfect and the recording is of a high standard.

★ **DVORAK:** *Symphony No. 9 in E Min. New Philharmonia Orch. Cond. Riccardo Muti. EMI 3285 Stereo/Quad. Price: £3.50.*

A comfortable easy-going view of Dvorak's *New World* with some fine playing from the New Philharmonia, as the numerous instrumental solos in the first movement amply illustrate. Recording is in demonstration class being very exciting in the opening Allegro Molto. However it is in the quiet reflective passages where Muti really excels. I cannot recall the famous Cor Anglais solo sounding so beautiful. Recommended.

★ **DVORAK:** *Symphony No. 7 in D Min. Concertgebouw Orchestra conducted by Colin Davis. Philips 9500 132.*

Davis gets a good solid sound from the Concertgebouw, although I was not impressed by the string tone which tends to become shrill in top registers under pressure. Some gruffness in attack, however, is not entirely out of place in Dvorak. This symphony is considered by many to be the composer's masterpiece but even Davis cannot reconcile me to the uninspiring slow movement. The scherzo goes at a good vivace — (how often conductors slow it to Waltz time) — a restless movement where Davis certainly spotlights the underlying stress. He keeps tight control on the finale although personally I like the trumpets to ring out more brazenly in the *National Song*. They seem to be placed too far back both here and in other sections. Recording is great when given a little treble boost and this, together with a masterly interpretation, earns it a star rating.

ELGAR: *Symphony No. 1 in A flat Op 55. Scottish National Orchestra cond. Alexander Gibson. RCA LRLI 5130. Price: £2.99.*

A Chandos production for RCA initially launched at a special price of £1.49. At that figure it was a snip and even at full price is worthy of consideration. The orchestra plays well although the string section sounds undernourished at times. This, I am sure, is merely a matter of numbers as in many places the orchestra give evidence of their competence. Gibson drives the music hard but personally I prefer this and the general lighthearted approach makes for a more genial interpretation than usual. The recording has a warm ambience.

★ **ELGAR:** *Soliloquy. Leon Goossens (Oboe), Bournemouth Sinfonietta, cond. by Norman Del Mar. RCA LRLI 5133. Price: £2.99.*

This first sponsorship for RCA by Harveys of Bristol is a charmer. Title piece was written especially for Goossens in 1934 but this is the first recording. Other delicacies include *Chanson de Matin*, *Salut d'Amour*, and the *Three Bavarian Dances*. Norman Del Mar approaches these miniatures with obvious affection and the playing of the Bournemouth Sinfonietta has a lovely "Spring" to it. The recording, made in the Guildhall, Southampton, is cosy and warm. An absolute winner.

★ **ELGAR:** *Violin Concerto in B Min. Pinchas Zukerman, London Philharmonic Orchestra conducted by Daniel Barenboim. CBS 76528. Price: £3.49.*

One of the masterpieces of the violin repertoire, this concerto seems to cast such a spell over soloists that we rarely hear a bad performance. Fiery virtuoso Pinchas Zukerman is not a name that springs immediately to mind as an Elgarian, but here he gives a reading steeped in authenticity. His beautiful tone is most evident in the Andante, he gives strength to the opening Allegro and equal authority to the long Finale. Daniel Barenboim and the LPO back him admirably and, apart from a moment of restriction towards the end, the recording is spacious.

★ ★ **GERSHWIN:** *Porgy and Bess (complete). Willard White, Leona Mitchell, McHenry Boatwright, Cleveland Orchestra and Chorus cond. Lorin Maazel. Decca SET 609-611. Price: £10.50. Cassette K3Q28. Price £11.99.*

Where does one begin to evaluate a work variously described as light opera, musical comedy and operetta? Gershwin himself modestly called it a folk opera but, on the evidence of this recording who can doubt that it is grand opera on a big scale. It is through-composed without dialogue and owes much to Gershwin's mentor Ravel although some sections are very much in the Puccini vein. *Bess you is my woman now* could have come straight out of *Butterfly* or *Boheme*. This is the first complete recording and at the opening Jazbo Brown is allowed a full Blues before the lullaby *Summertime*. Even the stage production I saw at the old Stoll Theatre gave only a few bars of piano. Restored cuts enhance the score and the young soloists led by Willard White and Leona





TCHAIKOVSKY
Piano Concerto No. 1

LISZT
Piano Concerto No. 1

HORACIO GUTIERREZ - ANDRÉ PREVIN

London Symphony Orchestra



Mitchell are superb. McHenry Boatwright as the villain Crown is an experienced baritone who has sung Porgy in his time. If I have to be hyper-critical my only reservation is the Sporting Life of Francois Clemmons. This character is the real villain of the piece, the dope-peddler who more than anyone brings about the downfall of Bess. I suppose it is difficult to erase memories of Cab Galloway, but Clemmons doesn't sound evil enough. He bleats just like a spoilt little boy. Cleveland Chorus and Orchestra are tremendous and Lorin Maazel has obviously lavished great care and attention in preparing the score. There is just enough stereo separation to identify stage business without being intrusive. I rate this one of the greatest successes of the year.

GLAZUNOV: *Quartet No. 5 in D Op 70/Quatuor Slav in G Op 26. Dartington Quartet. Pearl SHE 535. Price: £3.59.*

Glazunov is out of favour at the moment, which is a pity because his music is tuneful, well constructed and fluent. The D-major is the most serious of the two Quartets recorded here with a contrapuntal opening, a characteristic Scherzo, Adagio in 9/8 time, and bustling Finale. *Quatuor Slav* make use of folk-like tunes and is lighter but less fulfilling. At times it sounds like Borodin, with two movements in dance form. Dartington Quartet are teachers at Dartington College of Arts and established as one of our leading ensembles.

★ **GOTTSCHALK:** *Piano Works. Ivan Davis. Decca SXL 6725. Price: £3.25.*

One of the great characters of the piano's golden age, Gottschalk is now undergoing a revi-

val. It is surprising how much of this music is familiar. *Souvenirs d'Andalousie* is known to us as Lecona's *Malaguena*, *Camptown Races* turns up in *The Banjo*, and the tune of *Le Mancenillier* was used again as the Samba of his Symphony No. 1. *The Dying Poet* was Gottschalk's party piece and in demand everywhere he went. These pieces can easily fall into the abyss of banality, but Ivan Davis plays with a conviction that carries us along with his enthusiasm. I am sure that he copes better than Gottschalk himself who, according to contemporary accounts, was not as good as his reputation. I never expected to hear this music on disc and certainly will never hear them again played so brilliantly. Recommended.

★ **GRIEG:** *Peer Gynt Suites 1 and 2/Five Songs. Elisabeth Soderstrom, New Philharmonia Orchestra cond. Andrew Davis. CBS 76527. Price: £3.49. Cassette 40 - 76525 Price: £3.69.*

Grieg wrote some 150 songs and five of them are sung here in Norwegian by Elisabeth Soderstrom. The warm sunny *Fra Monte Pincis* was inspired by a visit to Rome and contrasts with *The Swan* a setting of Ibsen. *The Way of the World* is a so-called German song and the ballad *The Princess* has been tastefully orchestrated by the conductor. The popular *I Love Thee* is a Danish song to words by Hans Christian Andersen. The main attraction is the complete *Peer Gynt* with Miss Soderstrom singing not only *Solveig's Song* but also the lesser known *Lullaby*. A splendid performance by all concerned and warmly recommended.

HANDEL: *Oratorio "Israel in Egypt". Elizabeth Gale, Lillian Watson (Sops), James Bowman (counter-tenor), Ian Partridge (ten), Tom McDonnell, Alan Watt (basses). Christ Church Cathedral Choir, Oxford, English Chamber Orchestra cond Simon Preston. Argo ZRG 817-8. Price: £6.50.*

Israel in Egypt once rivalled *Messiah* in popularity, the great chorus numbers being an obvious attraction to local societies. This preponderance of chorus numbers makes it somewhat uneven, but with a lively and vigorous ensemble as on this record that complaint is easily overlooked. All-male chorus with splendid boy trebles is magnificent, maybe lacking in precision but always vibrant and exciting. I am not so happy with the soloists. Ian Partridge sings well but could show more authority, counter-tenor James Bowman

is often swamped by the orchestra, while the sopranos and basses are adequate without being exceptional. Spare a thought for the many felicitous touches in Handel's orchestration such as *He led them forth like sheep* and the insistent timpani of *And the waters overwhelmed their enemies*. This would have been even better if 18th century hard-headed sticks had been used. As an overture Simon Preston plays two movements from *The Cuckoo and the Nightingale Organ Concerto*. Handel borrowed profusely for this work from Stradella, Keril and Erba as well as diving down his own treasure chest. This was customary and should not undermine Handel's stature.

JOUBERT: *Pro Pace Motets/Three Hymns to St. Oswald*. Louis Halsey Singers conducted by Louis Halsey with Martin Neary (organ). Pearl SHE 534 Price: £3.59.

Pro Pace Motets were composed between 1955-9 and are settings of Latin texts from the Helen Waddell collection. Each is a call for peace: *Libera Plebum*, a prayer for deliverance from the Black Death, *O Tristia Secta Priora*, a war lament, and *Solus ad Victimam* the triumph of Easter. Singers are joined by Martin Neary for the *Three Hymns to St. Oswald* commissioned for the 1972 Three Choirs Festival and since extensively revised. They are written in more straightforward style. Sleeve notes by the composer give full texts and ample information on the pieces which are performed by the Halsey Singers with firm confident attack.

★★ **HERRMANN:** *The Mysterious Film World of Bernard Herrmann*. National Philharmonic Orchestra conducted by the composer. Decca PFS 4337. Price: £3.35. Cassette KPEC 4337. Price: £3.60.

Three films are represented here. *Mysterious Island* calls for a huge orchestra and the score is modernistic with roots in Stravinsky: the Giant Crab episode could have been culled from *Rite of Spring* and even the Krebs fugue is given Stravinsky clothing.

Ensemble for *Jason and the Argonauts* is equally impressive but without strings resulting in a solid sound or (as Christopher Plomer's sleeve note calls it) monolithic sturdiness and grandeur. This suite, divorced from screen action, is repetitive and consequently monotonous, relying too much on tympani. What a relief then to turn to Side 2 devoted entirely to *Gulliver's Travels* with its 18th century pastiche Overture, Mozartian Minuet and tuneful



Hornpipe. Herrmann casts his net widely taking in Wagner, Richard Strauss and Tchaikowsky; all these ingredients result in a delicious pudding. Phase-4 recording is tremendous and this is a "must" for dealer demonstrations.

LISZT: *Piano Concerto No. 1/Piano Concerto No. 2 Michele Campanella*, London Philharmonic Orchestra conducted by Hubert Soudant. Pye Nixa PCNHX7 Stereo/Quad. Price: £2.99.

Both soloist and conductor are new to me and Campanella is obviously a Liszt specialist who plays with meticulous care and delicate touch. These are no wild impetuous performances. He thunders where necessary but, on the whole, keeps to more restrained paths. I enjoyed this disc and was particularly impressed by the instrumental solos in the E flat concerto. The cellist is superb. Concerto No. 2 is a model of clarity and power. The recording is adequate.

MAHLER: *Symphony No. 9 in D*. Chicago Symphony Orchestra conducted by Carlo Maria Giulini. DGG 2707 097. Price: £7.18.

Giulini faces competition from at least seven other famous conductors and his version is definitely a conductor's view. He takes a good 15 mins longer than average and at the start I was far from convinced. The opening movement reflects Mahler's mental agony at the approach of death and Giulini takes it much too four-square for my liking. However by the time he reaches the development section of the grotesque scherzo he is completely involved and from then on I was under his spell. I have

never enjoyed the last movement so much. The Orchestra respond magnificently although the exuberance of the brass sometimes swamps the strings who are more steely than their European cousins. The recording is good and if you are in the market for Mahler 9, then be sure to consider Giulini.

MEDTNER: *Sonata in F Min/Sonata-Ballade in F Sharp/Four Skazki*. Malcolm Binns. Pearl SHE 535. Price: £3.59.

Nicholas Medtner, a contemporary and compatriot of Rachmaninov, has never enjoyed the popularity of his fellow-countrymen and it is easy to pinpoint the cause. While his style mirrors Rachmaninov in phrasing and passage-work he lacks the broad sweeping melody. A Medtner Sonata is pleasant but not memorable. Like Rachmaninov he left Russia and made his home in London for fifteen years. Once the *Fairy Tales* (*Skazki*) and other pieces cropped up in recitals by Pouishnoff and Moiseiwitsch, but latterly poor Medtner has been totally ignored. This then fills a gap and must attract everyone who cares for piano music. Two Sonatas and four *Skazki* are well played by Malcolm Binns on an excellent recording by Bob Auger.

MOZART: *Sacred Music*. Jill Gomez Choir and Sinfonia cf St. Bartholomew's, St. Bartholomew's Choral Society conducted by Robert Anderson and Andrew Morris. Abbey LPB 773. Price: £2.79.

This record was made in the famous Smithfield Church with musicians placed to take full advantage of the natural acoustics, and proceeds

go to the Gordon Hamilton Fairley Fund for Cancer Research. The popular *Ave Verum* is a late work but all else dates from 1770-1 when Mozart was a 14-15 year old. In fact the record opens with a four-part motet written at the age of nine. It would be pointless to pretend that this is great music, but *Regina Coeli* is interesting being a four-movement symphony for Soprano, Choir and Orchestra. Choirs perform with a confident serenity typical of the Anglican tradition.

ORFF: *Carmina Burana*. Norma Burrows, Lewis Devos, John Shirley-Quirk, Brighton Festival Chorus, Southend Boys' Choir, Royal Philharmonic Orchestra conducted by Antal Dorati. Decca Phase 4 PFS 4358. Price: £3.35. Cassette K PFC 4358. Price: £3.60.

Your reaction to this production will depend on whether or not you regard this music with serious reverence or, like me, treat it as a great piece of "cod". Last year I reviewed a performance by the Cleveland Forces on CBS and noted the distant sound. Here the reverse applies as one might expect from the Phase-4 label. Personally I enjoyed the brilliant gimmicky sounds and, if it were not for a bit of pre-echo, could recommend it for demonstrations. The three soloists are excellent and the Brighton Choir and Southend Boys superb. Antal Dorati conducts the RPO with just the right amount of swagger.

RESPIGHI: *The Birds/Three Botticelli Pictures*. Academy-of-St.-Martin-in-the-Fields directed by Neville Mariner. EMI ASD 3327. Stereo/Quad. Price: £3.50.

The ebullient and harmonically extravagant Respighi is not normally my cup of tea, but *The Birds*, scored for small orchestra, is a work of considerable charm. Sources range from Pasquini and Rameau to anonymous 17th Century English, all dressed in modern garb but retaining the Baroque spirit. Some lively playing from the Academy after a restrained Prelude. With *Botticelli Pictures* we are back, even with small orchestra, to luscious scoring, and consequently the musical content is less interesting, although I liked the adaptation of the famous Advent Hymn to represent the Adoration of the Magi. First-class in every way.

ROUSSEL: *Symphony No. 3*. **DUKAS:** *La Peri*. New York Philharmonic Orchestra conducted by Pierre Boulez. CBS Stereo/Quad 76519. Price: £3.49. Cassette 40-76519.

A decent recording of Roussel's fine sym-



phony is long overdue but I am not sure that this entirely fills the bill. Boulez gives a splendidly exuberant reading and draws some fine playing from the NYPO. He handles the Adagio particularly well with a tightly-knit fugato and generates tremendous excitement in the final Rondo. Paul Dukas led an active teaching life which restricted his output and he was so self-critical that he destroyed much of his music before it reached his publishers. Is there, I wonder, any other composer who would preface a sensuous ballet with a loud and lengthy fanfare to forestall the possibility of his audience going to sleep? *La Peri* may not be so well-known as the other Dukas warhorse (that persistent sorcerer's lad) but Boulez does his level best to make up lost ground with a really shimmering performance. Actual recording is rather distant and at times the strings sound undernourished.

RUBBRA: *Symphony No. 10/Improvisations on Virginal Pieces by Giles Farnaby/A Tribute for Ralph Vaughan Williams. Bournemouth Sinfonietta conducted by Hans-Hubert Schinzeler. RCA RL 25027. Price: £3.49.*

Rubbra has never achieved the popular appeal of Britten or Vaughan Williams although his music has much to offer the discerning listener. His severe style encompasses pure musical thought unencumbered by frippery. The chamber Symphony (No. 10) is a good example of the succinct method in which the composer presents his argument. By contrast the *Improvisations* date from 1937 and were written to offset the costs of publishing the first symphony. They are quite charming and deserve wider recognition. *The Tribute for Vaughan Williams* was commissioned by the BBC in

1942 and is, frankly, not on the same high level of inspiration as the other works recorded here. This Chandos production is the second in the Harveys of Bristol English Series and deserves highest praise for both enterprise and excellence of recording. Only criticism is the short measure of side 2 (17 mins).

SCHUBERT: *Lieber. Ian and Jennifer Partridge. Enigma Classics VAR.1019. Price £3.49.*

Seventeen songs mostly from the 1826-7 period plus a few earlier variety are sung to perfection. Ian Partridge is one of our finest young tenors and his success is due in no small measure to sister Jennifer's sensitive performance at the piano. Accent is on light cheerful romantic songs including *The Trout, Serenade, To Music, To Sylvia*. The pair achieve dramatic tension and unity which comes from long understanding and the recording is good. This is first-class Schubert.

★ **STRAUSS:** *An Alpine Symphony. Op 64 Los Angeles Philharmonic Orch. cond. Zubin Mehta. Decca SKL 6752. Price: £3.25. Cassette KSCX 6752 £3.50.*

Empty rhetoric of Strauss's bombast is counterbalanced by his brilliant handling of an orchestra comprising 20 horns, quadruple wind, six trumpets and trombones, windmachine, thundermachine, and multiple percussion, not forgetting organ. Influence of Wagner is noticeable in the opening "Night" section where the ascent from the depths of B flat mirrors *Rheingold* waves taking an identical pattern from a low E flat: "Entry into the Wood" is a Straussian *Forest Murmurs*. This is not to say that *An Alpine Symphony* is a mere copy. It has grandeur of its own and is cyclic in that, after all the mountaineering adventures, we arrive back at the same B flat that began it all. Trouble is that Strauss's melodies do not match his opulent scoring. This makes a fine demonstration piece and almost any section picked at random needs first class equipment to make a mark. The recording, made in the Royce Hall of the University of Los Angeles, is clear with just enough ambience to let us wallow in the colourful palette of Strauss.

ST. SAENS: *Violin Concerto No. 3/VIEUX-TEMPS:* *Violin Concerto No. 5 Kyung-Wha-Chung with the London Symphony Orch. cond. Lawrence Foster. Decca SKL 6759. Price: £3.25. Cassette KSCX 6759 Price: £3.50.*

Belgian Henri Vieuxtemps was of the de Beriot





Paris school. A-Min Concerto dates from 1858 and is a virtuoso piece in the Paganini mould. It is virtually a single movement (Allegro non troppo) to which is added a short Adagio and shorter quick ending. Musical pundits scoff, but many of my violinist friends have a soft spot for Vieuxtemps. Music of such slight content needs a powerful advocate and Miss Chung responds admirably. She is flawless both in tone and technique and brings dedication to the piece. The St. Saens, written 23 years later, is more conventional and Rimsky-Korsakov evidently had the first movement in mind when writing *Schéherazade*. Not that there is anything oriental in this display vehicle originally designed for Sarasate. The central Barcarolle I find too repetitive, although the soloist brings off some staggering harmonics, but even she cannot improve the banality of the last movement. The recording, made in Kingsway Hall, London, is first-rate. Lawrence Foster contributes in no short measure to the success of this disc, and only slight deterioration at the end of Side 2 prevents me from giving it a star rating.

TSCHAIKOWSKY: *Piano Concerto No. 1* LISZT: *Piano Concerto No. 1* Horacio Gutierrez, London Symphony Orchestra conducted by André Previn. HMV SQ ASD 3262. Price: £3.50.

Gutierrez tackles the massive opening chords of the Tchaikowsky with fingers of steel, but at the same time makes them crisp and clean. In quieter passages he is velvety and sleek. I regret that, for all his technical skill, he lacks proper feeling which is a pity because Previn

draws some lovely phrasing from the LSO. The Liszt goes better and Gutierrez is splendid, even at times condescending to share his glory with the orchestra. This will be a big seller but for the subtle approach I would go for Richter or Brendel in the Liszt and Berman or Argerich in the Tchaikowsky.

★ **TSCHAIKOWSKY:** *Nutcracker Ballet (complete)*. Concertgebouw Orchestra. Boys of St. Bravo, Haarlem. Conductor Antal Dorati. Philips 6747 364. Price: £4.75.

This is the third complete *Nutcracker* to come my way in recent months. I was the proud possessor of Dorati's first version and therefore expected something special from a highly respected Ballet conductor. Regrettably I cannot give him full marks. There is little fairy-tale magic in the First Act. The Overture and March are much too down-to-earth and Dorati doesn't seem to take interest until the Battle Scene which was superb. With Act 2 the picture changes and he gives an affectionate reading until the famous Pas-de-Deux when again he lapses into indifference. Tempi are faster than his rivals but this is a matter for personal preference. On the credit side the orchestra is magnificent and Dorati can certainly handle big climaxes. Recording is warm and pleasing, and at the special price of £4.75 is a bargain, but if you already own the Previn or Boyninge sets, don't bother to change.

WAGNER. arr. LISZT: *Opera Transcriptions*. Michele Campanella. Pye Nixa PCNH2 Stereo. Price: £2.99. Cassette. ZCPCNH2 Price: £2.99.

Comparatively straightforward piano reductions with the show element subdued, far removed from the tremendous operatic fantasies of the younger Liszt. Attraction is the *Tannhauser Overture*, *Bridal Music* from *Lohengrin* and *Spinning Chorus* from the *Flying Dutchman*, but there are also novelties. I cannot recall hearing *Valhalla* (based on themes from *Rheingold*), the *Pursiful Feielerlicher March*, or the *Liebested* from *Tristan and Isolde*. Campanella does a good job and the recording is sympathetic.

Brass and Military Bands

This being Jubilee Year, Military pageant is much to the fore and *The Queen's Silver Jubilee - Music from 25 years of Royal Occasions* (AJP Records AJP 1003/4 Price: £4.99) make a nice souvenir in a folder containing two

LP's and a booklet of colour pictures of royal occasions. Welsh and Coldstream Guards share the music which is all suitably regal. The production won the Prince Charles's Design Council Committee Award, which sounds like a "right royal carve-up" to me. Distribution is via Ember Records.

In these days of gloom, *Tunes of Glory* (Readers Digest) comes as a real tonic to remind us of the glorious tradition of the fighting services and their music. It features four bands, two orchestras and Pipes and Drums of Argyll and Sutherland Highlanders. Disc devoted to naval music is played by the Band of the Royal Marines, one of our finest institutions. Coldstream Guards ensemble is smaller and accent is on treble with bright incisive tone. By contrast, the Southern Band of the RAF makes a tubby, bass sound. Somewhere between and perfectly balanced is the Welsh Guards. The programme is made up of the popular Marches, National Airs, and Patriotic light opera. London Philharmonic conducted by Charles McKerras have a record to themselves featuring famous Classical Marches. These performances are excellent and London Festival Orchestra under Eric Rodgers sounds thin by comparison in their repertoire of music from epic war films. All specially recorded and first class in every way at £17.95, available also in cassette form direct from Readers Digest or special centres throughout the UK.

This has been a busy recording year for the Coldstream Guards as they turn up yet again in *Ballet on Ice*, a selection of music associated with champion skater John Curry and mostly arranged tastefully by conductor Captain R. A. Ridings. Marie Goossens provides the Harp Cadenza in the Minkus Pas-de-Deux (RCA PL 25024). Turning to brass, *The Best of the Fairy Band* ★ (RCA LSA 3279) presents one of our finest bands in a tremendous display of virtuosity and ensemble under conductor Kenneth Dennison. The recording is marvellous and left me absolutely spellbound. My only complaint is the number of modern arrangements by Gordon Langford. Sousa, Alford and Fucik were all bandmasters and knew exactly what they wanted — without any superfluous aids. One of the best arrangements is Ryan's *Spring* (Grieg). Strongly recommended.

Gordon Langford is also much in evidence in *The Best of the Black Dyke Mills Band* ★ (RCA PL 25025) having arranged ten out of the fourteen tracks. Two conductors, Geoffrey Brand and Roy Newsome, share the honours and there is some fine solo work from David Hirst, Phillip McCann and John Clough. The Chandos recording is first-class and the programme calculated to net a wide audience.

In contrast I found the *National Brass Band Festival* (RCA LSA 3285) rather dreary, though no doubt this was due to the atrocious acoustics of the Royal Albert Hall. Record is not banded and poor sleeve lay-out gives little indication of playing order. Only bright spot is the dazzling trumpeting of Carole Dawn Reinhart.

The presence of trombonist Don Lusher persuades the Brighouse and Rastrick Brass Band to momentarily forsake the tortuous paths of contest work for lighter fare. The *Lusher Side of Brighouse and Rastrick Band* (GRS 1050) is entertaining with ensemble work impeccable. Somehow, however, I cannot equate Jazz with conventional Brass Bands. The B & R make a brave stab, but I can think of better versions of *Harlem Nocturne*, *Making Whoopee* and *Mood Indigo*. Don himself is in great form and the recording is very good. Price £2.50.

Collections

Overtures: The Force of Destiny/Prometheus/Roman Carnival/Russlan and Ludmilla/Academic Festival/The Thieving Magpie. Cleveland Orchestra cond. Lorin Maazel. Decca SXL 6782. Price: £3.50.

This is a mixed bag. *Prometheus* is given a sound reading and *Academic Festival Overture* and *Thieving Magpie* receive tremendous performances. But the recording sounds as if it were made in the bathroom (in fact, the Masonic Hall, Cleveland). Gimmicky extravert sound completely destroys the tragedy



of Verdi's Prelude. Maazel also is not happy with *Roman Carnival* and *Ruslan and Ludmilla*, both sounding extremely pedestrian. This will probably have popular appeal but not for me.

The Baroque Concerto in England. Thames Chamber Orchestra conducted by Michael Dobson with Neil Black (Oboe) and William Bennett (Flute). CRD 1031. Price: £3.59.

Handel dominated London during the Baroque era, but this record presents music from two Englishmen of that period, William Boyce and Flautist Robert Woodcock. Woodcock concerti were once ascribed to Handel until Fritz Stein discovered original parts in 1933. For me the outstanding work was the Concerto Grosso for 2 oboes and strings in F of doubtful origin, once ascribed to Handel but later dropped by the publisher. If not authentic Handel it is a good copy with confidence and invention far outshining the other composers. Thames Chamber Orchestra was founded in 1962 by conductor Michael Dobson, former principal oboe of the LPO. Soloists are first-class and recording warm and reverberant.

School Orchestras

Abbey LPB 777 came as a revelation. Only extremely cautious tempo of the opening piece, Brahms *Academic Festival Overture* suggested that perhaps this wasn't a regular professional orchestra. I was struck by the accurate chording of the horns, in fact both brass and woodwind choirs were admirable. The Elgar *Introduction and Allegro*, needs an adult mind to bring out the full beauty of tone and the Solo Quartet try too hard to assert themselves. But the shorter pieces were superb. There was some ravishing string tone in the Arnold *Scottish Dances* and fine woodwind. *Soirees Musicales*, the Dvorak symphony excerpt, and the Lars-Larssen *Epilog* sounded most professional. Full credit to the Lancashire Schools Symphony Orchestra and their conductor Malcolm Doley. Price: £2.79.

City of Hull Youth Orchestra under Geoffrey Heald-Smith falter at times during a generally good performance of Edward German's *Norwich Symphony* but take the filler, *The Barber of Seville Goes to the Devil* (Gordon Jacob), with great panache. This disc costs £2.25 from Gough and Davy, Savile Street, Hull.

Recitals

Bath's Musical Heritage Volume 1. BUR 1001. Avon Recording Services, 6 Camden Crescent, Bath, BA1 5HY. £2.40.

Gerald Gifford in a programme of 18th Century keyboard music played on a Shudi and Broadwood harpsichord dating from 1775 incorporating Venetian Swell — a pedal-operated opening and closing lid giving special crescendo and diminuendo effects. Music is by composers associated with the Bath of Beau Nash, and the long suite by Thomas Chilcot sets the standard. It is in Handel mould and dextrously played by Mr. Gifford, assistant organist of Ely Cathedral and a Professor at the Royal College of Music. Handel himself is represented by his *Fantasia in C* and other works include *Three Aires* by Henry Holcombe, part of a Sonata by Stephen Storace, the D-major Sonata of J. C. Bach Op 15, and pieces by Thomas Linsley, and J. C. Smith. The recording is exemplary.

18th Century Organ Music from Hexham Abbey by Gerald Gifford. Crescent ARS109. Price: £2.40.

From 18th Century Bath, Gerald Gifford goes north to Northumberland for a recital on the new organ at Hexham Abbey. Bach's *Fantasia in C* completed from a fragment of the Anna Magdalena Notebook by Wolfgang Stochmeir opens Side 1, followed by Three Chorale Preludes by J. L. Krebs, a pupil of Bach. *Noel Suisse* (D'Aquin), Sonata for manuals (C. P. E. Bach) and the J. G. Walther transcriptions of Albinoni and Meck are designed to demonstrate principal organ styles of the 18th Century. Sleeve contains a nice little booklet of notes by Gerald Gifford, and the recording by Brian Preston and David Lord captures the organ sound most vividly.

Elizabethan and Jacobean Madrigals. Enigma Classics VAR 1017. The Scholars. £3.49.

Programme of cheerful Madrigals and Ballets by Dowland, Gibbons, Vauter, Woolkes, Mundy and Wilbye, with the whole of Side 2 devoted to Thomas Morley. The Scholars comprise male quartet plus mezzo-soprano. I liked the forceful style and every word comes over crystal clear. The recording is a model of clarity and entirely free of surface noise.

Music from Bath Abbey. Abbey Choir directed by J. Dudley Holroyd. Crescent ARS 107. £2.40.

This demonstrates a fair cross-section of the Anglican choral repertoire. Marcus Sealy is at

the organ and Mr. Holroyd contributes two organ solos, *Carillon* by Herbert Murrill and the magnificent *Theme and Variations* by Hendrik Andriessch, the latter revealing the depth and spaciousness of the recording. Choral music ranges from Palestrina and Byrd to John Ireland and Bruckner. It includes the *Magnificat and Nunc Dimittis in E* by Herbert Murrill and *Te Deum in F* by John Ireland. Apart from a few weak solo entries the Choir are on top form.

O Mistress Mine. James Griffett (tenor) Timothy Walker (lute). Pearl SHE 532. Price: £3.59.

A collection of Shakespearian songs in settings of his day, including Robert Johnson, John Wilson, Tallis and Dowland and, of course, the delightful Thomas Morley. Naturally *Greensleeves* is much in evidence, both as an unaccompanied song and in variation form by Francis Cutting. Tenor James Griffett is founder manager of Pro Cantione Antiqua and he uses his light tenor to good effect in varied styles, aided by the admirable Timothy Walker on lute. The fine recording was supervised by John Ansell and made in the Church of St. Lawrence, Seal Chart.

Gipsy Carnival. John and Susan Georgiadis. Kelsey Records KEL 7601. Price: £3.29.

Truly a family affair. John Georgiadis not only has his wife at piano but also recorded, produced and edited the recording using his own equipment. The result is a perfectly acceptable record containing some dazzling virtuoso playing. In the main these are old favourites: *Csaradus* (Monti), *Hejre Kati* (Hubay) *Zigeunerweisen* (Sarasate), *Horo Staccato* (Dinicu) and *Gipsy Carnival* (Krein). Another Hubay work less known is *Six Hungarian Poems* and we also hear the *Rumanian Dances* of Bartok. Such enterprise deserves success and I warmly recommend this disc and look forward to further issues.

The Romantic Silver Flute. William Bennett, Trevor Wye (Flutes), Clifford Benson (Piano). Pearl SHE 533. Price: £3.59.

Having scored a success last year with *A Victorian Musical Evening* this intrepid trio embark again on a voyage of discovery, unearthing more little gems which enchanted our forefathers. More Doppler and Köhler, joined this time by Sullivan, Paggi and Reineke, the latter more famed as a pianist. Possessors of the earlier record know what to expect and to the uninitiated I say this is a delightful disc of trifles to charm the ear.

Light

Nostalgia is big business, so *The Bath Wurlitzer Organ* (Crescent ARS 104) is bound to attract customers. Organ in question is Wurlitzer No. 4047 special, rescued from the Regent Brighton and now installed in the Pavilion, Bath. Specification quoted on the sleeve is impressive and I heartily recommend this for all addicts, or indeed to anyone looking for pleasant light entertainment. Ken Morrish is founder and resident organist of the Bath Theatre Organ Club and he presents a typical programme comprising Gershwin, Berlin, Novello, and other favourites, all played in impeccable style.

The Wurlitzer turns up again on *Wurlitzer Wonderland* (Grosvenor GRS 1047) this time in the hands of Brian Sharp. This is a 1937 instrument formerly built for the City Cinema, Leicester and now rebuilt at Dormston House. Brian Sharp is well-known from previous records and TV appearances and his programme ranges from the *Charleston* to *Poet and Peasant*. The recording is good. Forbes Robinson brings his rich fruity bass voice to bear on *Ballads, Songs and Snatches* (Argo ZDA 174), a selection of popular airs so beloved by the habitués of Grand Hotel. His range from bottom D to top A is impressive and only sounds forced on rare occasions at the extreme register. Among the traditional songs the most effective is *When Dull Care*. *Silvia* and *On the Road to Mandalay* were Peter Dawson favourites and I have a sneaking suspicion that Mr. Dawson composed them himself. Hermann Lohr's *So Fair a Flower* is also nicely turned. All beautifully sung and calculated to stir up pleasant memories for the older generation. The able pianist is Robin Stapleton. I can thoroughly recommend *James Tyler and the New Excelsior Talking Machine* ★ on Decca SKL 5266 Price £3.35. This modern pop-style title masks an octet of famous classical musicians. James Tyler himself is known as a lutenist and the group includes such talent as Keith Puddy on clarinet. They play a programme of Ragtime numbers in arrangements by James Tyler with accent on the tenor-banjo. I was particularly impressed by the clear phrasing of pianist Antony Saunders. The recording is clear with good stereo separation.

Imagination ★ (Decca PFS 4384 Price: £3.35) is the first album in the UK from brilliant young composer/arranger André Gagnon, who has composed all tracks himself. He has modelled himself on his compatriot Jacques Loussier and these pieces all seem to derive from Bach or Schumann with a modern beat. Phase-4 re-

cording is good and this makes ideal late-night relaxation listening.

There is nothing as exciting as a Flamenco guitar and *The Flamenco Soul* cf Juan Martin (Decca SKL 5256) exposes the many-sided facets of the art as demonstrated by Juan Martin. This artist has many successful Festival Hall concerts and TV appearances behind him and his programme shows the derivation of modern techniques from traditional material. Side 1 contains all his own compositions and Side 2 his variations and arrangements of great masters as Capinetti and Ricardo. Very exciting and extremely musical with a good recording made at Finchcock's Goudhurst, Kent by Ian Churches.

First published in 1924 A. A. Milne's set of children's poems *When we were very young* became an instant success. When some of them were dramatised on BBC Children's Hour in 1929 Pooh Bear was read by Norman Shelley. 48 years later here is Mr. Shelley reading these poems with obvious affection: A really delightful record for the very young child on Argo ZSW 568 Price £2.75 or Cassette KZSWC 568. *Now we are six* on Argo 569 or Cassette KZSWC 569 is the sequel which appeared three years later in 1927.

I have in the past commented on the good value and recording quality of Reader's Digest sets and once again can recommend *The Best of Nana Mouskouri* taken from Phonogram material. Six records feature this popular singer in a variety of moods ranging from Greek, traditional ballads, religious songs and pure pop. Apart from her own group, The Athenians, she is supported by a wealth of talented guests including the King's Singers, Michel Legrand, Christian Chevallier, Peter Knight, Mike Sammes, Francois Rauber, Georges Petsilas, André Popp, Alian Gorageur and Mike Vickers. Bonus is a souvenir of Nana live from an Albert Hall concert in May 1974.

Hugo Montenegro Plays is another Reader's Digest set taken from Ampro sources devoted to Broadway shows, Italian Tunes, Hollywood Hits, and Latin-American favourites. Bonus disc called *On the Tail* features the Grofé piece of that name plus *Rodeo* (Copland) and lighter fare with a cowboy flavour played by a variety of bands. All tracks are recorded in first-class stereo and any of them is ideal for demonstration.

More Ragtime in the shape of *Elite Syncopations*. (CRD 1029. Price: £3.59). Ballet companies have been quick to cash in on the new revival. Last year I reviewed *The Prodigal Son* scored from Scott Joplin by Grant Hossack for the Festival Ballet, but in contrast the Royal Ballet offering uses a mere dozen players in

arrangements by Schuller, Sponhaltz, Robert Docker, and Philip Gammon, who conducts from the piano. Many pieces are played by solo piano with drums and here Mr. Gammon is a bit heavy-handed. Joplin numbers include *Sunflower Slow Drag*, *Stop-Time Rag* and *Bethena Waltz* plus the title *Elite Syncopations*. Other composers represented include Max Morath, J. F. Lamb and Robert Hampton. An enjoyable disc, well recorded.

Rock, Blues and All That Jazz.

No Panic (Decca TXS-R 116. Cassette KTXCR 116 - both Price: £3.50) Features Udo Lindenburg, a rock star who is the sensation of the German pop scene. I gather that his stage performance with the help of a supporting cast of 16 artists varies from satire to pure pornography. Judging by the record alone the musical content is undistinguished and while the operatic, orchestral and other "send-ups" are mildly amusing the whole thing soon becomes a bore.

It becomes increasingly difficult to classify modern music these days. *The Elvin Bishop Band* (Capricorn Super 2429 147) is a mixture of styles — country, blues, rock, with a soupçon of jazz and reggae. In all a most attractive mixture and well recorded. Popular music with a rock flavour comes from *Benson and Farrell* ★ on CTI 6069 Super. George Benson proves a fine rock guitarist and the mellowing influence of Joe Farrell's flute results in a pleasant, melodious sound. The recording is superb and in demonstration class.

Rags to Riches on Decca SKL-R 5257 features Gerry Lockran, another pleasant singer in the country/rock vein, well supported by his backing group. None of the tracks are exactly world-shattering and I would imagine that this type of music has only limited appeal. *Thunderthroat* (Threshold THS 19) featuring Nicky James is a different cup of tea altogether. Nicky James, who has been around for a long time, can be counted as one of the sensational acts of the 70's. His previous bands produced such luminaries as Roy Wood and John Bonham, now with Led Zepplin. Side 1 is devoted to ballads but on the reverse the pace gets heavier and delves into the realm of Blues, Rock, and Rock and Roll.

It Looks like Phoebe Snow on CBS 81714 is the second LP from Miss Snow containing ten songs mostly of her own concoction. She is a typical pop-rock performer with a leaning towards blues and gospel and is supported by some 16 instrumentalists, jazz band and vocal group which ensures a variety of presentation.

Not my cup of tea, but just fine for the aficionados.

The drawback (or joy) of jazz is that one always knows exactly what to expect from an established artist. Count Basie, it seems has temporarily forsaken his big band to make a series of sessions with a small group. *Basie Jam 2* (Pablo de Luxe 2335 748) present four tracks with group comprising Benny Cater and Eddie Lockjaw Davies (saxes), Clark Terry (trumpet), Al Grey (trombone) with Joe Pass, John Heard and Louis Bellson. With that line-up the faithful will know exactly what to expect and it only needs me to add that the recording is good.

Eddie Lockjaw Davies has an LP to himself entitled *Straight Ahead* (Pablo Super 2310 778) accompanied by the Tommy Flanagan Trio. The commendable sleeve notes by that jazz master Benny Green tell all and further comment would be superfluous. Not my personal choice. In fact one phrase of Benny's Notes "bulldozing muscularity of his playing" sums up my objections, but I did enjoy the superb breaks from Tommy Flanagan's piano.

Abba is one of the enterprising pop groups and since winning the European Song Contest are tremendously popular. Their approach is thoroughly professional and they use good arrangements. *Arrival* (Epic EPC 86018 or Casette 40-86018) is well recorded souvenir including their recent hits *Dancing Queen* and *Money money money*. Another popular performer is Neil Diamond and *Love at the Greek* is a two-record set on CBS 95001. Recorded live at the Greek Theatre, Los Angeles the sound leaves much to be desired but this won't worry the faithful as it includes such as *Sweet Caroline*, *Beautiful Noise*, *Song Sung Blue*, *Holy Holy* and *if you know what I mean*. It will be a big seller.

Bargain Labels

Elizabeth de la Porte gives a harpsichord recital of popular Bach on Saga 5424, £1.50. The *B Min Partita* BW831 on Side one is largely a collection of dances suited to Miss de la Porte's fine rhythmic qualities. *Chromatic Fantasia and Fugue* sounds rather contrived and, to my mind, should give the impression of an improvisation. However, the gradual build-up of the final fugue is impressive. *Italian Concerto* gets off the ground with a solid Allegro. Perversely, here I would prefer a tighter control on the Andante, where ground bass should be played

with metronomic precision to counter the free range fantasia-like treble line. The Presto is taken at great speed but is accurate and well-phrased. The Instrument is a two-manual by John Feldberg after Jean Goujon and features a Buffalo Hide stop, used to special effect in the second Passepied of the Partita.

A good no-nonsense version of Vivaldi's *The Four Seasons* (Saga 5443) is played by the Sinfonia di Sienna with Giuliano Bodini as soloist. He is sure-toned and pleasing and the ensemble is accurate. Apart from a couple of suspect tape-joins the recording is acceptable and anyone in the market for Vivaldi should give this serious consideration especially at the price of £1.50.

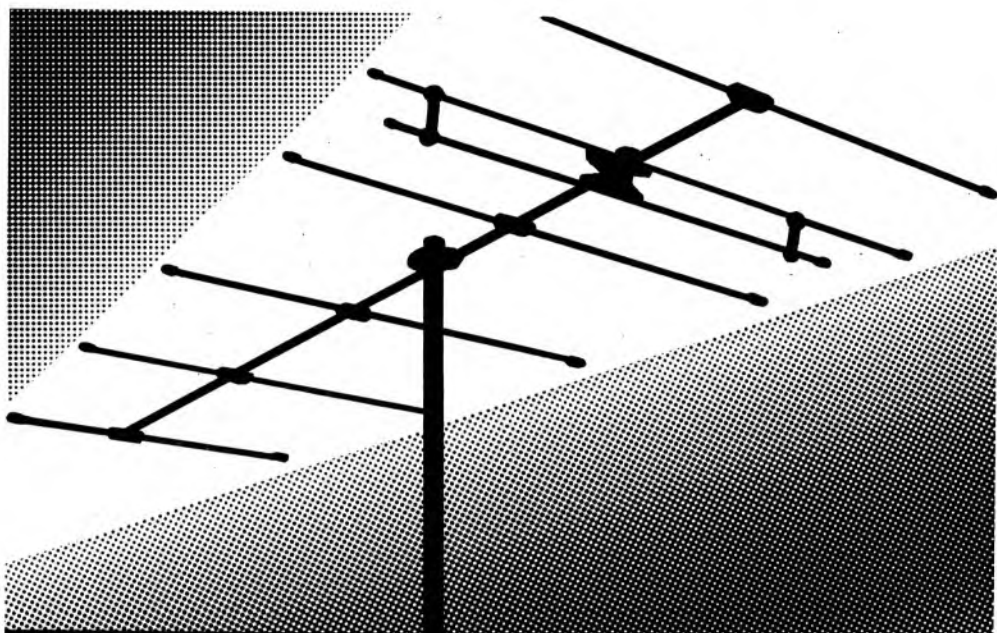
Saga have concentrated on the organ in recent issues and one of the best is the Widor 5th Symphony ★ played in its entirety by David Sanger at the Organ of St. Peter's Italian Church, Clerkenwell (5439). In the past I have criticised Mr. Sanger's stodgy style on harpsichord, so in fairness I must state that he handles the lovely Walker organ with aplomb, although I still feel that moments like famous Toccata need more bite. Movements from the 8th and 6th Symphonies make interesting fillers. Slight distortion at the end of sides is inevitable on such a well-filled disc but it is still good enough for a star rating.

Arthur Wills is at the organ of Ely Cathedral in the *Book of Noels* by Daquin coupled with organ works of Marchand on Saga 5433/4, a double album selling at £3. Louis Daquin literally had his audience rolling in the aisles with his jolly virtuoso playing, and earned a reprimand from the Archbishop of Paris. More substantial are the pieces by his mentor, Louis Marchand, a contemporary and rival of old Bach. The Ely organ, originally dating from 1907, has recently been modified by Michael Howard and Arthur Wills and is eminently suitable for the French baroque sound. Recording is good.

Yet more organ. This time Arthur Wills with the Choir of Ely Cathedral on Saga 5440, perform Anthems and Voluntaries by William Boyce. Mr. Wills conducts and contributes the organ solos, while the choir is supported at the organ by Gerald Gifford. It is a choir of average ability, not outstanding and sounding rather thin at times. Soloists are drawn from the choir and I personally think that the music would have gained from a more professional approach. Arthur Wills plays four of the Voluntaries in great style. Recording is only perfunctory and my copy had a considerable amount of surface noise.

Abbreviations

A	- - ampere	m	- - metres	VAT	- - Value added tax
A-B	- - comparison test	M	- - megohms (millions of ohms)	VHF	- - very high frequency (VHF radio approx 88-108MHz, VHF TV approx 174-216MHz)
AC	- - alternating current	mA	- - milliamps (0.001A)	V	- - volts or voltage
AFC	- - automatic frequency control	mag	- - magnetic	VA	- - volt/ampere
AGC	- - automatic gain control	ME	- - magic eye	vci	- - voice coil impedance
AM	- - amplitude modulation	MC	- - moving coil	VU	- - volume units
ASA	- - Acoustical Society of America	mg	- - milligram	W	- - watts
aux	- - auxiliary	MHz	- - megahertz (see Hz)	W and F	- - wow and flutter
BAF	- - bonded acetate fibre	mic	- - microphone	x1l	- - crystal (pickup or microphone)
CCIR	- - International Radio Consultative Committee	MOS	- - metal oxide semiconductor	Z	- - impedance
char	- - characteristic	mpx	- - multiplex	Miscellaneous	
cm	- - centimetre	mV	- - millivolts (0.001V)	%	- - per cent
c/o	- - cut-off frequency	MW	- - medium waves (approx 185-570m)	>	- - greater than
coax	- - coaxial	N	- - newton (SI unit of force).	<	- - less than
dB	- - decibel	NAB	- - National Association of Broadcasters (see also NARTB)	±	- - plus or minus
dBm	- - decibel/milliwatt	NARTB	- - National Association of Radio and Television Broadcasters (USA)	≅	- - equal to or greater than
DC	- - direct current	NL	- - noise level	μ	- - equal to or less than
deg	- - degrees	Pat	- - power available for tuner	μA	- - microamp
det	- - detector	pF	- - picofarad (10 ⁻¹² farad)	μV	- - microvolt
DIN	- - Deutscher Industrie Normen (German audio standards)	PPM	- - peak programme meter	μbar	- - microbar (air pressure equal to 1 dyn/cm ²)
disc	- - discriminator	Psn	- - power supply needed		
FET	- - field effect transistor	PU	- - pickup cartridge		
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		
gm	- - gramme	Replay	- - replay characteristic		
HC	- - handling capacity	RIAA	- - Record Industry Association of America		
HD	- - harmonic distortion	RMS	- - root mean square (0.707 peak value of AC)		
HF	- - high frequency	rpm	- - revolutions per minute		
H & N	- - hum and noise	sec	- - second (time)		
Hz	- - hertz (cycles per second)	sel	- - selector switch		
IC	- - integrated circuit	S/N	- - signal-to-noise ratio		
IEC	- - International Electro-technical Commission	SW	- - short waves (approx 10-60m)		
IF	- - intermediate frequency	THD	- - total harmonic distortion		
IHF	- - Institute of High Fidelity (USA)	thou	- - thousandths of an inch (0.001 in)		
imp	- - impedance	tpi	- - turns per inch (screw threads)		
in	- - inches	UHF	- - ultra high frequency (approx 470-854MHz)		
ind	- - inductor				
i/s	- - inches per second				
K	- - kilohms (thousands of ohms)				
kHz	- - kilohertz (see Hz)				
lb	- - pound (weight)				
L/C	- - inductance/capacitance				
LP	- - long play (records or tape)				
LW	- - long waves (approx 1100-2000m)				



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★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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: on application.

■ 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.

FMS100

FM/stereo single dipole with straight stand-off arm and 1-2in bracket. Price: £4.89 (plus VAT).

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 HP13 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: £6.00 (plus VAT).

FM234T Mushkiller

Three-element array with Trumatch dipole, complete with universal mast/boom clamp, for medium range FM stereo reception. Price: £9.00 (plus VAT).

FM244T Mushkiller

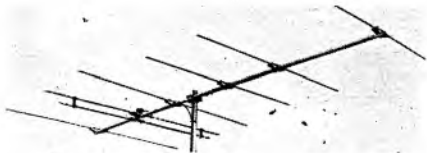
Four-element array with Trumatch dipole, complete with universal mast/boom clamp. The most popular FM stereo array. Price: £10.00 (plus VAT).

FM264T Mushkiller ★

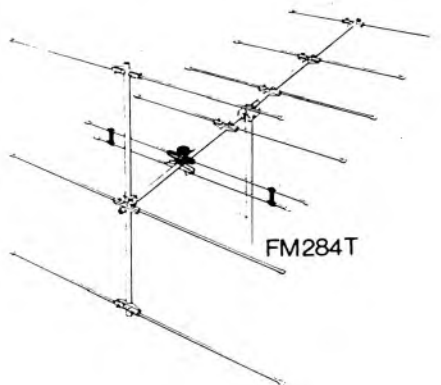
Six-element array with Trumatch dipole, complete with universal mast/boom clamp. Suitable for medium and long-range FM stereo reception. Price: £15.00 (plus VAT).



Aerialite FMS400



Antiferrence FM264T Mushkiller



Antiferrence FM284T Mushkiller

★ Indicates entry is illustrated

FM2841 Mushkiller ★

Eight-element array with Trumatch dipole complete with universal mast/boom clamp. Price: £19.00 (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: £9.00 (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: £12.00 (plus VAT).

RTA 200 Rotenna ★

Fully automatic heavy duty rotator designed to support large FM and TV arrays. Price: £57.68 (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: £9.70 (plus VAT).

PU102 Power Unit

Power unit for MA102 FM. Fully insulated housing. Price: £8.50 (plus VAT).

TRR/V/SP Receiver Transformer

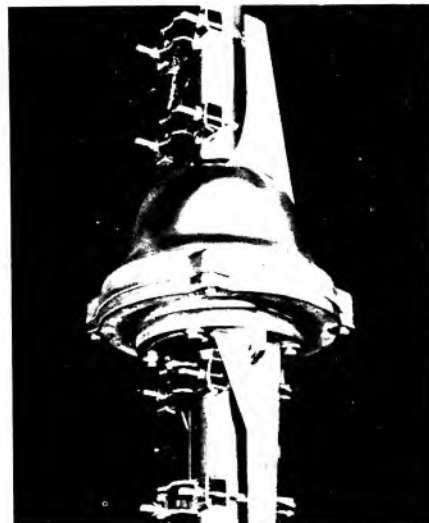
Matches 75 ohms coaxial input feeder into 300 ohms aerial sockets on imported tuners and tuner/amplifiers. Price: £2.10 (plus VAT).

UF2/SP TV/FM Aerial combiner

In fully weatherproof housing complete with perforated strip and bracket for mast or surface mounting. Price: £2.66 (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 combine TV and FM aerials. Surface mounting. Price: £1.70 (plus VAT).



Antiference RTA 200 Rotenna

812/SP TV/FM Aerial Outlet

Similar to Y12 but designed for flush-mounting. Price: £2.66 (plus VAT).

FMS/2 Stacking Kit

For stacking two Mushkillers. Price: £3.50 (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,



Eagle FMA 20

8dB gain, front to back ratio 32dB, acceptance angle 35 degrees. Price: £12.50 (plus VAT).

DA1

Complete 75Ω 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 unbalanced output. Price £13.75.

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 unbalanced output. Price: £7.65.

Exa Ringdipole

A simple omni-directional AM/FM aerial supplied complete with mounting bracket and output cable (300 ohms). Gold anodised finish. Price: £6.10.

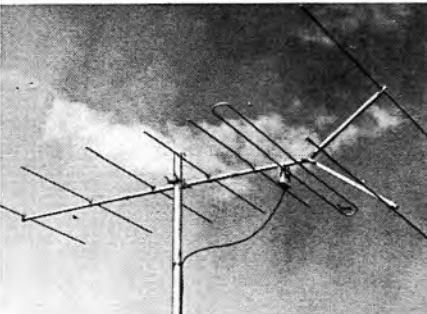
VMB 420

Masthead amplifier covering the FM band from 87.5MHz to 104MHz. Gain 15dB. Price: £28.00.

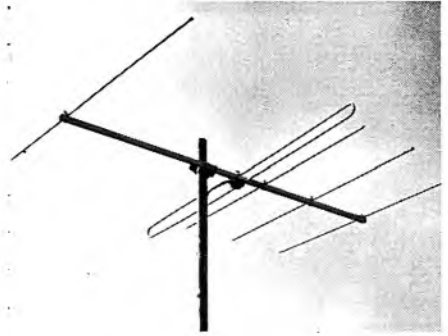
All prices quoted are retail including VAT.

■ FUBA

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



Fuba UKA Stereo 8



Fuba UKA Stereo 5

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 impedance 75 ohms unbalanced. Gold anodised finish. Price: £33.33.

Uka Stereo 5 ★

A Semi-Professional 5 element FM aerial for very difficult positions. Gain 7.9dB. Front-to-back ratio 23dB. Output impedance 75 ohms unbalanced. Gold anodised finish. Price: £22.20.

Uka Stereo 2

A high quality aerial for local/medium range reception. Gold anodised finish. Gain 3dB. Front-to-back ratio 10dB. Price: £11.55.

Uka 061

An omni-directional broadband FM aerial utilising the crossed dipole technique. Gain -3dB. Output impedance 300 ohms balanced. Conversion to 75 ohms possible using AKW 561. Gold anodised finish. Price: £16.75.

RFA 013

Small AM/FM aerial designed for window mounting. Output impedance 300 ohms balanced. Supplied complete with window mounting bracket. Gold anodised finish. Price: £6.55.

GAA 631/GAA 632

A high quality rugged AM/FM head incorporating facilities for a 2m or 3m AM rod aerial (GAZ 635 or 636) and supplied with a single dipole for FM (GAA 631) or a crossed dipole for FM (GAA 632). Output impedance 75 ohms unbalanced. With the add-on series of GAZ reflectors/directors it is possible to make the FM part up to 5 elements. Gold anodised finish. Prices from £31.78.

★ Indicates entry is illustrated

GAS 72

Receiver lead/signal splitter for AM/FM signals. Coaxial input balanced outputs. DIN plugs on outputs. Price: £7.09.

USW 100

An FM aerial combiner for combining aerials on two different transmitters. One wideband input and one narrowband input. Through loss less than 1.5dB. Suitable for combining ILR signals with BBC signals. Price: on application.

All prices include VAT.

■ **JAYBEAM**

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

Stereobeam SBM2 ★

Band II folded dipole and reflector on boom. Supplied complete with fixing clamp for masts up to 2in diameter. Gain: 3dB. Reduces interference from rear. Price: £6.30 (plus VAT).

Stereobeam SBM3 ★

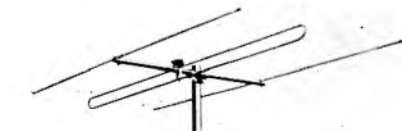
Band II aerial comprising folded dipole, reflector and director on boom. Supplied complete with clamp to fit masts up to 2in diameter. Gain: 6dB. Gives protection against signals more than 40° off bearing. Price: £8.86 (plus VAT).

Stereobeam SBM4

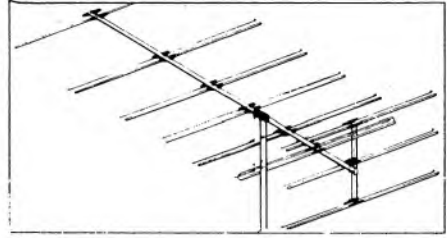
Band II aerial comprising folded dipole, reflector and two directors on boom. Supplied complete with clamp to fit masts up to 2in diameter. Suitable for medium fringe areas where large



Jaybeam Stereobeam SBM2



Jaybeam Stereobeam SBM3



Jaybeam FM9S

input signal is required for optimum performance. Gain: 7dB. Price: £9.94 (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: £14.80 (plus VAT).

Stereobeam room aerial

Band II compressed dipole using inductive loading. Suitable for areas of high signal strength. Can be stood on base or fixed to wall. Supplied complete with lead and plug. Price: £4.46 (plus VAT).

FM9S Superfringe Area FM Antenna ★

Consists of folded dipole, five directors and triple reflector unit with universal mast clamp. Price: £26.20 (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: £4.96 (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).

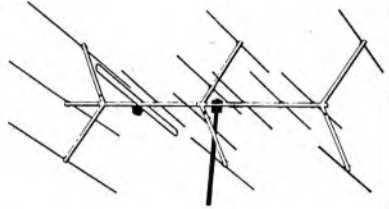
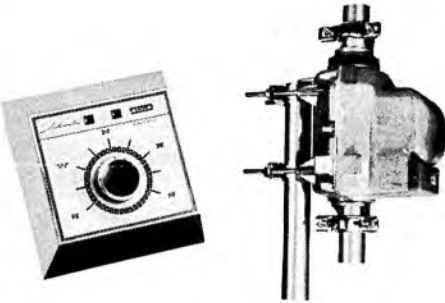
Maxview D/DM

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

Maxview D/HM

Band II array comprising dipole and reflector

FM Stereo Aerial For Far Distance Transmitter 87.5-108 MHz. Band II



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C. S. NEWELL WHOLESALE LTD.

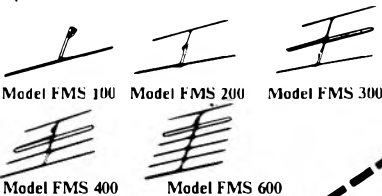
30/32 MILL STREET MARSH LANE · LEEDS 9
Telephone: LEEDS (0532) 451852



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 100 Model FMS 200 Model FMS 300

Model FMS 400 Model FMS 600

Aerialite Aerials Ltd.

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



Please send your new Stereo Aerials leaflet

Name _____

Address _____

HFYB101



Superb Stereo
with

CLEAR SOUND



The Wolsey Clearsound range of high gain aerials designed for top quality vhf reception in mono or stereo.

And, for those difficult signal areas, Clearsound amplifiers will give a signal boost of at least 20dB.

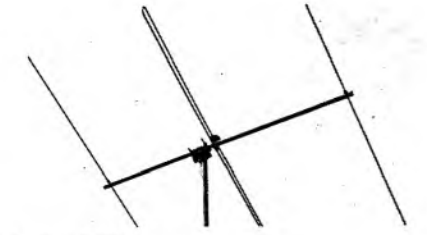
Choose Clearsound for superb stereo reception.

Wolsey

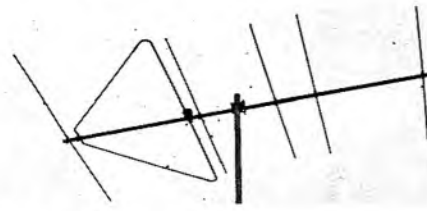
Electronics



A division of
AB Electronic Components Ltd
Cymmer Road, Porth,
Mid Glamorgan CF39 9BT, U.K.
Telephone Porth (044 361) 2711



Maxview D/FD3



Maxview Stereomax 6

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: £6.60 (plus VAT).

Maxview D/FD3 ★

Band II three-element array comprising director, folded dipole and reflector. Bracket for mast mounting. Price: £7.32 (plus VAT).

Stereomax 4

Tripole, two directors and reflector. Price: £8.70 (plus VAT).

Stereomax 6 ★

Tripole, four directors and reflector. Price: £12.88 (plus VAT).

■ PREMIER

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

C4ST ★

Four-element Band II array comprising two directors, folded dipole and modified reflector with wider folded back end and easier assembly. Price: £9.02 (plus VAT).

C6ST ★

Six-element Band II array comprising four directors, folded dipole and modified reflector

with wider folded back end and easier assembly. Price: £10.68 (plus VAT).

Clarity PH/ST

Phasing harness for coupling two C4 or two C6 arrays for extra long distance reception. Price: £3.24 (plus VAT).

2/SD/S

Single dipole Band II array. Supplied with 2 ins. universal mast clamp. Price: £2.72 (plus VAT).

2/H/H

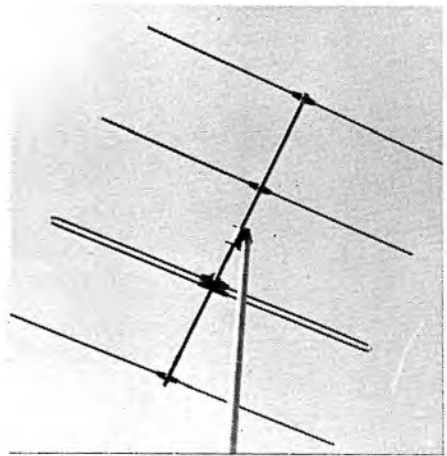
H Band II array. As above. Price: £4.04 (plus VAT).

2/3/H

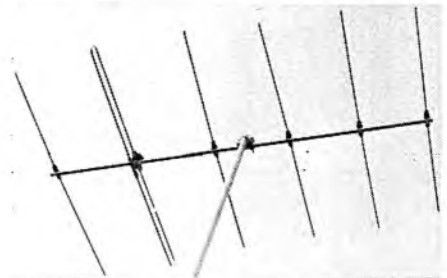
Three element array, folded dipole. Price: £6.62 (plus VAT).

Soundtrack

Five element on square boom construction for areas where trouble with interference is prevalent. Price: to be advised.



Premier NC4ST



Premier NC6ST

★ Indicates entry is illustrated

■ 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).

■ STOLLE

Karl Stolle, 29 Church Street,
Ilkley, Yorks. Tel: Ilkley 2193.

US-1

FM dipole with AM rod. Supplied with window/loft mounting bracket. Connection 300 ohms. Price: on application.

US-3

Three-element high power FM array. Universal mast clamp. Built-in balancer for 240 or 750 ohms down leads. Forward gain: 5.5dB. Front/back ratio: 13dB. Acceptance angle: horizontal 68 degrees, vertical 110 degrees. Price: on application.

US-5

Five-element high power FM array with double reflector. Universal mast clamp. Built-in balancer for 240 or 75 ohms down leads. Forward gain: 7.5 dB. Front/back ratio: 20dB. Acceptance angle: horizontal 60 degrees, vertical 90 degrees. Price: on application.

US-8

Eight-element high power FM array with treble reflector. Universal mast clamp. Built-in balancer for 240 or 75 ohms down leads. Forward gain: 10dB. Front/back ratio: 22dB. Acceptance angle: horizontal 50 degrees, vertical 70 degrees. Price: on application.

US-14V

Fourteen element, high power FM array. Universal mast clamp. Built-in balancer for 240 or 75 ohm downleads. Forward gain: 12dB. Front/back ratio: 20dB. Acceptance angle: horizontal 44 degrees, vertical 60 degrees. Connection box designed to accommodate a plug-in module amplifier. Price: on application.

Stereo Set-top (indoor) Aerials

Apollo. Model Z. 1912. With built-in amplifier.

8dB. Model Z. 1906. Model Z. 1942. With built-in amplifier. 14dB gain. Orion. Z. 1956. With built-in amplifier. 8dB gain. Model Z. 1955. Model Z. 1960. With built-in amplifier. 14dB gain. Further details and prices of models on application.

FM Masthead Amplifiers

Model TRA.3552. Supplied complete with remote power unit. 14dB gain. (Also a complete range of ultra broadband Masthead amplifiers, suitable for FM or TV reception. 14 to 30dB gain. Further details and prices of models on application.

FM Amplifier

Model TRA.3652. For indoor use only. With built-in amplifier. 14dB gain. Price: on application. -

Receiver Balancer

Model SG.1200. Matching transformer 300/75 ohms. Price: on application.

FM Module Amplifier

For use with US-14V. SAV 3325. Use with power unit SW 3307. Gain: 15dB. Price: on application.

FM Set-back Amplifier

Fully screened with integrated power units. SAV 3303 — gain 12dB, SAV 3304 — gain 18dB, SAV 3308 — gain 24 dB. Price: on application.

Variable attenuator

0-20 dB. SD 3201. Price: on application.

■ VORTA

Vorta Systems (UK), 297/299 High Street,
Cheltenham Spa, Glos GL50 3HS.
Tel: Cheltenham 31166.

Vorta Mk VI ★

Dome antenna. Omni-directional stereo en-



Vorta Mk VI dome antenna

closed aerial. Price: £29.80 (plus VAT).

Octophonic-OST8 ★

Continental style 8-element Band II aerial, comprising 5 directors, folded dipole (75/300 ohms matching transformer built-in), and a 2-element fish tail type of reflector. Robustly constructed on a 25mm sq section boom. Complete with mast fixing clamp. Price: £25.96 (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. Price: £19.80 (plus VAT).

VS1

Single dipole. Deluxe Band II aerial. Dipole mounted on 25mm sq section stand-off arm 30mm in length. Complete with mast fixing clamp. Price: £3.56 (plus VAT).

VS2

Dipole and reflector ('H' type) deluxe Band II aerial. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Price: £5.48 (plus VAT).

VS3 ★

3-element deluxe Band II aerial. Comprising 1 director, folded dipole, folded reflector. Robustly constructed on 25mm sq section boom. Complete with mast fixing clamp. Price: £9.28 (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).

■ WOLSEY ELECTRONICS

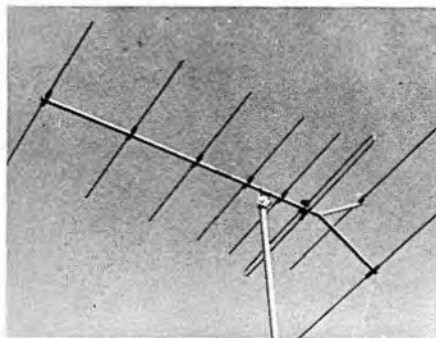
Cymmer Road, Porth, Rhondda,
Glamorgan CF39 9BT. Tel: Porth 2711.

FM de Luxe

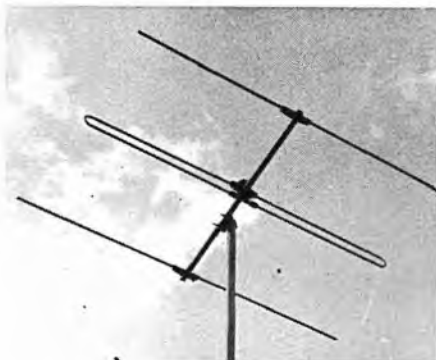
Indoor dipole aerial for room or loft mounting. Finished in cream plastic coated elements. For strong signal areas. Price: £3.39 (plus VAT).

FMD (Single Dipole)

Rugged outdoor version of above with similar or improved performance. Price: £3.88 (plus VAT).



Vorta Octophonic OST 8



Vorta Three Element VS3

FM2 (Dipole and Reflector)

Economic design giving improved directional characteristics and higher gain in forward direction. Price: £5.60 (plus VAT).

FM4 (Four element)

Fringe area high gain array providing superior characteristics in both gain and directivity. Price: £9.68 (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: £13.59 (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 impedance 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: £22.12 (plus VAT).

Not a win on the pools, a trip to a Pacific paradise, or a reduction in income tax, but distortionless "current dumping"

Z's 1 to 4 are the four passive components which interconnect the current dumpers, (the output transistors which supply the power), to the small high quality amplifier which provides the error signal, so that when the above condition is met the current in the load, the loud-speaker, is independent of the current in the dumpers and hence distortion is solely dependent on the quality of the error amplifier, which because it is small can be very good.

Wonderful indeed

For further details on current dumping and other Quad products write to Dept. HFYB

The Acoustical Manufacturing Co.
Ltd., Huntingdon, Cambs.,
PE18 7DB Telephone (0480) 52561

**"Something wonderful*
happens when $Z_1Z_3=Z_2Z_4$ "**



* Elektor Electronics
Magazine No. 8 Dec. 1975

QUAD

**for the closest approach to the original sound
for twenty-five years**

QUAD is a Registered Trade Mark

Amplifiers and Control Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ACCUPHASE

Belmont A/V 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 impedance: 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 cms. Price: £390 (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 impedance (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 cms. Price: £525 (plus VAT).

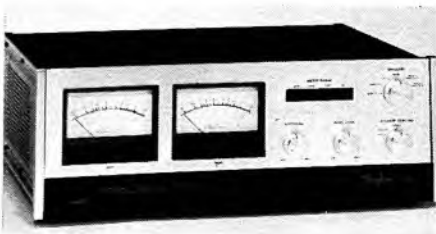
P-300 ★

Dual channel power amplifier. Power output: 150W per channel into 8 ohms (both channels

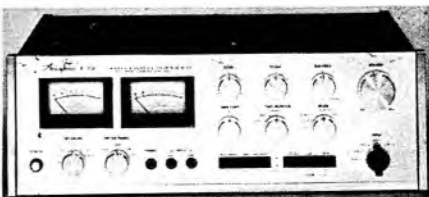
operating simultaneously at any frequency from 20Hz-20kHz). THD: not more than 0.1% at rated power. Intermodulation distortion: not more than 0.1% at rated output. FR: 20Hz-20kHz + 0dB, -0.2dB. Damping factor: 20 at 8 ohms load. Input sensitivity and impedance: 1V 100K for rated output at the maximum level control. Power consumption: 100W at zero signal output. Size: 44.5 × 15.2 × 35.5 cms. Price: £630 (plus VAT).

C-200

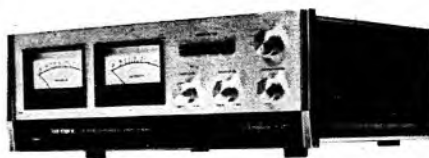
Stereo pre-amplifier. FR: 20Hz-20kHz +0dB, -0.2dB. Distortion: lower than 0.05% at rated output level. Inputs: disc (1) 2-6mV 30K, 47K; disc (2) 2-6mV 47K, mic 2mV 47K, tuner 200mV 130K, aux (1 & 2) 200mV 130K, tape play (1 & 2) 200mV 130K. Maximum output level: 10V at 0.05% distortion. Tone controls: 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 cms. Price: £525 (plus VAT).



Accuphase P-250 power amplifier



Accuphase E-202



Accuphase P-300

★ Indicates entry is illustrated

M-60

Monophonic power amplifier. Output 300W. THD: 0.1%. FR: +0 -0.2dB over 20Hz-20kHz; +0-3dB over 2Hz to 90kHz range. Input sensitivity and impedance 2V, 100K Ω . Damping Factor 45. Controls 1dB step attenuator type volume control. Power Level meter. Dimensions 48.2 x 34.5 x 17cm. Features/Facilities: Heavy duty large energy power supply. Subsonic Filter to eliminate noise below audible range. Price: £685 (plus VAT).



Alba 900

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. Impedance: 100K ohms. Controls: output level for mid and high. Dimensions Type A: 48.2 x 34.5 x 8.2cms. Type B: 44.5 x 34.9 x 8.2cms. Features: Cross over frequencies selectable with plug in boards. 12dB or 18dB octave filter slope, switchable. Guaranteed specifications. Price: £395.00 (plus VAT).



Alba 700A

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 impedance: 0.1V, 100K ohms. Damping Factor: 50, 5 or 1 changeable. Controls: Power on/off, subsonic filter, damping factor switch, notched attenuators one each channel. Dimensions: 48.2 x 35.3 x 15cms. Features: Dual power supplies, comprehensive protection circuit. 18dB/Oct; subsonic filter. Guaranteed specifications. Price: £525.00 (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 \pm 1dB. Inputs sensitivity and impedance: phono 1.3mV, Aux 1.150mV, tuner 150mV, tape monitor DIN 30mV, PIN 150mV. Damping Factor: more than 60. Controls: Bass, treble, loudness. Dimensions: 38 x 26.3 x 12.5cms. Features: High and low filters. Mono/stereo selector, balance control, headphones output jack, tape inputs. Price: £107.56 (plus VAT).

AM 2400

Power amplifier. Output: 40W into 8 ohms.

THD: less than 0.15%. FR: 30Hz-15kHz \pm 1dB. Inputs sensitivity and impedance: phono 1.3mV, aux 1.150mV, tuner 150mV, tape monitor DIN 30mV, PIN 150mV. Damping Factor: more than 60. Controls: Bass, treble, tone, loudness. Dimensions: 44 x 33.1 x 14.1cms. 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; quadrophonic adaptor. Damping Factor greater than 200 at 50Hz; S/N ratio, p.u. 69dB (77dB weighted) other input 79dB (82dB weighted). Dimensions: 46 x 24 x 10cm. Features: var. channel separation for quad. 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 \pm 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 x 19.5 x 10cm. Price on application.

■ ALPHA

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

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 x 21 x 10cm. Price: £63.50 (excluding 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 x 30 x 13cm. Price: £89 (excluding VAT).

■ AMCRON

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/Impedance: 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 x 22 x 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 x 8¾ x 1¾in. Weight: 10lb. Fully protected against short circuit or mis-

match. Outlet socket for headphones on front panel. Price: on application.

DC300A

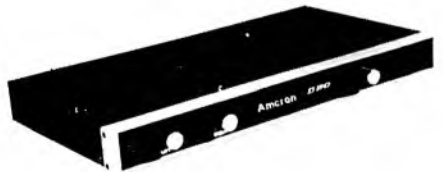
Stereo power amplifier. Output: 500W RMS per channel into 2.5 ohms, 350W RMS per channel into 4 ohms, 200W RMS per channel into 8 ohms, 650W RMS into 8 ohms or 4 ohms mono. THD: <0.05% from 0-20kHz. Intermodulation distortion: <0.05% 10mW to 150W into 8 ohms. FR: DC to 20kHz ±0.1dB. Damping factor: >200 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 9¾in. 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 ±



Amcron DI50A



Amcron D60



Amcron IC150A

★ Indicates entry is illustrated

0.6db 3Hz-100kHz into Hi Z Volume, loudness, panorama, bass and treble controls. Headphone monitor socket on front panel Rumble and scratch filters. Mains: 120, 240V 50-400 Hz. Size: 17 × 5¼ × 8½ in. Price: on application.

■ AMSTRAD

AMS Trading (Amstrad) Ltd,
89 Ridley Road, Dalston, London E8 2NH.
Tel: 01-249 5237/8/9.

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: 429 × 163 × 92mm. Features: headphone socket, extension loudspeaker outlets, slider controls, tape recording signal output. Price: approx. £40.



Amstrad IC 2000 Mk III



A & R A60



A/R/D 4000 system

■ 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: ± 1dB 50Hz-20kHz typ -9dB at 20Hz. Other Inputs: ± 1dB 20Hz-20kHz. Inputs Sensitivity: Mag PU: 3mV 47K ohms at 1kHz, overload margin 36dB. Others: 100mV 100K ohms 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 × 24 × 6cms. Features: Phones socket. Delayed electronic protection of power amplifier. Toroidal mains transformer, built-in rumble filter on RIAA. Low turnover frequency bass control. Single fibreglass P.c. board. Price: £115 (plus VAT).

■ A/R/D

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

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 kHz 8 ohms. Controls: Volume balance max-zero, bass and treble ± 12dB 50Hz, 10kHz. Dimensions: 26 × 35.2 × 11.2cms. Features: Three position low pass filters 4kHz, 7kHz, 10kHz. All input levels preset. Price: £160 (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 ± 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 ×



Armstrong 621



BGW 500D

28.5 x 8.2cm. Features include electronic gate switching on inputs, teak or rosewood case. Price: £132 (inc. VAT).

■ AUDIO KRAFT

Audio Kraft, 320 London Road, South Benfleet, Essex.
Tel: South Benfleet 58500.

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 ohms. Aux 1, 2 and tape 200mV, 100K ohms. Controls: Volume, balance, bass, treble, filter, spk 1, spk 2, on-off. Features: Two sets speakers, filter, toroidal transformer. Price: on application.

Power Amplifier

Output: 100W into 8 ohms. THD: 0.05%. FR: 5Hz-50kHz. Inputs sensitivity: 1V. Controls: R/Lft gain. Features: Half power switch suitable for both monitor speakers in Audio Kraft range. Price: on application.

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: on application.

■ BGW SYSTEMS

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

BGW Model 500D ★

Power amplifier. Power output: 200W per channel with both channels driven into 8 ohms at 25kHz to 15kHz. THD: not more than 0.2% at any power level from 250mW to 200W into 8 ohms. FR: 20Hz-20kHz +0dB, -0.2dB. Noise and hum level: better than 110dB below rated output into 8 ohms. Input sensitivity: 2V for 40V output. Voltage gain: 26dB. Input impedance: 47K. Damping factor: greater than 1000 at low frequencies into 8 ohms. Load impedance: ≥2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Size: 19 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 channel with both channels driven into 8 ohms at 20Hz-20kHz. THD: 0.1% at any power level from 250mW to 85W. FR: 20Hz-20kHz +0dB, -0.25dB. Noise and hum level: better than 110dB below rated output. Input sensitivity: 1.5V for 30V output. Voltage gain: 26dB. Input impedance: 47K. Damping factor: greater than 500 at low frequencies into 8 ohms. Load impedance: ≥2 ohms. Facilities include electronic crowbar circuitry, circuit breaker, thermal trip. Finish: standard brush silver rack panel. Weight: 27lb. Price: £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 impedance: 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 (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 5 kohms. Rated Output: 4 volts into 5 kohms. 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: 20-20,000. Dimensions: 5.25 x 19 x 10.75ins. Price: £395.00 (plus VAT).

★ Indicates entry is illustrated

50

Moving coil cartridge pre-amplifier. Gain: 26dB. S/N: 82dB below 1mV input from 20Hz-20kHz. THD: less than 0.01%. FR — 1dB at 5Hz, and 100kHz. Input impedance: 10.30. 1000 ohms switch selectable. Output impedance: 5,000 ohms source for nominal 47,000 ohm load. Dimensions: 8³/₄ × 5⁵/₈ × 2¹/₂ins. Price: on application.

■ BOSE

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

Model 1801 ★

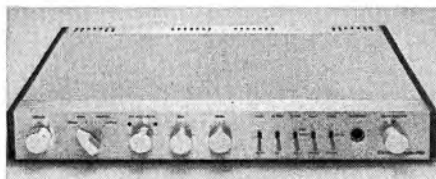
Power amplifier. Output: 250W per channel into 8 ohms or 400W RMS per channel into 4 ohms. FR: 20Hz-20kHz ±1dB. Input impedance: greater than 50K. Input sensitivity: 1.5V RMS for 250W into 8 ohms. Damping factor: greater than 40. S/N ratio: 120dB. Controls: input gain controls, 1/2 channel selection switch, speaker selection A and B, on/off, LED and meter display switch. Current limiting. Built-in thermal heat sensors. Dimensions: 18 × 18¹/₂ × 7³/₁₆in. Price: £619 (plus VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 111 Chertsey Road, Byfleet, Surrey KT14 7LA. Tel: Byfleet 41131.



Bose 1801



Cambridge Audio P80 Amplifier Control Unit



Dayton Wright SPS Mk3

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: £165 (plus VAT).

■ DAYTON WRIGHT

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

SPS Mk 3 ★

Pre-amplifier. Output: 25V peak to peak. IM distortion: under 0.002% at 1.5V output. FR: (high level) ±1dB at 4Hz-0.7MHz, RIAA phono ±0.2dB at 40Hz-20kHz. Inputs: phono 1, phono 2, tuner, aux 1, aux 2, tape. Controls: balance, volume, input selector, stereo reverse, stereo/mono, tape monitor, on/off. Dimensions: 5 × 5¹/₂ × 10in. Weight: 9lb. Output jack for medium impedance headphones. Price: on application.

SPL

Professional pre-amplifier. Outputs: 25V peak to peak. IM distortion: under 0.002% at 1.5V output. FR: (high level) ±1.6dB at 1Hz-

0.7MHz. Inputs: low level magnetic 30mV for 1.5V output, normal magnetic 1.5mV, tape 400mV. S/N ratio: better than 70dB. Controls: balance, volume, left and right channel controls for headphone input, input selector pushbutton, tape monitor 1 and 2, tape dub 1-2, 2-1. Dimensions: 11 × 5½ × 10in. Price: on application.

■ **DUAL**

Audiodecks Ltd, PO Box 7, Sandbeck Way, Wetherby, West Yorks.
Tel: Wetherby 5477.

CU 121-1

Stereo power amplifier with 40W output. THD: <0.2%. FR: 15Hz-45kHz ± 0.5dB. Inputs sensitivity: 2mV-47K (mic), 2.5mV-47K (RIAA PU), 300mV = 47K (tape, tuner, aux, monitor). Controls: bass, treble with linear button switchable. Dimensions: 42 × 33.5 × 10.8cms. Price: £223.45 (plus VAT).

■ **DUNLAP-CLARKE**

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

Dreadnought 1000 ★

Power amplifier. Output: 250W into 8 ohms, 500W RMS into 4 ohms, 1,000W into 2 ohms. THD: 0.25% maximum, typically 0.025%. FR: 20Hz-20kHz ±0.5dB. Inputs: 1.75V for full output. Input impedance: 100K. S/N ratio: at least 100dB minimum. Controls: meter calibrated. Dimensions: 19 × 7 × 12in. Price: £982 (plus VAT).

Dreadnought 500

Power amplifier. Output: 150W into 8 ohms, 300W RMS into 4 ohms, 600W into 2 ohms. FR: 20Hz-20kHz ±0.5dB. Inputs: 1.75V for full output. Input impedance: 100K. S/N ratio: at least 100dB minimum. Controls: meter calibrated. Dimensions: 19 × 7 × 12in. Price: £700 (plus VAT).

M 10

Preamplifier. Inputs: Moving coil magnetic pick-up, tape, monitor. Controls: gain and high pass filter. Channel balance. Features: lowest distortion available and ultra low noise. Price: £535 (plus VAT).

Dreadnought 250

Power amplifier with output of 125W into 8 ohms, 250W into 4 ohms. THD: Max. 0.25, typical 0.0025%. FR: 20Hz-20kHz. Inputs sensitivity: 1.25V for full output. Price: £513 (plus VAT).

■ **EAGLE**

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

AA 2

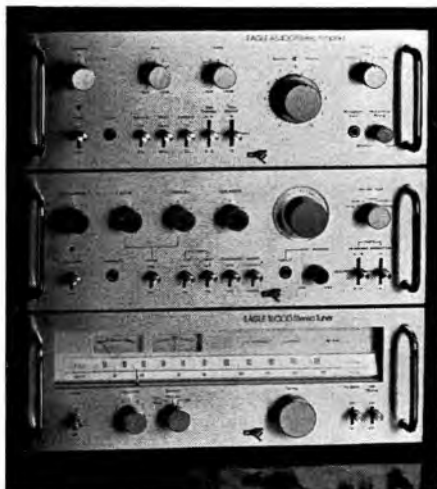
Integrated amplifier. Output: 10W per channel, both channels driven at 8 ohms. THD: >0.5%. FR: 25Hz-20kHz ±2dB. Inputs: mag 3mV 47K, cer 80mV 100K. tuner 180mV 100k. tape 180mV 100K. Damping factor: 25 at 8 ohms. S/N ratio: mag 58dB (weighted). Controls: input selectors, volume, bass, treble, balance, mono/stereo, scratch filter, rumble filter. Dimensions: 27.5 × 22 × 9.6cm. Price: £54 (plus VAT).

A 6400 ★

Integrated amplifier with facility for use as preamp or power amp. Output: 40W both



Dunlap-Clarke Dreadnought 1000



Eagle A6400/A6600 with T6000 Tuner

★ Indicates entry is illustrated



Eagle A4400/A4600 with T4000 Tuner

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 ohms, Aux 180mV at 100K ohms, tuner 180mV at 100K ohms, tape A (line) 180mV at 100K ohms, tape B 180mV at 100K ohms. Damping Factor: 27 controls: volume, balance, bass, treble, input, mic mixing, loudness, mode, subsonic filter, tape dubbing, tape monitor A/B. Dimensions: 40 \times 29 \times 13.2cms. Features: OCL Quasi-complementary power stage, speaker switching microphone, input and level control, speaker protection. Price: £115 (plus VAT).

A 6600 ★

Integrated amplifier with facility for use as preamp or power amp. Output: 55W, both channels driven at rated distortion figure 20Hz-20kHz. THD: less than 0.15% at rated output. FR: 15-35,000Hz \pm 0.5dB. Inputs sensitivity: Phono 3mV at 47K ohms, aux 180mV at 100K ohms, tuner 180mV at 100K ohms, tape A (line) 180mV at 100K ohms, tape B, 180mV at 100K ohms. Damping Factor: 27. Controls: volume, balance, bass, treble, input, mic mixing, loudness, mode, hi filter, low filter, tape dubbing, tape monitor, A/B tone defeat. Dimensions: 40 \times 29 \times 13.2cms. OCL Quasi-complementary power stage, speaker switching, microphone input and level control, speaker protection, circuit protection. Price: £138 (plus VAT).

A 4400 ★

Integrated amplifier with output more than

20W at 8 ohms. THD: less than 0.3% at rated output. FR: 20-20,000Hz \pm 0.5dB. Inputs Sensitivity: phono (1)3mV at 47 ohms, phono (2) ditto, tape A 1mV/K ohms (DIN), tape B 180mV at 47K ohms, aux 180mV at 47K ohms, tuner 180mV at 47K ohms. Controls: volume, balance, bass, treble, input, loudness, filter, tape response, speakers 1, speakers 2, mono. Dimensions: 38 \times 30 \times 15cms. Tape response switch allows tone controls to be used to contour recordings. VU meters. Price: £96 (plus VAT).

A 4600 ★

Integrated amplifier same as A4400 but with SEC system of five tone controls which can be used with tape response facility. Price: £110.

■ GOODMANS

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

Model Forty-Forty ★

Stereo integrated amplifier. Inputs: magnetic pick-up 2mV into 50 Kohms, aux 60mV into 600 Kohms, tuner 60mV into 600 Kohms, tape 320mV into 50Kohms. S/N: phono 60dB, all other 75dB; all ref. to rated power. Outputs: 35W channel into 4 ohms. Damping factor: 80 into 8 ohms. THD: less than 0.1% both channels driven 60W. FR: 30Hz-20kHz \pm 1.5dB. Controls: power on/off, local LS, remote LS, headphones, surround sound, balance, treble, bass, volume, filters, loudness compensation, reverse LS. Features include output for conventional stereo reproduction, plus facility for four loudspeakers surround sound. Size: 56 \times 30 \times 9.4cm. Price: No rec. retail price.

■ HARMON KARDON

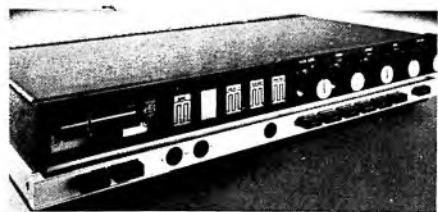
Tannoy, St. John's Road, Tylers Green,
High Wycombe, Bucks. HP10 8HR.
Tel: Penn 2810.

A 401

Integrated amplifier. Output: 20W per chan-



Goodmans forty-forty



Harrison S200



Hitachi HA300

.el. THD: 0.5%. FR: 10Hz-80kHz. Inputs: aux, tuner 150mV 20K, phono 47K, tape monitor 150mV 20K. Damping factor: 30:1. S/N ratio: 65dB. Controls: volume, bass, treble, balance. Dimensions: 33 x 27.5 x 13.4cm. Price: No rec. retail price.

Citation 16

Power amplifier. Output: 150W. THD: 0.05%. FR: 5Hz-110kHz. Impedance: 22K Ω . Damping factor: 300:1. S/N ratio: 100dB. On power display. Dimensions: 48.3 x 35.6 x 23.5cm. Price: No rec. retail price.

Citation 12

Power amplifier. Output: 60W per channel. THD: 0.2%. FR: 0.5Hz-100kHz. Impedance: 22K Ω . Damping factor: 40:1. S/N ratio: 100dB. Dimensions: 31.1 x 31.7 x 14cm. Price: No rec. retail price.

402

Integrated amplifier with output of 40W. THD: 0.1%. FR: 10Hz-60kHz. Damping Factor: 50. Controls: bass, treble, balance, volume function. Dimensions: 39.4 x 37.5 x 13.4cms. Features: Tape mon. twin power supply. Price: No rec. retail price.

Citation 17

Preamplifier with output 14V into 2.2K ohms. THD: 0.001%. FR: 5Hz-125,000Hz \pm 0.5dB. Controls: graphic equaliser function, mode, balance, volume, subsonic cut. Dimensions:

40.6 x 30.5 x 12cms. Features: tape to tape dubbing. Headphone O/P. Price: No rec. retail price.

■ **HARRISON**

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

S200 ★

Stereo integrated amplifier. Incorporates touch sense function switching, an LED output level meter and full output protection which is self-restoring. Inputs: mic 110mV 68K, phono 2.5mV 47K, two aux and radio adjustable 100mV 50K. Noise level: mic and phono 60dB ref 100W, aux and radio 70dB ref 100W. Output: 100W into 4 ohms, 75W into 7.5 ohms. Disc input overload margin 40dB. Damping factor: 100. THD: 0.05% at 100W, 1kHz. FR: 20Hz-20kHz \pm 0.5dB at 50W. Size: 17 x 10½ x 3¾in. Price: £220 (plus VAT).

■ **HITACHI**

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

HA 300 ★

Stereo amplifier. Output: 20W per channel into 8 ohms at 1kHz. FR: 20-30,000 Hz \pm 2dB. Power bandwidth: 30-20,000Hz. Distortion: 0.8% RMS. Damping factor: 55 at 8 ohms. Input sensitivity and impedance: mic 4.8mV 8K, phono 2.4mV 45K, tuner/aux 140mV 50K, tape (1 & 2) 140mV 50K, DIN 400mV 160K. Tone controls: bass \pm 10dB (100Hz), treble \pm 10dB (10kHz). Loudness control: +10dB (100Hz); +5dB (10kHz). Equaliser: \pm 2dB(RIAA). S/N ratio: phono 74dB, aux/tuner 94dB. Residual noise: 0.4mV. Size: 39 x 12.1 x 31.8cm. Weight: 6.7kg. Loudness switch, tape monitor switch, headphone jack and microphone jack. Facility for mic mixing. Price: £110 (inc. VAT).

HA 610 ★

Stereo amplifier. Output: 60W per channel into 8 ohms. THD: 0.3%. FR: 10Hz-30kHz. Inputs/impedance: phono 1-2mV 50K, phono (2) 1.7-6mV/50K; aux (1) 100mV/55K, aux (2) 100mV/55K; tuner 100mV/55K; tape PBI 100mV/55K. Damping factor: 70 at 8 ohms. S/N ratio: phono 75dB, aux 90dB. Controls: tuner, tape, phono, aux, tone, loudness. Dimensions: 43.5 x 144 x 38.8cm. Price: £240 (inc. VAT).

★ Indicates entry is illustrated

■ KLARK-TEKNIK

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

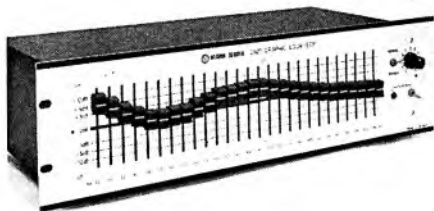
DN27 ★

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: ± 0.5 dB. Hum and noise: 20Hz-20kHz unweighted <-90dBm. Centre frequency accuracy: $\pm 2\%$. Input impedance: Unbalanced 10K ohm nominal. Output impedance: unbalanced <10 ohms, short circuit protected. Operating level:

-20dBm to +24dBm input protection -60V RMS. Balanced floating inputs and outputs available. Input: 10K ohms. Output: 600 ohms. Output clipping point: +22dBm into 600 ohm load. 6dB of gain is available adjusted by the front panel control. This can be increased to 20dB by an internal preset. Panel controls include a mains on/off switch with LED indicator, level control and equalization bypass switch. Size: $19 \times 5\frac{1}{4} \times 8\frac{1}{2}$ in. Price: on application.

DN22 ★

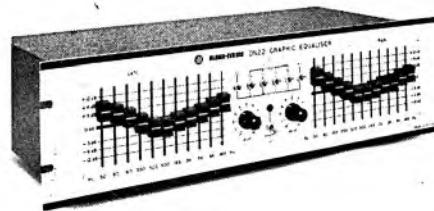
Two channel graphic equaliser. Each channel has 11 variable filters and is particularly suitable for room acoustic correction. A separate high pass and low pass filter, bypass control and a main level control are included on each channel. A maximum of 12dB of boost or cut is available on each of the 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.



Klark Teknik DN27



Klark Teknik DN15



Klark Teknik DN22

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 impedance: 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.

■ LEAK

Rank Hi-Fi.
PO Box 70, Great West Road, Brentford,
Middlesex TW8 9HB.
Tel: 01-568 9222.

2200 ★

Stereo integrated amplifier. Inputs: phono 2.5mV or 6.5mV 47K switchable, tape 150mV 100K, cassette 150mV 100K, tuner 150mV 100K, mic. 2.4mV 47K, main amp 1V 47K; all at 1kHz for 50W output. S/N: phono 65dB, tape/cassette/tuner 80dB, main amp 90dB. Outputs: tape/cassette 150mV, DIN 1.5mV/K, speakers 45W channel into 8 ohms, 50W channel into 6 ohms, 60W channel into 4 ohms. Both channels sine wave driven at 1kHz. High power single channel mode 120W. Damping factor: 40 at 80Hz. THD: 0.1% at 45W. Power bandwidth: 10Hz-40kHz at 50W -3dB. Size: $16.3 \times 12\frac{1}{2} \times 5\frac{1}{4}$ in. Price: £173.33 (plus VAT).



Leak 2200



Hitachi HA610



Lecson Systems AP1

3900 A

Integrated high-powered amplifier. Output: 80W. THD: <0.1%. FR: + 1dB at 1W per channel, 11Hz-50kHz. Inputs Sensitivity: phono, aux, monitor, tuner, mic. Damping Factor: 80. Controls: bass, bass turnover switch, treble, treble turnover switch, headphone jack, monitor control, mixing indicator, mic jack, mic mix level control, low filters, high filters, mode control, loudness, audio muting, two power meters, balance control, volume control, function selector. Dimensions: 48.2 x 40.5 x 17.5cms. Independent power supplies for left and right channels and separate power transformers. Finish in satin aluminium. Price: £284.95 (plus VAT).

■ **LECSON SYSTEMS**

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

AC1 ★

Preamplifier THD: <0.02% at 1kHz. Inputs Sensitivity 2 x PU 2.5mV at 68K, 2 x Aux 125mV at 68K. Dimensions: 36 x 25.4 x 3.8cms. Price: approx £190 (plus VAT).

API ★

Power amplifier with output of 50W. THD:

<0.05% at 1kHz. FR: 10Hz-20kHz ± 0.5dB. Inputs sensitivity 500mV. Dimensions: 28 x 14.5 dia. cms. Price: approx £140 (plus VAT).

■ **LENCO**

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

A50

Integrated amplifier with output 2 x 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: 4.3 x 3.7 x 1.32cms. Features: 'rack mount' style with side handles. Price: £155 (plus VAT).

■ **MONOGRAM**

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

Concert 5000

Totally modular preamp mainframe and headphone amplifier and line driver. 3 tape monitors, aux, tuner, 2 phono. Further details on request.

3000

Integrated amplifier with 40W output at 8 ohms. THD: 0.01%. FR: 5Hz-32kHz. Inputs sensitivity: 2.5 phono, 100 tape/aux/tuner.

★ Indicates entry is illustrated



Monogram 3200

Damping Factor: 60. Controls: selector, tape (2), gain, HK filter. Dimensions: 19 × 12 × 3½ins. Features: LED level controls, tape monitoring (2). Price: £269 (plus VAT).

3050

Power amplifier. Output: 75W at 8 ohms. THD: 0.01%. FR: 2Hz-32kHz. Inputs: 0.775V-0dB. Damping Factor: 350. Controls: 2 × level. A + AB speakers. Subsonic 30Hz. Dimensions: 19 × 12 × 3½ins. Features: Input/output level LEDs (12) two power supplies. Price: £329 (plus VAT).

3200 ★

Power amplifier Class A auto AB + B. Output: 150W into 8 ohms. THD: 0.01%. FR: DC — 32kHz, 100kHz optional. Inputs: 0dB-0.775V. Damping Factor: 500. Controls: 2 gain speakers A + AB. Dimensions: 19 × 12 × 5¼ins. Features: 12 LED power indicators. 2 separate power supplies. Price: £485 (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 × 12 × 7½ins. Features: 12 LED power indicators, subsonic filter, 2 separate power supplies. Price: £595 (plus VAT).

4100

Preamplifier and graphic equalizer. Output: 0dB. 0.775V-7 Volts. THD: 0.01%. FR: 2Hz-32kHz ± 0.5dB. Inputs sensitivity: 2mV/100mV tape/aux/tuner. Controls: 2 phono, tuner, aux, tape (2). Dimensions: 19 × 12 × 5¼ins. Features: 13 band equalizer ½ octave and 1 octave. Price: £565 (plus VAT).

4000

Preamplifier and parametric equalizer. Output: 0dB — 0.775V — 7 volts. THD: 0.01%. FR: 2Hz-32kHz ± 0.5dB. Inputs sensitivity: 2mV phono 100mV tuner/tape/aux. Controls:

Tape, HF filters, master gain, eq. gain. Dimensions: 19 × 12 × 5¼ins. Features: 2 × 4 band parametric equalize. Price: £595 (plus VAT).

■ MUSTANG COMMUNICATIONS

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

SS.50

Power amplifier. Output: 80W. THD: less than 0.5% (typically 0.1%). FR: (Ref. 1kHz) -0.2dB at 10Hz and -0.2dB at 20kHz. Inputs/ impedance: 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 open chassis form. A range of steel cabinets are available. Dimensions: 48.3 × 33.7 × 8.9cm. Price: £100 (plus VAT).

SS.100

Power amplifier. Output: 150W per channel. Details as per SS.50. Price: £134.50 (plus VAT).

■ NAD

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

NAD 60

Integrated stereo amplifier. Output per channel at 8 ohms from 20Hz-20kHz = 30W + 30W. Power Bandwidth: 10Hz-50,000Hz. FR: 20Hz-20,000Hz ± 0.5dB. THD: 0.3%. Damping Factor at 8 ohms: Min 45. S/N: phono and mic 60dB, aux tapes 1 & 2 80dB. Inputs: phono and mic, aux tapes 1 & 2. Dimensions: 38.6 × 13 × 26.4cms. Price: £129 (plus VAT).

NAD 90

Integrated stereo amplifier. Output per channel at 8 ohms from 20Hz-20kHz = 45W + 45W. Power bandwidth: 10Hz-50,000Hz. FR: 20Hz-20,000Hz ± 5dB. THD: 0.3%. Damping



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

Agents in Eire: Peat Wholesale Ltd. Dublin.

Amcron

STATE OF THE ART



New Amcron IC-150A Pre Amplifier

A new phono circuit incorporates an exclusive complementary parallel discrete input, driving an operational amplifier output. This combination results in extremely low distortion, wide dynamic range, and a noise level 85dB or more below a 10 millivolt input. Audibly, the results extend from clean, controlled bass reproduction to precisely accurate music transient response all the way to the top of the audio band.

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and

KJ LEISURE SOUND

101 ST. ALBANS RD., WATFORD, HERTS.



MACINNES LABORATORIES LTD.

MACINNES HOUSE, CARLTON PARK INDUSTRIAL ESTATE,
SAXMUNDHAM, SUFFOLK IP17 2M.
TEL: (0728) 2262 2615

Factor at 8 ohms: Min 45. S/N: phono and mic 60dB, aux tapes 80dB. Input: phono and mic, aux tapes. Dimensions: 38.6 × 13 × 26.4cms. Price: £157 (plus VAT).

NAD 200 ★

Integrated stereo amplifier with built-in Dolby NR. Output per channel at 8 ohms from 20Hz-20kHz = 100W + 100W. Power bandwidth: 10Hz-50,000Hz ± 5dB. FR: 20Hz-20,000Hz. THD: 0.2%. Damping Factor at 8 ohms: Min 45. S/N: phono and mic 60dB, aux tapes 1 & 2 80dB. Inputs: phono and mic, aux tapes 1 & 2. Dimensions: 44 × 16 × 37cms. Price: £299 (plus VAT).

■ NAIM AUDIO LTD

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

NAP 160

High power studio speaker also suitable for use in the home. Two channel delivering continuously 80W into 4 ohms and 50W into 8 ohms from each channel when sine wave driven. Generation of harmonic and inter-modulation distortion is kept to a low level over whole audio bandwidth. NAP 160 is intended as a slave, driven by a controlled programme source, and is therefore not fitted with gain controls in its standard form. Inter-modulation distortion: less than 0.03% at levels up to 35W. FR: at bass end is dependent on gain decoupling capacitor and the half power bandwidth extends to below 5Hz. At top end response is controlled by a passive single pole filter and is 3dB down at 40kHz. Overall the response is independent of load presented to amplifier. Construction: heavy aluminium extrusion which also acts as the heat sink. Features: 30V regulated supply is built in to power NAC 12 stereo control unit.

NAC 12

Stereo control unit is a simple pre-amplifier 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. Prices: on application.

■ NYTECH

Nytech Ltd, 4 High Street, Nailsea, Bristol BS19 1BW.
Tel: Nailsea 5267.

A 225

Integrated amplifier with output of 25W into 8 ohms both channels driven. THD: less than 0.1%. FR: 20Hz-40kHz ± 3dB. Inputs: Disc, tuner, tape. Damping Factor: 50 @ 50Hz. Controls: volume, balance. Dimensions: 40 × 30 × 8.8cms. Features: Interconnection socket for use with RCE 101 equaliser. Price: £95.59 (plus VAT).

CA 225

Integrated amplifier with output 25W into 8 ohms both channels driven. THD: less than 0.1%. FR: 20Hz-40kHz ± 3dB. Inputs: disc, tuner, tape. Damping Factor: 50 @ 50Hz. Controls: volume, balance, bass, treble, middle, filters. Dimensions: 40 × 30 × 8.8cms. Features: As A225 but with tone controls. Price: £118.54 (plus VAT).

A 250

Integrated amplifier with output 50W both channels driven. THD: less than 0.1%. FR: 20Hz-40kHz ± 3dB. Inputs sensitivity: disc, tuner, tape. Damping Factor: 50 @ 50Hz. Controls: volume and balance. Dimensions: 40 × 30 × 8.8cms. Features: interconnection socket for use with RCE 101 equaliser. Price: on application.

RCE 101 Room Correction Equaliser

Controls: 7 independent per channel. Control range: ± 12dB @ each frequency. Gain: Unity (0dB). Input: 100mV @ 100K. Max Input: 2V. Other features: High filter, low filter, cancel (tone defeat) S/N: better than 70dB. Size: 40 × 30 × 8.8cms. Price: on application.

■ NORDMENDE

Vessco Vision and Radio Ltd,
Vessco House, Unit 4, Blackwater Way,
Ash Road, Aldershot, Hants GU12 4DL.
Tel: Aldershot 312661/4.

Stereo 6005ST

Stereo tuner-amplifier with four wavebands FM, L, M, S. Five pre-programmed selection switches for FM, four sliding regulators for



NAD 200

★ Indicates entry is illustrated



Phase Linear 700B



Phase Linear 400



Phase Linear 4000



Phase Linear 2000 pre-amp

control of volume, balance, treble, bass, stereo indicator lamp. Output: 30W. Price: £113.33 (plus VAT).

■ PHASE LINEAR

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

700B ★

Power amplifier with output of 345W @ 8 ohms. THD: 0.25%. FR: 20Hz-20kHz. Inputs sensitivity: 175mV, 100K ohms reducing to 10K ohms at full rotation of control. Damping Factor: minimum 1,000 @ 20Hz. Dimensions: 41 × 21½ × 15cms. Features: Brushed light gold finish, protection circuitry. Price: £452 (plus VAT).

400 ★

Power amplifier with output of 201W @ 8 ohms. THD: 0.25%. FR: 20Hz-20kHz. Inputs sensitivity: 170mV impedance 10K ohms. Damping Factor: 1000: 1 @ 20Hz. Dimensions: 41 × 21½ × 15cms. Features: Brushed light gold finish, protection circuitry. Price: £452 (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: 41 × 21.5 × 15cms. Price: £547 (plus VAT).

2000 ★

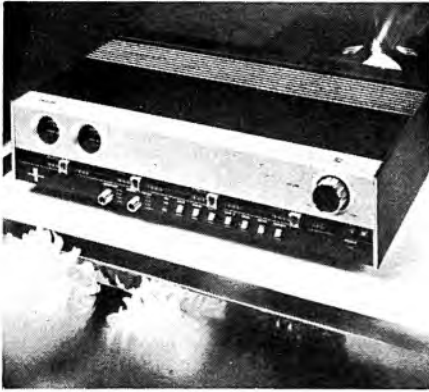
Preamp, output 2V. THD: guaranteed less than 0.1% at rated output. FR: within ± 5dB from 20Hz-20kHz. Inputs Sensitivity: low level 47K, high level 40K. Controls: bass, treble, active equaliser, power switching capability. Dimensions: 41 × 13 × 12cms. Price: £262 (plus VAT).

200

Power amplifier with output of 105W @ 8 ohms. THD: <0.25%. FR: 20Hz-20kHz. Inputs Sensitivity: 150mV 18K ohms. Damping factor: 100-1. Dimensions: 41 × 19 × 12cms. Price: £381 (plus VAT).

■ PHILIPS

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



Philips RH551



Pioneer SA 9500 Mk II

RH 551 ★

Stereo pre-amplifier 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 × IV. 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.

■ **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: 0.1%. FR: 5Hz-50kHz + 0-1dB. Inputs sensitivity: phono (1) 2.5mV/50K, phono (2) 2.5mV/10K/50K/100K variable. Aux 150mV 50K, tuner 150mV 50K, tape play and record 150mV 50K, mic 6mV/24mV/85K, power amp in 1V. Damping



Pioneer SA 5500 Mk II



Pioneer SA 6500 Mk II

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 × 15cms. Features: hum/noise (IHF short circuited A network) phono/75dB auxiliary/tuner/tape replay. 95dB RIAA equalisation 20Hz-20kHz ± 0.2dB. Price on application.

SA 8500 II

Integrated power/preamplifier. Output: 60W to 8 ohms. THD: 0.1%. 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: base, treble, volume, balance, main functions, speakers off, high and low filters, mode switch, duplicate switch, muting switch. Dimensions: 42 × 37.6 × 15cms. Price: on application.

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. Con-

★ Indicates entry is illustrated

trols: speakers, base, treble, 32 step volume control function, high low filter, loudness, balance, mode tape, duplicate, tape monitor. Dimensions: 38 × 30.8 × 13.9cms. Price: on application.

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, bass, treble, tone defeat, volume, balance, function, loudness, tape duplicate. Dimensions: 38 × 30.8 × 13.9cms. Price: on application.

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, volume function, base, treble, balance, tape monitor loudness. Dimensions: 38 × 26.9 × 12.4cms. Price: on application.

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 × 8.1cms. Features: all push buttons selection provides four tape lines and duplicate of any combination. Price: on application.

M 22

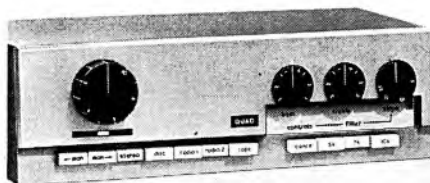
Integrated power amplifier. Output: 30W at 8 ohms. THD: 0.01% at rated power. At 15W 0.005%, at 1W 0.005%. FR: 2Hz-150kHz + 0 - 1dB at 1W. Inputs sensitivity: 1V/50K ohms. Damping factor: 60. Dimensions: 42 × 37 × 15.3cms. Price: on application.

D 23

Integrated crossover network. Output: RL: 50K ohms 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 impedance: 100K ohms. Controls: low/mid low/mid high/high crossovers × 64 sep. level control/0.30dB (1dB steps) 6 slope controls. Dimensions: 42 × 35.2 × 15cms. Price: on application.

C 21

Integrated preamplifier. Output: tape record 150mV/2.2K. Output RL: 50K iV/600 ohms (rated) 20V/600 ohms (maximum). THD: 0.06%. FR: 20Hz-20kHz, aux 10Hz-100kHz. Inputs sensitivity: phono 2.5mV/100/10k/25k/



Quad 33



Quad 303 power amp

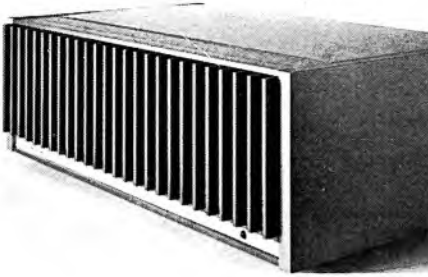
50k/75k/100k ohms. Aux 1 + 2 150mV/50K, tape play/tape record 150mV/50K. Controls: left and right gain, cartridge load pF, cartridge load ohms, function, main volume control. Dimensions: 42 × 35.7 × 8.1cms. Price: on application.

■ QUAD

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

Quad 33 ★

Pre-amplifier. Output: 0.5V into not less than 10K (3.7mV, 20mV or 100mV to recorder). THD: 0.02%. FR: 30Hz-20kHz ± 0.5dB. Inputs/impedance: 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



Quad 405

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: £90 (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/impedance: 0.5V RMS 22K in parallel with 60pF. Damping factor: output source 0.3Ω 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: £98 (plus VAT).

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/impedance: 0.5V RMS 20K in parallel with 50pF. Damping factor: source 0.03Ω in series with 3.3μH. 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 × 34 × 19.5cm. Price: £145 (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/impedance: 0.5V RMS, (unbalanced) 14-50K depending on pre-set gain, (balanced) >14K in parallel with 50H. Damping factor: source 0.5Ω in series with 2.5μH for 17V output. S/N ratio: -80dB. Controls: continuously variable screwdriver pre-set gain. Features/facilities: input bridging for monitoring 600Ω lines; output adjustable for any load 4-200Ω; uncon-

ditional stability. Dimensions: 12 × 32.4 × 15.9cm. Price: £82 (plus VAT).

■ RADFORD

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

ZD22. Stereo Pre-amplifier Control Unit ★

A stereo pre-amplifier of virtually zero distortion. Inputs for disc, tuner and two tape machines providing comprehensive recording and reproducing facilities. Sensitivities: Disc 1mV and aux 50mV for 1V output. Exceptional signal/noise ratio. Output at clip level 18V. Size: 43 × 12 × 25cm. Price: £175 (plus VAT).

HD250. Stereo Integrated Amplifier ★

Uses ZD22 pre-amplifier with power amplifier having a power output in excess of 50W per channel RMS sine wave into 4-8 ohms. Distortion: less than 0.02% at rated power, typically less than 0.01%. True complementary symmetry output having low crossover distortion. Headphone output. Inputs: Disc, tuner and two tape machines. Sensitivities: disc 1mV, aux 50mV for 50W output. Size: 43 × 12 × 28cm. Price: £240 (plus VAT).

ZD25. Pre-amplifier Control Unit

A stereo pre-amplifier of unmeasurable distortion constructed entirely of aluminium. Inputs for disc, tuner, and two tape machines. Input sensitivity: disc 1mV and aux 50mV for 1V output. Output at clip level 20V. Size: 43 × 12 × 25cm. Price: £210 (plus VAT).

ZD100. Power Amplifier ★

A stereo power amplifier of all aluminium construction with high thermal mass. Designed for continuous operation at high output level. Pro-



Radford Stereo pre-amp ZD 22



Radford ZD 100

★ Indicates entry is illustrated

vides 150 watts per channel continuous sine wave into 4 ohms and 90 watts per channel into 8 ohms at virtually zero distortion. Sensitivity: 1V for rated power output. Size: 43 × 14 × 35cm. Price: £305 (plus VAT).

ZD 50

Power amplifier with output 70W into 8 ohms, 110W into 4 ohms. THD: 1kHz: less than 0.004% typically 0.0015%. FR: - 3dB at 8Hz and 50kHz. Inputs sensitivity: 1V into 47K ohms. Dimensions: 44 × 28 × 13cms. Features: DC offset protection, over-temperature protection. Price: £225.00 (plus VAT).

■ REVOX

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

Revox 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 ±1dB. Inputs: mag PU 3mV, ceramic PU 250mV, tape 100mV, aux 100mV, radio

100mV, tape monitor 250mV. Treble control: ±12dB at 12kHz. Bass Control: ±12dB at 60Hz. Mains: 110, 130, 150, 220, 240, 250V AC 50-60Hz. Size: 6¼ × 16½ × 9½in. Weight: 18lb. Price: £299 (plus VAT).

A722 ★

Stereo power amplifier. Inputs: 0.75V 20K for (60W/4 ohms). Outputs: 60W per channel into 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 (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: £720 (plus VAT).

■ ROGERS

Swisstone Electronics Ltd, 4-14 Barmeston Road, London SE6 3BN. Tel: 01-697 8511.

Panthera A75 ★

Integrated stereo amplifier. Power output: 2 × 37.5W continuous into 8 ohms. THD: less than 0.06% up to 20W into 15 ohms at 1kHz. (0.1% average at 32W). Output impedance: 4, 8 and 16 ohms. Damping factor: 60 at 1kHz into 15 ohms. Power frequency response: -3dB 25Hz-35kHz into 15 ohms. S/N ratio: volume control minimum better than -80dB, volume control maximum, tuner, tape, aux inputs better than -75dB. Disc inputs, short circuit or 10K load, 2.5/3.5mV better than -60dB, 55/80mV better than -65dB, all relative to 32W into 15 ohms. Crosstalk: tuner, tape, and aux better than 45dB, 1kHz better than 30dB, 10kHz. Disc input short circuited better than 40dB up to 25kHz. Bass control: ±16dB at 40Hz. Treble control: ±16dB at 10kHz. High pass filter: built-in 20Hz 30dB per octave. Low pass filter: switched 6 or 9kHz. Balance control: range 9dB. Mains: 110, 125, 220, 240V 50/60Hz. Size: 14¼ × 11¼ × 4½in. Price: £95 (plus VAT) with optional teak or walnut end trim

A75 Series 2 ★

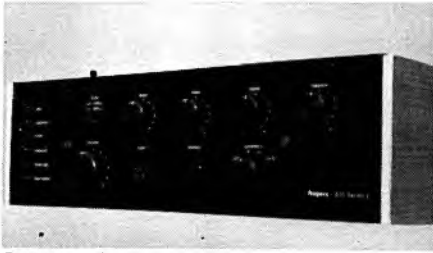
Integrated amplifier with output 45W per channel THD: <0.08% at 1kHz <0.3% 40Hz-20kHz. FR: ±1dB 25Hz-20kHz, ±2dB 20Hz-50kHz. Inputs sensitivity: Disc: RIAA



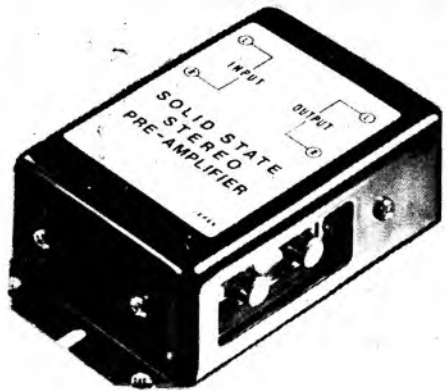
Revox A78



Revox A722



Rogers A75 Series 2



Ross Elec Stereo pre-amp



Rogers Panthera A75



Rotel RA 312

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 × 28.5 × 11.5cms. Features: DC coupled units. Darlington output devices. Price: £135 (plus VAT).

■ ROSS ELECTRONICS

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

Stereo pre-amplifier ★

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

■ ROTEL

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

RA 212

Integrated amplifier with output of 10W at rated power, bandwidth 50-20,000Hz at rated THD. THD: 1%. FR: 20-60,000Hz. S/N: >80dB. Dimensions: 33.5 × 24 × 11.5cm. Features: 2 pairs of speaker facilities. Tape monitor, rotary knobs for balance, volume, treble, bass, function selection. Price: £57.64 (plus VAT).

RA 312 ★

Integrated amplifier with output of 18W at 50-20,000Hz. THD: 1%. FR: 15-60,000Hz. S/N: >85dB. Dimensions: 40 × 24 × 11.5cm. Price: £67.97 (plus VAT).

RA 412

Integrated amplifier with output of 25W at 20-20,000Hz. THD: 0.5%. FR: 15-90,000Hz. S/N: >85dB. Dimensions: 40 × 24 × 11.5cm. Features include split power supply. Audio muting, simulated four channel sound, tape dubbing facilities, high and low filters. Price: £87.71 (plus VAT).

RA 612

Integrated amplifier with output of 35W at 20-20,000Hz. THD: 0.5%. FR: 5-95,000Hz. S/N: >90dB. Dimensions: 43 × 33 × 14cm. Electronic circuitry protection, full tape dubbing and audio muting. Separate right and left controls. Outputs for four speaker matrix. Price: £82.25 (plus VAT).

★ Indicates entry is illustrated

RA 812

Integrated amplifier with output of 45W at 20-20,000Hz. THD: 0.3%. FR: 5-100,000Hz. S/N: >90dB. Dimensions: 43 × 33 × 14cm. Three stage direct coupled equaliser amp with high gain ICs. Audio muting, tape dubbing and mic mixing. Subsonic, low, high filters. Two direct reading watt meters. Price: £152.28 (plus VAT).

RA 1212

Integrated amplifier with output of 70W 20-20,000Hz. THD: 0.3%. FR: 4-100,000Hz. S/N: >95dB. Dimensions: 43 × 38 × 14cm. Two power transformers. Full tape dubbing, audio muting. Outputs for four speaker matrix. Price: £138.95 (plus VAT).

RA 1412

Integrated amplifier with output of 110W 20-20,000Hz. THD: 0.1%. FR: 3-100,000Hz. S/N: >95dB. Dimensions: 54 × 43 × 18cm. Full tape dubbing, mic mixing. Price: £357 (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 ohms. 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 × 43 × 18cms. Features: 2 aux, tuner, 2 phono. Twin direct reading watt meters. Subsonic filter. Price: £357 (plus VAT).

RA 712

Integrated stereo amplifier with output 40W. THD: 0.5%. Controls: volume, bass, treble, balance, loudness, low filter, 2 tape monitors, 2 pairs speakers, phones. Dimensions: 43 × 38 × 14cms. Features: tuner, phono, aux. Twin direct reading wattmeters. Price: £106.40 (plus VAT).

■ SANSUI

Vernitron Ltd, Thornhill, Southampton SO9 5QF.

Tel: Southampton 444811.

AU 4900

Integrated amplifier with output of 38W. THD: 0.15%. FR: 10Hz-40kHz + 0.5dB - 2dB. Inputs sensitivity: phono 2.5mV 50K, mic 2.5mV 10K, aux 130mV 50K, tuner 130mV 50K, tape 130mV 50K. Damping factor: 50. Controls: bass, treble, balance, volume, mic level, loudness, high and low filter, muting.

Dimensions: 40 × 12 × 24cms. Features: facilities for 2 sets of speakers. Price: £173.38 (inc. VAT).

AU 5900

Integrated amplifier with output of 50W. THD: 0.1%. FR: 10Hz-50kHz + 0dB - 1.5dB. Inputs sensitivity: phono 1/2 2.5mV 50K, aux 1/2 130mV 50K, tape 1/2 130mV 50K, tuner 130mV 50K, main-in 700mV 50K. Damping factor: 80. Controls: bass, midrange, treble, volume, balance. Dimensions: 43 × 13.2 × 31.2cms. Features: facilities for 2 phono inputs one with variable impedance. Two speaker systems. Tape to tape reprint. Price: £246.53 (inc. VAT).

AU 2900

Integrated amplifier with output of 17W. THD: 0.3%. FR: 10Hz-40kHz + 0.5dB - 2dB. Inputs sensitivity: phono 2.5mV 50K, aux 130mV 50K, tuner 130mV 50K, tape 130mV 50K. Damping factor: 30. Controls: bass, treble, balance, volume, hi filter, loudness. Dimensions: 40 × 12 × 24cms. Features: facilities for 2 sets of speakers. Price: £100.01 (inc. VAT).

AU 3900

Integrated amplifier with output 25W. THD: 0.15%. FR: 10Hz-40kHz + 0.5dB-2dB. Inputs sensitivity: phono 2.5mV 50K, mic 2.5mV 10K, aux 130mV 50K, tuner 130mV 50K, tape 130mV 50K. Damping factor: 50. Controls: bass, treble, balance, volume, mic level, hi filter, loudness. Dimensions: 40 × 12 × 24cms. Features: facilities for 2 sets of speakers. Price: £143.06 (inc. VAT).

AU 7900

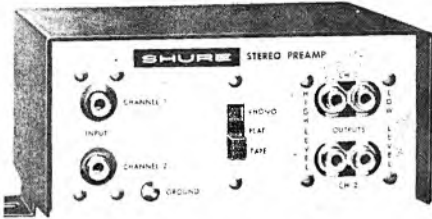
Integrated amplifier with 80W output. THD: 0.1%. FR: 10Hz-50kHz + 0dB - 1.5dB. Inputs sensitivity: phono 1/2 2.5mV 50K, aux 1/2, 130mV 50K, tape 1/2 130mV 50K, tuner 130mV 50K, main in 700mV 50K. Damping factor: 80. Controls: bass, midrange, treble, volume, balance. Dimensions: 43 × 13.2 × 34cms. Features: 2 speaker systems, tape to tape reprint. Price: £337.71 (inc. VAT).

AU 9900

Integrated amplifier with output 80W. THD: 0.08%. FR: 10Hz-50kHz + 0dB - 1dB. Inputs sensitivity: phono 1: 2, 4 or 8mV, 30K, 50K or 100K ohms. Phono 2, 2mV 50K, aux 1/2 130mV 50K, tape 1/2 130mV 50K, tuner 130mV 50K. Controls: bass, midrange, treble, volume, balance. Features: 2 speaker systems, tape to tape reprint. Price: £559.29 (inc. VAT).



Shure Solophone SA-2E



Shure M64-2E

■ SHURE ELECTRONICS

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

Solophone SA-2E ★

Provides personal stereo listening for one or two people. Gives sufficient amplification to accept output from any high quality cartridge (for example Shure Stereo Dynetic range), tape deck or FM tuner. There are input selector switch, separate volume controls for each channel and two headphone jacks mounted on the front panel. Size: 10¼ × 3½ × 3in. Weight: 2lb. Mains: 240V 50Hz. Price: £36.30 (plus VAT).

M64-2E ★

Stereo pre-amplifier designed to furnish voltage gain and equalisation to enable amplifiers not equipped with necessary input facilities to be used with magnetic pickup cartridges and tape heads. Can also be used for microphones and as buffer amplifiers. FR: 20Hz-20kHz ±2dB. Input impedance: 50K at 1kHz. Load impedance: (high) 22K minimum; (low) 600 ohms optimum. Separation: 50dB at 1kHz. H and N: 71dB minimum below 10mV input from 20Hz-20kHz. Optional battery power unit. Price: £42 (plus VAT).

■ SONY (UK) LTD

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

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

TA 5650★

Output: 65W RMS per channel, both channels operating at 1kHz into 8 ohms, 20Hz-20kHz. Harmonic distortion: 0.1% at 1kHz rated output power. IM distortion: 0.1% at rated power. S/N ratio: 100dB. Damping factor: better than 100 at 1 kHz into 8 ohms. Pure complementary direct-coupled circuit system (main amp). Mains: 240V AC. Price: No rec. retail price.

TA 8650 ★

Output: 90W RMS per channel, both channels operating at 1kHz into 8 ohms, 20Hz-20kHz. Harmonic distortion: 0.1% at 1kHz rated output power. IM distortion: 0.1% at rated output power. S/N ratio: 100dB. Damping factor: better than 100 at 1kHz into 8 ohms. Inputs: phono (1) 2.5mV 50K, phono (2) 2.5mV 50K, mic 0.2mV 50K, aux 1, 2, 3 150mV 100K, tuner 150mV 100K, tape (1 & 2) 150mV 100K. FR: (RIAA equalisation curve ±0.2dB) phono (1 & 2) 10Hz-100kHz ±0-2dB, aux 1, 2, 3, tuner, tape (1 & 2). Tone controls: bass 250/500Hz ±10dB, treble 2.5/5kHz ±10dB, filters (high) 12dB/Oct 9-20kHz (turnover), (low) 12dB/Oct 10-40Hz (turnover). S/N ratio: 70dB phono (1 & 2), 90dB aux 1, 2, 3, tape (1 & 2). Pure-complementary triple push-pull direct-coupled circuit system. Size: 44 × 17 × 42cm. Weight: 20.8kg. Price: No rec. retail price.



Sony TA5650



Sony TA8650

★ Indicates entry is illustrated



Sony TA 3650 with ST 3950



Sony TA 1630

TA 2650

Integrated amplifier with output of 48W per channel, both channels operating at 1kHz into 8 ohms. THD: 0.2% at 1kHz rated output power, 0.15% at 1W output power. FR: 10Hz-100kHz + 0-2dB. Inputs sensitivity: phono 1 2.5mV 50K, aux 1 150mV 100K, tuner 150mV 100K, tape $\times 2$ 150mV 100K, DIN 150mV 100K. Damping factor: 25 (8 ohms) at 1kHz. Controls: power, muting, volume, monitor, function, tape copy, acoustic comp balance, treble, bass speaker. Dimensions: 39 \times 29 \times 15cms. Features: click setting volume and tone controls. Direct coupled amplifier circuit. Protector circuit. No rec. retail price.

TA 1630 ★

Integrated amplifier with output of 25W per channel, both channels operating at 1kHz into 8 ohms. THD: 0.5% at rated output power 0.1% at 1W output power. FR: 20Hz-100,000Hz \pm 1dB at tuner input. Inputs sensitivity: phono 1 2.5mV at 50K ohms, aux 1 200mV at 100K, tuner 200mV at 100K, tape 200mV at 100K, DIN 200mV 100K. Damping factor: 40 (8 ohms) at 1kHz. Controls: power, volume, monitor, function, loudness, pre-

sence, balance, treble, bass. Dimensions: 39 \times 29 \times 15cms. Features: click setting tone controls, direct coupled amplifier circuit, protection circuits for amplifier and speakers. No rec. retail price.

TA 3650 ★

Integrated amplifier with output 60W per channel, both channels operating at 1kHz into 8 ohms. THD: 0.1% at rated output power, 0.03% at 1W output power. FR: 10Hz-100kHz + 0-2dB. Inputs sensitivity: phono 1 2.5mV 50K ohms, phono 2 2.5mV 50K ohms. Aux 150mV 100K ohms, tuner 150mV 100K ohms, tape 150mV 100K ohms. Damping factor: 35 (8 ohms) at 1kHz. Controls: muting, volume, function, monitor, tape copy, mode, balance, treble, bass, speaker, low and high filter, turn-overs. Dimensions: 46 \times 33 \times 17cms. Features: click setting volume and tone controls, tape to tape completely independent, direct coupled dual transistor differential amplifiers. No rec. retail price.

TA-73

Integrated amplifier with output 10W per channel. Further details on request.

■ 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 660mV. Damping factor: >25 @ 40Hz. Controls: volume, input select, balance/mono. Dimensions: 33 \times 22 \times 9.6cms. Price: on application.

■ J. E. SUGDEN

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

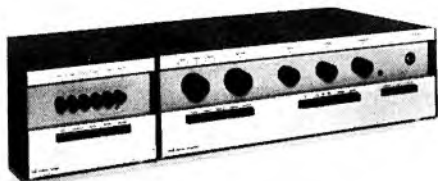
Tel: Cleckheaton 2501.

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. Plug-in adaptors available for various cartridges, microphones, etc. 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



J. E. Sugden C51



J. E. Sugden A48



J. E. Sugden P51

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: £88 (plus VAT).

A48 Series Two ★

Integrated stereo amplifier. Inputs: mag PU 2.5mV 47K, radio 100mV 200K, tape 100mV 200K, aux 100mV 200K. Noise level: (PU input) -70dB, (other inputs) -82dB. Overload capability: (PU input) 100mV, (other inputs) infinite. Output: 45W into 8 ohms. Controls: bass ±14dB at 40Hz, treble ±14dB at 10kHz, balance ±6dB at 180° rotation, fade out at full rotation, volume, input selectors, LF filter 18dB/octave from 70Hz, HF filter at 4, 7 or

10kHz, pushbutton selection of slope (steep 18dB/octave, gradual 6dB/octave), quiet button (-16dB loudness compensated), mono/stereo, left or right output. HD: <0.1%. FR: 30Hz-20kHz ±1dB at all output levels. Size: 16 x 5¼ x 11½in. Finish: Nextel with brushed aluminium panel. Special output stage. Price: £156 (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 ±0.75dB at all power levels. Finish: case finished in embossed PVC with matt PVC facing on aluminium panel. Price: £112 (plus VAT).

TANDBERG

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

TA300M

Integrated stereo amplifier. Inputs: mag PU (2) 2.5mV 48K, tape (2) 200mV 100K. Noise level: (PU inputs) 60dB, (other inputs) 83dB. Overload capability: 25dB. Output: 35W RMS per channel. Controls: treble ±17dB, high filter -3dB at 7kHz, bass ±15dB, loudness +7dB at 10kHz, low filter -3dB. HD: 0.2% at 1dB below rated output. Load impedance: 4-8 ohms. FR: 15Hz-50kHz -1.5dB. Size: 16 7/8 x 3½ x 9 5/8in. Finish: teak or rosewood. Headphones jacks on front plus microphone input. Input mixing capability. Price (teak or rosewood): £145.78 (plus VAT).

TECHNICS

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

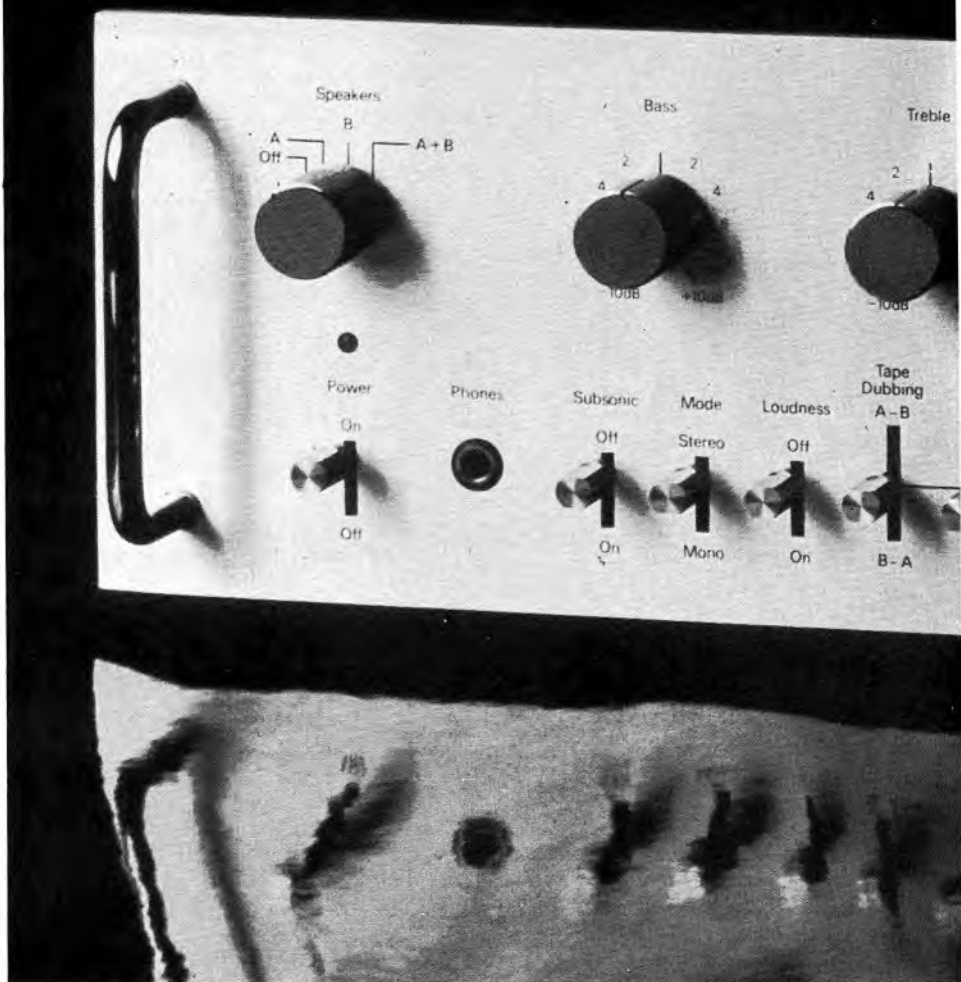
SU-8600

Integrated amplifier. Output: 2 x 85W (4 ohms) 2 x 76W (8 ohms) at 1kHz. 2 x 80W (4 ohms), 2 x 73W (8 ohms) at 20Hz-20kHz. THD: 0.08%. FR: 20Hz-20kHz ± 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 x 17.3 x 35.2cms. Price: £319.95 (inc. VAT).

SU-3500

Integrated amplifier. Output: 2 x 55W (4

**WHEN A COMPANY WANTS TO BECOME FAMOUS,
IT PULLS OUT ALL THE STOPS.**



Here at Eagle, we're determined to be one of the big names of the hi-fi world.

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EAGLE

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

★ Indicates entry is illustrated

ohms) $2 \times 43W$ (8 ohms) at 1kHz. $2 \times 47W$ (4 ohms) $2 \times 41W$ (8 ohms) at 20Hz-20kHz. THD: 0.08%. FR: 5Hz-100kHz + 0-3dB. S/N: rated power phono 60dB aux 80dB. 50mW power output phono 53dB aux 54dB. Damping factor: 50, 100. Inputs and tone controls as SU-8600. Dimensions: 41 x 14 x 34cms. Price: £219.95 (inc. VAT).

SU-7600

Integrated amplifier. Output: $2 \times 55W$ (4 ohms), $2 \times 43W$ (8 ohms) at 1kHz. $2 \times 50W$ (4 ohms), $2 \times 41W$ (8 ohms) at 20Hz-20kHz. THD: 0.2%. FR: 7Hz to 75kHz-3dB. Damping factor: 20, 40. Inputs: phono, tuner, tape deck. Bass and treble tone controls. Dimensions: 41 x 14 x 34cms. Price: £114.95 (inc. VAT).

SU-7200

Integrated amplifier. Output: $2 \times 24W$ (4 ohms) $2 \times 22W$ (8 ohms) at 1kHz. $2 \times 21W$ (4 ohms) $2 \times 20W$ (8 ohms). THD: 0.8%. FR: 10Hz-30kHz + 0-3dB. Damping factor: 12.5, 25. Inputs: phono, tuner, tape deck. Bass and treble tone controls. Dimensions: 41 x 14 x 32.2cms. Price: £83.95 (inc. VAT).

■ TELETON

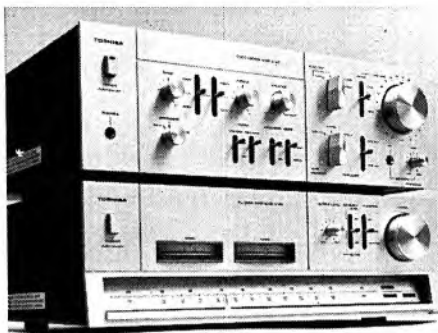
Teleton Electro (UK) Co Ltd,
Teleton House, Waterhouse Lane,
Chelmsford, Essex CM1 1BD.
Tel: Chelmsford 62442.

A401B

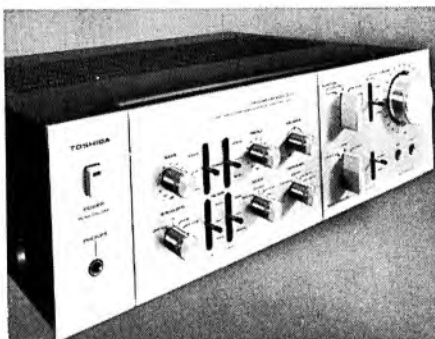
Stereo amplifier. Twin VU meters. Output power: 20W RMS per channel, both channels driven. HD: 0.3% at 10W 1kHz. IM distortion: 1%. FR: 25Hz-30kHz $\pm 1.5dB$ (Ref. 1kHz). Power bandwidth: 15Hz-30kHz. Input sensitivity: mag PU 3mV 47K, crystal/ceramic PU 150mV 700K, tape 250mV 100K, aux 200mV 100K. Tone controls: bass $\pm 11dB$ (100Hz), treble $\pm 11dB$ (10kHz). High cut filter: -8dB at 10kHz. Hum and noise: (vol/bass/treble max) less than 20mV. Outputs: speakers 8 ohms. Headphones: 8 ohms (500mV at 20W). Crosstalk: -50dB at 1kHz. Damping factor: 20. Size: 9 x 42.2 x 23cms. Price: No rec. retail price.

GA203

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



Toshiba SB-420



Toshiba SB-820

treble $\pm 11dB$ (10kHz). High cut filter: -8dB at 10kHz. Hum and noise: less than 20mV. Outputs: speakers 8 ohms, headphones 8 ohms Crosstalk: -50dB at 1kHz. Damping factor: 20. Size: 9 x 42.2 x 2.3cms. Price: No rec. retail price.

■ TOSHIBA

Toshiba (UK) Ltd, Toshiba House, Girling Way, Great South West Road, Feltham, Middlesex.

★ Tel: 01-751 1281.

SB-220

Integrated amplifier with output $2 \times 22W$ at 8 ohms. 40Hz-20kHz. THD: 0.8% rated power. FR: 15Hz-70,000Hz. S/N: phono 66dB, aux, 80dB. Dimensions: 40 x 31.2 x 12.6cms. Price: £88.44 (plus VAT).

SB-420 ★

Integrated amplifier with output $2 \times 42W$ at 8 ohms, 20-20,000Hz. THD: 0.3% rated power. FR: 10-80,000Hz. S/N: phono 70dB, aux 80dB. Dimensions: 45 x 37.5 x 14.8cm. Price: £146.22 (plus VAT).

SB-620

Integrated amplifier with output of more than 62W into 8 ohms. THD: less than 0.2%. FRL 30Hz-15kHz \pm 0.2dB. Inputs: phono (1) 2mV 50K, phono (2) 2mV 50K. Damping factor: more than 30. Controls: dual bass /treble, turnover freq. three level audio muting. Dimensions: 45 \times 37.5 \times 14.8cms. Two tape decks with two-way dubbing. Price: £212.89 (plus VAT).

SB-820 ★

Integrated amplifier with output of more than 82W into 8 ohms. THD: less than 0.1%. FR: 30Hz-15kHz \pm 0.2dB. Inputs sensitivity: phono (1) 2mV at 47K ohms, phono (2) 2mV into 47 or 100K ohms. Damping factor: more than 40. Controls and dimensions same as SB-620. Three tape decks with three way dubbing. Price: £301.78 (plus VAT).

■ TRIO

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

KA 5500

Integrated amplifier with output 55+55 W from 20-20,000Hz. THD: 0.1 at rated power, 0.06 at 1W. Power bandwidth: 5-40,000Hz. S/N: 100dB input shorted. Controls: bass, treble, volume, balance, low filter, audio attenuator. Dimensions: 38 \times 25 \times 14cm. Adjustable sensitivity power meters. Speaker selector, tape dubbing, monitoring switches. Price: £194.22 (plus VAT).

KA 7300

Integrated amplifier with output 65+65 W from 20-20,000Hz. THD: 0.1% at rated power, 0.04% at 1W. Power bandwidth: 5-60,000Hz. S/N: 110dB input shorted. Controls: bass, treble, volume, balance, loudness, subsonic filter, low filter, high filter, presence. Dimensions: 43 \times 37 \times 15cm. Audio attenuator, separate power supplies for each channel, direct coupling FET amps. Price: £255.55 (plus VAT).

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 \times 38 \times 15cm. Features include direct coupling FET amps. DC power amplifier, separate power supplies for each channel. Price: £564.44 (plus VAT).

KA 1500

Integrated amplifier with output 25W from 20Hz-20kHz. THD: 0.1% at rated power. FR: 20Hz-35kHz. Inputs sensitivity: phono 2.5 @ 50K, tuner 150 @ 50K, aux 150 @ 50K, tape (2) 150 @ 50K. Damping factor: 30. Controls: volume, bass, treble, loudness, balance. Dimensions: 38 \times 26.5 \times 14cms. Features: ICL pre-amp, OCL output stage. Price: £71.06 (plus VAT).

KA 3500

Integrated amplifier with output 40W from 20Hz-20kHz. THD: 0.2% at rated power. FR: 10Hz-40kHz. Inputs as per KA 1500. Damping factor: 50. Controls: volume, bass, treble, balance, loudness, speakers. Dimensions: 38 \times 25 \times 14cms. Features: ICL pre-amp, OCL output stage. Price: £111.11 (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 \times 38 \times 15cms. Features: DC response, two step loudness, tone defeat, dual power supplies. Price: £198.00 (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 \times 38 \times 15cms. Features: DC response, power meters, triple power supplies, tone defeat, phono gain switch. Price: £351.16 (plus VAT).

L-07M

Power amplifier (mono) with output 150W from 20Hz-20kHz. THD: 0.008% at rated

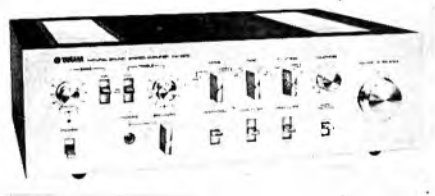


Trio KA 7100

★ Indicates entry is illustrated



Trio KA 9100



Yamaha CA1000

power. Inputs sensitivity: 1V @ 50K. Damping factor: 120. Dimensions: 20 × 39 × 16cms. Designed to mount on or under speaker. Price: to be announced.

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 × 33 × 10cm. Suitable for both MM and MC cartridges. Price: to be announced.

■ YAMAHA

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

CA800

Integrated stereo amplifier. Phono input: 3mV into 47K. Noise level: 80dB. Output: 45W per channel into 8 ohms. Load: 4-16 ohms. Damping factor: 70. THD: 0.02% at rated power. FR: 10Hz-100kHz. Mains: 110-240V. Dimensions: 438 × 146 × 324mm. Price: £248 (plus VAT).

CA1000 ★

Integrated stereo amplifier. Phono input: 3mV into 47K. Noise level: 80dB. Output: 70W from 20Hz-20kHz into 8 ohms. Load: 4-16 ohms. Damping factor: 70. THD: 0.016% (Class B)

not measurable in Class A. Distortion measured at 10W. FR: 10Hz-100kHz +0dB ±1dB. Mains: 110-240V. Dimensions: 438 × 146 × 324mm. Price: £328 (plus VAT).

CA 610

Integrated stereo amplifier. Output: 40W RMS per channel. THD: 0.05%. FR: 20-20,000Hz + 0.2dB - 0.3dB. Input sensitivity/impedance: phono 2.5mV, tuner 150mV, phono dynamic margin 150mV. Damping factor: better than 50. Dimensions: 43.5 × 15 × 29.8cms. Wide-range power level meters. Price: £142.20 (plus VAT).

CA 410

Integrated stereo amplifier. Output: 25W RMS per channel. THD: 0.05%. FR: 20-20,000Hz ± 0.5dB. Inputs sensitivity/impedance: phono 2.5mV, aux tuner tape 150mV, phono dynamic margin 150mV. Damping factor: better than 50. Dimensions: 43.5 × 14.1 × 35cms. Wide-range power level meters. Tape monitoring and dubbing independent of source. Price: £106.56 (plus VAT).

Cassette Decks and Recorders

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ AIWA

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

AD 1800 ★

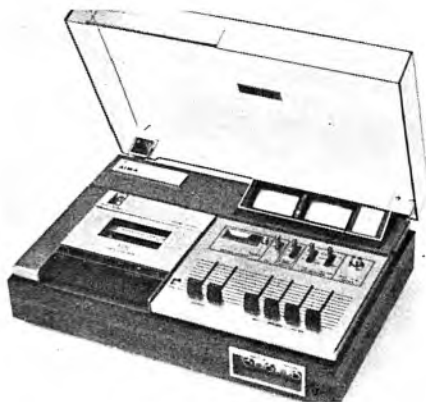
Stereo cassette deck. Double noise reduction circuitry, Dolby and DNL. 3-step tape selector. Automatic CrO₂ tape selector built in. Ferrite record head aligned by four points for extra stability. Quick review/cue controls. Oil-damped cassette eject elevation. Memory rewind system. MPX filter. Mic/line mixing. FR: 30Hz-18kHz (FeCr tape). S/N ratio: 65dB (Dolby and DNL on, CrO₂ tape). W and F: 0.05% (WRMS). Separate bias and equalisation switching. VU meters and +3dB and +7dB peak lights. Dimensions: 42.3 × 29.5 × 15.2 cm. Inputs: mic, line, Rec/PB. Hinged and removable acrylic dust cover. Price: £257.03 (plus VAT).

AD 6500 ★

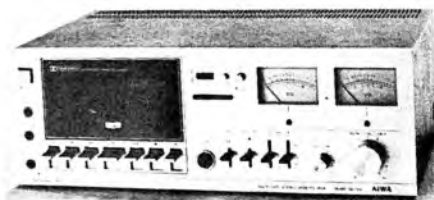
Front loading Dolby cassette deck. Features include: Dolby noise reduction system, motor driven cassette tape loading mechanism, 3-step tape selector (LH, CrO₂ and FeCr), quick review/cue controls, two large VU meters, 2-step peak indicator (3dB and 7dB). Mechanical pause. Two mic/line input selectors and memory rewind mechanism. FR: 30 Hz-16kHz (FeCr tape). S/N ratio: 62dB (FeCr tape, Dolby on) 58 dB 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 × 15.5 cm. Price: approx. £224.77 (plus VAT).

AD 1600 ★

Stereo cassette deck. Fitted with Dolby noise reduction. 3-step tape selector. Automatic



Aiwa AD1800



Aiwa AD6500



Aiwa AD1600

CrO₂ tape selector built-in. Ferrite record head. Full automatic stop system. Quick review/cue control for speedy replay. Oil damped elevation. Mic/line input mixing. 4-track, 2-channel. FR: 30-16,000Hz (F, CrO₂ tape), S/N ratio: 60dB (Dolby on CrO₂ tape). W and F: 0.07%. Separate bias and equalisation switches. 2 VU meters. Inputs for mic, line, Rec/PB. Dimensions: 42.3 × 29.5 × 15.2 cm. Finish: Black. Price: £219.61 (plus VAT).

★ Indicates entry is illustrated

AD 1250

Stereo cassette deck with Dolby noise reduction system. W and F: 0.09% WRMS. FR: 30-16000Hz CrO₂. Bias switch. Twin VU meters, LED peak/indicator. Inputs: line 50mV/50K ohms, DIN 0.1mV/K ohm/3K ohms, mic 0.3mV/200-10K ohms. Outputs: line 0.775V/50K ohms (0VU); DIN 0.775V/50K ohms (0VU); headphones 1mW/8 ohms. Mains voltage: 110-120, 220-240V. Dimensions: 38.8 × 27.5 × 24cms. Price: £141.24 (plus VAT).

AD 6300

Stereo cassette deck with Dolby noise reduction system. W and F: 0.09% WRMS. FR: 30-15000Hz ± 3dB. Bias switch. Twin VU meters, LED peak indicator. Inputs: Line 50mV/50K ohms; DIN 0.1mV/5K ohms, mic 0.25mV/200-10K ohms. Outputs: line 0.775/10K ohms (0VU); DIN 0.775/10K ohms (0VU); headphones 1mV/8 ohms. Mains voltage: 110-120, 220-240V. Dimensions: 42 × 30 × 16cms. Price: £155.94 (plus VAT).

■ AKAI

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

CS 34 D

Stereo cassette deck with Dolby noise reduction. W and F: less than 0.13%. S/N: better than 52 dB. FR: 40 to 13,000 Hz ± 3dB, 40-15,000Hz using chrome. Bias switch for low noise and chrome. Inputs for mic and line. Dimensions: 14.9 × 4.3 × 8.9 ins. Price: £116.40 (plus VAT).

GXC 39 D

Stereo cassette deck using Dolby noise reduction. W and F: less than 0.08%. S/N: better than 50 dB but improves with Dolby up to 60dB above 5kHz. FR: 30-14,000Hz. Bias switch for low noise, chrome and Ferrochrome. Inputs for microphone and line. Dimensions: 17.3 × 4.6 × 9ins. Price: £155.60 (plus VAT).

GXC 310 D

Stereo cassette deck using Dolby noise reduction. W and F: 0.07%. S/N: 50dB or 18dB with Dolby. FR: 30-14,000Hz. Switch for noise control, chrome and Ferrochrome. Inputs for mic and line. Dimensions: 17.3 × 5.6 × 11.8 ins. Price: £188.40 (plus VAT).

GXC 510 D

Similar to GXC 310 D except W and F: 0.08% and FR: 30-16,000Hz. Dimensions: 16.4 × 10.1 × 5.2 ins. Price: £203.60.

GXC 710 D

Stereo cassette deck with Dolby noise reduction. W and F: less than 0.07%. S/N: better than 50dB, with Dolby up to 60dB above 5kHz. FR: 30-14,000Hz. Inputs for mic and line. Size: 17.3 × 5.6 × 12 ins. Price: £211.60 (Plus VAT).

GXC 75 D

Stereo cassette deck with Dolby noise reduction. W and F: less than 0.1%. S/N: better than 50dB, without Dolby. FR: 30-16,000Hz. Inputs for mic and line. Dimensions: 18.1 × 5.8 × 11.9 ins. Price: £219.60 (plus VAT).

GXC 325 D

Stereo cassette deck with Dolby noise reduction. W and F: less than 0.055%. S/N: better than 51dB with Dolby improves 10 dB. FR: 30-19,000Hz. Inputs for mic and line. Dimensions: 17.4 × 5.6 × 11.9 ins. Price: £243.60 (plus VAT).

GXC 740 D ★

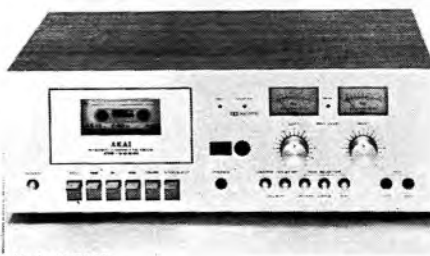
Stereo cassette deck with Dolby noise reduction. W and F: better than 0.07%. S/N: better than 50dB, with Dolby improves up to 10dB. FR: 30-18,000Hz. Inputs for mic and line. Dimensions: 17.3 × 5.6 × 12 ins. Price: £287.60 (plus VAT).

GXC 760 D

Similar to GXC 740 D except: W and F: 0.06% and FR: 30-19,000Hz. Price: £359.60 (plus VAT).



Akai GXC 740D



Akai CS 705D

CS 705 D ★

Stereo cassette deck with Dolby noise reduction system. W and F: less than 0.08% WRMS. FR: 35-16,000Hz. Bias switch. Level indicator, VU, lamp. Inputs: mic (2) 0.3mV; line (2) 70 μ V/100K ohms. Impedance: 100 ohms. Outputs: line (2) 410mV (VU), phone 50mV/8 ohms. Load impedance: 20K ohms. Electronic speed controlled DC motor. Dimensions: 40 × 30 × 16.5cms. Price: £172.80 (plus VAT).

■ ALPHA

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

CD 2000

Stereo cassette deck. W and F: 0.13%. S/N ratio: 45dB. FR: 45Hz-12kHz \pm 3dB. VU meter. Inputs: mic 1mV 600 ohms, aux (phono) 100mV 220K, aux (DIN) 30mV 220K. Slave unit. One motor. Mains: 240V AC. Dimensions: 40 × 25 × 10cm. Price: £69 (excluding VAT).

■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road, Dalston, London E8 2NH. Tel: 01-249 5237/8/9.

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 ohms; line 100mV/250K ohms; DIN 10mV/27K ohms. Outputs: line: 0.7 variable/10K; DIN 0.7 variable/10K; Headphones 8 ohms. Mains voltage: 240V. Dimensions: 37 × 22 × 8.5cms. Price: approx £72 (inc. 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 ohms; line 50mV/100K ohms;



Amstrad 7070



BASF 8200 CrO₂

DIN 10mV/27K ohms. Outputs: line 0-1 variable/10K; DIN 0-1 variable/10K; headphones 8 ohms. Mains voltage: 240V. Dimensions: 42 × 25.5 × 14.5cms. Price: approx. £85.50 (inc. VAT).

■ BASF

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

8200

Stereo cassette deck. W and F: less than 0.2%. Fitted with both Dolby and DNL noise reduction. S/N: better than 45dB (ferric oxide, NR out), better than 58dB (CrO₂ NR out). FR: 40Hz-10kHz (ferric oxide), 40Hz-12.5kHz (CrO₂) DIN. CrO₂ switch alters bias and record/replay equalisation. Two VU meters. Inputs: mic 70dB 1 K, line 0.1-2mV 50K. Outputs: line 0.5-2V 2.5K, phones 8 ohms. Mains: 110/220-240V. Size: 407 × 147 × 270mm. Price: to be announced.

8100 Hi-Fi Stereo Deck CrO₂

Automatic switching to CrO₂ cassettes conforming to the DIN standard. DNL noise limiter. Two illuminated recording level meters. Automatic or manual recording level. Pause key. Tape index counter and automatic switch off. Fast review key. DIN and phono connectors. FR: 20Hz-10kHz (Fe₂O₃), 20Hz-14kHz (CrO₂). S/N ratio: \geq 48dB (Fe₂O₃ with DNL), \geq 52dB (CrO₂ with Dolby). W and F: \leq 0.25%. Size: 327 × 114 × 259mm. Weight: 3.9kg. Price: on application.

8200 Hi-Fi Stereo Deck CrO₂ ★

Dolby system with DNL noise limiter, Automatic switching to CrO₂ cassettes. Two illuminated recording level meters. Automatic or

★ Indicates entry is illustrated

manual recording level, tape index counter with memory to find a pre-set passage, Pause key and automatic switch-off. DIN and phono connectors. FR: 20Hz-12.5kHz (Fe_2O_3), 20Hz-14kHz (CrO_2). S/N ratio: $\geq 54\text{dB}$ (Fe_2O_3 with Dolby), $\geq 58\text{dB}$ (CrO_2 with Dolby). W and F: 0.5%. Size: 407 × 147 × 270mm. Weight: 5.4kg. Price: £180 (plus VAT).

■ BEOCORD

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

Tel: Gloucester 21591.

1100/1101 ★

Stereo cassette deck. W and F: $\pm 0.3\%$ DIN; Dolby B noise reduction system. FR: 40Hz-12,500Hz DIN. CrO_2 switch. Twin VU meters. Input: radio, mic. Outputs: amplifier 550mV/22K ohms. Synchronous AC motor. Mains: 110-240V AC/50Hz. Dimensions: 40 × 24 × 8.5cms. Price: approx. £145.00 (plus VAT) in silver or black finish.

5000 ★

Stereo cassette deck with Dolby B noise reduction system. W and F: $\pm 0.15\%$ DIN. FR: 30Hz-15,000Hz DIN. Auto switch ferric or CrO_2 only. Peak programme meters. Inputs: radio, mic, aux. Outputs: amplifier



Beocord 1100



Beocord 5000



Carlitone 1000/64

940mV/23K ohms, headphones max 2.7V/22 ohms. Two motors, drive system servo controlled. Mains: 110-130-220-240V AC/50Hz. Dimensions: 47 × 28 × 8cms. Price: £298.50 (plus VAT).

■ CARLITONE

C. F. Fraser Ltd, 21 Princess Road, London NW1 8JR.

Tel: 01-722 6633.

1000/64 ★

Stereo Dolby cassette deck with VU meters, record level control, CrO_2 switch, 7 piano keys, counter meter, headphone socket, DIN and phono outlet, tape counter, playback level control, mic jack. Noise reduction circuit. Full details on request. Price: on application.

■ CROWN

York Electronics Ltd, 73 Grosvenor Street, London W1.

Tel: 01-629 8368.

CTD 1170

Fitted with Dolby noise reduction system and fitted with automatic CrO_2 . Features include electronic memory switching, full auto stop, twin VU meters, DIN jack sockets and tape counter.

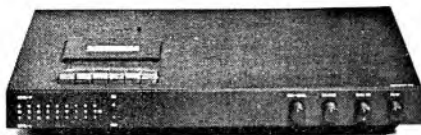
■ DANSK

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs. ST5 0SW.

Tel: Newcastle (Staffs.) 615131.

1802 ★

Cassette deck, compact and slim featuring LED light system for record level control. W and F: less than 0.2%. FR: Ferric 30-14kHz, Chrome 30-15kHz. S/N: better than 48dB. Dolby noise reduction system. Inputs for mic, radio, line. Price: £176.20 (plus VAT).



Dansk SD 1802



Decca DC 2000



Decca DC 1100

■ DECCA

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

DC 2000 ★

Stereo cassette deck with Dolby B. Tape speed 17 1/2 i/s. FR: (playback) ±2dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left and right). Pushbutton controls: mains on/off, 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 outputs, DIN outputs. Mains: 240V 50Hz. Power consumption: 6W. Size: 350 × 240 × 110mm. Finish: teak. Price: on application.

DC 1100

Stereo cassette deck. Tape speed: 17 1/2 i/s. FR: (playback) ±2dB 100Hz-8kHz. Bias frequency: 83kHz. W and F: 0.18% linear RMS. Twin VU meters. Slider controls: record level (left and right). Pushbutton controls: mains on/off, 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

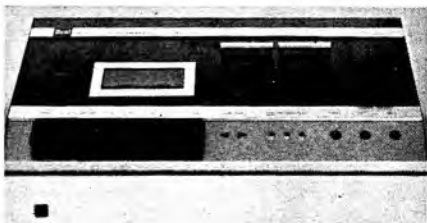
Audiodecks Ltd, PO Box 7
Sandback Way, Wetherby,
West Yorks LS22 4YS.
Tel: Wetherby 5477.

C901 ★

Stereo cassette deck with record and playback in both directions. W and F: better than ±0.12% DIN. FR: 30Hz-14kHz (ferric oxide tape), 30Hz-10kHz (CrO₂ tape). Fitted with Dolby noise reduction. Inputs: mic 0.15mV, DIN 0.15mV, line 40mV. Outputs: phones, DIN 0.75V, line 0.75V. Size: 16 1/2 × 4 3/4 × 1 1/2 in. Automatic tape reversal, auto stop after both directions have been replayed. Continuous play override switch. Automatic selection for CrO₂ with manual switch for unmarked CrO₂ cassettes. Automatic level control or manual. Twin VU meters. Overload indicator. Fittings available for vertical mounting. Alternative walnut or white enamel (C901W) finish. Price: £264.66 (including VAT).

C 919

Stereo deck with Dolby noise reduction system. W and F: weighted RMS < ± 0.07%. DIN reproduction only < ± 0.10%, DIN record/play < ± 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.



Dual C901

★ Indicates entry is illustrated

RCA jacks. Outputs: receiver/amplifier DIN jack 750mV/3.3K ohms, RCA jacks 0-750mV/4.7K ohm adjustable. Mains: 110-125/220-240V. Dimensions: 42 × 12.8 × 26.5cms. Price: £206.20 (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 sen-



Ferguson 3280



Ferguson 3287



Goodmans SCD 110

sitivity: 50mV/47K phono, 2.2mV/10K DIN. Outputs: 500mV/8K DIN and phono. Mains: 240V. Dimensions: 39.8 × 9.4 × 23.3cms. 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.

■ GOODMANS LOUDSPEAKERS LTD

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

SCD 110 ★

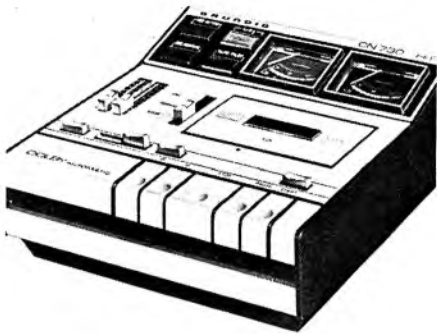
Stereo cassette deck with Dolby 'B' system. W and F: 0.09% (weighted RMS). FR: 30Hz-16,000Hz. Bias switch for chrome and ferrochrome cassettes. Twin meters. Inputs sensitivity: mic 0.2mV into 1K ohm, line 80mV into 100K ohms, DIN 15mV into 10K ohms. Outputs: line 500mV into 50K ohms, DIN 500mV into 5K ohms. Closed loop, servo controlled motor. Mains: 120, 220, 240, 50 or 60Hz. Dimensions: 39 × 32.1 × 15.1cms. Price: no rec. retail price.

■ GRUNDIG

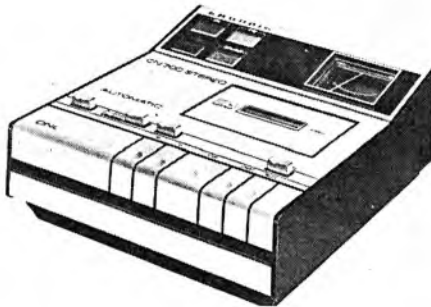
Grundig International Ltd, Newlands Park,
London SE26 5NQ. Tel: 01-659 2468.

CN 730 ★

Stereo cassette deck with CrO₂ facility. Fitted with Dolby B and DNL. W and F: ±0.2%. 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 impedance. One motor. Mains: 110-240V. Dimensions: 23.7 × 10.3 × 26.1cm. No rec. retail price.



Grundig CN700



Grundig CN730

CN 700 ★

Stereo cassette deck fitted with DNL. W and F: $\pm 0.2\%$. S/N ratio: 48dB. FR: 30Hz-12.5kHz. Auto switching. Recording level meter, DNL pilot, record pilot, tape pilot. Inputs: mic 1mV 100K, radio diode 5mV 50K, phono 40mV 2.2M. Output: 0.5-1.5V 20K adjustable high impedance. Mains: 110-240V. Dimensions: 23.7 x 10.3 x 26.1cm. No rec. retail price.

CN 930

Stereo cassette deck with Dolby system. W and F: $< \pm 0.15\%$. 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 ohms. Mains: 110, 127/220-240V AC 50-60Hz. Dimensions: 46 x 11 x 27cms. No rec. retail price.

■ HANIMEX

Hanimex (UK) Ltd, Hanimex House, Faraday Road, Dorcan, Swindon, Wilts. Tel: Swindon 26211.

HCD 1020 ★

Stereo cassette deck with Dolby noise reduction system. W and F: less than 0.15%. FR: 40Hz-12,000Hz normal, 40Hz-15,000Hz chrome. VU-meters for left and right. Inputs: line in 100mV (100K ohms), mic 0.4mV 600 ohms, DIN 40mV 82K ohms. Outputs: line out 0.775V, DIN 0.775V. Mains: 240V. Dimensions: 37 x 25.5 x 9cms. Price: £124.00 (plus VAT).

■ HARMAN KARDON

Tannoy, St. Johns Road, Tylers Green, High Wycombe, Bucks. Tel: Penn 5221.

HK 2000 ★

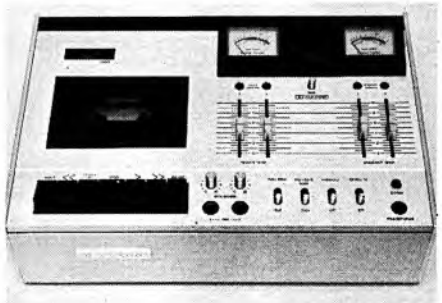
Stereo cassette deck. W and F: 0.07%. Fitted with Dolby noise reduction. S/N ratio: 53dB 0VU. FR: 20Hz-16kHz ± 3 dB. Bias switch for chrome cassettes. VU meters. Inputs: mic 0.2mV 600 ohms, low 50mV 50K, high 200mV 50K. One motor. Outputs: 1350mV. Dimensions: 38.1 x 26 x 13.6cm. Price: on application.

■ HITACHI

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

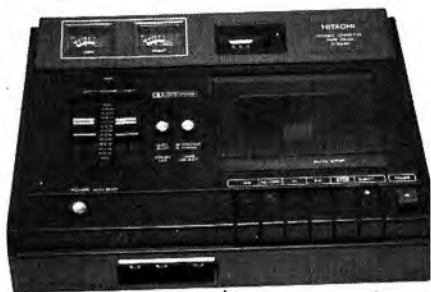


Hanimex HCD 1020



Harman Kardon HK 2000

★ Indicates entry is illustrated



Hitachi D 2330



Hitachi D 2310

D2330 ★

4-track, 2-channel stereo record/playback. FR: 40-12,000Hz with normal tape, 40-14,000Hz with CrO₂ tape. S/N: Dolby off: 50dB; Dolby on: 58dB. W and F: less than 0.18% WRMS. Output: More than 0.5V. Dimensions 31.9 × 9.2 × 22.3cm. Accessories: DIN lead, head cleaning stick. Price: £79.20 (plus VAT).

D2310 ★

4-track, 2-channel stereo record/playback. FR: 40-12,000Hz with normal tape, 40-14,000Hz with CrO₂ tape. S/N: 50dB. W and F: Less than 0.2% WRMS. Output: More than 0.5V. Dimensions: 31.9 × 9.2 × 22.3cm. Accessories: DIN lead, head cleaning stick. Price: £55.20 (plus VAT).

D3500

4-track, 2-channel stereo record/playback. FR: 20-15,000Hz on normal tape: 20-20,000Hz on CrO₂ tape. S/N: better than 55dB at Dolby off; better than 63dB at Dolby on. W and F: 0.05% WRMS. Output: better than 0.5V (variable). Dimensions: 43 × 14 × 28.3cm. Accessories: DIN lead, head cleaning bar. Price: £200.00 (plus VAT).

D2750

4-track, 2-channel, stereo record/playback. FR: 30-14,000Hz DIN45511 with normal tape, 20-15,000Hz DIN 45500 with CrO₂ tape, 20-16,000Hz DIN 45511 with CrO₂ tape. S/N: Dolby off: better than 45dB DIN with normal tape; better than 48dB DIN 45500 with CrO₂ tape; Dolby on: improves up to 9dB over 4kHz. DNL on: improves up to 10dB over 4kHz. W and F: less than 0.15% DIN 45500. Dimensions: 43 × 14 × 28.3cm. Accessories: DIN lead, head cleaning bar. Price: £156.00 (plus VAT).

■ 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.

■ Lenco

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

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 ohm, line input phono 60mV 180K ohms. Special spooling motor ensuring constant tape tension. Dimensions: 4.6 × 2.85 × 0.85cms. Price: £358.00 (plus VAT).



ITT ST 720



Lenco C2003



NAD 900

■ NAD

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

NAD 900 ★

Front load cassette deck with Dolby 'B'. W and F: 0.06% (WRMS) + 0.15± DIN. FR: 20Hz-14,000Hz (normal), 20Hz-15,000Hz (CrO₂ tape) S/N: Dolby off 55dB, Dolby on 58dB (normal). Dolby off 57dB, Dolby on 65dB (CrO₂ tape). THD: less than 2.5% crosstalk attenuation at 1kHz: 35dB. Mains: 120, 220, 240V. Dimensions: 45 × 16 × 32cms. Price: £197.00 (plus VAT).

■ NAKAMICHI

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

TT 1000

Stereo cassette deck fitted with Dolby noise reduction and DNL. W and F: <0.1%. S/N ratio: >60dB. FR: 20Hz-20kHz ±3dB. Bias switch for chrome and ferric cassettes. Peak level meters. Inputs: mic 0.5mV 600 ohms, line 100mV 100K. Output: 0-1.2V. Phonic wheel DC servo, separate rewind motor. Mains: 100, 220, 240V. Dimensions: 528 × 220 × 300mm. No rec. retail price.

TT 700 ★

Stereo cassette deck fitted with Dolby noise reduction. W and F: <0.1%. S/N Ratio: >60dB. FR: 20Hz-20kHz±3dB. Bias switch for chrome and ferric cassettes. Peak level meters. Inputs: mic 0.5mV 600 ohms, line 100mV 100K. Output: line 0-1.0V. Phonic wheel DC servo, separate rewind motor. Mains: 100, 117, 220, 240V. Dimensions: 520 × 130 × 270mm. No rec. retail price.

DT 550 ★

Stereo cassette deck fitted with Dolby noise reduction. W and F: <0.1%. S/N Ratio: >60dB. FR: 40Hz-17kHz. Bias switch for chrome and ferric cassettes. Peak level meters. Inputs: mic 0.2mV 600 ohms, line 70mV 150K. Output: 580mV. Pulse control DC servo motor. Batteries and separate transformer. Dimensions: 311 × 350 × 89mm. No rec. retail price.

DT 600 ★

Stereo cassette deck fitted with Dolby noise reduction. W and F: <0.8%. S/N Ratio: >68dB. FR: 20Hz-20kHz ±3dB. Bias switch for chrome and ferric cassettes. Peak level meters. Inputs: line 60mV 50K. Output: 580mV. DC servo-controlled motor. Mains: 240V. Dimensions: 400 × 237 × 170mm. No rec. retail price.



Nakamichi TT700



Nakamichi DT550

★ Indicates entry is illustrated



Nakamichi DT600



Neal Model 102

■ NEAL

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

Model 102 Mk II/Mk IIV ★

Transcription cassette recorder. Dolby B. 3M Wollensak deck. Two illuminated peak reading meters. Chrome and ferric equalisation and bias. Controlled headphone output. Separate input amplifiers for mic, DIN and line. W and F: less than 0.09% RMS (DIN weighted). Record amp distortion: less than 0.1% at 0dB. Inputs: mic 500 μ V 2K, high level line 50mV 200 K, DIN 2.5mV 10K. Outputs: Line and DIN 600mV 5K, phones variable to 2.5V 10 Ω . Overload margin on all inputs 40dB. Replay amp distortion: less than 0.1% at 0dB. Equalisation: CrO₂ 70/3180 μ sec (102 Mk IIV as for 102 Mk II, but with built in Dolby calibration oscillator, fully variable bias in ferric and chrome positions, and provision for reading bias on the meters). Output levels referred to 220nWb/m flux density. FR: (ferric tape) 35Hz-12kHz + 1dB - 3dB; CrO₂ tape 35Hz-15kHz + 1dB - 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: £225.00 (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). Record amp distortion: less than 0.1% at 0dB. Inputs: mic 200 μ V 2K, high level line 80mV 2M, DIN 5mV 10K. Replay amp distortion: less than 0.1% at 0dB. Inputs: mic 200 μ V 2K, high level line 80mV 2M, DIN 5mV 10K. Equalisation: CrO₂ 70/3180 μ sec, ferric oxide 120/3180 μ sec. Equalisation calibration controls externally accessible. 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: £250 (plus VAT).

Model 104

Replay only machine. Dolby B. 3M Wollensak deck. Chrome and Ferric equalisation. Outputs, line and phone 2V variable, load 10 Ω . W and F: less than 0.09% RMS. (DIN weighted). F.R. from DIN Test Tape (455 13/6) corrected to 3,180 μ S, \pm 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



Neal Model 103

bias. Separate recording/replay on each track. W and F: less than 0.09% RMS. (DIN weighted). Inputs: audio 100mV 10K Ω , sync 100mV 10K Ω . Equalisation audio track: CrO₂ 70/3180 μ sec, ferric oxide 120/3180 μ sec. Outputs: audio, line 600mV 100 Ω fixed, headphone 2.5V 10 Ω variable, sync, phono 600mV 100 Ω fixed, line 2.5 10 Ω variable. F.R. (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 ★

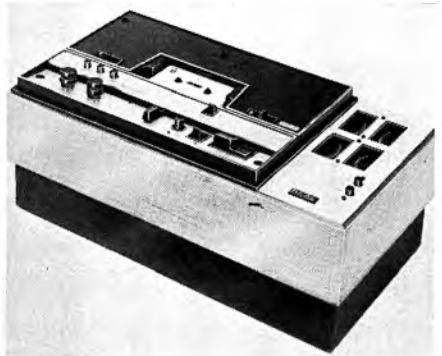
Stereo audio visual format cassette recorder. Audio details as for 102 Mk IIV above. Sync/Audio tracks can be recorded/replayed separately. Fully compatible with mono audio visual format and with standard stereo cassette format. Sync track details: Inputs, line 100mV 10K Ω , DIN 100mV 10K Ω . Outputs line 600mV fixed 200 Ω , DIN 600mV fixed 200 Ω . F.R. 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 Ω , DIN 100mV 10K Ω . Outputs line 600mV fixed 200 Ω , DIN 600mV fixed 200 Ω . F.R. 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 MkII above except: DIN inputs and outputs omitted; headphone level fixed 1V; four peak reading meters; crosstalk



Neal Model 140



Philips N2511

1-2, 3-4 40dB, others 50dB. Price: on application.

Professional Options

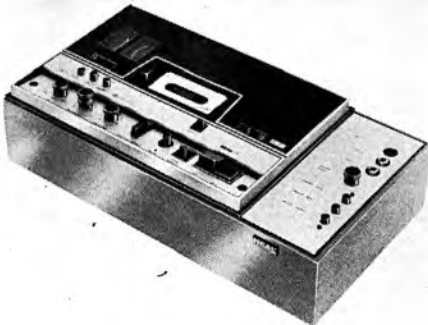
An extensive range of professional variants of these machines is available. Facilities and options to special order include: 3 $\frac{3}{4}$ ips tape speed, remote pause, balanced inputs and outputs, four channel operation. Details and prices on application.

■ 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 ferrochrome cassettes. Record level meters (L and R). Inputs sensitivity: mic 0.25mV/2K ohms, line 0.25mV/2K ohms or 100mV/1m ohm. Outputs: 1V (adjustable), load impedance 10K ohms. DC tachometer controlled motor. Mains: 110, 127, 220 or 240V AC 50/60Hz. Dimensions: 36 x 15.5 x 30.8cms. Price on application.



Neal Model 102AV

★ Indicates entry is illustrated

N 2511 ★

Stereo cassette deck suitable for use with low noise (Fe_2O_3) cassettes or chromium dioxide cassettes. Auto/manual selection facility. Switchable DNL noise reduction system. Switchable Dolby 'B' system. W and F: < 0.02%. FR: CrO_2 40Hz-12,500Hz (DIN 45500), Fe_2O_3 40Hz-10,000Hz (DIN 45511). Switch for chrome or ferro, auto or manual. Inputs: mic 0.25mV/2K ohms, line 0.2mV/2K ohms, 100mV/1M ohms. Outputs: 0.5V, load impedance 10K ohms. DC tachometer controlled motor. Mains: 240V AC 50/60Hz. Digital counter, auto end stop. Separate recording level controls for each channel. Two illuminated recording level indicators. Sockets for mics, headphones. Connections for two mics, tuner/amp, record player line, tape in-out. Dimensions: 34 × 8.5 × 24.5cms. Price: on application.

N2501

Stereo cassette deck. W and F: < 0.35%. Noise reduction system and DNL. FR: CrO_2 40Hz-12,500Hz, Fe_2O_3 60Hz-10,000Hz (acc: DIN 45511). Inputs: mic 0.25mV/2K ohms, line 2mV/20K or 100mV/1M ohms. Outputs 0.5V 10K ohms. 1DC motor. Mains: 240V AC 50/60Hz. Auto selection of electronic circuit depending on tape used. Switchable dynamic noise limiter. Digital counter, auto end stop. Two illuminated recording level indicators. Sockets for mics, headphones. Dimensions: 24.5 × 7 × 24.5cms. Price: on application.

■ PIONEER

Shiro (UK) Ltd, Shiro House, The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652222/7.

CTF 2121★

Stereo front loading cassette deck. W and F: 0.19% (DIN). Fitted with Dolby noise reduction system. S/N ratio: 48dB (Dolby off), 58dB (Dolby on). FR: (LH tape) 40Hz-11kHz ±3dB, (chrome) 40Hz-12kHz ±3dB. Switchable EQ and bias for LH and chrome tape. Two VU meters. Inputs: mic 2 × 0.3mV/63mV 20K, line 2 × 63mV/12V 50K, DIN 1 × 10mV/2V 10K. Outputs: headphone 80mV 8 ohms, line 2 × 450mV 50K, DIN 1 × 450mV 50K. Electronically controlled DC motor. Full auto stop

mechanism. Cassette compartment illumination. Permalloy solid rec/playback head. Rosewood, teak or walnut cabinets an optional extra. Mains: 220-240V switchable. Dimensions: 35 × 28.2 × 14.2cm. Price: on application.

CTF 9191

Stereo front access cassette deck. W and F: 0.12% (DIN). Fitted with Dolby noise reduction. S/N ratio: 52dB (Dolby off) at 250nWb/m, 62dB (Dolby on) at 250 nWb/m. 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 8 ohms, line 4 × 315mV/530mV 100K, DIN standard. Electronically controlled DC motor. One DC torque motor. Mic and line mixing. Switchable MPX filter. Auto tape selector for CrO_2 tape. Full memory rewind start function. Memory markers. Mains: 220-240V switchable. Dimensions: 45.7 × 31.5 × 19.7cm. Price: on application.

CTF 7070

Stereo cassette deck. W and F: < 0.19%. Dolby noise reduction. FR: 40Hz-13kHz or 40Hz-15kHz (Chr). Bias switch for ferrochrome, auto chrome switch. 2 VU meters. Inputs sensitivity: mic 0.23-80mV/23K ohms, line 64mV-25V/100K ohms, DIN, 10mV-3.6V/2.2K ohms. Outputs: line 800mV/50K ohms, DIN, 800mV/50K ohms, phones 60-100mV/8 ohms. DC servo motor. Mains: 220/240 50/60Hz. Dimensions: 42 × 34 × 15cms. Price: on application.

CTF 8080

Stereo cassette deck with Dolby. W and F: < 0.17%. FR: 30Hz-15kHz (Fer) 30Hz-15kHz (chrome). Bias switch for chrome and ferrochrome cassettes. 2 VU meters. Inputs sensitivity: mic 0.2-100mV/50K ohms, line 60mV-25V/100K, DIN 5.5mV-3.6V 8.7K. Outputs: line 660mV/50K ohms, DIN 660mV/50K ohms, phones 60-98mV/8 ohms. Servo DC capstan motor wind/rewind DC. Mains: 220/240 50/60Hz. Dimensions: 42 × 33.4 × 16.5cms. Price: on application.

CTF 6060

Stereo cassette deck with Dolby. W and F: < 0.2% DIN. FR: 40Hz-13kHz (Fer) 40Hz-15kHz (chrome). Bias switch for ferrochrome, auto chrome switch. 2 VU meters. Inputs: mic 0.3-63mV/23K ohms, line 63mV-12.6V/100K ohms, DIN 10mV-2V/2.2K ohms.



Pioneer CTF2121

Output: line 700mV/50K ohms, DIN 700mV/50K ohms, headphones 50-90mV/8 ohms. DC servo motor. Mains: 220/240V 50/60Hz. Dimensions: 38 × 31.6 × 15cms. Price: on application.

■ REALISTIC

Tandy Corporation (Branch UK), Bilston Road, Wednesbury, West Midlands WS10 7JN. Tel: 021-556 6101.

SCT-11 ★

Stereo cassette deck with DNL noise reduction. W and F: less than 0.2%. FR: 30Hz-15,000Hz ± 3dB with CrO₂ tape. Bias equalisation switch. Lighted VU meters. Inputs sensitivity: mic -68dB 0.25mV, aux -20dB 80mV, DIN -52dB, 2mV. Outputs: 0.775V maximum, impedance preamp out and DIN 10,000 ohms. Mains: 220-240V 50Hz. Dimensions: 14.5 × 39 × 28cms. Price: £159.95 (inc. VAT).

■ ROTEL

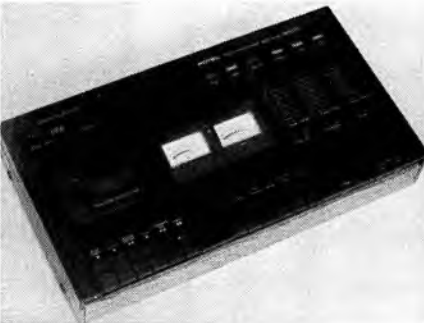
Rank Audio Visual, PO Box 70, Great West Road, Brentford, Middlesex. Tel: 568 9222.

RD20 ★

Stereo cassette deck with Dolby 'B'. W and F: 0.07%. S/N: 53dB (or 60dB Dolby) for CrO₂,



Realistic SCT-11



Rotel RD 20

50dB (or 59dB Dolby) for FeCr, 48dB or 58dB Dolby for LH. FR: Normal 30-15,000Hz but 22-15,000Hz FeCr and 22-16,000Hz CrO₂. Three tape selector switches. VU meters with indicators for record/Dolby/Three types of tape. Inputs for mic, line and DIN. Electronic governor DC motor. Dimensions: 45.8 × 24.5 × 75cm. Price: £158.00 (plus VAT).

RD 12 F

Stereo cassette deck with Dolby. W and F: 0.09% playback, 0.15% rec/play. FR: normal 30Hz-14,000Hz, Ferro-chromium 30Hz-15,000Hz, Chromium dioxide 30Hz-16,000Hz. Bias switch for chrome and ferro-chrome cassettes. Two VU meters (timer). Inputs sensitivity: mic 0.4mV/10K ohms, line (RCA Jack) 50mV/90K ohms, line (DIN jack) 5.5mV/40K ohms. Outputs: 350mV/90K ohms; load impedance: 900mV/5K ohms. Electronic governor DC motor. Mains: 240V. Dimensions: 50.5 × 14.8 × 11.5cms. Price: £158.80 (plus VAT).

■ SANSUI

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

SC2000

Front loading stereo cassette deck with Dolby. W and F: 0.1%. FR: 30-13,000Hz, 35-11,000Hz ± 3dB normal or 30-15,000Hz, 35-12,000Hz ± 3dB chromium. S/N: 50dB or 60dB Dolby. Inputs: Mic, line, DIN. Dimensions: 44 × 29 × 15.8cm. Price: £206.55 (inc. VAT).

SC3000

Front loading stereo cassette deck with Dolby. W and F: 0.09%. FR: 30-13,000Hz, 35-11,000Hz ± 3dB normal or 30-16,000Hz, 35-13,000Hz ± 3dB chromium. S/N: 50dB or 60dB Dolby. Inputs: Mic (left, right), line, DIN. Dimensions: 44 × 29 × 15.8cm. Price: £261.13 (inc. VAT).

SC3003

Front loading stereo cassette deck with Dolby. W and F: 0.09%. FR: 30-13,000Hz, 35-11,000Hz ± 3dB normal or 30-16,000Hz, 35-13,000Hz ± 3dB chromium. Inputs: mic (left and right), line, DIN. Dimensions: 44 × 29 × 15.8cm. Price: £261.13 (inc. VAT).

SC 2002

Stereo cassette deck with Dolby. W and F: < 0.1%. FR: 35Hz-11kHz normal, 35Hz-12kHz chrome. Two VU meters. Inputs: mic 0.5mV 600-10K ohms, line 70mV 100K ohms, DIN 14mV 90K ohms. Outputs: 300mV. Load

★ Indicates entry is illustrated



Sharp RT-3500



Sharp RT-2500



Sharp RT 1155

impedance: 100K ohms. Electronically controlled DC motor. Mains: 110, 220, 240. Dimensions: 44 × 29 × 15.8. Price: £232.86 (inc. VAT).

■ SHARP ELECTRONICS (UK) LTD

107 Hulme Hall Lane,
Manchester M10 8HL.
Tel: 061-205 7321.

RT-3500 ★

Stereo cassette deck with Dolby system. W and F: 0.3% weighted peak DIN. S/N: 52dB (250 PWb/mm), Dolby 58dB (250 PWb/mm). FR: CrO₂ 25-16kHz. Fe₂O₃ 25-14kHz. Built in bias switch, recording equalisation, 70 μs playback, equalisation for CrO₂ tapes. Three digit counter, twin VU meters, Dolby, CrO₂, APFS, pause indicators, peak level indicator (two

coloured). Inputs: mic 2 × (0.1mV 120K ohms), DIN r/p. DC servo motor. Dimensions: 42.8 × 11.4 × 26.8cm. Price: £154 (plus VAT).

RT-1200

Stereo cassette deck. W and F: 0.3% weighted peak (DIN). S/N 50dB or 55dB with suppressor on. FR: CrO₂ 45-12kHz, normal 45-10kHz. Built-in bias switch, recording equalisation, playback equalisation for CrO₂ tapes. 3 digit counter, level meters, recording indicator. Inputs: mic and DIN. DC servo motor. Dimensions: 40.6 × 11.2 × 25.6cm. Price: £84 (plus VAT).

RT-2000H

Stereo cassette deck with Dolby system. W and F: 0.3% weighted peak (DIN). S/N: 50dB or with Dolby 56dB. FR: CrO₂ 40-14kHz, Fe₂O₃ 40-12kHz. Built-in bias switch, recording equalisation switch, 70 m/sec playback equalisation for CrO₂ tapes. Inputs: mic, DIN, r/p. DC servo motor. Dimensions: 40.6 × 25.6 × 11.2cm. Price: £98.89 (plus VAT).

RT-2500H ★

Stereo cassette deck with similar spec. to RT-2000H except S/N: 52dB or 58dB with Dolby. Dimensions: 42.8 × 26.8 × 11.4cm. Price: £135.33 (plus VAT).

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 operating indicator, APSS auto programme search system. DC high torque motor. Dimensions: 40.8 × 24.5 × 15.7cms. Price: £119.95 (plus VAT).

■ SKANTIC

Skantic (UK) Ltd, Station Road, Edenbridge, Kent TN8 6EY.
Tel: Edenbridge 5231.

9241

Stereo cassette recorder/player. Buttons for DNL noise suppression and remote mics. Tape counter and pause control. Sockets for stereo headphones, two mics and amp. Switch for CrO₂ and standard tapes, manual recording level using 2 slide controls and 2 VU meters. Slider and push button controls. Auto stop. Price: Teak: £99.47, Walnut/White/Rosewood £101.08 (all plus VAT).

9243

Stereo cassette recorder/player with Dolby noise suppression. Tape counter and pause control. Auto stop. Sockets for amplifier, three mics, stereo headphones. Auto switching between standard and CrO₂ tapes. Recording and playback level indicators via 2 large VU meters. Slide controls for recording and mixing. Acrylic dust cover. Price: Teak £140.70, Walnut/White/Rose £142.64 (all plus VAT).

■ SONY (UK) LTD

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

TC 135 SD ★

4-track, 2 channel stereo cassette deck with Dolby system. W and F: 0.12% WRMS, $\pm 0.22\%$ DIN. S/N 53dB. FR: 50-13,000Hz, 40-12,000Hz (DIN). Equalisation switch. Normal, FeCr, CrO₂, automatic bias switch for CrO₂. Level indicators: 2 \times VU meters. Inputs for mic, line, DIN. Dimensions: 39 \times 24.8 \times 10.8cm. No rec. retail price.

TC 136 SD ★

4-track, 2 channel stereo cassette deck with Dolby system. W and F: 0.1% WRMS, $\pm 0.2\%$ DIN. S/N: 52dB normal, 54dB FeCr, CrO₂. FR: 40-14,000 Hz (DIN on FeCr), 30-16,000Hz. ± 5 dB (FeCr). Equalisation switch. Inputs: mic, line, DIN. Dimensions: 38.6 \times 24 \times 12.6cm. No rec. retail price.

TC 177 SD

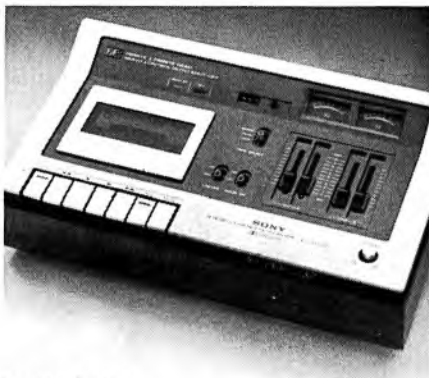
4-track, 2 channel stereo cassette deck with Dolby system. W and F: 0.07% WRMS, $\pm 0.18\%$ DIN. S/N: 53 dB normal, 55dB (FeCr, CrO₂). FR: 30-13,000 Hz normal, 30-17,000Hz FeCr, CrO₂. Bias switch: low, medium, high. 2 \times VU meter and peak level indicator. Inputs: mic, line, DIN. Dimensions: 43.5 \times 32.5 \times 15.5cm. No rec. retail price.

TC 204 SD

4-track, 2 channel stereo cassette deck with Dolby system. W and F: 0.1% WRMS $\pm 0.2\%$ DIN. S/N: 53dB normal, 55dB with FeCr, CrO₂. FR: 40-12,000Hz normal, 40-15,000Hz FeCr, CrO₂. Bias switch: low, normal, high. Equalisation switch: normal, FeCr, CrO₂. 2 \times VU meter plus peak level indicator. Inputs: mic, line, DIN. Dimensions: 43 \times 32.5 \times 16cm. 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)

*Sony TC 135 SD**Sony TC 136 SD**Sony TC 118 SD**Sony DC 186 SD*

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Tel: Leicester 58662

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Tel: Farnham 5534

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Tel: Eastbourne 27362
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Newcastle-upon-Tyne 1.
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Tom S. Ford,
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Tel: Whitley Bay 21798

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Worcestershire

Downing & Davis,
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Tel: Bromsgrove 72976

Scotland

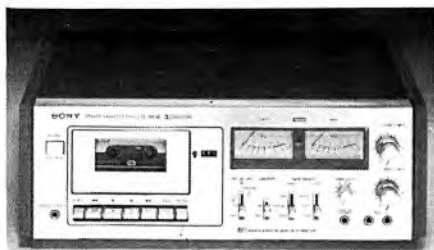
Audio Aids, 54 George Street,
Edinburgh EH2 2LE, Lothian.
Tel: 031-226 3970
Elena Mae, Princes Street,
Edinburgh, Lothian.
Tel: 031-226 7505
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High Street, Ayr, Strathclyde.
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For further information about the RS615US, the SB4500
and other Technics products contact your local Technics dealer.

★ Indicates entry is illustrated



Sony TC 206 SD



Sony TC 525



Sony FL 5

DIN. Equalization switch for normal, FeCr and CrO₂, automatic bias switch for chrome. 2 × VU meters. Inputs: line 60mV 100K ohms, mic 0.2mV low. Outputs: line 435mV. Load impedance: more than 10K ohms. DC servo-controlled motor. Mains: 240V, 50Hz. Dimensions: 36 × 24 × 11cms. No rec. retail price.

TC 186 SD ★

Four track — two channel stereo cassette deck with Dolby. W and F: 0.09% ± 0.2% DIN. FR: 40Hz-15,000Hz ± 3dB (FeCr), 40Hz-15,000Hz (FeCr) DIN. Bias and equalisation switches for normal, FeCr and CrO₂. 2 × VU meters. Inputs sensitivity: line 60mV 100K ohms, mic 0.2mV low. Outputs: line 435mV with load

impedance more than 10K ohms. DIN 435mV load impedance K ohms. DC servo-controlled motor. Mains: AC 110, 127, 220, 240V 50/60Hz. Factory set 240V. Dimensions: 39 × 29.5 × 14.5cms. No rec. retail price.

TC 206 SD ★

Four-track, two channel stereo cassette deck with Dolby. W and F: 0.08% ± 0.2%. FR: 30Hz-15,000Hz ± 3dB (FeCr), 30Hz-15,000Hz DIN (FeCr). Bias and equalisation switches for normal, FeCr and CrO₂. 2 × VU meters. Inputs as per TC 186 SD. Outputs: line 775mV with load impedance more than 10K ohms, DIN 775mV with load impedance 50K ohms. DC servo-controlled motor. Mains: AC 110, 127, 220, 240V 50/60Hz. Factory set 240V. Dimensions: 43 × 32 × 17cms. 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 0.2mV low impedance, line 0.06V impedance 560K ohms. Outputs: line 0.44V at 100K ohms. Mains, 240V 50Hz or 4 × HP11 batteries. Dimensions: 28 × 25 × 9cms. No rec. retail price.

TC 229 SD

Details on application.

TC 158 SD

Details on application.

FL 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 impedance 100K ohms. Mic 0.3mV low impedance. Outputs: line 775mV impedance more than 10K ohms, DIN 775mV impedance 50K ohms. Mains, 110, 127, 220, 240V 50Hz. Dimensions: 43 × 32 × 17cms. No rec. retail price.

FL 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.

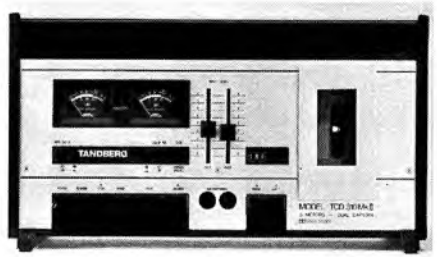
■ TANDBERG

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

TCD 310 Mk 2 ★

Cassette stereo tape deck, ¼ track, speed 17½

ips. W and F: 0.02%. FR: 40Hz-12.5kHz (ferric oxide tape). 40Hz-13.5kHz (CrO₂ tape). CrO₂ switch. Two meter level indicators. Four-digit tape position indicator with PB reset. Inputs: mic 0.1mV at less than 700 ohms, line 40mV 100K, radio 8mV 47K. Outlet: line 0.775V 10K. All DIN sockets. Three motors (synchronous hysteresis for capstan, precision fastwind reel motors). Size: 16⁷/₈ × 4¹/₈ × 9¹/₈in. Pause. Monitoring on record. Parallel track replay. Hot-pressed ferrite heads. Dolby noise reduction system. Dual-capstan closed loop tape transport. Electronic controls. Auto-stop. Operates horizontally or vertically. Can be wall mounted. AC mains. Price: £203.56 (plus VAT).



Tandberg TCD 310 Mk 2

TCD 330

Cassette deck stereo 1/4 track, speed 1⁷/₈ ips. W and F: better than 0.12%, 3 motors, 3 heads, complete logic touch controls, source and tape tests, servo tape winding, dual capstan closed loop tape device, memory, peak level record/playback meters. Dolby 'B' noise reduction. Azimuth adjustment. Auto-stop. Can be used horizontally or vertically. Dimensions: 18¹/₂ × 4¹/₈ × 9¹/₈ins. Price: £354.67 (plus VAT).



Teac PC-10

■ **TEAC**

Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds. Tel: 0582 603151.

A400

Stereo cassette deck with Dolby system. W and F: 0.08%. S/N: 50dB, improved with Dolby. FR: 30Hz-16kHz (CrO₂), 30Hz-13kHz. Fitted with peak level indicator. Outputs: 2 line, stereo headphones. Dimensions: 44 × 15.5 × 28.5cm. No rec. retail price.



Teac A-460

A650

Front loading stereo cassette deck with Dolby system. W and F: 0.06%. S/N: 57dB, improved with Dolby. Inputs: 2 mic and 2 line. Dimensions: 44 × 17.7 × 32.5cm. No rec. retail price.

meters. Inputs sensitivity: 2 line: 60mV 50K ohms, 2 mic 0.25mV (-72dB). Load Imp: 600 ohms. Outputs: 1 monitor speaker 300mV into 8 ohms. 1 PLL servo DD capstan motor, 1 mechanically governed DC reel motor. Dimensions: 29.2 × 23.2 × 9.1cms. No rec. retail price.

A170

Stereo cassette deck with Dolby system. W and F: 0.09%. S/N: 50dB, improved with Dolby. FR: 30Hz-13kHz. VU meter. Inputs for mic and line. Dimensions: 43 × 13.6 × 22.5cm. No rec. retail price.

A-480

Stereo cassette deck with Dolby noise reduction system. W and F: 0.07%. FR: 30Hz-16kHz ferro-chrome. Three step switch for bias and equalisation. VU meter. Inputs sensitivity: 0.25mV (-72dB), impedance 600 ohms. 50K ohms. Outputs: 0.3V 50K. 1 FG servo DC motor. Mains: 117/240 50/60Hz. Dimensions: 47 × 28.9 × 18cms. No rec. retail price.

PC - 10 ★

Portable stereo recorder with Dolby noise reduction system. W and F: 0.07%. FR: 30Hz-16kHz. Two position switching for both equalisation and bias. Two illuminating VU

A-460 ★

Stereo cassette deck with Dolby. W and F: 0.06%. FR: 30Hz-16kHz. Two-three position

★ Indicates entry is illustrated

bias and equalisation switch. VU meter. Inputs: 2 mic 0.25mV (-72dB) 600 ohms or more, 2 line: 60mV/50K ohms. Outputs: 2 line: 0.3V/load impedance: 50K ohms or more, 1 stereo headphone jack 0.3mW/8 ohms. 1 servo DC motor. Mains: 110/240V. Dimensions: 44 × 29.4 × 16.4cms. No rec. retail price.

A-420

Stereo cassette deck with Dolby. W and F: 0.08%. FR: 30Hz-16kHz. Two-three position switches. VU meters. Inputs: 2 line 60mV/50K ohms, 2 mic 0.25mV (-72dB)/600 ohms or more. Outputs: 2 line 0.775V/load impedance 50K ohms or more, 1 stereo headphone jack 8 ohms. 1 DC servo motor. Mains: 110/220. Dimensions: 44 × 28.5 × 15.5cms. No rec. retail price.

A-440

Stereo cassette deck with Dolby. W and F: 0.07%. FR: 30Hz-16kHz. Two-three position equalisation and bias switch. VU meter. Inputs: 2 mic 0.25mV (-72dB)/600 ohms or more, 2 line 60mV/50K ohms. Output: 2 line 0.3V/load impedance 50K ohms or more, 1 stereo headphone jack 0.3mW/8 ohms. 1 DC servo motor. Mains: 110/240. Dimensions: 44 × 29.4 × 16.4cms. No rec. retail price.

■ TECHNICS

National Panasonic (UK) Ltd, 107-109
Whiteby 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; impedance: 600 ohms-20K ohms. Line: sensitivity 60mV/110K ohms; Tuner: sensitivity 100mV/75K ohms. DIN: sensitivity 0.34mV/2.2K ohms. Output: line: output level 0.42V/load imp 50K ohms over; headphone: output level 65mV/8 ohms; DIN: output level 0.42V/load impedance 50K ohms 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 × 36cms. Price: £294.95 (inc. VAT).

RS-671 USD

As RS-676 except in inputs spec. MIC: sensitivity 0.3mV/applicable microphone impedance 600 ohms-20K ohms. Line: sensitivity 60mV/68K ohms. DIN: sensitivity 0.34 mV/2.2K ohms. Price: £229.95 (inc. VAT).

RS-640 USD

4-track 2-channel stereo recorder and playback. W and F: 0.07% (WRMS) ± 0.15% (DIN). S/N: Dolby in: 51dB, Dolby out: 61dB above 5kHz. Input: MIC: sensitivity 0.3mV/applicable microphone impedance 600 ohms-20K ohms. Line: sensitivity 60mV/68 k ohms. DIN: sensitivity 0.34mV/2.2kohms. Output: line: Output level 0.42V/load impedance 50k ohms over. Headphone: output level: 65mV/8 ohms. DIN: Output level 0.42V/load impedance 50K ohms over. Motor: electronic speed controlled DC. Dimensions: 43.2 × 13 × 30.1cms. Price: £199.95 (inc. VAT).

RS-610 USD

4-track 2-channel stereo recorder and playback. W and F: 0.12% (WRMS) ± 0.25% (DIN). S/N: Dolby out 49dB, Dolby in 59dB at 10kHz. Inputs: mic: sensitivity 0.3mV/applicable microphone impedance 600 ohms-20K ohms. Line: sensitivity 60mV/470K ohms. DIN: sensitivity 0.34mV/2.2K ohms. Output: line: output level 0.42V/load impedance 50K ohms over. Headphone: output level 60mV/8 ohms. DIN: output level 0.42V/load impedance 60K ohms over. Electronic speed controlled motor. Dimensions: 33.6 × 11.6 × 29cms. Price: on application.

RS-273 USD

4-track 2-channel stereo recorder and playback. W and F: 0.07% (WRMS) ± 0.15% (DIN). S/N: Dolby out 52dB, Dolby in 60dB at 10kHz. Inputs: MIC: sensitivity 0.3mV/applicable microphone impedance 600 ohms-20K ohms. Line: sensitivity 60mV/160K ohms. DIN: sensitivity 0.34mV/2.2K ohms. Output: line: output level 0.5V/load impedance 50K ohms over. Headphone: output level 45mV(max) 8 ohms. DIN: output level 0.5V/load impedance 50K ohms over. Electronic speed controlled motor. Dimensions: 42.5 × 12.5 × 27.5cms. Price: £152.95 (inc. VAT).

RS-263 AUDS

4-track 2-channel stereo recorder and playback. W and F: 0.12% (WRMS) ± 0.24% (DIN). S/N: Dolby out 49dB, Dolby in 57dB at 10kHz. Inputs: MIC: sensitivity 0.3 mV/applicable microphone impedance 600 ohms-20K ohms. Line: sensitivity 30mV/220K ohms. DIN: sensitivity 0.17mV/1.1K ohms. Output: line: output level 0.42V/load impedance 50K ohms over. Headphone: output level 45mV/8 ohms. DIN: output level 0.42V/load impedance 50K ohms over. Electronic speed controlled motor. Dimensions: 37.5 × 12 × 24.2cms. Price: £109.95 (inc. VAT).

RS 9900

4-track 2-channel stereo professional standard Dolby deck supplied in two units: one housing tape transport, the other housing the recording and playback amplifiers. This eliminates any possibility of interference from one set of circuitry degrading the performance of the other. W and F: 0.04% WRMS. FR: CrO₂ tape: 30-20,000Hz \pm 3dB; Normal tape: 30-18,000Hz \pm 3dB. Inputs: MIC: sensitivity 0.25mV (applicable microphone imp 6000 ohms-20K ohms). Line: sensitivity 60mV. Aux: sensitivity 600mV. Outputs line: output level 420mV; headphone: output level 0-1,000mV, imp 8 ohms. Motor: 3-motor closed-loop double capstan system, direct drive for capstan, 2 coreless for reel tables. Dimensions: Transport Unit 19.3 \times 48 \times 37.5cms. Amplifier: 17.3 \times 48 \times 37.5cms. Features: Three bias and equalisation switch positions — two cater for normal and chrome tape, the third can be set up to match any tape of the user's choice. Price: to be announced.

TELEFUNKEN

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

Magnetophon C 3300 Hi-Fi

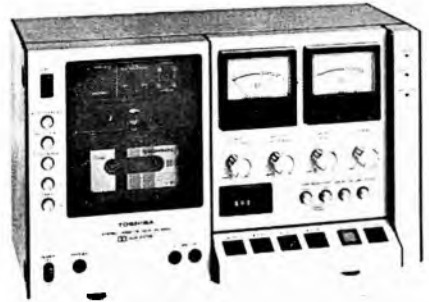
Stereo cassette tape deck (DIN 45 500). Dolby system, featuring integrated circuitry and with selector switch. Electronic CrO₂ tape selector. HNS audio head. Automatic stereo recording level control with manual override. Speech/music change-over switch coupled with radio/mic input selector. Two illuminated peak voltage meters, also operated during playback. Three slide controls for record left/right and headphones volume. 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 (including VAT).

MC 2400

Stereo cassette recorder with Dolby. W and F: $< \pm$ 0.2% record/playback, $< \pm$ 0.12% playback only. FR: 30Hz-14kHz. 2 illuminated VU meters. Dimensions: 39 \times 30 \times 8.5cms. Price: £194.67 (plus VAT).



Toshiba PC 4030



Toshiba PC 6030



Toshiba PC 5060



Toshiba PC 4020

★ Indicates entry is illustrated

■ 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 × 30 × 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 meters. 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).

■ 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



Trio KX 620



Trio KX 520

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: £177.73 (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. Impedance: line 180K, DIN 4K, mic 8K. Outputs: line 490mV, DIN 490mV. Load impedance: line 100K, DIN 100K. DC servo motor. Mains: 240V AC. Dimensions: 38 × 28 × 14cms. Same size as amplifier KA 1500, KA 3500, KA 5500. Price: £133.76 (plus VAT).

KX 720 ★

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. Impedance: line 340K ohms, DIN 1.3K ohms, mic 10K ohms. Outputs: fully variable 0-490mV, load impedance: 100K ohms. DC servo motor. Mains: 240V



Trio KX 720



Trio KX 920

AC. Dimensions: 40 × 25 × 12cms. Price: £195.55 (plus VAT).

KX 920 ★

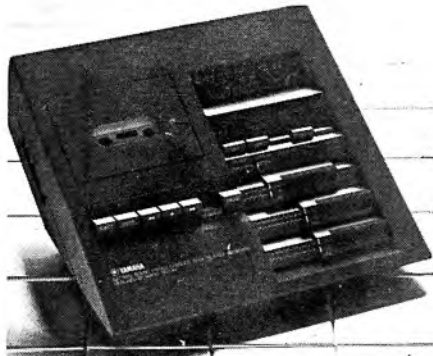
Stereo cassette deck with Dolby. W and F: 0.08%. FR: 30Hz-14kHz normal, 30Hz-16kHz CrO₂. Bias switch for chrome and ferro-chrome cassettes. Peak level indicator, VU/peak meters. Inputs: line 77.5mV, DIN 0.45mV, mic 0.24mV. Impedance: line 340K, DIN 1.3K, mic 10K. Outputs: variable 0-490mV. Load impedance 100K. DC servo motors. Mains: 240V AC. Dimensions: 24 × 25 × 12cms. Price: £222.22 (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 ohms. Tun/rec 2mV-600mV/22K ohms, P11 150 M11-3V/1 Megohm, dubbing 150 MU-3V/1 megohm. Outputs: Tuner/rec 0-900mV/16K ohms, dubbing 900mV/470 megohms, headphones 0.75V at 8 ohms. Motors: 3. Mains: 220/110V at 50,



Yamaha TC 800 GL

60Hz. Dimensions: 40 × 29.5 × 10.4cms. Price: £350.00 (plus VAT).

CR 210

Stereo cassette deck. W and F: 0.2% DIN. FR: 30Hz-15kHz CrO₂ (DIN). Auto switch for tapes. Moving B or level indicator. Inputs: mic 0.2 MV-200mV/500 ohms, car radio 500mV/15K ohms, 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 × 5.7cms. Price: £400.14 (plus VAT).

■ **YAMAHA**

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

TC 800 GL ★

Stereo cassette deck. W and F: 0.06%. Fitted with Dolby noise reduction. S/N ratio: >63dB. FR: 30Hz-16kHz ±3dB. Bias switch for chrome and ferro-chrome cassettes. Two VU meters and peak lights. Inputs: line 50mV 50K, mic 0.5V 10K. Output: 0.4V. DC servo motor. Mains: 240V or batteries. Dimensions: 312 × 312 × 98mm. Price: £222.00 (plus VAT).

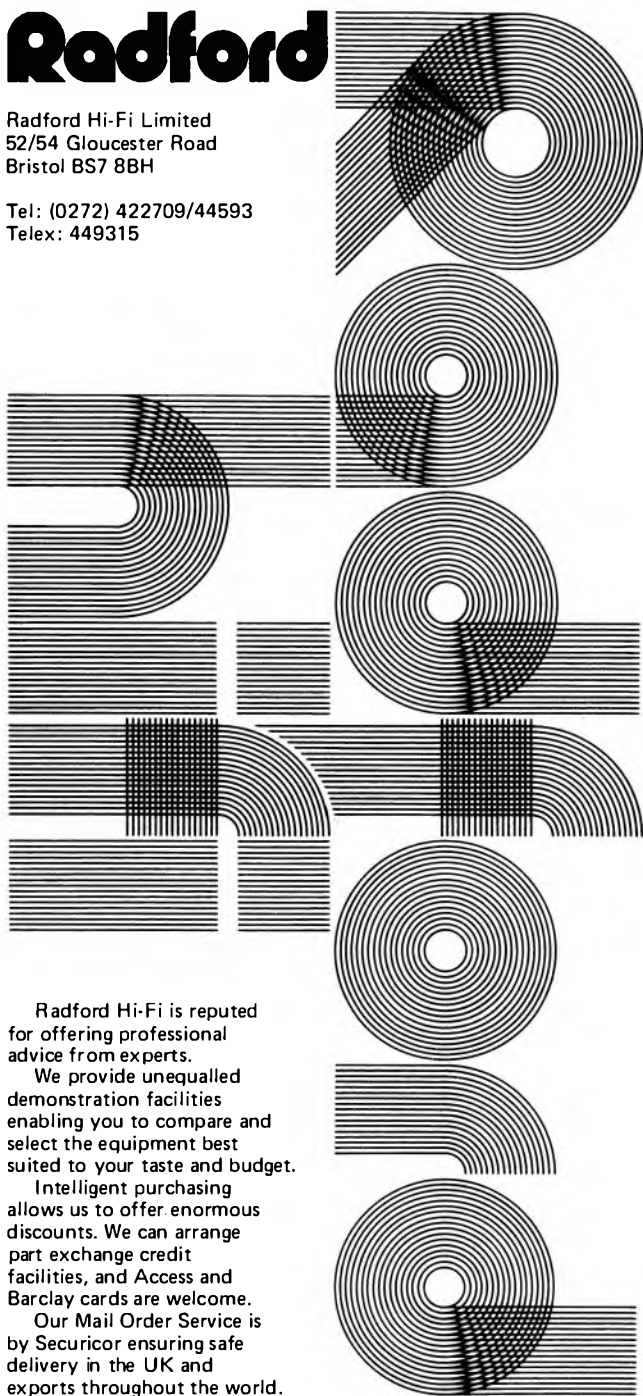
ACOUSTIC RESEARCH

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Radford

Radford Hi-Fi Limited
52/54 Gloucester Road
Bristol BS7 8BH

Tel: (0272) 422709/44593
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Constructional Kits

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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. Impedance: 8 or 15 ohms. Recommended cabinet size: 20 × 12 × 9in. Design based on Richard Allan Chaconne series II enclosure. Price: £16.85 (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. Impedance: 8 or 15 ohms. Recommended cabinet size: 20 1/2 × 13 × 8 1/2in. Design based on Richard Allan Flamenco series II enclosure. Price: £25.75 (plus VAT).

Triple-12 Assembly

Speaker kit comprising CG 12 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. Impedance: 8 or 15 ohms. Recommended cabinet size: 25 × 15 1/2 × 12 1/2in. Design based on Richard Allan Pavane series II enclosure. Price: £31.75 (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. Impedance: 8 or 15 ohms. Recommended cabinet size: 25 × 15 1/2 × 12 1/2in. Design based on Richard Allan Sardana enclosure. Price: £37.00 (plus VAT).

RA 8 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. Impedance: 8 ohms. Recommended enclosure 40 × 27 × 25cms. Based on RA8 enclosure. Price: £23.75 (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. Impedance: 8 ohms. Recommended enclosure: 55 × 28 × 25cms. Based on RA82 enclosure. Price: £38.50 (plus VAT).

RA82L Assembly

Speaker kit comprising HP8B bass/mid unit, DT20 dome treble unit, CN35L/H filters with control, BAF wadding, choice of fret material, veneered pre-cut baffle, fixing hardware, terminals. Detailed assembly instructions. FR:



Richard Allan RA 8 Assembly

★ Indicates entry is illustrated

40Hz-20kHz \pm 3dB. HC: 45W RMS, 70W programme. Impedance: 8 ohms. Recommended Labyrinth enclosure: dimensions 73 x 35 x 29cms. Price: £41.00 (plus VAT).

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 2142.

BD1 Turntable Kit

Description and specification as for BDI motor unit (See Record Decks section). Easy one-hour assembly. No soldering. Fitted with Press Button speed change. Price: £19.41 (including VAT).

Plinth and cover for BDI:

£15.75 (plus VAT), plinth only;

£10.00 (plus VAT), cover only;

£5.75 (plus VAT).

■ DORAM ELECTRONICS LTD.

PO Box TR8, Leeds LS12 2 UF.
Tel: Leeds 34222.

International 25

Based on proven design. Output: 25 + 25W. Noise - 68dB (unweighted). FR: 15Hz-30kHz (\pm 0.5dB). THD: 0.16% at 12 $\frac{1}{2}$ W. Incorporates one-piece PCB with time delay relay to eliminate switch on 'plop' which may damage speakers. Input selector (magnetic cartridge, tape, tuner, aux), volume, bass, treble, balance controls. Complete with all metalwork, front panel and attractive 'teak finish' case. Price: £29.95 (plus VAT).

Quadraphonic Synthesiser Kit ★

Surround Sound. Connects directly to existing stereo amplifier loudspeaker sockets providing outputs for four separate speakers. Separates the Antiphase components already present in many stereo or matrix encoded quadraphonic recordings and broadcasts. This extra information is fed to two additional rear loudspeakers (not supplied). Output: 100W. Comes complete with case, printed circuit board, all components and full instructions. Price: £9.95 (plus VAT).

TV Sound Only Tuner Kit

Designed to provide source of high quality sound from TV broadcasts via independent UHF FM receiver. Unit contains pre-aligned varicap tuned front end which allows stations to be pre-set using push button channel selector. Constructed on one P.C.B. mounted in a one-piece chassis making for simple con-



Doram Quad Resolver

struction. Alignment of I.F. and detector is simple and can be done without the need for test equipment. Price: £36.95 (plus VAT).

FM Tuner

Output adjustable 0-400mV. FR: 87.5 Hz-104MHz. (FM only). Stereo separation 40dB at 1kHz and 32dB at 10kHz. Sensitivity: 1.2 μ V for 26dB. S/N 75 ohms input. Signal to noise ratio with 400 μ V input = 67dB typ. Distortion: 0.5%. Features: ultrasonic filter for pilot tone rejection to 65dB. Six preset station selectors, geared manual tuning drive. Balanced twin LED tuning indicators. Illuminated scale tuning meter with LED selector indication, varicap tuning. Price: £64.95 (plus VAT).

AM/FM Tuner

Output: 0-400mV adjustable. FR: 525-1605kHz (MW), 150-275kHz (LW), 87.5-108kHz (FM). Stereo separation: 40dB typ at 1kHz, and 32dB typ at 10kHz. Input sensitivity: 150 μ V/m (MW), 200 μ V/m (LW), 1.8 μ V (FM) for 26dB quieting. S/N: - 65dB. Distortion: 0.6%. AFC pull-in range - 150kHz stereo. Features: Simulated teak veneer with contrasting black and silver fascia. Push button and rotary controls. In-built mute control, illuminating tuning scale, 5-pin DIN output, matching for 300 ohms or 75 ohms antennae. Price: £44.95 (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 \pm 5dB. Drive units: 165mm bass and high-range. Price: £7.50 (plus VAT).

SK 215

Speaker kit (two-way) complete with cross-over 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 cross-over 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 cross-over 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 ★

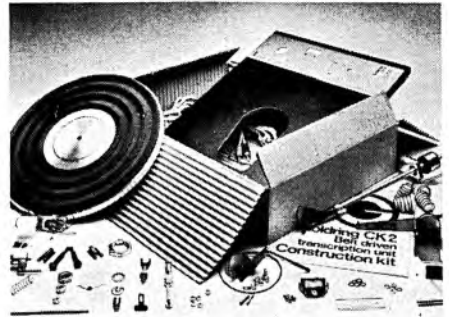
Speaker kit (three-way) complete with cross-over and spring terminals. No soldering required. HC: 35W RMS at 8 ohms. FR: 75Hz-20kHz ± 4 dB. Drive units: 305mm bass mid and high-range. Price: £44.15 (plus VAT).

■ **GOLDRING LTD.**

Anglian Lane, Bury St. Edmunds, Suffolk IP32 6SS.
Tel: Bury St. Edmunds 64011.

CK2 Transcription Unit ★

Complete with instruction for easy assembly. 2 speed belt driven turntable with 33 $\frac{1}{2}$ and 45 rpm. Viscously damped pick-up lifting and



Goldring CK2



Goodmans DIN 20 and Mezzo Twin Kit

lowering device. 16 pole synchronous motor, counter balanced pick-up arm with adjustable stylus pressure from 0.5gm. Removable plug-in headshell bias compensation. W and F: 0.15%. Motor Plate 37.8 x 28.3cms. Turntable diameter 25.4 cms. Price: £28.00 (plus VAT).

■ **GOODMANS LOUDSPEAKERS LTD.**

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

DIN 20 Kit ★

All parts supplied except timber to make complete loudspeaker system, which should be used with amplifier rated between 10 and 40 watts. FR: 45-22,000 Hz. Power Handling: 20W DIN. Recommended amplifier music-power: 10-40 watts. Sensitivity: 4.4 watts (96 dB at 1m). Rec. amp imp: 4 or 8 ohms. Cross-over frequency: 4,000Hz. No rec. retail price.

Mezzo Twin Kit ★

Parts to make Mezzo SL., which should be used with amplifiers having music power rating in range 10-60 Watts. FR: 40-20,000Hz. Power Handling: 50 Watts (DIN), Recommended amplifier music power: 10-60 Watts, Sen-



Eagle SK 335

★ Indicates entry is illustrated

sitivity: 7 Watts (96dB at 1m), Recommended amplifier imp: 4 or 8 ohms. Crossover frequency: 2,000Hz. No rec. retail price.

■ LARSHOLT

Doram Electronics Ltd, PO Box TR8,
Wellington Road Industrial Estate,
Wellington Bridge, Leeds LS12 2UF.
Tel: Leeds 34222.

Audio Master ★

25W per channel stereo amplifier kit matching de luxe FM Stereo Doram. Rosewood case, 4 inputs, loudness, bass, treble, balance, volume controls. Low distortion and dynamic range of 80dB. Price: £89.95 (plus VAT).

Signal Master

Double MOS FET, Larsholt module system needing only a screwdriver and soldering iron. Can be programmed for five stations besides manual tuning. Automatic scanning across FM band. Price: £98.50 (plus VAT).

■ 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, solderless connecting cables, and comprehensive instructions on system connection and cabinet construction. All kits have an input impedance of 8 ohms.

Kit 1060 ★

8 1/4 in. woofer with foam roll surround. lin. dome tweeter. HC: 50W. FR: 30-22,000 Hz. Crossover: 1600 Hz. Rec. cabinet vol: 20 litres. Price (Per Pair): £70.65 (plus VAT).

Kit 1070 ★

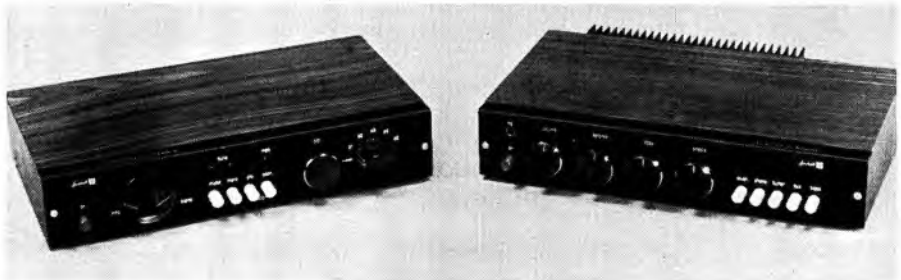
2 x 7 in. woofer with foam roll surround. 4in. enclosed midrange. lin. dome tweeter. HC: 60W. FR: 25-22,000 Hz. Crossover: 500 and 4000 Hz. Rec. Cabinet vol: 30 litres. Price (Per Pair): £62.57 (plus VAT).



Peerless Kit 1060



Peerless Kit 1070



Larsholt Audiomaster



Peerless Kit 1120

Kit 1120 ★

2 × 10in. woofer with foam roll surround. 4in. enclosed midrange. 1in. dome tweeter. HC: 100W. FR: 20-22,000 Hz. Crossover: 500 and 4000 Hz. Rec. cabinet vol: 60 litres. Price (each kit): £70.65 (plus VAT).

Kit 2050

8¼-inch woofer with foam roll surround and 2⅞-inch tweeter. HC: 50W. FR: 50 to 20,000Hz. Crossover: 1500Hz. Rec. cabinet volume: 20 litres. Price (per pair): £49.50 (plus VAT).

Kit 2060

8¼-inch woofer with foam roll surround, 4½" inch midrange and 2⅞-inch cone tweeter. HC: 50W. FR: 50-20,000Hz. Crossover: 700 and 4000Hz. Rec. cabinet volume: 20 litres. Price (per pair): £66.75 (plus VAT).

■ TELERADIO

The Teleradio Co. (Edmonton) Ltd, 325 Fore Street, London N9.

Kits

Suppliers of kits and modules for high specification amplifiers and instrumentation.

■ VERO

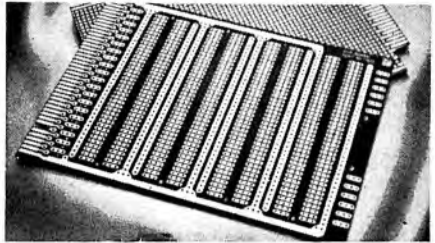
Vero Electronics Ltd, Industrial Estate, Chandler's Ford, Eastleigh, Hants SO5 3ZR. Tel: Chandler's Ford 2956.

Audio Equipment Cases ★

Wide range of equipment cases suitable for hi-fi units, tuners, power supplies and test gear. Available in various panel heights and



Vero Type D case



Vero Printed Boards

with or without anodised aluminium front handles. Made in light gauge steel finished in Raf blue/grey vinyl paint. Integral aluminium trim. Neat slim-line appearance. Ventilation slots incorporated. Full list of sizes, accessories and prices, available on request. Ask for Vero 'D' series cases.

Printed circuit boards ★

Vero circuit boards comprise resin-bonded paper laminate clad on one side with 1oz copper foil of nominal thickness 1.5mm. Base material cut to width and punched with a matrix of holes. Copper foil is in parallel strips along the lines of holes. Enables small electronic assemblies to be built easily and quickly. Vero boards are produced in various sizes, also double-sided, in strips, with plug-in terminations, edge-connectors, breadboards and in plain non-coppered versions. Accessories include connector contacts, D-I-L sockets, terminal pins, pin insertion tool, spot face cutter and numerous design-aid sheets. Catalogue on request.

New cases

Six sizes injection moulded in ABS and provided with aluminium front and rear panels, ideally suited to housing small amplifiers and tuners. Prices on request.

Headphones and Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ADASTRA

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

H7

Mono headphones. Impedance: 16 ohms. Maximum input: 250mW. FR: 20Hz-10kHz. Weight: 15oz. 5ft. lead. Fitted with dynamic boom mic. Two-tone grey. Adjustable headband. Washable ear cushions. Price: £11.60 (plus VAT).

■ AKAI

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

ASE11 ★

Stereo headphones with acoustic control. Impedance: 8 ohms. Maximum input: 500mW. FR: 25Hz-15kHz. Weight: 18oz approx. Length of cord: 6ft. Price: £12.75 (plus VAT).

ASE20

Stereo headphones with acoustic loudness control. Impedance: 8 ohms. Maximum input: 500mW. FR: 25Hz-18kHz. Weight: 17oz approx. Length of cord 6ft. Price: £15.75 (plus VAT).

ASE22 ★

Stereo headphones. Built-in mechanical two-way system. Mylar film diaphragms. Impedance: 8 ohms. FR: 20Hz-10kHz. Normal input: 1mW. Maximum input: 500mW. Weight: 18oz approx. Price: £17.75.

ASE 7

Headphone. FR: 30Hz-20kHz. Impedance: 16 ohms. Weight: 22.5kg with cord. Lightweight,

left and right units marked, padded earpieces. Standard controls. Price: £13.13 (plus VAT).

■ AKG

AKG Equipment, 182-184 Campden Hill
Road, Kensington, London W8 7AS.
Tel: 01-229 3695.

No details available at time of passing for press.

■ AMSTRAD

A.M.S. Trading (Amstrad) Ltd, 89 Ridley
Road, Dalston, London E8 2NH.
Tel: 01-249 5237.

HPS 6 A ★

Stereo headphones, FR: 20Hz-25kHz. Impedance: 8 ohms. Weight: 500gms. Finish: chrome metalwork. 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: on application.

■ ARNOLD ELECTRONICS

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



Akai ASE11



Akai ASE22



Amstrad HPS 6A



Bang and Olufsen U70



Audio Technica AT701

Headset Amplifier

Solid state 100mW stereo amplifier for use with headphones. From either magnetic or ceramic input. Magnetic input: 3mV nominal. Ceramic input: 100mV nominal. Output: 100mW into 8. Supply: 9V. Dimensions: 18 × 9 × 13cms. Price: £17.97 (plus VAT).

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 × 9 × 4.5cms. Easy to connect. Silver brushed aluminium case. Suitable for language laboratories. Switch to disconnect speakers. Price: £8.71 (plus VAT).

■ AUDIO TECHNICA

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

AT701 ★

Dynamic headphones. Impedance: 4-16 ohms. FR: 30Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: on application.

AT702

Dynamic headphones. FR: 25Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: on application.

AT703

Dynamic headphones. Impedance: 4-16 ohms. FR: 20Hz-20kHz. Maximum input power: 200mW at 200Hz. Weight: 250gm. Diaphragm: mylar. Copper coated aluminium voice coil. Price: on application.

AT706 ★

Electrostatic headphones. Impedance: 4-16 ohms. FR: 10Hz-25kHz. Maximum input power: 10W at 200Hz. Weight: 220gm. Diaphragm: push/pull electret. Adaptor with two headphone outlets, speaker switch and attenuator. Price: on application.

AT707

Electret condenser headphones. Impedance: 4-16 ohms. FR: 20Hz-25kHz. Maximum input power: 800mW at 200Hz. Weight: 310gm. Price: on application.

■ **BANG & OLUFSEN**

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

Tel: Gloucester 21591.

U70 ★

No details available as this book went to press.

■ **BEYER**

Beyer Dynamic (GB) Ltd,
1 Clair Road, Haywards Heath, Sussex.

Tel: Haywards Heath 51003.



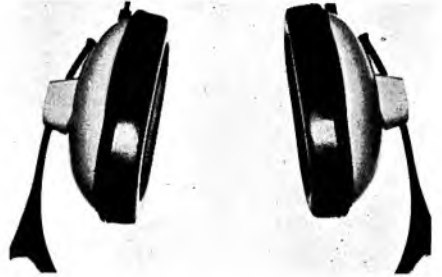
Audio Technica AT 706

DT96A ★

Lightweight moving coil stereo headphones. FR: 30Hz-17kHz. Impedances: 50 ohms or 400 ohms per earpiece. Max power: 100mW. Various cable lengths and terminations available. Also available with coiled cable. Price: £15.80 (plus VAT).

DT100 ★

Moving coil stereo headphones. Sensitivity: 110dB. FR: 30Hz-20kHz. Various impedances and cable terminations available. Price: £18.86 (plus VAT).



Beyer DT900

DT100RR

Similar to the DT100 but fitted with individual volume controls. Price: £24.29 (plus VAT).

DT48

Moving coil stereo headphones. FR: 16Hz-20kHz. Impedance: 8 ohms, 25 ohms, 200 ohms per earpiece. Rated input: (8 ohms) 80mV, (25 ohms) 150mV, (200 ohms) 450mV. Cable: 6½ft open end. Price: £57.07 (plus VAT).



Beyer DT100

DT480

Moving coil stereo headphones. FR: 20Hz-20kHz. Various impedances available. Rated input: 350mW, max 1W. Cable: 10ft. Various terminations offered. Price: £37.74 (plus VAT).

DT900RR

Similar to the DT900 but fitted with individual volume controls. Price: on application.

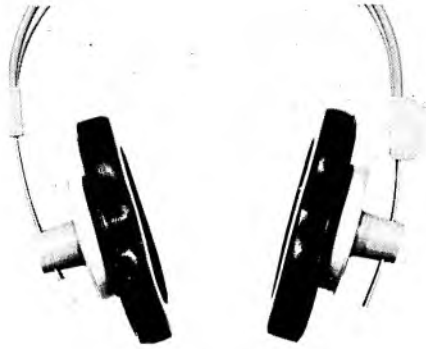
DT900 ★

Moving coil stereo headphones. FR: 30Hz-18kHz. Impedance: 600 ohms per earpiece. Maximum input: 200mW. Lightweight, gaily coloured. Price: £13.45 (plus VAT).

DT49

Telephone type handset with coloured replaceable ear pads. FR: 30-13,000Hz. Impedance: 15 ohms. Weight: 220gm. Finish in black, red, grey. Price: £16.03 (plus VAT).

★ Indicates entry is illustrated



Beyer DT96



Eagle H2008/H2009

DT98A/B and DT99A/B

Specification as DT96 for headphone. FR: 40-15,000Hz. Impedance: 200 ohms. Price: £26.80 (plus VAT).

D109

Dynamic headphones-microphones combination. FR: 30-20,000 headphone and 40-12,000 microphone. Hypercardioid mic available as DT109V fitted with induction loop receiver. On-off switch and separate volume controls for phone and mic. Price: £34.44; DT109V £57.65 (plus VAT).

DT202

Stereo dynamic transducer. FR: 20-2,000Hz. Impedance: 400 ohms. Weight: 360gm. Straight or coiled leads available with choice of terminations (extra). Price: £29.22 (plus VAT).

DT204

Quad/stereo moving coil. FR: 20-20,000Hz. Impedance: quad 200 ohms, stereo 100 ohms. Weight: 435gm. Quad/stereo switch and two volume controls for front to rear balance. Price: £44.51 (plus VAT).

DT302

Stereo moving coil. FR: 20-20,000Hz. Sensitivity: 110dB. Impedance: 600 ohms. Weight: 66gm. Price: £9.06 (plus VAT).

DT440

Open high velocity dynamic transducer. FR: 20-20,000Hz. Impedance: 600 ohms. Weight: 260g. Suitable for connection to source impedances from 4-1,000 ohms. Complete with lead. Price: £29.00 (plus VAT).

Accessories

Monitoring units/voltage divider/passive simulator unit when connected stereo system gives four channel effect/headphone output transformer for DT48. Prices: on application.

■ BINATONE

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

01/3978

Moving coil headphones. FR: 30Hz-18kHz. Impedance: 8 ohms. Padded black finish. Rotary volume control. Price: on application.

01/3994

Moving coil headphone. FR: 20Hz-20kHz. Impedance: 8 ohms. Padded black/silver finish. Price: on application.

01/3927

Moving coil headphones. FR: 30Hz-18kHz. Impedance: 8 ohms. Padded black finish. Slide/volume control. Price: on application.

■ EAGLE

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

H 2009 ★

Moving coil reflex stereo headphones. FR: 30Hz-20kHz ± 5 dB. Impedance: 8-16 ohms. Weight: 0.35kg. Finish: black/brushed metal. Adjustable padded headband. Reflex enclosure. Lift/flat/cut bass switch (acoustic) on both earpieces. Controls: ± 5 dB at 100Hz acoustic switches on both earpieces. Price: £16.50 (excluding VAT).

H 2008 ★

Moving coil reflex stereo headphones. FR: 30Hz-20kHz ± 5 dB. Impedance: 8-16 ohms. Weight: 0.35kg. Finish: black/brushed metal. Padded adjustable headband and earpieces. Price: £11.80 (excluding VAT).

FF 6 ★

Moving coil stereo headphones. FR: 20Hz-20kHz. Impedance: 8-16 ohms. Finish: black/white with chrome stirrups. Fully padded and adjustable with control box. Separate left and right levels, mono/stereo switch. Control box in lead. Price: £14.60 (excluding VAT).

G 6000

Moving coil stereo headphones. FR: 20Hz-20kHz. Impedance: 8-16 ohms. Finish: black/white with chromium stirrups. Fully padded and adjustable. Volume control on each earpiece (slider type). Mono/stereo switch on left earpiece. Price: £12.80 (excluding VAT).

H 4300

Dynamic reflex headphones. FR: 20Hz-20kHz. Impedance: 8 ohms. Chrome-plated finish. Lightweight lead. Price: £17.50 (plus VAT).

H 6300

Super-velocity reflex. FR: 40Hz-20kHz. Impedance: 8 ohms. Brushed metal suede headband. Lightweight lead with moulded plug. Price: £22.50 (plus VAT).

■ ECHO

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

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-17kHz. Power handling capacity: 0.5W. Supplied with 10ft coiled cord lead fitted with jack plug. Price: £10.00 (plus VAT).

■ GOODMANS

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

OHP 10 ★

Ortho dynamic headphones. FR: 16Hz-20kHz. Impedance: 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.

*Eagle FF6**Goodmans OHP 10***221 ★**

Moving coil stereo headphones. FR: 20Hz-20kHz. Impedance: 220-426Ω. Distortion Factor: 0.5% at 120 phon. Fitted with stereo plug (DIN 45 327). Weight: 550gm. Finish: black. No rec. retail price.

★ Indicates entry is illustrated



Grundig GDHS 221



Koss K/145



Koss Easy Listener

216

Moving coil headphones. FR: 20Hz-20kHz. Impedance: 400 ohms. Lightweight. No rec. retail price.

219

Moving coil headphones. FR: 20Hz-20kHz. Impedance: 400 ohms. Padded. No Rec. retail price.

■ HACKER RADIO LTD

Norrey's Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.

Stereo Headphones HP2

Light and comfortable to wear. Supplied complete with coiled lead and jack plug. Impedance: 8-16 ohms. No rec. retail price.

■ HITACHI

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

HD 404

4-channel moving coil headphones with built-in switch for 2-channel listening. FR: 20Hz-20kHz. Input power: 1mW. Maximum rated power input: 0.1W. Impedance: 8 ohms. Distortion: less than 1%. Cord length: 2m. Weight: (with cord) 610gm. Price: £27.92 (including VAT).

HD 60

Moving coil stereo headphones. FR: 20Hz-20kHz. Input power: 1mW. Maximum rated power input: 0.5W. Impedance: 8 ohms. Distortion: less than 1%. Cord length: 1.5m. Weight: (with cord) 420gm. Price: £11.92 (including VAT).

■ 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. Impedance: 100 ohms at 1kHz. Weight: 365gms. THD: less than 1% at 1kHz, 100dB-SPL. Pneumalite earcushions. Adjustable headband with stainless steel bands, forked slide bars and soft vinyl cover. Price: on application.



Koss HV-2

K/135

Moving coil stereo headphones. FR: 10Hz-18,000Hz. Impedance: 100 ohms at 1kHz. Weight: 425gms. THD: less than 1% at 1kHz, 100dB-SPL. Pneumalite earcushions. Adjustable headbands with stainless steel bands, self-adjusting yokes, soft vinyl cover. Finish in ebony teak with brown cushions. Price: on application.

K/145 ★

Moving coil dynamic stereo headphone. FR: 20Hz-20,000Hz. Impedance: 90 ohms at 1kHz. THD: less than 5% at 1kHz, 100dB-SPL. Weight: 454gms. Pneumalite earcushions. Adjustable headband with stainless steel bands, self-adjusting yokes, soft vinyl cover. One rotary volume balance control on each earcup. Price: on application.

K 7 ★

Moving coil dynamic headphones. FR: 20Hz-16kHz. Impedance: 100 ohms. Designed to operate from outputs with source impedances of 3.2 to 600 ohms. Weight 293gms. Mushroom finish with black cushions. Foam filled vinyl ear cushions Polypropylene headband. No rec. retail price.

K 6

Moving coil dynamic headphones. FR: 10Hz-16kHz. Impedance: 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-



Koss K-7

adjusting yokes and sponge cushioned cover. No rec. retail price.

K 6D

Moving coil dynamic headphones. FR: 10Hz-16kHz. Impedance: 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. No rec. retail price.

K 6 LC

Moving coil dynamic headphones. FR: 10Hz-16kHz. Impedance: 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. No rec. retail price.

PRO 4AA

Moving Coil (dynamic) headphone. FR: 10Hz-22kHz. Impedance: 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. No rec. retail price.

PRO 5 LC

Moving coil dynamic headphones. FR: 10Hz-20kHz. Impedance: 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 rot-

★ Indicates entry is illustrated



Koss Phase/2+2

ary volume balance control on each earcup. No rec. retail price.

Phase 2

Moving coil dynamic headphones. FR: 10Hz-22kHz. Impedance: 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 earcup. Slide ambience expander located on right cup, momentary slide comparator switch on left cup. No rec. retail price.

Technician 2

Moving coil dynamic headphones. FR: 10Hz-22,000Hz. Impedance: 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. No rec. retail price.

Technician VFR

Moving coil dynamic headphones. FR: 10Hz-22kHz. Impedance: 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. No rec. retail price.

HV2 ★

Moving coil dynamic headphones velocity operated. FR: 20Hz-20kHz. Impedance: 172 ohms. Weight: 0.340kg. Black finish with grey cushions. Flexible Acetal headband with padded sponge and self-adjusting pivoting

yokes. Soft acoustical sponge earcushions. High velocity lightweight open-back stereophone. No rec. retail price.

Easy Listener ★

Moving coil dynamic headphones, velocity operated. FR: 20Hz-20kHz. Impedance: 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 earcushions. No rec. retail price.

HV 1A

Moving coil dynamic headphones, velocity operated. FR: 15Hz-30kHz. Impedance: 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 earcushions. High velocity lightweight open-back phone. No rec. retail price.

HV 1 LC

Moving coil dynamic headphones velocity operated. FR: 15Hz-30kHz. Impedance: 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 earcushions. High velocity lightweight open-back phones. No rec. retail price.

Phase 2+2 ★

Moving coil dynamic headphones, velocity operated quadraphone. FR: front 20Hz-20kHz, back 15Hz-15kHz. Impedance: 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. No rec. retail price.

Continental adaptor leads

For use with amplifiers having DIN output sockets instead of jack sockets. Comprises: two DIN speaker plugs with lead and stereo jack socket. Two 100-ohm resistors inserted for attenuation. No rec. retail price.

HEADPHONES AND ACCESSORIES

Two-way adaptor TPA

For connecting two pairs of headphones to single output. Extends length by 3ft. No rec. retail price.

Extension cable EC25KK

25ft coiled cord terminated with stereo jack plug and socket. No rec. retail price.

T3 Switchbox

Speaker/headphone switchbox. Jack socket for phones, terminals for speaker and connection to amplifier output. Switch selects speakers on or off. No rec. retail price.

T4A Connector box

Accepts up to five pairs of stereo headphones. 14ft extension lead with jack plug for amplifier. Simulated rosewood base with black trim, spun aluminium panel. No rec. retail price.

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: $3\frac{1}{8} \times 3\frac{3}{8} \times 2\frac{5}{16}$ in. Weight: 10 $\frac{1}{2}$ oz. No rec. retail price.

T10A

Chairside listening station. Comprises control box with separate volume controls for two sets of stereo headphones, plus on/off switch for speakers. Wires directly to amplifier. Seven-core flat connecting cable suitable for under carpet installation. Tinted plastic cover. No rec. retail price.

■ 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. Impedance: 60 ohms. Weight: 340gms. Black finish. Unique styling with hidden headband adjusting. Price: to be announced.

■ LENCO

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane,
Byfleet, Surrey.
Tel: Byfleet 41131

K110

Moving coil stereo headphone. FR: 16-22,000 Hz. Sensitivity: 91dB. Imp: 200 ohms. Price: £21.00 (plus VAT).

K105

Moving coil stereo headphone. FR: 18-20,000. Sensitivity: 96dB Imp: 4-16 ohms. Price: £17.00 (plus VAT).

K106

Moving coil stereo headphone. FR: 16Hz-22kHz. Impedance: 4-16 ohms. Sensitivity: 110dB. Price: £17.00 (plus VAT).

■ NAD

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

NAD 05

Stereo headphone, open moving coil. Impedance: 4-50 ohms. FR: 20Hz-20,000Hz. Weight: 340gm. Price: £11.75 (plus VAT).

NAD 10

Stereo headphone, closed moving coil. Impedance: 4-50 ohms. FR: 20Hz-20,000Hz. Weight: 490gms. Price: £18.50 (plus VAT).

NAD 16

Stereo headphone, open moving coil. Impedance: 4-50 ohms. FR: 20Hz-20,000Hz. Weight: 450gms. Price: £27.50 (plus VAT).

NAD RP 18

Stereo headphone, open magnetic surface diaphragm, regular phase. Impedance: 4-40 ohms. FR: 20Hz-20,000Hz. Weight: 520gms. Price: £42.00 (plus VAT).

NAD 20 E

Electrostatic headphone. FR: 20Hz-20,000Hz. Weight: 320gms. Price: £59.00 (plus VAT).

■ PEERLESS

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

RE-237

Reflex stereo headphones featuring drive units with high velocity mylar diaphragms for wide-range, distortion-free response and ported ear-cups that provide a controlled awareness of ambient sound. Other features include a universally adjustable headband with leather grain cover, foam-filled ear cushions and a

★ Indicates entry is illustrated



Peerless RE-257

3-metre coiled lead with moulded jack plug. Impedance: 8 ohms. FR: 15Hz-20kHz. Maximum input: 500mW. Sound Pressure. Level: 115dB/mW. Price: £11.30 (plus VAT).

RE-252

Stereo headphones featuring detachable, remote control box with left and right volume controls and stereo/mono switch. Remote control may be simply unplugged and replaced by 3-metre spiral cord and jack plug. Wide range drive units operate in acoustically damped earcups. Padded stainless steel headband and earmuffs. FR: 20Hz-20kHz. Impedance: 8 ohms. Price: £15.00 (plus VAT).

RE-264

Stereo/quadrasonic headphones. Padded headband and earmuffs. Fitted with 50mm front and rear loudspeakers angled to provide realistic 4-channel listening from discrete or matrix systems. Maximum input: 200mW per channel. Impedance: 8 ohms. Price: £10.50 (plus VAT).

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 earmuffs. With 3-metre spiral cord and jack plug. FR: 20Hz-20kHz. Impedance: 4-32 ohms. Sensitivity: 100dB/mW at 1,000Hz. Price: £21.50 (plus VAT).

RE-270

Electret condenser stereo headphones utilising a high-molecular thin-film element that provides a low-distortion, extended frequency range. Direct connection, external adapters or polarizing equipment not required. Functional styling with softly padded headband and earmuffs. FR: 18Hz-22kHz. Impedance: 1.3K ohms at 1kHz. Matching impedance: 4-32 ohms. Sensitivity: 100dB/V at 1,000Hz. Max. input: 10V. Price: £28.50 (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).

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).

PMB-6

Direct connection, Orthodynamic stereo headphones utilizing a special thin film diaphragm uniformly driven to provide near linear frequency characteristics. Fitted with stainless steel headframe and adjustable, contour fitting headband, and swivel mounted earcups with supra-aural earpads. FR: 16Hz-20kHz. Impedance: 140 ohms (suitable for all Hi-Fi amplifiers). Sensitivity: 90dB. SPL/0.001W. Handling capacity 2W. Total harmonic distortion: less than 1%. Price: £29.63 (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 earmuffs. FR: 20Hz-22,000Hz. Impedance: 8 ohms. 3-metre spiral cord. Price: £14.30 (plus VAT).

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 ear-drum pressure, and centrally located volume controls that permit direct setting for perfect

sound balance. FR: 20Hz to 20,000Hz. Impedance: 8 ohms. With 3-metre lightweight spiral cord. Price: £16.70 (plus VAT).

■ PHILIPS

Philips Electrical Ltd,
City House, 420-430 London Road,
Croydon CR9 3QR.
Tel: 01-689 2166.

N6310 ★

Moving coil stereo headphones. FR: 20Hz-20kHz. Sensitivity: 92dB at 1mW. Impedance: 600 ohms each channel. Power handling: 20mW each channel. Weight: 160gm. Finish: black/silver. Meets DIN 45 500 standard. 3m cable attached. Incorporates 'open air' principle. Available in three versions: (N6310/00) 360° DIN plug; (N6310/02) 6.3mm jack plug; (N6310/03) loudspeaker DIN plugs. No rec. retail price.

N6302

Moving coil stereo headphones. FR: 16Hz-20kHz. Sensitivity: 112dB at 1mW. Impedance: 600 ohms each channel. Power handling: 20mW each channel. Weight: 450gm. Finish: black/silver. 6½ft curled connecting cord. No rec. retail price.

For connection to a 240° DIN headphone socket an adaptor is available (code number 4822 263 50054) from: Combined Electronic Services, 604 Purley Way, Waddon, Croydon CR9 4DR. Tel: 01-686 0505.

■ PICKERING

Hightgate 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. Impedance: 15 ohms. Power handling: 0.2W per channel. Weight: 0.215kg. Finish: brown. Price: £18.50 (plus VAT).

OA-2

Stereo moving coil headphones. FR: 30Hz-19kHz. Sensitivity: (specific response) 100dB at 600Hz. Impedance: 8 ohms. Power handling: 0.3W per channel. Finish: brown. Price: £11.00 (plus VAT).

PH-4955

Stereo moving coil headphones. FR: 10Hz-22kHz. Sensitivity: 100dB SPL at 0.10V at 1kHz. Impedance: 8 ohms. Power handling: 0.15W. Weight: 0.785kg. Finish: brown. Price: £28.00 (plus VAT).



Philips N6310 in use



Philips N6310

■ PIONEER

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

SE-505

Dynamic headphones. Impedance: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 108dB at 300mV. Weight: 690gm. Cord length: approximately 60in. Jack plug. Two-way speaker volume/tone controls. Price: on application.

SE-305

Dynamic headphones. Impedance: 4-16 ohms.

★ Indicates entry is illustrated



Pioneer SE-Q404



Pioneer SE-700

Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 113dB at 300mV. Weight: 435gm. Cord length: 60ins. Jack plug. Price: on application.

SE-205

Dynamic headphones. Impedance: 4-16 ohms. Maximum power input: 500mW. FR: 20Hz-20kHz. Distortion: 1%. Sensitivity: 115dB at 30mV. Weight: 450gm. Cord length: 84in. Jack plug. Price: on application.

SE-700 ★

Piezoelectric headphones. Impedance: 4-16 ohms. Static capacity: 0.1 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: more than 30V. Price: on application.

SE-500

Piezoelectric headphones. Impedance: 4-16 ohms. Static capacity: 0.08 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Price: on application.

SE-300

Piezoelectric headphones. Impedance: 4-16 ohms. Static capacity: 0.08 μ F. FR: 20Hz-20kHz. Sensitivity: 100dB 3V. Maximum input power: 30V. Price: on application.

SE-Q404 ★

4-channel dynamic headphones. Impedance: 4-16 ohms. FR: 20Hz-20kHz. Sensitivity: 105dB 0.3V (4-channels driven) 111dB 0.3V (2-channels driven). Maximum input power: 500mW (each channel). Price: on application.

SE-255

Carbon fibre blend moving coil stereo headphone. FR: DIN 20-20,000. Sensitivity: 100dB/mv. Imp: 4-8 ohms. Power handling: more than 500mw each channel. White leather-like vinyl with aluminium metal trim. High efficiency carbon fibre drive units, 4m coiled lead. Price: on application.

Monitor 10

Moving coil stereo headphones. FR: DIN 20-20,000. Sensitivity: 100dB/mw. Imp: 4-16 ohms. Power handling: 700mw per channel. Finish in black leather. Low sound leakage design, High efficiency drive units. Head band has clock stop locking adjustment. Price: on application.

■ PLUSTRON

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW. Tel: Newcastle. 615131.

2500 ★

FR: 18Hz-24,000Hz. Impedance: 4-8 ohms. Twin tone volume controls. Price: £17.41 (inc. VAT).

7700

FR: 18Hz-24,000Hz. Impedance: 4-8 ohms. Compact headphone unit with rotating volume controls. Price: £17.65 (inc. VAT).

5000 ★

FR: 18Hz-24,000Hz. Impedance: 4-8 ohms. Price: £17.90 (inc. VAT).

■ REVOX

F. W. O. Bauch Ltd, 49 Theobald Street, Borehamwood, Herts WD6 9RZ. Tel: 01-953 0091.

RH 31 ★

Stereo headphones. FR: 20-20,000Hz. Impedance: 600 ohms. Power handling: 50mW per channel. Weight: 200gm. Soft foam earpads, lightweight PVC headband with soft cushioning. Price: £21.31 (plus VAT).

■ ROTEL

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



Plustron 5000



Plustron 2500

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: £29.29 (plus VAT).

RH700

Stereo headphones. Impedance: 8-16 ohms. Maximum input: 500mW. FR: 20Hz-20kHz. 10ft coiled cord. Black headband and ear cushions. Adjustable headband. Price: £14.72 (plus VAT).

■ **SANSUI**

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

SS10 ★

Stereo headphones. Impedance: 8 ohms. Normal listening input: 1mW. Maximum input: 500mW. FR: 20Hz-20kHz. HD: <0.8%. Sensitivity: better than 110dB. Crossover frequency: 1kHz (6dB/Oct). Weight: 625gm. Three-pole jack plug. Washable ear cushions. Individual volume adjustment. Black headband, white earpieces. Price: £27.34 (inc. VAT).

SH5

Stereo headphones. Impedance: 25 ohms nom-

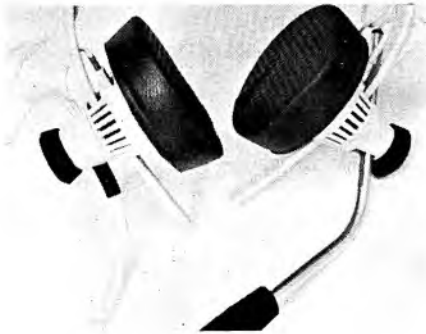


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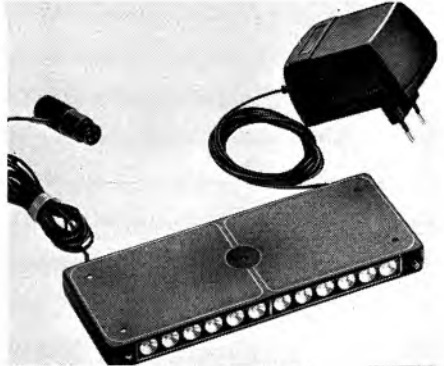


Sansui SS10

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Sennheiser HMD 414



Sennheiser Infra-red Transmitter SI434



Sennheiser Infra-red Headphones HD 1434

inal. FR: 20Hz-20kHz. Maximum input power: 65mW. Sensitivity: 97dB. Weight: 245gm. Price: £27.75 (inc. VAT).

SH 15

Stereo dynamic headphones. Imp: 4-32 ohms. FR: 20-20,000Hz. Weight: headphones only 260gm. Price: £33.77 (plus VAT).

■ SENNHEISER ELECTRONIC

Distributors: Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW. Tel: Gerrards Cross 88447.

HD.414

Stereo headphones. Wired for mono or stereo. Lightweight robust design. Removable washable sponge ear pads. FR: 20Hz-20kHz. Impedance: 2000 ohms per capsule. Weight: 5oz. Price: £21.20 (plus VAT).

HMD.414★

Stereo headset HD.414 with close-talking boom microphone located near corner of mouth. Especially high ratio of desired sound to background noise. Sensitivity: $0.1mV/\mu$ bar. Impedance: 200 ohms. Price: £51.15 (plus VAT).

HD.44

Ultra light stereo headphones with volume control on each capsule. Can be used mono. FR: 40Hz-15kHz. Impedance: 640 ohms. Weight: 33gm. Price: £13.50 (plus VAT).

HD.424

Stereo headphones (can be used mono) with good low frequency response. FR: 16Hz-20kHz. Impedance: 2K. Weight: 170gm. Price: £30.40 (plus VAT).

HD.412

Stick type headphone designed for use in record booths, etc. FR: 20Hz-20kHz. Impedance: 2K. Price: £28.45 (plus VAT).

HD 400

Moving coil stereo headphone. FR: 20-18,000Hz. Imp: 600 ohms. Price: £14.60.

Infra-Red Headphone Transmission System

Mono system consisting of: Mono transmitter SI406. This is a 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: $\pm 50kHz$. Preemphasis: $50\mu s$. Audio frequency response: 40 to 15,000Hz. Distortion: $<2\%$.

Dynamic: same as source material. Dimensions: 200 × 80 × 17mm. Finish: flat black, plastic housing. Price: £44.10.

SI434 ★

SI434 compact two channel infra red transmitter mains powered, designed to operate with domestic hi-fi systems. The modulation level is indicated by an LED. The area covered by the transmitter can be increased by connecting an additional power radiator. Short technical data: Colour: dull black. Dimensions: approx. 200 × 80 × 17mm. Power supply: 220V, 50-60Hz, approx. 10W. Modulation: FM. Carrier frequencies: left channel I = 95kHz, right channel II = 250kHz. Pre-emphasis: 50 μ s. Nominal deviation at 1V input: \pm 35kHz. Peak deviation at 1.5V input: \pm 50kHz. Audio connector: 5-pin DIN-headphone connector. Sync-output socket: 3.5mm jack socket. Audio frequency response: 20Hz-20,000Hz. Price: £72.50.

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. \pm 50kHz. 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. 380g. Price: £86.50.

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: \pm 50kHz. Deemphasis: 50 μ s. Acoustical system: dynamic driver, sound tubes to ears. Distortion at max. deviation: less than 3%. Audio frequency response: 100Hz-10kHz. Max. loudness: 104dB SPL. S/N ratio at 4m distance in normally lit room, facing transmitter 60dB: Facing opposite wall: 52dB. Weight: 65g. Price: £44.66.

■ 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. Impedance: 8 ohms. FR: 30-18,000Hz. Max. input: 0.3W. Weight: 520g. 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: 430g, adaptor 970g. Adaptor includes switch for headphone or speakers. No rec. retail price.



Sharp HP400

★ Indicates entry is illustrated

ECR 500 ★

Electret condenser stereo headphone. FR: 20Hz-20kHz. Imp: 30 ohms at 1kHz. Power handling: max. input 12V 1kHz. Weight: 350g, adaptor 1kg. Adaptor includes switch for headphone or speakers. No rec. retail price.

HS 25

Mono LL headset with microphone for TC 96L. Price: No rec. retail price.

DR 6 M ★

Moving coil headphone. FR: 20Hz-20kHz.



Sony DR 6M



Sony DR 35



Sony DR 45



Sony ECR 500

Impedance: 1kHz, 20 ohms. Weight: 350g. Black finish. Collapsible, polyester diaphragm, sealed unit. No rec. retail price.

DR 35 ★

Moving coil open air headphone. FR: 28Hz-18,000Hz. Impedance: 25 ohms. Weight: 370gm. Black finish. No rec. retail price.

DR 45 ★

Moving coil open air microphone. FR: 20Hz-20kHz. Impedance: 25 ohms. Weight: 370 gms. Black finish. No rec. retail price.

■ **STAX**

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

SR5/SRD 65B

Stereo electrostatic headphones. FR: 30Hz-25kHz. Sensitivity: 96dB at 100V RMS input. Impedance: 130K ohms at 10kHz. Power handling: 8W continuous. Weight: 390gm. Finish: white, black leather, stainless steel. Supplied with SRD 65B self energiser. Controls: switch on SRD 65B headset or loudspeakers. Price: £84.35 (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: £52.50 (plus VAT).

SRX3

Stereo electrostatic headphones with SRD 65B self energiser. FR: 30Hz-27kHz. Sensitivity: 97dB at 100V RMS. Impedance: 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: £139.90 (plus VAT).

■ **TANDBERG**

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

HD424

Light headphones supplied with 3m lead and DIN plugs or a 1/4in stereo jack. Impedance:



Stax SR 44

2000 ohms. FR: 16Hz-20,000Hz. Price: £34.20 (inc. VAT).

HD414

Light headphones supplied with 3m lead and DIN plugs or a 1/4in stereo jack. Impedance: 2000 ohms. FR: 20Hz-20,000Hz. Price: £23.85 (inc. 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. Impedance: 125 ohms. Weight: 260gm. Price: £39.95 (inc. VAT).

■ **TOSHIBA**

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

HR50

Stereo headphone with channel changeover switch for binaural and cross-field stereo sounds. Price: £16.40 (plus VAT).

HR710

Electrostatic stereo headphones. FR: 20-35kHz. Sensitivity: 8-500 ohms. Power handling: 100V RMS. Weight: 0.24kg. Extra light-weight headset, electrostatic without need for power supply. Price: £22.00 (plus VAT).

★ Indicates entry is illustrated



Trio KH 52

■ **TRIO**

B. H. Morris & Co. (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middx. HA0 1SU.
Tel: 01-902 9422.

KH32

Stereo dynamic headphones. FR: 20Hz-20kHz. Impedance: 4-16 ohms. Mz power: 100mW. Sensitivity: 106dB. Mylar diaphragm. Weight: 290gms. Price: £15.86 (plus VAT).

KH 52 ★

Stereo dynamic headphones. FR: 20Hz-20kHz. Impedance: 4-16 ohms. Max power: 100mW. Sensitivity: 106dB. Mylar diaphragm. Weight: 300gms. Price: £24.86.

■ **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).

W 676

Moving coil headphones. FR: 20Hz-20kHz. Fitted with standard 1/4in stereo jack plug. Price: £23.77 (plus VAT).

■ **VIDEOTONE**

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

HP 80

Moving coil with closed earpieces. Full details not yet announced. Price: £10.50 (plus VAT).

HP 90

Moving coil with open earpieces. Full details not yet announced.
Price: £16.00 (plus VAT).

Hi Fi Cabinets

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 43.

■ ACCUPHASE

Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent. Tel: Edenbridge 4111.

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).

■ 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).

■ CURB HI-FI

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

Hi-Fi Equipment Desk ★

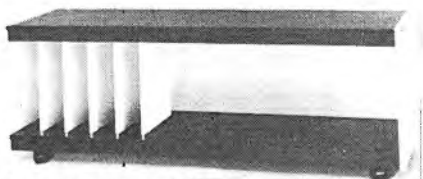
Swedish design available in five wood veneers — teak, dark oak, walnut, rosewood, jacaranda and black and white. Dimensions: 40 × 48.5 × 99cms. Price: £56.64, jacaranda and dark oak £73.14, rosewood £78.86 (all plus VAT).

Hi-Fi Equipment Desk ★

As above but in 140cm length. Price: £60.50, jacaranda, dark oak £78.20, rosewood £84.57 (all plus VAT).

■ HACKER RADIO LTD

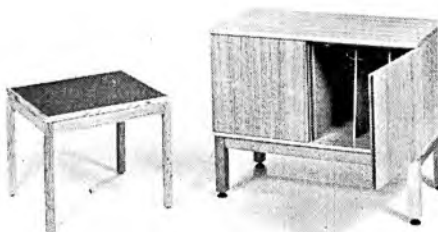
Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.



Curb Hi-Fi Equipment Desk



Curb Hi-Fi Equipment Desk



Hacker T45 and SR 1000 Record Cabinet

SR 1000 Record Cabinet ★

Sturdy craftsman finished record storage cabinet in selected teak veneers. Legs and underframe are solid timber. Holds approx. 240 records. Measures 24³/₈ high × 32 wide × 16¹/₂in deep. Price: No recommended retail price.

■ 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.

★ Indicates entry is illustrated

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.



Holder Pearce Vulcan



Holder Pearce The Mayfield

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 ★

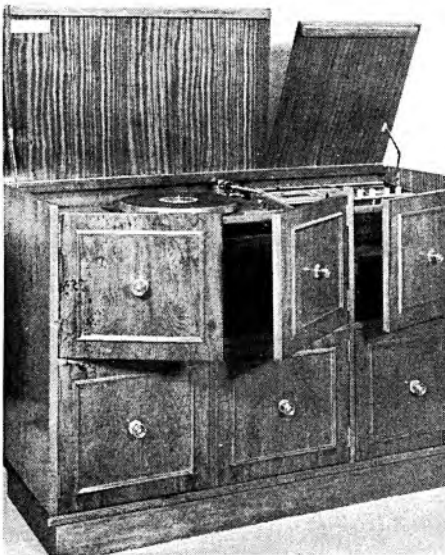
In rich yew tree veneers, Berwick has full width continuous top shelf to house record-player and tape recorder side by side, space below for amplifier and tuner units and two lift-up lids above shelf for easy access to both units. Bottom section has record divisions in right hand cupboard and one removable 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 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



Holder Pearce The Berwick



Holder Pearce Queen Anne



Pageantry Cabinet

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 veneers, hand carving to top and bottom rail and to legs. Made to special order and individual sizes.

■ PAGEANTRY RADIO & TV CO LTD

104 Felsham Road, Putney SW15 1DQ.
Tel: 01-788 5588.

Custom-built cabinets ★

Hand-made cabinets to house hi-fi systems. Two standard designs. Typical is antique reproduction model in selected walnut veneers

hand-finished with traditional French polish. Features include intricate hand-carved mouldings on front side panels. Size: 54in wide, 21in deep, 32in high. Lower centre front houses record storage drawer running on precision runners. Size of drawer: 17in wide, 15½in deep, 13in high. Full details of hi-fi cabinets including prices and delivery available on request.

■ RECORD HOUSING

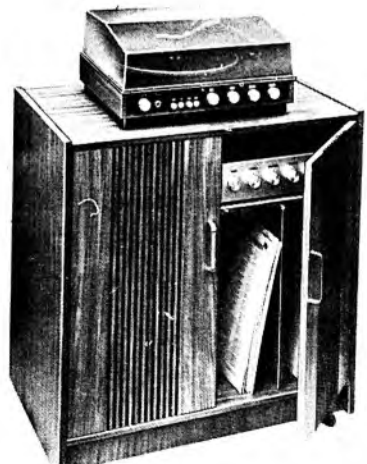
17a Newnham Road, London N22 5SS.
Tel: 01-888 7487.

Stereo Trolley

Upright style equipment cabinet on wheels. General purpose equipment/record cabinet. Accommodation for turntable, amplifier (or tuner/amplifier) plus approx 125 LP records. Size: 19in wide, 18in deep, 23in high (including castors); top measures 19in by 18in; amplifier section 18in wide, 18in deep, 7in high. Finish: natural teak. Price: £33 (plus VAT).

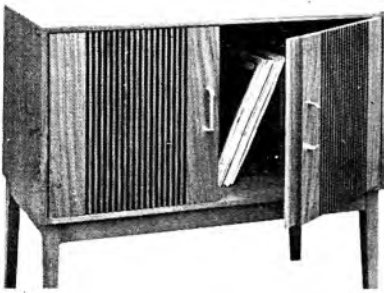
Transcription Trolley ★

Upright style equipment cabinet on wheels. General purpose equipment/record cabinet. Accommodation for turntable, amplifier (or tuner/amplifier) plus 150-175 LP records. Size: (overall) 27in high (including castors). 16¼ in deep, 25in wide; (top) 16¼in deep, 24in wide; (internal tuner/amplifier section) 6in high. 15in deep, 24in wide. Finish: natural teak. Price: £53 (plus VAT).



Record Housing Transcription Trolley

★ Indicates entry is illustrated



Record Housing Capricorn Cabinet



Sonic Stand from Selmor

Capricorn Cabinet ★

Contemporary equipment cabinet on legs. Front-opening doors. Vertical record partitions which are removable and can function as shelves, providing flexible arrangement for housing records and equipment. Size: (overall) 32in wide, 16½ deep, 16in high, plus 12in legs and frame; inside height 15in, inside depth 15in. Distance between partitions 7½in. Finish: natural afrormosia. Price: £45 (plus VAT).

Scan Record Unit

Contemporary style record storage cabinet. Accommodation for 100 LP records in each cabinet. Designed as add-on units permitting users to build up a library. Size: (overall) 19¾in high, 15in wide, 16¾in deep; (black plinth) 19in wide, 14in deep, 3in high. Finish: natural afrormosia. Price: £22 (plus VAT).

Audiflex Cabinet

Contemporary style equipment/record storage cabinet. In flat pack form. Front-opening doors in lower section holding records. Accommodation for turntable (or tuner/amplifier) and amplifier (or tuner). Size: (overall) 24in high, 15¾in deep, 25in wide; (top) 15¾in deep,

24in wide; (amplifier section) 6in high, 15¾in deep, 24in wide. Finish: teak. Price: on application.

Rolaflex Trolley

Upright style equipment cabinet on castors. In flat pack form. General purpose equipment/record cabinet. Accommodation for player unit, tape recorder, amplifier and tuner. Below there is storage for over 200 LP records. Size: (overall) 36in long, 24in high, 15¾in deep; (top) 36in by 15¾in; (amplifier section) 6in high, 15¾in deep, 36in long. Finish: teak. Price: on application.

The Music Centre

In flat pack form. Will take virtually any piece of audio equipment including records and tapes with room to spare. The centre section is 25in wide for those with large equipment. Fitted with castors. Overall size: 59¾in wide by 24in high by 16½in deep. Top measure: 59½in wide by 15¾in deep with drawer, cupboard, section for amplifier, open storage section, tape storage section and record storage for approx. 100 records. Price: on application.

RH 360 Highmaster Trolley

Spacious housing unit to feature a complete audio system. Complete with castors. Dimensions: 63.5 × 91.5 × 42cms. Storage for 225 records. Finish in natural teak. Price: £69.00 (plus VAT).

RH 48 Playflex

Storage unit with large space for tapes and records, fitted with castors. Dimensions: 40.5 × 61cms. Shelf 80.5 × 15cms, tape cupboard 37cms. Capacity for 90 cassettes and 200 records. Finish in rosewood or teak grain effect. Price: £59.00 (plus VAT).

■ SELMOR

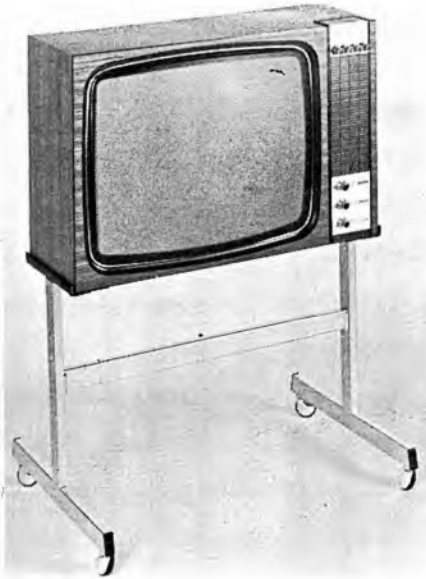
Selmor Engineering Industries Ltd,
24 Mulberry Street, Tower Hamlets,
London E1 1EH. Tel: 01-247 3344.

Hi-Fi Trolley Stand

Mounted on castors with shelves and fitted dividers for record storage. Teak finished shelves and five removable metal dividers. Price: £9.00 (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



Merlin Stand

grade steel with ribbed plastic edging and legs of polished chrome. Easily assembled. Price: £5.40 (plus VAT).

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: £4.50.

LM 15 Adjustable Loudspeaker Stand

Foamed tape inside bracket grips speaker without scratching and absorbs speaker vibration. Width adjustable 23-35.5cms. Five height positions from 23-35.5cms. Incline of brackets directs sound from speaker to any ideal listening level. Steel construction in black or silver epoxy powder. Price: £7.60 per pair (plus VAT).

SL Audio Hi-Fi Stand

Aluminium base on castors. Width adjustable 45.7-71.1cms. Height 43.1cms. Assembled without tools. Supplied in knock-down form. Upright and top in black epoxy powder. Price: £5.50 each (plus VAT).

■ **SHAFTESBURY**

Shaftesbury Furniture Ltd, Flempton Road, Leyton, London E10 7NH.
Tel: 01-539 1041-2-3.

C.H.B. SUPPLIES LTD

SPARES ARE IMPORTANT

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A. D. C.**

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Oldington Trading Estate, Stourport Road

Telephone: KIDDERMINSTER 4861 or 3293

★ Indicates entry is illustrated

Storage Units

Range of storage units in natural teak veneer or white. All fitted with castors. Prices range from: £32.00 to £102.75 (inc. VAT).

■ SONY (UK) LTD.

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

TAC 1N

Walnut wood case for Sony models TA1130, TA1140, TA1150, ST5150, ST5130, SQD2010, SQD2020. No recommended retail price.

TAC 5N

Walnut wood case for Sony models STR7055A, STR7065A, STR6055. No recommended retail price.

TAC 6

Walnut wood case for STR6200F. No recommended retail price.

TAC 16

Cabinet for TC209SD. No recommended retail price.

SU234 Audio Stand

For use with Sony music centres HMK30, HMK40, HMK40A, HMK20. Complete with record and cassette rack and mounted on castors. Finish: teak and chrome. No recommended retail price.

SU 1700

Designed to incorporate turntable, amplifier, tuner and front loading cassette deck. Will take any of the following models: ST 2950, TA 1630, TA 2650, TC 186 SD, PS 1350, 2350, 1700. No rec. retail price.

■ TECHNICS

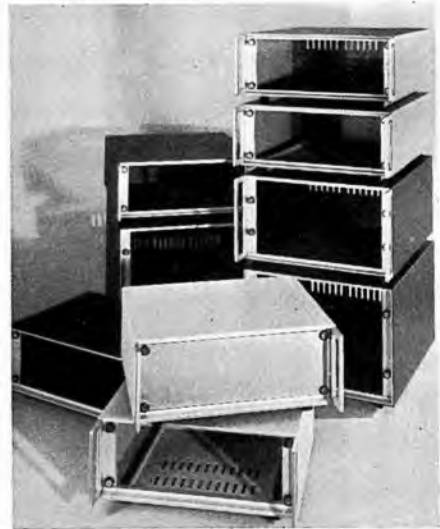
National Panasonic (UK) Ltd, 107-109
Whithy Road, Slough, Bucks. SL1 3DR.
Tel: Slough 34522.

HS-100 ★

An attractive housing for Technics Units. Top right of cabinet is recessed to take turntable and prevent possibility of it being accidentally knocked off. Drawer lower left takes cassettes and there is space at the back for headphones, cleaners and other accessories. Record storage is lower right. Woodwork is solid teak, edges are teak tipped and teak veneer on external surfaces is carefully matched. The cabinet



Technics HS 100 cabinet



Vero Equipment Cases

stands on castors allowing for easy movement. Price: Approx. £90 (inc. VAT).

■ 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.

Magnetic Tape

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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 £3.34½; 15cm 360m £3.84; 18cm 540m £5.53½; 26cm 1280m £14.40; 26cm 1280m £14.40. All prices plus VAT.

PE46

Low-noise, triple-play tape supplied in plastic library case. 13cm 360m £3.96½; 15cm 540m £5.53½; 18cm 720m £6.85½. All prices plus VAT.

PE66

Low-noise, triple-play tape supplied in plastic library case. 13cm 540m £5.74½; 15cm 720m £7.71; 18cm 1080m £8.61. All prices plus VAT.

PEM368 ★

Low-noise, long-play, matt backed tape supplied in plastic library case. Metal spools: 13cm 270m £4.67; 18cm 540m £7.75; 26cm 1100m £18.13½; Plastic spools: 13cm 270m £4.00; 18cm 540m £6.64½; 26cm 1100m £15.00. All prices plus VAT.

PEM268

Low-noise, double-play, matt-backed tape supplied in plastic library case. Metal spools: 13cm 320m £5.70; 18cm 640m £9.57½; 26.5cm 1280m £20.72. Plastic spools: 13cm 320m £4.75½; 18cm 640m £8.20½; 26.5cm 1280m £17.27. All prices plus VAT.

Compact Cassettes

Super colour. C60 (2 × 30min) £1.03½; C90 (2 × 45min) £1.41½; C120 (2 × 60min) £2.12. All prices plus VAT.

Cassette Album

Three C60 plus three C90 cassettes £7.15½. 10-pack (10 × C60) in case £8.76½. 10 pack (10 × C90) in case £11.65½. All prices plus VAT.

Stereochrom ★

Chromium dioxide tape cassette. C60 (2 × 30min) £1.93½; C90 (2 × 45min) £2.42; C120 (2 × 60min) £3.32. All prices plus VAT.

Carat

Carat C48 £1.56½, C60 £2.31, C90 £2.91. Super Ferro Dynamic C60 + 6 £1.41½, C90 + 6 £1.89, C120 £2.49. All prices plus VAT.



Agfa Professional PEM 368



Agfa Stereo Chrom

★ Indicates entry is illustrated



Audio Magnetics Range

■ 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

Standard ★

Low noise tape with permanent head cleaner leader tape in screwed cassette housing. C60 89p; C90 £1.19; C120 £1.49.

Extra ★

These offer 10% additional tape, permanent head cleaner and Paraflo guide system which ensures continuous jamfree cassette performance. C66 98p; C99 £1.36.

Super ★

Contain a high density Gamma Ferric Oxide tape as well as featuring permanent head cleaner leader tape and Paraflo guide system. C60 £1.13; C90 £1.57; C120 £1.94.

XHE ★

Extra High Energy cassette exceeds conventional industry standards for maximum output levels and dynamic range. Magnalinc TM ferric oxide formulation provides superior signal to noise ratio and full spectrum frequency response. Instant start recording and Paraflo guides. C45 £1.35; C60 £1.57; C90 £2.21; C120 £2.65.

Cartridges ★

Audio 40 min £1.40; 80 min £1.84; XHE 45 min £1.98; 90 min £2.41.

Reel-to-Reel ★

7in tapes — single play 1200ft £5.40; long play 1800ft £6.75; double play 2400ft £9.12.

■ 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; 5¹/₄in 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; 5¹/₄in 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.

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; 7¹/₂ 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 £8.48; 10¹/₂in 3610ft £16.44. 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 £9.86; 8³/₄in 3000ft £12.94; 10¹/₂ 4200ft £19.28. All prices plus VAT.

LH SM Compact Cassettes

BASF LH tape in snap pack box: C30 82p; C60 £1.02; C90 £1.38; C120 £1.92. All prices plus VAT.

LH Super Tape ★

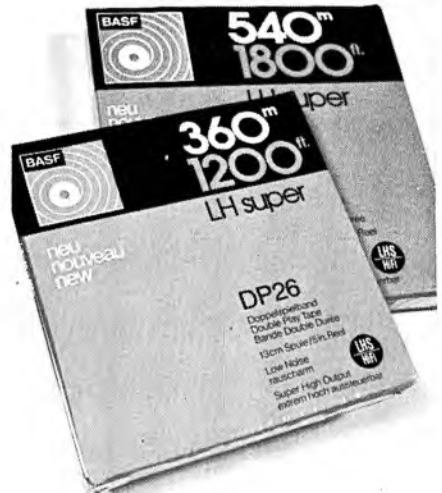
Incorporates BASF special mechanics for smooth winding and avoidance of jamming, in snap pack box: C60 £1.32; C90 £1.76; C120 £2.32. All prices exclude VAT.

Chromium Dioxide Tape

Incorporated BASF special mechanics, CrO₂ tape, better dynamic range, lower background noise, when used with suitable machines, in snap pack box: C60 £1.76; C90 £2.20; C120 £2.86. All prices exclude VAT.

8-track Cartridges (unrecorded)

45min £1.98; 64min £2.18; 90min £2.48. All prices exclude VAT.



BASF DP 26 LH Super



BASF LH



Contek LN

★ Indicates entry is illustrated

Ferrochrom

In snap pack. C60 £2.20, C90 £2.86.

LH Super SM

In C Box. C60 £1.66, C90 £2.10, C20 £2.64.

■ CONTEK MAGNETICS LTD

32 Eveline Road, Mitcham, Surrey.
Tel: 01-648 5156.

Contek L.N. ★

Low noise cassettes available in: C60 £1.00; C90 £1.37; C120 £1.94. All prices plus VAT.

Contek U.H.E.

Ultra Hi-Energy low noise cassettes available in: C60 £1.39; C90 £1.68; C120 £2.41. All prices plus VAT.

■ DINDY

Dindy Marketing (London) Ltd, 300 Old Brompton Road, London SW5 9JJ.
Tel: 01-373 4873.

Cassettes

C45 59p; C60 79p; C90 99p; C120 £1.19.

■ EMI TAPE LTD.

Tape House, Dawley Road, Hayes UB3 1BT.
Tel: 01-573 3888.

HSP Standard Play

5in 600ft £2.18; 5 $\frac{1}{4}$ in 900ft £2.50; 7in 1200ft £3.16. All prices include VAT.

HLP Long Play

5in 900ft £2.50; 5 $\frac{1}{4}$ in 1200ft £3.16; 7in 1800ft £4.10. All prices include VAT.

HDP Double Play

5in 1200ft £3.16; 5 $\frac{1}{4}$ in 1800ft £4.10; 7in 2400ft £5.36. All prices include VAT.

Emitape Hi-Dynamic

Is supplied in transparent hinged library case. A pre-folded index card is included. Card is designed to provide maximum space for titling with easily visible reference without opening the box.

Compact Cassettes (Soundhog)

C60 (1 hour playing time) 90p; C90 (1 $\frac{1}{2}$ hours playing time) £1.20; C120 (2 hours playing time) £1.70. All prices include VAT.

Compact Cassettes (Hi-Dynamic)

C30 60p; C60 £1.06; C90 £1.50; C120 £2.05. All prices include VAT.



EMI Compact Cassette

Compact Cassettes (X-1000) ★

C60 £1.50; C90 £2.05. All prices include VAT.

EMI Cassettes are supplied in library case with index sheet.

Trio Packs of Three

Soundhog—C60 £2.70; C90 £3.60; C120 £5.10.
Hi-Dynamic—C60 £3.30; C90 £4.50; C120 £6.05.
X1000—C60 £4.50; C90 £6.50.

■ FUJI

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

Audio Cassette Tapes

FL Super Low Noise

FL C30 67p; FL C60 92p; FL C90 £1.34; FL C120 £1.78.

FX Pure-Ferrix-Wide Range

FX C46 £1.08; FX C60 £1.35; FX C80 £1.67; FX C90 £1.89.

8-Track Cartridge

FX C45 £1.57; FX C90 £2.16.

FM Low Distortion Ferric Oxide

FM900 £2.92; FM 1200 £3.56; FM 1800 £4.54.

FG High Sensitivity High Output Ferric Oxide

FG 1200 £4.00; FG 1800 £5.18; FG 3600 £16.74.

FB 151 Master Recording Tape Back Coats

FB 1200 £5.08; FB 1800 £7.24; FB 3600 £20.41.
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.



Memorex MRX2, Cassettes



Memorex Chromium Dioxide Cassettes



Memorex Open Reels



Musonic

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.

■ **MEMOREX**

Memorex (UK) Ltd, Hoechst House,
50 Salisbury Road, Hounslow West,
Greater London. Tel: 01-570 7716.

MRX: Cassettes ★

C30 £1.18; C45 £1.26; C60 £1.32; C90 £1.84;
C120 £2.50. All prices plus VAT.

CrO₂ Cassettes ★

CC45 £1.70; CC60 £1.82; CC90 £2.60. All
prices plus VAT.

Open Reels ★

7in × 1200ft £5.44; 7in × 1800ft £6.36; 7in ×
2400ft £8.58. All plus VAT.

Blank 8-Track

45 mins £2.44; 60 mins £2.64; 90 mins £2.80. All
plus VAT.

■ **MUSONIC**

Musonic Ltd, 34-38 Verulam Road,
St Albans, Herts AL3 4 DF.
Tel: St Albans 50611.

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.

★ Indicates entry is illustrated

MT21

C60 Chromium Dioxide Cassette. No rec. retail price.

MT22

C90 Chromium Dioxide Cassette. No rec. retail price.

MT24

C30 Low Noise Cassette in postal pack. No rec. retail price.

■ NAKAMICHI

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

Ex ferric cassettes in snap packs. Prices: C60 £1.50; C90 £1.85. Also available in album sets of six cassettes at £11.90 for C60s and £17 for C90s. 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, Century House,
Shaftesbury Avenue, London WC2H 8AS.
Tel: 01-437 7777.

Long Play (Red) in library case

Coercivity 26A/m, retentivity 950G, tensilised polyester base, S/N at 3¹/₂ i/s better than -58dB, print-through less than 55dB, relative frequency response 333Hz-125kHz. Price: 5in 900ft £4.00; 5¹/₂ i/in 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 3¹/₂ i/s 58dB, print-through less than -55dB, relative frequency response 333Hz-12.5kHz. Price: 5in 1200ft £4.94; 5¹/₂ i/in 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 (1¹/₂ 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.

EL 1907/52 Endless Loop cassette CE. 10

Approximate playing time: 40 minutes at 1⁵/₆ i/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.

■ PYRAL (UK) LTD

Airport House, Purley Way, Croydon,
Surrey CR0 0XY.
Tel: 01-681 2272.

Sprint

C60 75p; C90 £1.05; C120 £1.43. Suitable for portable recorders.

Hi-Fi

C60 £1.03; C90 £1.45; C120 £1.85. Suitable for recorders to DIN specification, dual oxide formulation with "cushion foil" mechanics.

Super Optima

C60 £1.30; C90 £1.70. Microferric oxide, high output, low noise cassette incorporating "cushion foil" mechanics.

Maxima

C60 £1.55; C90 £2.05. Microferric oxide, cobalt activated, extra high output low noise cassette incorporating "cushion foil" mechanics. Suitable for high price range cassette recorders with high bias requirements.

Studio Quality

C60 £2.25; C90 £2.90. The highest grade Pyral cassette incorporating magnetic ferrite particles for maximum fidelity and cassette deck compatibility.

REVOX

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

Low-Noise 601

Professional sound recording tape featuring low-noise oxide with high signal output. Wide dynamic range. Antistatic backing. 42073 Novodor £12.19 (plus VAT). 42092 Metal Black £14.41. 42094 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 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 33 Series cassettes complement, and in no way supersede, Ross 66 Series cassettes. Prices: 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 5522.

Cassette:**Low Noise Dynarange**

C60 £1.11; C90 £1.56; C120 £2.18 (plus VAT).

High Energy "Super Ferric" ★

C45 £1.23; C60 £1.54; C90 £1.86 (plus VAT).



Ross Series 33 Superpacks

Chrome

C45 £1.42; C60 £1.80; C90 £2.25; C120 £2.94 (plus VAT).

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; 5½in 1200ft £4.74; 7in 1800ft £5.84 (plus VAT).

Hi-Fi Range in Library Box:**SP222**

Standard Play. 5in 600ft £3.74; 5½in 900ft £4.88; 7in 1200ft £6.42 (plus VAT).

LP223

Long Play. 5in 500ft £4.34; 5½in 1200ft £5.32; 7in 1800ft £7.00 (plus VAT).

DP224

Double Play. 5in 1200ft £5.32; 5½in 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. 45mins £2.05; 90mins £2.43 (plus VAT).

★ Indicates entry is illustrated



Scotch High Energy



Sony C60 HF



Sony C90 FeCr

Classic

45mins £2.30; 90mins £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.

K series Compact 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 tape 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 ★

SLH 72-370BL Super low noise high output tape—370m; SLH 7-550 BL Super low noise high output tape—550m; SLH 7-740B Super low noise high output tape—740m; SLH 11-740B Low noise 740m. 10½in NAB Spool; SLH 11-1100BL Low noise 1100m. 10½in NAB Spool. No rec. retail price.

■ SYNCHROTAPE

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

Specification of Synchrotape includes the following: Coercivity 270 oersted, remanent

induction 0.75 maxwell per 6.25mm width. At 7½/s ½-track biased to give max output at 1kHz, with DIN 70µ Sec playback equalisation, main characteristics are: recorded flux for 2% third harmonic distortion 0.2 maxwell, unweighted RMS noise referred to 0.2 maxwell -65dB, print-through after 72 hours at 20C -58dB.

Standard Play

PVC base. 5in 600ft £1.27; 5¾in 900ft £1.50; 7in 1200ft £2.02. All prices exclude VAT.

Long Play

PVC base. 5in 900ft £1.50; 5¾in 1200ft £2.02; 7in 1800ft £2.55. All prices exclude VAT.

Double Play

Tensilised polyester base. 5in 1200ft £2.62; 5¾in 1800ft £3.45; 7in 2400ft £4.12. All prices exclude VAT.

Syncassettes

Compact cassettes. C60 63p; C90 85p; C120 £1.00. All prices exclude VAT.



Sony C90 CR



Sony SLH-11-1100-BL

■ **TANDBERG**

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

XD60 £1.50 (inc. VAT); XD90 £2.50 (inc. VAT).

■ **TECHNICS**

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

RT-60 CN

CrO₂ cassette tape. Price: on application.

■ **TDK**

TDK Tape Distributor (UK) Ltd., 341 Brighton Road, South Croydon, Surrey CR2 6EQ. 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 — 8T45SD, 8T90SD.

Open Reel

AUDUA L1800, L3600 and the newly introduced matt back AUDUA LB1800, LB3600.

Endless Loop Cassettes

Available in EC 30S, EC 1M, EC 3M, EC 6M.

Accessories

HCI Cassette Head Cleaner, 7in metal spool, 10½in metal spool.

All prices on application.

Ross 66 Cassettes. Quality Hi-Fi....



from beginning to end.



Ross Electronics

**ROSS
ELECTRONICS**

Quality Hi-Fi from beginning to end.
32 Rathbone Place, London W1P 1AD. Tel: 01-580 7112/3

Microphones and Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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. Impedance: 600 ohms. Sensitivity: -70dB. Price: £19.50 (plus VAT).

■ AIWA

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

CM-2000A

One-point stereo electret condenser microphone. Directivity: Uni-directional. Semi-conductors: 1 FET. Output impedance: 250 ohms. Sensitivity: -74dB ±3dB (0dB 1V/μbar). Frequency response: 50-17,000Hz. Channel balance 2dB. Dimensions 50 × 215mm. Price: £25.43 (plus VAT).

DM-68N

Dynamic microphone. Directivity: Uni-directional. Impedance: 250Ω or 10kΩ. Sensitivity: -73dB (250Ω), -59dB (10kΩ). Frequency response: 50-15,000Hz. Switch: Built-in tone selection switch. Price: £44.96 (plus VAT).

CM 1016

Electret microphone. Uni-directional. FR: 50Hz-15kHz. Impedance: 600 ohms. Stand. Sensitivity 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: 01-508 9222.

ACM 100

Electret. FR: 40Hz-16,000Hz. Supplied with two different coloured mufflers. FR: 30 Hz-20 kHz. Price: £18.01 (plus VAT).

■ AKG

AKG Equipment Ltd, Eardley House,
182-184 Campden Hill Road,
Kensington, London W8 7AS.
Tel: 01-229 3695.

Details not available at time of passing for press.

■ BEYER

Beyer Dynamic (GB) Ltd,
1 Clair Road, Haywards Heath, Sussex.
Tel: Haywards Heath 51003.

M55LM

Mono moving coil omni-directional. FR: 70Hz-16kHz ± 4dB. Sensitivity: (low Z) 0.17mV; (high Z) 1.5mV. Impedance: (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: £15.18 (plus VAT).

M57

Mono moving coil omni-directional. FR: 300 Hz-4kHz. Sensitivity: -146 dBm. Impedance: 600 ohms. Hand mic waterproof and shock resistant. Price: £20.10 (plus VAT).

M64 SH ★

Mono moving coil cardioid. FR: 100Hz-10kHz. Sensitivity: -146 dBm. Impedance: 200 ohms Gooseneck with rigid baseplate. Price: £32.45; M £20.55 (plus VAT).

M67N (C)

Mono moving coil cardioid. FR: 40Hz-18kHz ±2.5dB. Sensitivity: -148 dBm. Impedance: 200 ohms. Rubber suspended hand mic. Suitable for any climatic conditions. Built-in speech/music switch. Price: DIN £49.97; Canon £54.16.

M69 N (C)

Mono moving coil uni-directional cardioid.

★ Indicates entry is illustrated



Beyer M 64 SH

FR: 50Hz-15kHz \pm 3dB. Sensitivity: 144 dBm. Imp: 200 ohms. Rec. load: 1K. Hand mic with optional speech-off-music switch. Steel case finished blue stove enamel. Price: DIN £40.50; Cannon £42.80; SM £42.80 (plus VAT)

M81 LM

Mono moving coil cardioid. FR: 15Hz-16kHz. Impedance: 500 ohms. Supplied complete with plated table stand and clamp. Price: £19.60 (plus VAT).

M88 N (C) ★

Mono moving coil hypercardioid. FR: 30Hz-20kHz. Sensitivity: 144 dBm. Impedance: 200 ohms. Hand mic available with Cannon plug. Price: DIN £81.05; Cannon £83.34 (plus VAT).

M101N (C) ★

Mono moving coil omni-directional. FR: 40Hz-20kHz \pm 2.5dB. Sensitivity: 150 dBm. Impedance: 200 ohms. Rec. load: 1K. Hand mic with windshield. Anodised aluminium case. DIN £44.70; Cannon £48.24 (plus VAT).

M111N

Mono moving coil omni-directional. FR: 60Hz-15kHz. Sensitivity: - 155 dBm. Impedance: 200 ohms. Lavalier mic. Anodised aluminium case. Price: £53.89 (plus VAT).

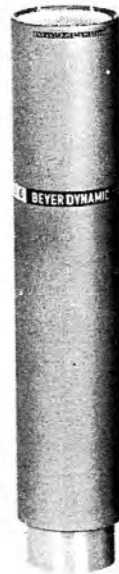
M160N (C)

Mono double-ribbon super cardioid. FR:

150



Beyer M88N



Beyer 101 (C)

40Hz-18kHz \pm 2.5dB. Sensitivity: 152 dBm. Impedance: 200 ohms. DIN £96.07; Cannon £98.37 (plus VAT).

M260 N (C)

Mono ribbon super cardioid. FR: 50Hz-18kHz ± 3 dB. Sensitivity: -153 dBm. Impedance: 200 ohms. Price: DIN £47.16; Cannon £55.73 (plus VAT).

M410

Mono moving coil cardioid. FR: 300Hz-12kHz. Sensitivity: -144 dBm. Impedance: 200 ohms. Gooseneck hand mic designed for heavy duty use. Price: £27.15 (plus VAT).

M411N (C) S

Mono moving coil uni-directional cardioid. FR: 200Hz-12kHz. Sensitivity: -149 dBm. Impedance: 200 ohms. Rec. load: 1K. Hand Gooseneck mic. Designed for close-talking applications. Price: £29.24 (plus VAT).

M500 N (C)

Mono ribbon hypercardioid. FR: 40Hz-18kHz. Sensitivity: -153 dBm. Impedance: 200 ohms. Price: DIN £61.45; Cannon £64.30 (plus VAT).

M818LM

Stereo moving coil cardioid. Comprises pair of matched M81HL. FR: 15Hz-16kHz. Impedance: 500 ohms. Price: £44.18 (plus VAT).

M550LM

Omni-directional moving coil. FR: 70Hz-18kHz. Sensitivity: -152 dBm. Impedance: 500 ohms. Price: £14.70; M550 LMS £16.35 (plus VAT).

M810N ★

Cardioid moving coil. FR: 50Hz-16kHz. Sensitivity: -148 dBm. Impedance: 500 ohms. Supplied complete with case, windscreen, spring mic clamp, detach. cable. Price: £31.75 (plus VAT).



Beyer M810N

M201NC

Hypercardioid moving coil. FR: 40Hz-18kHz. Sensitivity: -149 dBm. Impedance: 200 ohms. Hand-held or stand-mounted type. Price: DIN £53.23; Cannon £54.87.

M412N(T)S

Moving coil cardioid. FR: 200Hz-12,000 Hz. Imp: 200 ohms. Sensitivity: -149 dBm. Hand or gooseneck mounting. PA mike with flexible rubber housing. Price: £29.65 (plus VAT).

X1N (C)

Moving coil cardioid. FR: 30Hz-18,000 Hz. Imp: 200 ohms. Sensitivity: -146 dBm. Stand, built-in pop filter. Available with DIN connectors or Cannon. Price: DIN £30.35, Cannon £31.84 (plus VAT).

X1HL(C)

As above. Price: DIN £35.98. Cannon £37.44 (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: £32.00 (plus VAT).

CM 652D

Full range cardioid ideal for high quality home recording. Price: £32.00 (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: £33.70 (plus VAT).

CM 656D

As CM 654D but with chromium plated spherical mesh head containing reticulated foam windshield. Price: £40.00 (plus VAT).

■ COLES

Coles Electroacoustics Ltd, Pindar Road, Hoddesdon, Herts. Tel: Hoddesdon 66685.

Distributor: Hampstead Hi-Fidelity, 91 Heath Street, Hampstead, London, NW3. Tel: 01-435 0099.

★ Indicates entry is illustrated



Coles Eng 4038

4037

Omni-directional moving coil stick microphone for field work and P.A. Extremely rugged in construction. FR: 80Hz-10kHz. Impedance: 30 ohms or 300 ohms. Sensitivity: -76dB. Long (A) or short (C) models available. Available in colours for use in discos and on colour television. No rec. retail price.

4038 ★

Studio ribbon microphone. Accurate figure-of-eight response. Flat frequency response 30Hz-15kHz. Impedance: 30 ohms or 300 ohms. Sensitivity: -85dB. Non-linear distortion 0.1%. Controlled transient response. No rec. retail price.

4104 ★

Broadcast quality commentator's noise-cancelling ribbon lip microphone. Output: -82dB. Impedance: 30 or 300 ohms. No rec. retail price.

4119

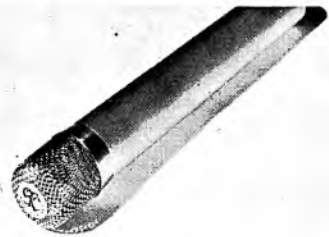
Twin ribbon microphone. FR: 50Hz-15kHz. Impedance: 300 ohms or 30 ohms. Hand or stand mounting. No rec. retail price.

4136 ★

Condenser cardioid microphone, uniform polar frequency response. Front/back ratio better than 20dB. FR: 40Hz-18kHz. Impedance: 30 or 300 ohms. Sensitivity: -50dB at 300 ohms. FE1 head amplifier. Phantom power supply for combined mains and battery supply unit. Complete system with windshield and connecting cable. No rec. retail price.



Coles Eng 4104



Coles Eng 4136



Eagle PRO-M20

■ **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 FE1 circuit built into mic capsule. Impedance: 600 ohms balanced (floating). Hand or stand type. Supplied with stand adaptor. Built-in switch, windshield. Price: £38.95 (plus VAT).

CO96

Mono electret condenser microphone. Powered by single cell. Cardioid response: better than 20dB. Impedance: 600 ohms. FR: 30Hz-16kHz. Sensitivity: -70dB. Price: £21.90 (plus VAT).

Prom 70

Capacitor microphone. Cardioid. FRL 40Hz-16kHz. Impedance: 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. Omni-directional. FR: 40Hz-20kHz. Impedance: 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: £22.00 (plus VAT).

PRO M90

Moving coil mic, cardioid 10dB front to back. FR: 40Hz-16kHz. Impedance: 600 ohms. Hand mic supplied with hold for stands. Studio quality, heavy diecast body. Three-layer windshield. Price: £43.90 (plus VAT).

PRO M80

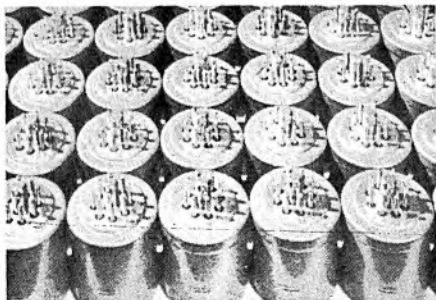
Moving coil mic, cardioid 10dB front to back. As M90 but finished in all gold. Price: £37.60 (plus VAT).

■ GARDNERS

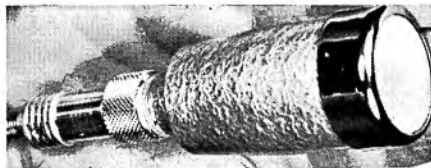
Gardners Transformers Ltd,
Christchurch, Dorset BH23 3PN.
Tel: Christchurch 2284.

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



Gardner Mic Transformers



Gramspan DP6

transformers and miniature open A.F. line matching transformers. Specifications and prices on request.

■ GRAMSPAN REPRODUCERS LTD

Cowleaze Road, Kingston-upon-Thames,
Surrey KT2 6D2.
Tel: 01-549 5077.

DP4

Moving coil. FR: 50-15,000Hz. Sensitivity: -52dB, -70dB, -86dB, for high, medium and low impedance, 50,000, 600 and 25 ohms. Tubular case. Price including lead, high or medium impedance on application; low impedance on application.

DP6 ★

Moving coil. Omni-directional. FR: 200Hz-15kHz. Sensitivity: -87dB (25 ohms), -75dB (200 ohms), -50dB (600 ohms), -52dB (50K). Built-in transformers fitted to all but low impedance model. Price: on application.

GC2 and GC3

Mono moving coil microphone for hand (GC2) or desk mounting (GC3). Uni-directional response. FR: 70Hz-14kHz. Impedance: (L) 25 ohms; (X) 200 ohms; (M) 600 ohms; (H) 50K. Sensitivity: (L) -86dB 50μV, (X) -75dB 180μV (M) -70dB 300μV (H) -52dB 2.5mV. All sensitivity figures per microbar. Easily replaceable diaphragm and coil assembly. GC2 has on/off switch and is supplied with swivel holder for fitting to floor or table stand. Prices: on application.

GR1

Ribbon. Unequal figure-of-eight. Response: 40Hz-15kHz. Sensitivity: -90dB (25 ohms), -81dB (200 ohms), -76dB (600 ohms), -58dB (50K). Impedance: 25, 200, 600 ohms, 50K. Built-in transformer. Easily replaceable ribbon. Price: on application.

GR2

Details as for GR1, but equal figure-of-eight response.

DP8 series ★

Moving coil omni-directional microphones.

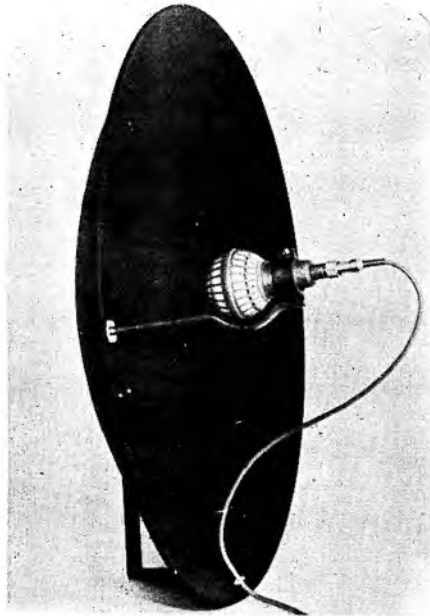
★ Indicates entry is illustrated



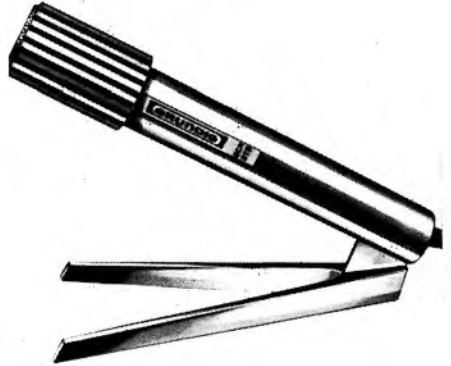
Grampian DP8



Grundig GDM 308



Grampian Parabolic Reflector



Grundig GCM 319

1³/₄lb. Thread termination for mic ⁵/₁₆ in BSF male, thread termination for stand ⁵/₁₆ in × 27tpi female. Supplied with adaptor to ³/₁₆ in BSF female. Adaptors for other sizes available. Price: on application.

Grampian Parabolic Reflector ★

Diameter 24in, depth 5in. Gain 14dB 500Hz-5kHz. Takes Grampian DP4 and DP6 microphones. Weight: 4³/₄lb. Price: on application.

■ **GRUNDIG**

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

FR: 50Hz-15kHz ± 5dB. Built-in on/off switch. Interchangeable leads. Hand type with swivel holder for stand use. Sensitivities, impedances and rec loads as for DP4 series, Prices: on application.

Boom arm

Suitable for use with various types of mics and stands. The clamp, locked by a single lever, allows the reach and angle to be readily adjusted as required. Length: 34in. Weight:

GDM 308 Report ★

Moving coil microphone, Omni-directional. FR: 80Hz-15kHz. Impedance: 700 ohms. Hand held. Motor stop/start switch. No rec. retail price.

GCM 319 ★

Capacitor mic. 60Hz-18kHz. Impedance: 100 ohms. Hand/desk stand. Built-in FET amplifier. No rec. retail price.

GCSM 332 ★

Capacitor mic. FR: 60Hz-18kHz. Impedance: 1000 ohms. Desk/stand. Built-in FET amplifiers. No rec. retail price.

■ **LAWTRONICS**

Lawtronics Ltd, 139 High Street, Edenbridge, Kent TN8 5AX.

Tel: Edenbridge 5191/2.

LM23

A subminiature electret microphone weighing 7.5gm. FR: 30Hz-10kHz ± 3 dB. Impedance: 600 ohms. Sensitivity: -72 dB, ± 4 dB @ 1kHz. Hand or lapel mounting. External power adaptor. FET amplifier. Supplied with adaptor and case. Price: £26.80 (plus VAT).

■ **MELODIUM**

Amdio Ltd, 26-30 Reading Road South, Fleet, near Aldershot, Hants.

Tel: Fleet 7316 and 3566.

C121

Moving coil, cardioid. Noise-cancelling miniature. FR: 150Hz-14kHz ± 3 dB. Sensitivity: -89 dB (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 ± 3 dB. Sensitivity: -83 dB (0.072mV) at 30 ohms, -71 dB (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.



Grundig GCSM 332

C133SU

Same with on/off switch, cannon LXR connection.

Optional accessories

Wide range of plugs, sockets, adaptors, clamps, goosenecks, stands, stereo bars, mounting blocks, wideshields, lavalier cords, transformers and adaptors. Full details on request.

■ **NAKAMICHI**

NSS Natural Sound Systems Ltd, Strathcona Road, North Wembley, Middlesex HA9 8QL.

Tel: 01-904 0141.

CM 1000

Studio Condenser with superior consistency of frequency response, dynamic range and direction characteristics from unit to unit. FR: 20Hz-20kHz ± 5 dB. Output Imp: 600 ohms $\pm 15\%$. Sensitivity: -67 dB ± 1.5 dB. S to N: better than 50dB. Max SPL: 139dB. Current consumption: less than 1.5mA. Battery: 9.1V Mercury. Dynamic range: 115dB. Price: £189.00 (plus VAT).

CM 300

Electret condenser handling up to 138dB sound pressure level. Features include power switch to conserve battery combined with lo-cut filter. Each microphone comes complete with CP-1 cardioid capsule. CP-2 omnidirectional capsule. CP-3 (super-omni) and CP-4 (shotgun) capsules available as optional accessories. Hard case contains windshield, cables, and batteries. Price: plus 3 microphones £198.75 (plus VAT), plus 1 microphone £75.60 (plus VAT).

■ **NEUMANN GMBH**

Sole UK Agents: F.W.O. Bauch Ltd, 49 Theobald Street, Boreham Wood, Herts WD6 4RZ. Tel: 01-953 0091.

KM83

FET condenser. Omni-directional. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10 dB. Price: on application.

KM84

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10 dB. Price: on application.

★ Indicates entry is illustrated



Neumann U47 FET



Neumann KMS 85

KM86

FET condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV/microbar. Impedance: 50 or 200 ohms. Built-in transformer. Sensitivity switch: -10dB. Price: on application.

U87

FET condenser. Switchable to omnidirectional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Impedance: 50 or 200 ohms. Built-in transformer. Bass cut and sensitivity switch of -10dB. Price: on application.

KM88

FET condenser. Switchable to omnidirectional or cardioid. FR: 40Hz-16kHz. Impedance: 50 or 200 ohms. Sensitivity across 1K: approx 0.7mV/microbar. Built-in transformer. Sensitivity switch - 10dB. Price: on application.

SM69 FET

Stereo transistor condenser. Both systems separately remote controlled: omnidirectional, cardioid or figure-of-eight. FR: 40Hz-16kHz. Sensitivity across 1K: 2mV/microbar. Impedance: 50 or 200 ohms. Built-in transformers. Pressure-gradient. Price: on application.

U47 FET ★

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.8mV/ μ bar. Impedance: 150

ohms balanced. Recommended load: \geq 750 ohms. Stand swivel with thread adaptor. Continues the tradition of the U47 produced from 1947-1960. Elastically mounted capsule and various switches. Finish: matt nickel plated. Price: on application.

KMS 85 ★

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.6mV / μ Bar. Impedance: 150 ohms balanced. Recommended load: \geq 750 ohms. Hand type. Multistage mechanical filter in front of condenser capsule provides protection against close-talking, popping noises and other explosive sounds. Finish: matt nickel plated. Price: on application.

KMA

Mono condenser. Cardioid. FR: 40Hz-16kHz. Sensitivity: 0.5mV open circuit. Impedance: 800 ohms balanced. Recommended load: \geq 2.7K. Lavalier type. Tie-clip fitting. Low sensitivity to noise of clothing etc. Finish: dark satin nickel plate. Price: on application.

■ PHILIPS

Pye Business Communications Ltd,
Cromwell Road, Cambridge CB1 3HE.
Tel: Cambridge 45191.

LBB 9005/06

Cardioid microphone. FR: 50Hz-16kHz. Impedance: 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: £39.05 (plus VAT).

LBB 9007/06

Cardioid microphone. FR: 50Hz-16kHz. Impedance: 200 ohms. Front-to-back: 20dB. Complete with on/off switch and 3m cable. Price: £43.05 (plus VAT).

LBB 9008/07

Cardioid microphone. FR: 50Hz-16kHz. Impedance: 200 ohms. Front-to-back ratio: 20dB. 3m cable. Price: £48.00 (plus VAT).

LBB 9018/05

Noise-cancelling microphone. FR: 200Hz-12.5kHz. Impedance: 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: £38.05 (plus VAT).



Shure Microphones- Sound of the Professionals.



Shure Electronics Limited • Ecclestone Road • Maidstone ME 15 6AU • Telephone: Maidstone (0622) 59881

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Wembley HA0 1SU Middlesex Tel: (01)-902 8832



Eagle

■ ROSS ELECTRONICS

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

B.2004 Mixer

4-channel transistorised audio mixer with mono/stereo selector switch. High impedance inputs into standard jack sockets; phono plug output. Max input 1V. Output 1.3V. Noise ratio: -60dB. Gain approximately 3dB. Price: £9.50 (plus VAT).

RE-365

Uni-directional cardioid, dual-impedance electret condenser microphone, similar in construction to RE-360. FR: 20Hz-20kHz. Sensitivity: -68dB at 600 ohms (1kHz), -52dB at 50K (1kHz). SPL: 132dB max. With stand holder, foam windshield, 20ft lead and jack plug. Price: £21.90 (plus VAT).

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).

Desk Stands:**RE-311A**

Microphone desk stand with 127mm diameter plastic base with chrome-plated centre pillar threaded externally to accept all Ross Electronics microphone holders and most others. Height: 115mm. Price: £2.40 (plus VAT).

RE-312

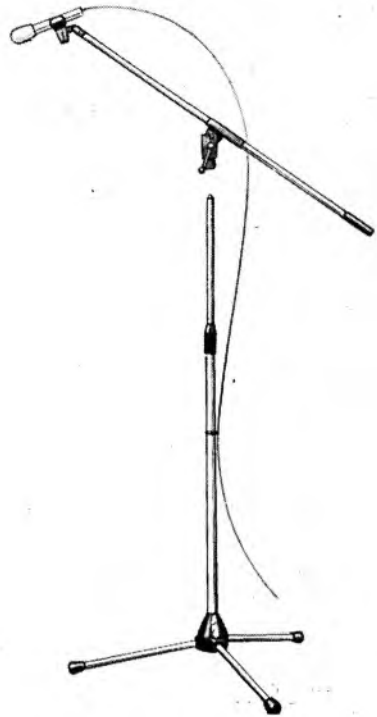
Adjustable microphone desk stand with weighted plastic base and single-draw telescopic centre pillar with friction lock. Chrome finish. Threaded to accept all Ross Electronics microphone holders and most others. Height: 305mm closed, 500mm extended. Price: £5.40 (plus VAT).

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).



Ross Electronics RE-315 and RE-315B

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. (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 ¼-inch 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

★ Indicates entry is illustrated

4-pin, dual-impedance type socket and standard, 1/4 inch 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 1/4 inch jack plug at other. Price: £1.76 (plus VAT).

RE-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 1/4 inch 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 ± 3 dB. Sensitivity: 0.2mV/ μ bar ± 3 dB. Impedance: 200 ohms. Rec load: 1K. Light alloy case finished hammer stove enamel. Windshield MZW421 optional extra. Price: (microphone) £48.95 (plus VAT); (windshield MZW421) £5.40 (plus VAT); (desk stand MZT21) £5.95 (plus VAT).

MD21HL

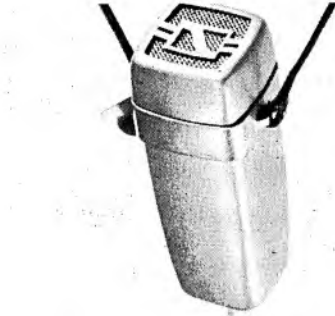
Dual-impedance version of MD21. Price: £51.20 (plus VAT).

MD211N

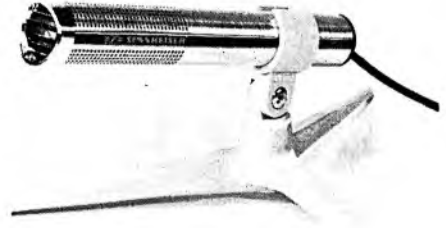
Omni-directional moving coil miniature studio microphone. Hand or stand use. FR: 30Hz-20kHz ± 2.5 dB. Sensitivity: 0.13mV/ μ bar ± 2.5 dB. Impedance: 200 ohms. Rec load: 1K. Metal case with satin chrome finish. Windshield MZW201 optional extra. Price: (microphone) £86.00 (plus VAT); (windshield MZW201) £4.80 (plus VAT); (small tripod desk stand MZT104) £4.50 (plus VAT).

MD214 ★

Omni-directional moving coil lavalier microphone. Built-in 'natural voice' equaliser to



Sennheiser MD214



Sennheiser MD-402LM

studio standards. FR: specially designed for lavalier operation. Sensitivity: 0.10mV/ μ bar ± 2.5 dB. Impedance: 200 ohms. Rec load: 1K. Metal case finished special 'non-glare' enamel. Price: £78.75 (plus VAT).

MD408N

Super cardioid moving coil microphone with flexible shaft. Specially suitable for PA applications. FR: 50Hz-15kHz ± 3 dB. Impedance: 200 ohms. Sensitivity: 0.13mV/ μ bar ± 3 dB. Case of light gauze woven wire cloth. Price: £31.50 (plus VAT).

MD420-2

Super-cardioid noise cancelling moving coil mono microphone. FR: 200Hz-10kHz (special response curve for noise cancellation). Impedance: 200 ohms. Rec load: 1K. Sensitivity: 0.18mV/ μ bar. Hand or stand microphone with large Tuchel plug. Metal case with silver finish. Price: £37.15 (plus VAT).

MD420-9

Shorter version of MD420 for gooseneck mounting. Price: £29.75 (plus VAT).

MD402LM ★

Mono moving coil super cardioid microphone. FR: 80Hz-12.5kHz. Sensitivity: 2.3mV/ μ bar. Impedance: 750 ohms. Rec load: 4K. Hand mic

MICROPHONES AND ACCESSORIES

with stand and clip. Rugged construction. Frequency response tailored for domestic applications. Finish: satin chrome. Price: £19.20 (plus VAT).

MD409N

Mono moving coil super cardioid. FR: 50Hz-15kHz. Sensitivity: 0.18mV/ μ bar. Impedance: 200 ohms. Rec load: 200 ohms or greater. Stand mounted musicians' microphone. Finish: black and gold. Price: £47.25 (plus VAT).

MD421

Mono moving coil cardioid microphone. FR: 30Hz-17kHz. Sensitivity: 0.2mV/ μ bar at 1kHz. Impedance: (HL series) 200 ohms and 24K; (N, U and 2 series) 200 ohms. Rec load: (high Z version of HL series) 50K, (all others) 1K. Hand/stand microphone $\frac{3}{8}$ in thread fitting. Built-in bass cut switch. Low handling noise. Finish: (standard versions) grey plastic body with chrome grille. Price: £77.10 (plus VAT).

MD441

Mono moving coil super cardioid microphone. FR: 30Hz-20kHz. Sensitivity: 0.2mV/ μ bar \pm 3dB. Impedance: 200 ohms. Rec load: 1K. Hand microphone, with optional mounting clip available. Choice of ten switchable frequency responses. Low handling noise. Polar diagram constant over frequency range. Finish: shock resistant metal case. Silver-plated metal grille on matt black body. Price: £111.40 (plus VAT).

MKH105T

Mono capacitor omni-directional microphone. FR: 20Hz-20kHz. Sensitivity: 2mV/ μ bar. Impedance: 20 ohms. Rec load: 200 ohms or greater. Hand/stand microphone. Table stands MZT104 and 105 available. Low self noise. Windshield (MZW201) optional extra. Finish: satin chrome on brass. Price: £173.85 (plus VAT).

MKH124

Mono capacitor omni-directional. FR: 40Hz-20kHz. Sensitivity: 0.32mV/ μ bar. Impedance: 150 ohms. Rec load: 200 ohms or greater. Lapel or lavalier microphone with clip or lanyard. Small size: flat frequency response. Presence lift. Finish: matt grey enamel. Price: £181.85 (plus VAT).

MKH125

Mono capacitor omni-directional microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Impedance: 10 ohms. Rec load: 200 ohms.

Lapel/lavalier microphone with lanyard or clip. Small size. Flat frequency response. Presence lift. Finish: matt grey enamel. Price: £193.40 (plus VAT).

MKH415T/TU

Mono capacitor super cardioid microphone. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar. Impedance: 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: £213.20 (plus VAT).

MKH815T/TU

Mono capacitor uni-directional (narrow beam) microphone. FR: 50Hz-20kHz. Sensitivity: 4mV/ μ bar. Impedance: 20 ohms. Rec load: 200 ohms. Gun microphone. Fittings: boom MZS-805 or pistol grip MZP805. Low self noise. Very narrow beam. Windshield: MZW804 and MZW815. Finish: satin chrome on brass. Price: £258.75 (plus VAT).

MD412LM

Moving coil super cardioid mono microphone. FR: 50Hz-12.5kHz. Impedance: 800 ohms. Sensitivity: 0.2mV/ μ bar \pm 3dB. Built-in roll-off filter. With desk stand. Price: £28.25 (plus VAT).

MKH435T/TU

Studio quality capacitor microphone. Cardioid polar diagram. FR: 40Hz-20kHz. Sensitivity: 2mV/ μ bar \pm 1dB. Impedance: 200 ohms. Hand/stand type microphone. Price: £203.65 (plus VAT).

MD416NU

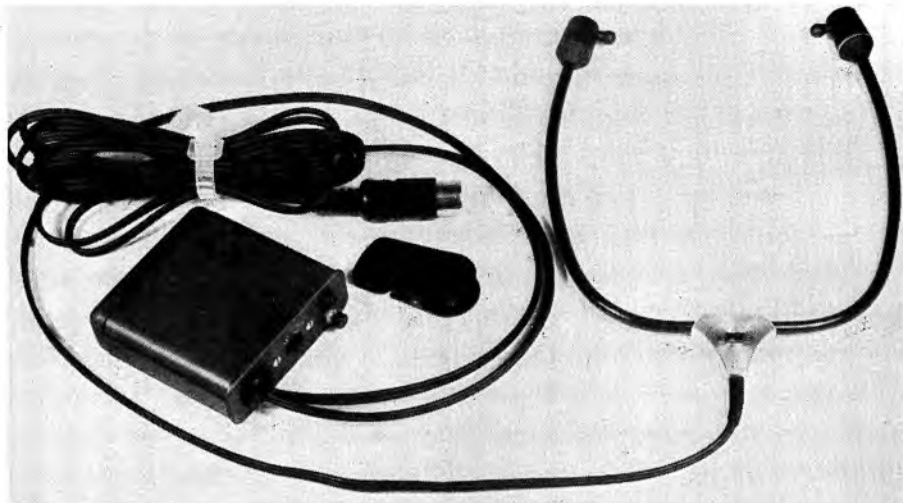
Moving coil mono microphone. Cardioid polar diagram. Insensitive to handling or mechanical vibration. Designed for vocal or instrumental soloists. FR: 50Hz-15kHz. Sensitivity: 0.13mV/ μ bar \pm 3dB. Impedance: 200 ohms. Hand or stand microphone. Low sensitivity to pop and wind noises. Price: £72.00 (plus VAT).

MD413NU

Moving coil mono microphone. Cardioid diagram. FR: 50Hz-15kHz. Impedance: 200 ohms. Sensitivity: 0.13mV/ μ bar \pm 3dB. Rec load: 200 ohms or greater. Hand or stand microphone. Built-in 'pop' protector. Good immunity to feedback. Finish: solid brass with satin chrome finish. Price: £55.15 (plus VAT).

MKH416P/48

Capacitor microphone super cardioid. FR: 40-20,000Hz. Phantom powered 48V cannon



Sennheiser MKE 2002

or tuchel versions available. Price: £191.25 (plus VAT).

MKH816P/48

Capacitor microphone super directional. FR: 50-20,000Hz. Phantom powered 48V cannon or tuchel plug versions available. Price: £258.75 (plus VAT).

MKE802

Electret microphone super cardioid. FR: 50-15,000Hz. Impedance: 200 ohms. Cannon or tuchel plug versions available. Price: £84.40 (plus VAT).

MKH406P/48

Capacitor microphone. FR: 40-20,000Hz. Cannon or tuchel plug versions available. Price: £180.00 (plus VAT).

MKE402

Electret cardioid microphone. FR: 50-15,000Hz. Impedance: 200 ohms. Cannon or tuchel plug versions available. Price: £70.90 (plus VAT).

MKE 2002 ★

Electret mic. FR: 40Hz-20kHz. Impedance: 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: £122.65 (plus VAT).

MKH 126 P 48

Capacitor mic. Omni-directional. FR: 40Hz-20kHz. Impedance: 200 ohms. Miniature Lavalier mic in two parts. Capsule and elec-

tronic unit available in two finishes, satin nickel or matt grey. Tuchel or cannon XKR version available. Price: £193.40 (plus VAT).

■ SHURE ELECTRONICS LTD

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

SM33 ★

Ribbon microphone. Super cardioid. FR: 40-15,000Hz. Impedance: 50 and 150 ohms. Stand mounted. Smooth warm response with switchable low end roll off. Price: £118.80 (plus VAT).

SM51

Omni-lavalier microphone. FR: 70-12,000Hz. Low impedance with sensitivity: -82dB. Small size. Price: £57.00 (plus VAT).

SM54

Cardioid microphone. FR: 70-16,000Hz. Impedance: 150 ohms. Sensitivity: -81dB. Hand, stand or boom. Versatile with switchable low end roll-off. Price: £128.40 (plus VAT).

SM58

Cardioid microphone. FR: 50-15,000Hz. Impedance: 50 and 150 ohms. Sensitivity: -84 and -77dB. Rugged construction with built-in wind shield. Price: £76.20 (plus VAT).

SM57

Cardioid microphone. FR: 40-15,000Hz. Impedance: 50 and 150 ohms. Sensitivity: -82 and -76dB. Good feedback suppression. Price: £60.00 (plus VAT).

MICROPHONES AND ACCESSORIES



Shure SM33



Shure 545 Unidyne 111

SM62

Cardioid microphone. FR: 100-10,000Hz. Impedance: 150 ohms. Sensitivity: -82dB. Price: £60.00 (plus VAT).

300

Ribbon microphone with polar patterns figure of 8. FR: 40-15,000Hz. Impedance: 50,150 and high. Switchable low end roll off. Price: £82.20.

515SA

Cardioid microphone. FR: 80-13,000Hz. Impedance: High, but low version available. Price: £21.60 (plus VAT).

545 ★

Cardioid microphone. FR: 50-15,000Hz. Impedance: low/high. Slim style, true cardioid. Price: £45.60 (plus VAT).

548

Cardioid microphone. FR: 40-15,000Hz. Impedance: low/high. Price: £54.00 (plus VAT).

565 ★

Cardioid microphone. FR: 50-15,000Hz. Impedance: low/high. Built-in wind shield. Price: £51.00 (plus VAT).

579SB

Omni-microphone. FR: 50-15,000Hz. Impedance: low. Price: £36.00 (plus VAT).

588SA

Cardioid microphone. FR: 80-13,000Hz. Impedance: High, but low version available. Built-in wind shield. Price: £31.20.

589S

Cardioid microphone. FR: 90-13,000Hz. Impedance: low/high. Price: £36.00 (plus VAT).

A95U

High quality series line transformer making it possible to connect low impedance (25-50 ohms and 150-250 ohms) lines to a high impedance amplifier input. Comes complete with all connectors. Size: 2½in × ¾in. Price: £10.60.



Shure 565 Unisphere 1

★ Indicates entry is illustrated

A97A

As above but designed to match 150-600 ohm microphone outputs to medium impedance (1-10K ohm) devices, such as those frequently used in cassette recorders. Price: £9.60.

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: £10.60.

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 $\frac{1}{16}$ in H x 5 $\frac{1}{16}$ in W x 6in D. Price: £7.80.

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 $\frac{3}{4}$ in. Price: £12.60.

516 EQ ★

Moving coil mic. Cardioid. FR: 50Hz-15kHz. Impedance: 150 ohms. Hand or stand, adaptor supplied. Four built-in filters to "tailor" your recordings. Price: on application.

SM11 ★

Moving coil mic, omni-directional. FR: 50Hz-15kHz. Impedance: 150 ohms. Lavalier or special applications. Very small. Price: £37.20 (plus VAT).

■ SONY (UK) LTD

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

ECM 170

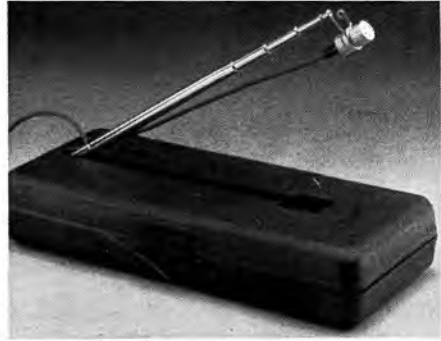
Electret omnidirectional. FR: 20-16,000Hz. Impedance: 200 ohms. Sensitivity: -56.0dB. Hand mounting. A16 table stand available. Bass roll off switch. No rec. retail price.

ECM 220

Electret unidirectional. FR: 50-12,000Hz. Impedance: 200 ohms. Built-in wind screen. On/off talk switch. No rec. retail price.

ECM 270

Electret uni-directional. FR: 40-16,000Hz.



Sony ECM 150

Impedance: 200 ohms. Removable wind screen. No rec. retail price.

ECM 280

Electret unidirectional. FR: 30-18,000Hz. Impedance: 200 ohms. Removable wind screen, bass roll-off switch. No rec. retail price.

ECM 150 ★

Electret mic, omni-directional. FRL 40Hz-13kHz. Impedance: 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 990

"One-Point" stereo Electret condenser mic. Details on application.

■ TANDBERG

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

TM 6

Spherical omni-directional moving coil microphone. FR: 50Hz-15,000Hz +3 -6dB. Impedance: 250 ohms. Comes complete with table stand and fixture for mounting on floor stand. Bigger table stand available as optional extra. Price: £20.00 or with table stand £29.00 (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/1μhar). Price: £39.95 (inc. VAT).

RP-3850E

Slimline uni-directional microphone. FR: 20Hz-16,000Hz. Sensitivity: -72dB (0dB = 1V/1 μ bar). Price: £59.95 (inc. VAT).

RP-3830E

Slimline uni-directional stick microphone with removable windscreen. FR: 50Hz-15,000Hz. Sensitivity: -74dB (0dB = 1V/1 μ bar). Price: £47.95 (inc. VAT).

RP-3550E

Compact uni-directional electret condenser microphone. FR: 50Hz-15,000Hz. Sensitivity: -74dB (0dB = 1V/1 μ bar). Price: £34.95 (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: £49.00 (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. Impedance: 200 ohms. For use with Uher 5000 tape recorder. Price: approximately £31.29 (plus VAT).

M517

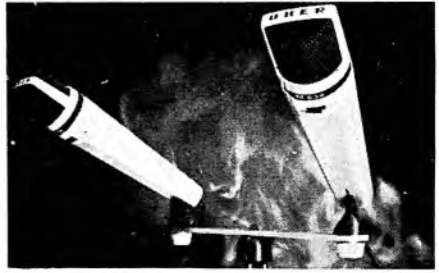
Dynamic cardioid microphone for use with Uher battery portable. Remote stop/start switch. Speech/music switch. FR: 70Hz-14kHz. Price: £31.29 (plus VAT).

M534

Dynamic cardioid microphone with speech/music switch. Sensitivity:



Uher M154



Uher M634

0.23mV/ μ bar. FR: 50Hz-16kHz. Impedance: 500 ohms. For recording under adverse acoustic conditions. Pressure diecast case. Includes table stand (M923). Plug wiring: unbalanced 3/2. Price: £25.96 (plus VAT).

M634 (stereo) ★

Dynamic cardioid stereo microphone system. Sensitivity: 0.23mV/ μ bar. FR: 50Hz-16kHz. Impedance: 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/ μ bar. FR: 70Hz-15kHz. With stop/start switch for Uher cassette recorders. Price: £36.06 (plus VAT).

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Music Centres

(see also Unit Audio sections)

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ AIWA

Aiwa Sales and Service (UK) Ltd, 30 and 32 Concord Road, Westwood Park Trading Estate, London W3 0TH.
Tel: 01-993 6172.

AF 5080

Stereo music centre with Dolby noise reduction circuitry. Record deck: speeds $33\frac{1}{3}$, 45 rpm. W and F: 0.1%. Moving magnet cartridge with 2-2.5 stylus. Amplifier: output 24+24W. FR: 20-30,000Hz. THD: 0.08% 22+22W (8 ohms). S/N: 58dB. Radio tuner: four waveband (AM/FM/LW/SW). FR: 20-15,000Hz. THD: 0.7% stereo. Tape deck: Dolby cassette. W and F: 0.2% DIN. S/N: 58dB DIN. FR: 30-15,000Hz (CrO₂ tape). Speakers: recommended speakers with HC 30W × 30W. Imp: 8 ohms. Dimensions: 27.8 × 19.3 × 48cm. Walnut finish. Main Unit: dimensions 59 × 38.2 × 14.8cm. Finish: walnut. Features: Dolby unit. Oil-damped cassette key controls and cassette elevation. Synchronous mechanism between tone arm and cassette motor. Price: £341.07 (plus VAT).

■ ALBA (RADIO AND TELEVISION) LTD

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

9071

Record deck: BSR 172 D1. Speeds: $33\frac{1}{3}$, 45, 78 rpm. Rumble: better than -29dB. W and F: less than 0.2%. Ceramic cartridge with sapphire stylus. Amplifier: Output: 7.5W+7.5W. THD: 0.5%. Radio tuner: band coverage: VHF/L/M. FR: 150-530kHz. Tape deck: W and F: less than 0.35%. S/N: better than 35dB. Speakers: Imp: 8 ohms. Crossover drive units: 20.3 × 12.7cm. Teak finish. Main unit: 55 × 41 × 18.5cm. Price: on application.

■ AMBASSADOR

Ambassador Audio, 12-14 Wakefield Road, Brighouse, West Yorks.
Tel: Brighouse 714355.

Audio 3

Period-style music centre in Queen Anne (walnut) or Regency (mahogany). Output: 20W RMS per channel, belt-drive P157 turntable, magnetic cartridge, VHF-L-M tuner. Cassette recorder with CrO₂ and manual level adjustment. Matching speakers with 8 ins. woofer and 4 in. tweeter. Price: £346.67 (plus VAT).

Audio 4

Louis style music centre in mahogany veneers. Single play turntable. AM/FM tuner, cassette recorder. Output: 10W RMS per channel. Matching speakers with 6in. woofers and 4in. tweeters. Price: £257.78 (plus VAT).

■ CARLTONE

C. F. Fraser Ltd, 21 Princess Road, London NW1 8JR.
Tel: 01-722 6633.

4-in-1 ★

AM/FM/MPX stereo receiver with BSR deck, cassette player stereo recorder and 8-track cartridge player and stereo recorder. Mics, hinged full size lid, headphone socket. Four speaker matrix system. Full details on request. Price: on application.

SHC 3100

Stereo music centre complete with speakers. Record deck: BSR P129 R1 with speeds of $33\frac{1}{3}$, 45, 78 rpm. W and F: below 0.35%. Ceramic cartridge with diamond stylus. Amplifier: Output: 7.5+7.5W RMS. FR: 50-20kHz. Radio tuner: Coverage: FM/L/M. Tape deck: W and F: 0.25%. FR: 100-10kHz. Speakers: Imp: 8 ohms. Drive units: woofer, tweeter. Dimensions: 13 × 10.75 × 5.5in. Walnut finish. Main unit: Dimensions: 24 × 13.5 × 6.5in. Finish in simulated wood and black.



Carltone 4 in 1

★ Indicates entry is illustrated

SHC 3200

Three piece record player, radio and stereo cassette recorder with matching 24W speaker system. Record deck: BSR P128 with speeds 33½, 45 rpm. W and F: below 0.2 RMS. Magnetic cartridge with diamond stylus. Amplifier: output: 20+20W RMS. FR: 40-20,000Hz. THD: 1%. Tape deck: W and F: 0.25%. S/N: 45dB. FR: 40-12kHz. Speakers: Imp: 4 ohms. Crossover drive units: 20cm and 7.7cm. Dimensions: 39 × 29 × 20.5cm. Main unit: dimensions: 23.5 × 16 × 8.5in. Finish in black and silver.

SHC 3330 Stereo Music Centre

Multi-band, performance-engineered receiver, VHF stereo/MW/LW with stereo indicating lamp and mono/stereo switch. Automatic 2 speed player. A stereo cassette deck including CrO₂/normal tape selector. Output power: 25W + 25W maximum. 12W + 12W at 1% THD, both channels. Receiver sensitivity: VHF: 3mV. MW: 250mV. LW: 500mV. SW: 250mV. Wow & flutter: player less than 0.35%. Cassette deck less than 0.25%. S/N: player more than 30dB. Cassette deck more than 45dB. Cassette section: recording system AC bias, 1/4 track. Erasing system AC erase, 1/2 track. Other features: AFC switch and bass/treble controls. Signal meter, tuning meter and muting switch, 2/4 channel (speaker matrix) operation sockets, DIN type socket for tape dubbing.

SHC 3350 Stereo Music Centre

Multi-band, performance-engineered receiver, VHF stereo/MW/LW/SW with stereo indicating lamp and mono/stereo switch. Automatic belt-driven 2 speed player with VM cartridge. A stereo cassette deck of the Dolby NR (noise reduction) system including CrO₂/normal tape selector. Extra power: IC reliability and an impressive 75W + 75W maximum. VHF preset: enables to select any one of 5 broadcasts by depressing a button. Output power: 75W + 75W maximum, both channels. 30W + 30W at 1% THD, both channels. Receiver sensitivity: VHF: 3mV. MW: 250mV. SW: 250mV. Wow & flutter: player; less than 0.2%. Cassette deck; less than 0.25%. S/N: player; more than 30dB. Cassette deck; more than 45dB. Cassette selection: recording system AC bias, 1/4 track. Erasing system AC erase, 1/2 track. Other extra features: AFC switch and bass/treble controls. Signal meter, tuning meter, level indicator and muting switch. 2/4 channel (speaker matrix) operation sockets. DIN type socket for tape dubbing.



Decca DS 5349

■ DECCA RADIO & TELEVISION LTD

Neachells Lane, Willenhall,
West Midlands WV13 3RW.
Tel: Willenhall 67367.

Audio 20 Music Centre DS 5355

Complete three-piece music centre. Record deck: Garrard 35SB with speeds of 33½ and 45 rpm. Rumble: -55dB. Shure M75-6S cartridge with diamond spherical stylus. Amplifier: output: 25W per channel. FR: 20-30,000Hz. THD: 1% at 1kHz. S/N: >60dB. Radio tuner: band coverage: FM/L/M. Tape deck: W and F: <0.3% RMS. S/N: 50dB. FR: 40-12,000Hz (Fe₂O₃). Speakers: Imp: 8 ohms. Crossover drive units: 8in bass and tweeter. Dimensions: 30 × 25 × 60.4cm. Teak finish. Main unit: dimensions: 65.5 × 42 × 14.4cm. Teak finish. Features: mute/AFC, high filter, mono external tape switching, erase oscillator frequency shift, four-speaker facility for ambiophonic sound. Price: on application.

DS 5339 ★

Music centre: Record deck: Garrard 6200CP with speeds of 33½, 45, 78 rpm. Ceramic cartridge with Acos GP104 diamond stylus. Amplifier: Output: 12W per channel. FR: 20-30,000Hz. THD: 0.2% max at 1kHz. S/N: -60dB. Radio tuner: coverage: FM/L/M. Tape deck: W and F: <0.3% RMS. S/N: 50dB. FR: 40-12,000Hz (Fe₂O₃). Speakers: HC: 20W DIN. Imp: 8 ohms. Drive units: 1 at 8in. Dimensions: 24 × 14.4 × 42cm. Teak or walnut finish. Main unit: dimensions: 65.5 × 14.4 × 42cm. Teak or walnut finish. Features: four speaker facility for ambiophonic sound. Head-phone socket, mute/AFC, high filter. Price: on application.

DS 5349 ★

Music centre with Garrard SP 25 Mk IV deck with Acos M7 magnetic cartridge. Amplifier



Decca DS 5339



Dynatron RG 96

output: 12W. FR: 20Hz-30kHz. THD: 0.2%. Radio tuner: FM/L/M. Tape deck; W and F: <0.3%. Optional speakers. Main unit dimensions: 65.5 × 42 × 14.4cms. Finish: silver/black. Four speaker facility, twin microphone socket, headphone socket, Mute/AFC, oscillator shift. Price: on application.

DS 5365

Music centre. Garrard 35 SB record deck with Shure M75/6 cartridge. Amplifier output: 25W. FR: 20Hz-30,000Hz. THD: 1%. Radio tuner: FM/L/M. Tape deck: Dolby "B". W and F: <0.3%. Optional speakers. Main unit dimensions: 65.5 × 42 × 14.4cms. Teak finish. Four speaker facility, mic and headphone socket. Mute/AFC. Oscillator shift. FeCr on tape deck. Price: on application.

■ DYNATRON

Dynatron Radio Ltd, Ditton Walk,
Cambridge CD5 8QD.
Tel: Teversham 2781.

Beaufort RG 96 ★

Incorporates Garrard 35 SB single record playing belt-driven deck with Vermitron V100 magnetic cartridge and diamond stylus. Three wave band tuner/amplifier with facilities for four-channel quadro sound. Stereo cassette tape unit with DNL circuit for standard and chromium dioxide tapes. Queen Anne styling in walnut veneers. Storage space for records and cassettes. Matched speakers. Dimensions: 73.3 × 14.8 × 52.3cms. No rec. retail price.

■ FERGUSON

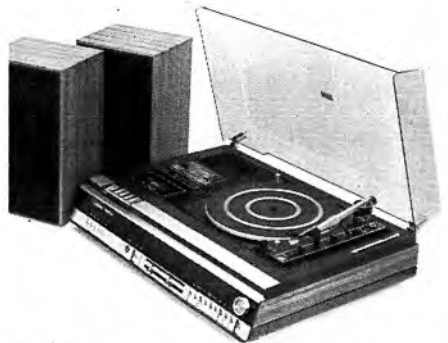
Thorn Consumer Electronics Ltd, 284
Southbury Road, Enfield, Middx.
Tel: 01-366 1155.

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: 6½in. 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.



Ferguson 3494

★ Indicates entry is illustrated

Speaker drive units: 2 × 5ins. and 3³/₈in. tweeter in each enclosure which measures 24 × 21 × 36cms. Main unit measures 62 × 49 × 19.5cms and is finished in black and silver with teak effect finish ends. No rec. retail price.

3971 ★

BSR P182 deck with ceramic SC12H sapphire cartridge. Amplifier output: 5W. FR: 40Hz-18,000Hz. THD: 0.3%. Radio tuner: FM/L/M. Tape deck with Dolby noise reduction system. W and F: ± 0.3%. Speakers 6¹/₂ins. drive unit. Dimensions of speaker: 22 × 18.5 × 37cms. Mains unit dimensions: 56 × 34.5 × 17cms. Finish in black/silver with teak surrounds. Switchable AFC. FM stereo beacon. Auto stop on all cassette functions. No rec. retail price.

■ **FIDELITY**

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

MC3

Music centre with radio, record player and cassette in ultra-modern unit and complementary speakers. BSR P146RE deck with ceramic cartridge. Amplifier output: 8W. Radio tuner band coverage: VHF/FM/L/M. W and F: less than 0.4%. Drive units 8 × 5ins. Impedance: 4 ohms. Dimensions: 31 × 20.5 × 12.5cms. Main unit dimensions: 16.6 × 54 × 38cms. Teak look finish. Cueing device. Price: £141.78 (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. Price: £169.50 (inc. VAT).

A5020H ★

Combined AM/FM radio, stereo cassette recorder and record-player. Loudspeakers (S1606) in teak finish sold separately. Record



Ferguson 3923



Ferguson 3971



GEC A5019H

deck: Garrard 125SB two-speed automatic single play turntable unit, belt driven by 4-pole synch motor. Counterbalanced "S" pickup arm, viscous damped cue function, calibrated stylus pressure and bias adjustment, slide in cartridge carrier. Repeat play facility. Amplifier: 30W speech and music power per



GEC 5020H



GEC 2817

channel. Radio: three-waveband AM tuner and entirely separate FM tuner with auto muting, switched AFC, pre-set VHF electronic station selection and calibrated tuning-meter. Tape deck: stereo cassette tape unit with twin meters and slider control for record level, tape counter with re-set button and auto stop. Speakers: S1606 available in teak finish as optional extra. Finish: black moulded cabinet with smoked record deck cover. Features: jack sockets for headphones; two jack sockets for use with microphones supplied. Price: to be announced.

2817 ★

Garrard 6300 auto/manual three speed unit. Amplifier output: $2 \times 15W$. Tuner coverage: VHF/FM, L/M/S. Cassette tape unit. W and F: 0.35%. Each speaker houses $6\frac{1}{2}$ in. round dual

system speaker including $2\frac{1}{4}$ in. dia. mechanically coupled tweeter. Dimensions: $20 \times 20 \times 40$ cms. Main unit dimensions: $66 \times 45 \times 19.8$ cms. No rec. retail price.

■ **GOODMANS**

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

Module 90 Compact ★

AM/FM stereo receiver with transcription record player. Facilities: two stereo headphone sockets, stereo beacon, tuning indicator, two output meters. Amplifier: 45W per channel into 4 ohms, 30W per channel into 8 ohms. THD: <0.1% at 35W into 4 ohms. FR: 25Hz-30kHz, -3dB. S/N: (Tape input) -75dB. Radio bands: MW 525-1605kHz, FM 87.5-108MHz variable, 87.5-101MHz on 4 pre-sets. FM sensitivity: typically $2\mu V$ into 240 ohms or $1\mu V$ into 75 ohms, for 30dB S/N with 75kHz deviation. THD: typically 0.5% for



Goodmans Module 90 Compact



Goodmans MCD 100

★ Indicates entry is illustrated

75kHz deviation. Transcription unit. Garrard Zero 100 SB; W and F: 0.12% peak, rumble -63dB DIN. Cartridge: Shure M93E, elliptical stylus. Mains: 122V or 220-245V 50-60Hz. Size: 24½ × 15¼ × 8½in. No rec. retail price.

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 not included, Goodmans RV35 are recommended. Dimensions: 77.2 × 38.1 × 20.8cms. Five pre-sets on FM radio. No rec. retail price.

■ **GRUNDIG**

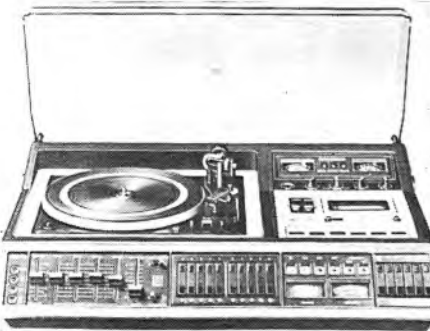
Grundig International Ltd,
Newlands Park, London SE26 5NQ.
Tel: 01-659 2468.

Studio 3010

AM/FM stereo receiver in cabinet with Dual 1225 record deck and 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, 1⅞ i/s. FR: 60Hz-12.5kHz. Automatic switching for CrO₂. Wand 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



Grundig RPC 500



Hacker MC 600

noise reduction system. Main unit dimensions: 69 × 21 × 48cms. Black finish. Ten pre-tuned stations selected by pressure switches with LED indicators. Frequency meter, signal strength meter, electronic tuning on VHF/AM.

■ **HACKER RADIO LTD**

Norreys Drive, Cox Green,
Maidenhead, Berks SL6 4BP.
Tel: Maidenhead 22261.

MC600 ★

Record deck: Garrard 35SB with speeds of 33⅓ and 45 rpm. Rumble: -55dB (DIN). W and F: 0.20%. Verritron V100 magnetic cartridge with diamond stylus. Amplifier: Output: 14W + 14W into 8 ohms, both channels driven. FR: 25-40,000Hz. THD: 0.075% at 1Hz. Radio tuner: band coverage: FM/L/M. THD: better than 0.5%. Tape deck: W and F: less than 0.25%. S/N: 47dB. FR: 50-12,000Hz (CrO₂) and 50-10,000Hz (Fe₂O₃). Speakers: designed to operate with any high quality loudspeaker of 8 ohms including Hacker range. Main unit: dimensions: 67 × 43.2 × 19.6cm. Teak veneer finish. Features: Built-in facilities for immediate connection of rear speakers for ambiphonic reproduction. Programme material from disc and radio can be recorded and played back. Material from external sources can be similarly recorded and played back. Recordings can be made from disc and radio on external equipment. Voice can be mixed with recording. Facilities for chromium dioxide tape. No rec. retail price.

■ **HITACHI**

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

STD 2690

LW/MW/SW/FM stereo tuner, amplifier, Dolby cassette deck, record player and speaker system. Specifications. Radio. Tuning range: FM: 87.5-108MHz with FM stereo, MW: 530-1,605kHz, LW: 150-300kHz, SW: 5.9-10MHz. Sensitivity: FM: $2.2\mu\text{V}$ (IHF), MW: $200\mu\text{V}$ (S/N 20dB), LW: $400\mu\text{V}$ (S/N 20dB), SW: $100\mu\text{V}$ (S/N 20dB external aerial). Output power: 25W plus 25W RMS. THD: less than 1% both channels driven into 4 ohm). Aerial: MW/LW: ferrite core aerial, FM/SW/LW-TR: external DIN jack. Semiconductors: 15-IC, 21 transistors, 3-FET, 42 diodes, 1 varistor, 10 LED, 3 varicap (variable capacitor for FM tuning). Player. Type: single automatic player, $1\frac{1}{4}$ in (300mm) turntable dia. Static balance pipe tone arm. Motor: 4 pole synchronous motor. Speed: $33\frac{1}{3}$, 45 rpm. Cartridge: induced magnetic (interchangeable head shell). Stylus: Hitachi DS-ST101 diamond, pressure 2.5g. Cassette deck. Track system: 4 track, 2 channel stereo record/playback. Tape speed: $1\frac{7}{8}$ in/s (47.5 mm/sec). FR: 40-10,000Hz with normal tape, 40-15,000Hz with CrO₂. S/N ratio: better than 50dB. Cross talk: better than 55dB. Recording system: AC bias 57kHz. Erasing system: AC erase. Erasing ratio: better than 60dB. W and F: less than 0.15% WRMS. Power source: AC 240V 50Hz. Power consumption: 170W. Speaker system: 3 way speaker system SS 8310G (8 bass, $3\frac{3}{8}$ in mid-range, $3\frac{3}{8}$ in tweeter, 4 ohms). Dimensions: Main unit $25\frac{5}{16} \times 7\frac{1}{4} \times 16\frac{3}{8}$ in (650mm \times 185mm \times 416mm) approx. Speakers: $10\frac{5}{16} \times 18\frac{15}{16} \times 9\frac{7}{8}$ in (262mm \times 354mm \times 251mm) approx. Accessories: Hitachi stereo microphone, Hitachi C60 blank cassette tape, FM indoor aerial. Price: £279.20 (plus VAT).

STD 7660

LW/MW/SW/FM stereo tuner, amplifier, cassette deck, record player and speaker system. Features: FM pre-set tuning system (5 stations). Push button function switches for tape, phono, mono/stereo, FM, SW, MW, LW, LW-. Slide controls for volume, treble, bass and balance. FM stereo indicator. Twin VU meters and recording level controls. CrO₂ tape/normal tape selector. Tape pause button. Tape full auto stop. Recording indicator. Anti-skating device, adjustable stylus pressure, cueing device. Speaker enclosures incorporate 8in. bass unit and $3\frac{3}{8}$ in. tweeter unit. Output 25 + 25 watts. Built-in loudness compensator. Specifications: Radio: VHF/FM, L/M/S. Output: 25 + 25 watts. THD both channels driven into 4 ohms. Player:

Type: Hitachi TP.200 (300mm dia. turntable). Stylus: Diamond (ST-103). Cassette deck: 4-track, 2-channel, stereo, record playback. Tape speed: $1\frac{7}{8}$ ips. Frequency response: 30-13,000Hz with normal tape. 30-15,000Hz with CrO₂ tape. Wow and Flutter: 0.2% WRMS. Speaker system: SS 8260G, 4 ohms. 8in. foam edge bass unit, $3\frac{3}{8}$ in. tweeter unit. Dimensions: main unit 60 \times 17.8 \times 39.5cm. Speakers: 43 \times 25.5 \times 18cms.

SDT 7640

LW/MW/SW/FM stereo tuner, amplifier, cassette deck, record player and speakers. Features: Push button switches with slide controls for volume, treble, bass and balance. FM stereo indicator. CrO₂ tape/normal tape selector. Tape pause button. Tape full auto stop. Recording indicator. Anti-skating device, adjustable stylus pressure, cueing device and single or repeat play facility. Speaker incorporates 8in. bass unit and $3\frac{3}{8}$ in. tweeter unit. Output 20 + 20 watts. No rec. retail price.

SDT 7675

Hi-Fi Dolby stereo music centre. LW/MW/SW/FM stereo tuner, amplifier, cassette deck, record player and speakers. Output: 25 + 25W. Radio tuner: VHF/FM, L/M/S. Player: Hitachi AR-408 Hi $1\frac{1}{4}$ in. (300mm dia. turntable). 4 pole synchronous motor with electronic servo control. Speeds: $33\frac{1}{3}$, 45rpm. Stylus: diamond (3T-103). Cartridge: induced magnetic. Cassette deck: 4-track, 2 channel, stereo record/playback. Frequency response: 30-13,000Hz with normal tape, 30-15,000Hz with CrO₂ tape. Wow and flutter: 0.2%. Speaker system: SS-8470G teak, SS-8470G rosewood. 8in. foamed edge bass unit. 1in. HF dome radiator. Dimensions: main unit: 77.2 \times 19.2 \times 38.4cms. Speaker: 47 \times 27 \times 26.5cms. Accessories: Hitachi stereo microphone, Hitachi ultra dynamic cassette tape UDC 60, FM ribbon aerial. Features: teak or rosewood finish. AM/FM tuning meter. FM pre-set push touch tuning system (5 stations). Push button switches with slide controls for volume, treble, bass and balance. Twin VU meters and recording level controls. Dolby noise reduction. CrO₂ tape/normal tape selector. Tape pause button. Tape auto stop. Recording indicator. Anti-skating device, adjustable stylus pressure, cueing device. No rec. retail price.

SDT 7620

LW/MW/FM stereo tuner amplifier, cassette deck, record player and speakers. Features: CrO₂ tape/normal tape selector. Tape auto stop. Anti-skating device, adjustable stylus pressure, cueing device. Output — 12 + 12

★ Indicates entry is illustrated

watts. Frequency response: 30Hz to 20kHz (± 1.5 dB) (DIN 45500). Input sensitivity and impedance: microphone -60dB. 470 ohms. Tape record/playback: 500mV, 500K ohms. Output level and impedance: speaker: more than 4 ohms. Headphone: more than 8 ohms. Tape record/playback 150mV, 150K ohms. Tuner section: FM/L/M. Cassette deck section: frequency response: CrO₂, 50Hz to 13kHz (DIN 45500). Normal: 50Hz to 10kHz (DIN 45500). Wow and flutter: 0.28% RMS. Dimensions: main unit 19 × 59 × 41cms. Speakers: 43 × 25.5 × 18cms. Record player section: type: Garrard 6200CP. Speed: 33 $\frac{1}{3}$, 45, 78rpm. Cartridge: KS41C. Speaker system: SS-6220G. System: twin cone system (8 inch). Impedance: 8 ohms. Accessories (supplied): Hitachi stereo microphone. Hitachi C-60 cassette tape. FM ribbon aerial. No rec. retail price.

■ ITT CONSUMER PRODUCTS (UK) LTD

Maidstone Road, Footscray, Sidcup,
Kent DA14 5HT. Tel: 01-300 7733.

MC 5030/LS 16 ★

BSR 171 record deck with SC 12M cartridge. Amplifier output: 6.8W. THD: 10%. Tuner: FM stereo/L/M. Tape deck: W and F: 0.3%. Speakers 20cm × 12.5cm drive units. Speaker housing dimensions: 23 × 18.4 × 38cms. Main unit in black/teak 60 × 35 × 18cms. Illuminated tuning scale, auto CrO₂/Fe switching, auto-stop. No rec retail price.



ITT MC 5030



ITT MC 5035

MC 5035/LS16 ★

As above but with amplifier output of 8.5W and finish in black/silver/teak. Three-digit tape counter, cue/review facility on tape. No rec. retail price.

MC 5040/LS21 ★

BSR P171 record deck with SC12M cartridge. Amplifier output: 15W per channel. THD: 10%. Radio tuner: FM stereo/L/M. Tape deck — W and F: 0.3%. Speakers: 6 $\frac{1}{2}$ in. round dual cone drive units. Dimensions: 40.7 × 18.4 × 25cms. Main unit dimensions: 57.5 × 41 × 16.5cms. Finish in silver/grey/teak. Cassette storage, illuminated tuning scale, FM switchable AFC, six illuminated function indicators. No rec. retail price.

MC 5080

Record deck with BSR P163 and Shure M75/5 magnetic cartridge. Amplifier output: 15W. THD: 1%. 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 × 19.2cms. Manual/auto record level, twin VU meters, full auto stop, cassette storage. No rec. retail price.



ITT MC 5040



Lenco 3500

MC 5041/LS24

Record deck with BSR P182 and magnetic cartridge. Amplifier output: 15W. THD: 10%. Tuner: FM stereo/L/M. Tape deck: W and F: 0.3%. 6 1/2in. dual cone speaker drive units plus tweeter. Dimensions of speakers: 27.8 × 21.5 × 43cms. Main unit: 57.5 × 41 × 16.5cms. Finish in silver/teak. Electronic balance button, magnetic cartridge, "S" arm. Other features as per MC 5040. No rec. retail price.

■ Lenco

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

I.3500 ★

Lenco L84 record deck. Amplifier output: 2 × 12W into 4 ohms. FR: 25Hz-40kHz. THD: 2%. Radio tuner: FM/L/M. Tape cassette—W and F: ± 0.3%. Speakers in matching modern style. Price: £295.00 (plus VAT). Speakers £50 per pair extra.

I.4000

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: 6.60 × 3.40 × 1.68cms. Price: £395.00 (plus VAT). Speakers £90 per pair extra.

■ NATIONAL PANASONIC

National Panasonic UK, 308 Bath Road, Slough, Berks.
Tel: Slough 34522.

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



National Panasonic SG 3090

noise reduction system, two recording level controls, recording level meters, peak indicator, separate selection switches. Price: £19.95 (inc. VAT). Recommended National Panasonic speakers are SB 61 price £69.95 per pair (inc. VAT).

■ 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 × 35cms. No rec. retail price.

■ OMEX PRODUCTS LTD

Hereford House, Wandle Mills, Beddington, Croydon, Surrey CR0 4SB.
Tel: 01-686 9022.

MC006 ★

Record deck: BSR C123 R1 with speeds 33 1/3, 45, 78 rpm. SC 12M cartridge with ST16 stylus. Amplifier: output: 5W RMS per channel. FR: 100-10,000Hz. THD: 1% at 5W. S/N: 55dB. Radio tuner: band coverage: FM/L/M. Tape deck: W and F: 0.25% RMS. S/N: 38dB. FR: 100-10,000Hz (low noise tape). Speakers: HC:



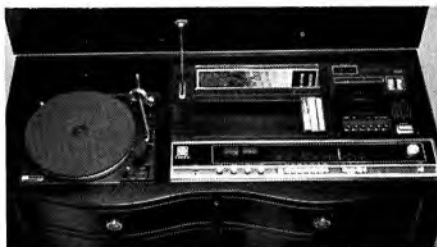
Omex MC 006



Omex Gallery XII



Omex MC 007



Omex Gallery XII top view

7W RMS. Imp: 8 ohms. Drive units: 8 × 5in. Dimensions: 23 × 15 × 36cm. Weight: 3kg. Teak finish. Main unit: dimensions: 60.7 × 20 × 38.7cm. Weight: 11kg. Teak finish. Features: auto record level, switchable AFC, cueing device. Price: on application.

MC007 ★

Record deck: BSR C123 R1. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. SC12M cartridge with ST16 stylus. Amplifier: output: 10W per channel. FR: 30-15,000Hz. THD: 1%. S/N: 55dB. Radio tuner: band coverage: FM/L/M. FR: 30-15,000Hz. THD: 1.25%. Tape deck: W and F: 0.25% RMS. S/N: 45dB. FR: 80-10,000Hz (low noise tape). Speakers: HC: 15W RMS. Imp: 8 ohms. Drive units: 6 $\frac{1}{2}$ in duo cone. Dimensions: 27 × 21 × 43cm. Weight: 5kg. Teak finish. Main unit: dimensions: 60.7 × 20 × 39.7cm. Weight: 12kg. Teak finish. Features: slider controls, CrO₂ switching. Auto record level. Mics provided. Cueing device on changer. Pause control and auto stop on cassette. Price: on application.

MC 020

Record deck: BSR P163. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: ±0.2%, typical 0.13%. ADC K8 car-

tridge with diamond stylus. Amplifier: output: 25W per channel. FR: 30-15,000Hz. THD: better than 1%. S/N: -60dB. Radio tuner: band coverage: FM/L/M. FR: 30-15000Hz. THD: 1.25%. Tape deck: Noise reduction system: DNL. W and F: 0.2% RMS. S/N: 45dB. FR: playback 63-10,000Hz (TEAC MTT-116L), rec/playback 80-10,000Hz (low noise). Speakers: HC: 30W. Imp: 8 ohms. Drive units: 8in woofer, 2 $\frac{1}{2}$ in tweeter. Dimensions: 27 × 21 × 43cm. Weight: 6kg. Teak finish. Dimensions: 60 × 40 × 17cm. Weight: 20kg. Teak finish. Features: Noise reduction system, pause, auto-stop, level meter, microphones supplied, tuning meter, radio, four speaker output (switched), belt drive, record deck, magnetic cartridge. Price: on application.

Gallery XII ★

Classic reproduction styling. BSR P163 record deck with K8 magnetic cartridge. Amplifier output: 2 × 25W. FR: 30Hz-15kHz. THD: 0.7%. Radio tuner: VHF/FM, L/M. Cassette tape recorder with 2 VU meters, 3 digit tape counter with reset button. Speakers: 8ins. round plus 2 $\frac{1}{2}$ in. tweeter with crossover network. No rec. retail price.

■ PHILIPS ELECTRICAL LTD

City House, 420-430 London Road,
Croydon CR9 3QR.
Tel: 01-689 2166.

The Telefunken Studio Center 5030. The performance of hi-fi. The convenience of a Music Centre.



The all-in-one principle has never been readily accepted by the true hi-fi enthusiast, who is convinced that genuine hi-fi equipment must come in lots of separate units, connected with plugs and cables.

However, not everyone wishes to devote space and time to a component system, and many have therefore been denied the pleasure and excitement of genuine hi-fi reproduction. Telefunken were aware of this problem. And being well-known for their professional equipment in the sound recording studios of the world, they used the knowledge gained from producing a range of quality component hi-fi equipment (the well-reviewed TRX 2000 and the recently-introduced TR1200 are typical examples) to develop the Studio Center 5030. This is a compact hi-fi system which offers true hi-fi standards of reproduction combined with the many advantages of the music centre concept.

The Studio Center 5030 has the added advantage of a plug-in modular system, derived from the development by Telefunken of the world's first 100% modularised CTV chassis.

Power Output

2 x 30 watts (continuous sine) into 4 Ohms. Distortion less than 0.5% at nominal output power. The frequency response is 20-20,000Hz \pm 1.5dB.

Sensor Touch Button Tuning

The Studio Center 5030 is a sensitive receiver. Up to seven FM stations may be pre-selected and recalled at the touch of a sensor button. The frequency of the pre-set station being received is shown on an LED frequency display meter.

Signal Strength Meter

An LED signal strength meter, which incorporates an 'exact tuning' beacon, simplifies the spot-on tuning necessary for distortion-free reception.

Turntable

The high-quality belt drive turntable is driven by a 16-pole synchronous motor. Wow and flutter is \pm 0.12% and rumble is \leq 60dB weighted. The cartridge fitted is the Shure M75MG.

Cassette Deck with Dolby

The cassette deck specification matches many of the most expensive separate decks and has a combination of features which make it easy to achieve high recording quality. The motor is electronic servo-controlled, making the speed independent of mains supply fluctuations.

Automatic switching for CrO₂ and high coercitivity ferric tapes and manual switching for FeCr tape. An LED tape motion indicator shows the tape speed and direction.

Wow and flutter is less than 0.14% (record and replay) and the signal-to-noise ratio is better than 64dB with Chrome tape and Dolby.

Loudspeakers

We would recommend the use of the Telefunken TL 510 or TL 710.

Free Brochure

The Studio Center 5030 has many other features which make it one of the most advanced pieces of equipment of its kind. To get all the facts in a free brochure, simply fill in the coupon and send it to the address below.

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Features a belt-driven 2-speed auto-return turntable equipped with a moving magnet cartridge fitted with a diamond stylus. The amplifier provides a powerful 15 Watts per channel. The cassette facilities are a delight . . . with integral autostop, piano key controls and Dolby noise reduction system. The radio has 4-channel (LW, MW, SW and FM) colour coded tuning with a special pull-out console that enables you to pre-select up to seven stations. Once tuned these stations are located automatically by sensitive touch control. A manual override sensor gives you standard tuning facilities without disturbing the pre-selected stations. Other features include positive, easy-action slider controls for volume, balance, treble and bass – left and right 'record' volume level indicators – 3 digit tape counter with reset – and sockets for headphones and stereo recording microphones.

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Sanyo Marubeni (UK) Limited,

8 Greycaine Road, Greycaine Estate, Watford WD24UQ. Telephone: Watford 46363.

AH 963 ★

Record deck: Philips GC027 with speeds 33½ and 45 rpm. Rumble: <-58dB. W and F: <0.2%. Philips GP215 ceramic cartridge. Amplifier: Output: 2 × 10W. FR: >20-20,000Hz. THD: <10%. S/N: -50dB. Radio tuner: band coverage: FM/L/M/S. THD: FM <1% at 75kHz deviation. Tape deck: noise reduction system: DNL. W and F: <±0.35%. S/N: >47dB for CrO₂ tape with DNL. Speakers: HC: 20W RMS. Impedance: 4 ohms. Drive unit: 7in dual core. Dimensions: 24.5 × 17.5 × 34.5cms. Black ash finish. Main unit: dimensions: 57.7 × 38.3 × 17.9cms. Black and silver finish. Features: tape pause control, hinged lid, headphone output. Price: on application.

RH 953

Record deck: Philips GC027 with speeds of 33½, 45 rpm. Rumble: <-58dB. W and F: <0.2%. Philips GP400 magnetic cartridge. Amplifier: output: 2 × 10W. FR: >20-15,000Hz. THD: <10%. S/N: -50dB. Radio tuner: band coverage: FM/L/M/S. THD: FM: <1% at 75kHz deviation. Tape deck: noise reduction system: DNL. W and F: <±0.35%. S/N: >48dB for CrO₂ tape with DNL. Speakers: HC: 20W RMS. Imp: 4 ohms. Crossover: 3,000Hz. Drive units: 8in + 1in dia. Dimensions: 24.4 × 17.6 × 34.5cm. Black ash finish. Main unit: dimensions: 57.6 × 37.7 × 18cm. Black and silver finish. Features: mic input and headphone output on front panel. Switchable contour. Automatic tape switching. Three digit tape counter, tape pause control, hinged lid. Price: on application.

■ PLUSTRONICS

Hempstalls Lane, Newcastle-under-Lyme, Staffs ST5 0SW.
Tel: Newcastle-under-Lyme 61531.

Plustron

Record deck: P 128R with speeds 33½, 45, 78 rpm. Cartridge: SC12M with ST17 stylus. Amplifier: output: 8W at 1kHz. Radio tuner:



Philips AH 963

band coverage: FM/L/M/S. Tape deck: W and F: less than 0.35%. S/N: 40dB overall. FR: standard 100-7,500Hz. Chrome: 10-15,000Hz. Speakers: Imp: 8 ohms. Dimensions: 25 × 14 × 40cm. Weight: 2.75kg. Teak finish. Price: 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: £377.78 (plus VAT).

■ SHARP ELECTRONICS (UK) LTD

107 Hulme Hall Lane, Manchester M10 8HL.

Tel: 061-205 7321.

SG 315/CP 315

Record deck with ceramic cartridge. Amplifier output: 15W into 4 ohms. FR: 30Hz-35kHz ± 3dB. THD: 5%. Tuner: FM/L/M/S. Tape deck — W and F: 0.35% DIN. Speaker dimensions: 265 × 17 × 43cms. Main unit dimensions: 74.5 × 34 × 19.1cms. Finish: walnut cabinet. Auto tape change. Price: £226.62 (plus VAT).

SG 220/CP220 ★

Record deck with ceramic cartridge. Amplifier output: 2 × 10W into 4 ohms. FR: 25Hz-40kHz ± 3dB. THD: 5%. Tuner: FM stereo/L/M. Tape deck — W and F: 0.16%. Speaker dimensions: 26.5 × 17.6 × 43cms. Main unit dimensions: 57.8 × 39.6 × 21.7cms. Auto programme search system. Front loading, flywheel tuning. Price: £223.96 (plus VAT).



Rotel RM 5010

★ Indicates entry is illustrated



Sharp SG 220E



Sharp SG 400/CP400

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 "B" noise reduction system. W and F: 0.2%. Speaker dimensions: 26 × 25.5 × 48cms. Main unit dimensions: 75.3 × 35.1 × 18cms. Five preset stations on FM. Price: £331.11 (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 ambiophonic box for simulated four-channel reproduction. FM stereo radio with four preset 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: Teak £238.17, walnut/lacquer £240.17, rosewood £242.18, all plus VAT.

1753 Music Centre

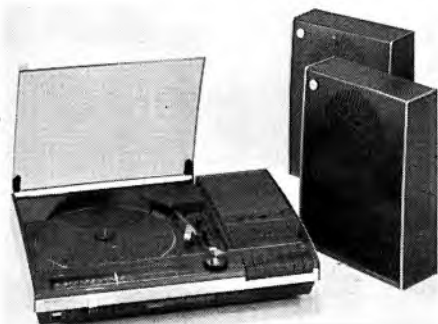
Output 34W RNS. Ready for connection to ambiophonic box for simulated four-channel reproduction. FM stereo radio with five preset programmes. Skantic record player with Pickering V15/AT-2 magnetic cartridge. Adjustable anti skating and stylus pressure devices. Stereo cassette recorder/player. DNL noise 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 control. Pair of speakers each 30W handling capacity and each with 20cm bass and 2.5cm dome tweeter. Acrylic dust cover. Price: Teak £307.02, walnut/lacquer £311.22, rosewood £317.66.

2065 Music Centre ★

Output: 40W RMS. Modular construction with built-in facility for simulated four channel



Skantic 1053



Skantic 2065



Skantic 3063



Tandberg TR 220GC

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.

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.

EX 1K

Sony belt drive record deck with VL 100G cartridge. Amplifier output: 6in. Radio tuner: VHF/L/M/S. Tape deck — W and F: less than 0.4%. Speakers: 16cm plus passive bass radiator. Dimensions: 29 × 14 × 39cms. Main unit 58 × 43 × 14cms. Black and silver. No rec. retail price.

EX 2K

Sony belt drive record deck with VL 100G cartridge. Amplifier output: 12W. Radio tuner: VHF/L/M/S. Tape deck — W and F: less than 0.4%. Speakers: 16cm bass, 5cm tweeter plus passive bass radiator. Dimensions: 30 × 14 × 40cms. Main unit 58 × 43 × 14cms. Black and silver finish. No rec. retail price.

■ STEREOSOUND

Stereosound Productions Ltd, 12-14 Wakefield Road, Brighouse, Yorks. Tel: Brighouse 714355.

1515 Music Centre

Comprises P182 single play turntable with V100 magnetic cartridge. AM/FM tuner, cassette recorder with CrO₂. Output: 15W. Speakers: 6in. woofers and 4in. tweeters. Rec. Price: £200.00 (plus VAT).

■ TANDBERG

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

TR 200 GC ★

Dual record player 1225 with stylus. Each speed can be adjusted by about 6%. Visual check by stroboscope. FM stereo tuner and stereo amplifier: Output: 20W. Cassette tape

★ Indicates entry is illustrated

recorder has manual level controls for recording, peak indicating level meters, high quality heads, auto end stop, and Dolby B noise reduction system. Recommended speakers: Tandberg TL 1520 or 2520, or Fasett. Dimensions of main unit: 56.7 × 18.6 × 33.9cms. Specifications as Tandberg TR220 receiver. Price: with speakers teak £384.00 (plus VAT), rosewood £392.00 (plus VAT).

■ TOSHIBA (UK) LTD

Toshiba House, Great South West Road, Feltham, Middlesex.

Tel: 01-751 1281.

SM 3500

Record deck: Toshiba with speeds of 33 $\frac{1}{3}$ and 45rpm. W and F: 0.12% WRMS. Magnetic C52M cartridge and N-14D diamond stylus. Amplifier: 12+12WRMS 1kHz, 8 ohms. THD: better than 1%. Radio tuner: band coverage: FM/L/M. Tape deck: Dolby noise reduction. W and F: 0.23 WRMS. S/N: 55dB. Main unit: Dimensions: 69 × 36 × 20cm. Features: full ASO mechanism, memory system, auto CrO₂ normal tape selector. Price 3500/A with SS 200 Speakers, £310.67 (plus VAT); 3500/B with SS 220 Speakers, £346.22 (plus VAT).

SM-2900

Record deck: Toshiba 33 $\frac{1}{3}$, 45 rpm. W and F: 0.12% WRMS. Ceramic C37C cartridge. Amplifier: 8+8W RMS at 1kHz. FR: 8-50,000Hz -6dB. THD: 1.5%. Radio tuner: band coverage: FM/L/M. FR: 50-15,000Hz. THD: stereo 0.85%. Tape deck: W and F: 0.23% WRMS. S/N 55dB. Speakers: two way. Imp: 8 ohms. Drive units: 16cm, 6cm. Dimensions: 21.5 × 16 × 38cm. Main unit: Dimensions: 69 × 38 × 17cm. Price: £204.00 (plus VAT).

SM3100 ★

Record deck: Toshiba with speeds 33 $\frac{1}{3}$ and 45 rpm. W and F: 0.1%. Magnetic C29M cartridge with N-14D diamond stylus. Amplifier: output: 12+12WRMS at 1kHz 8 ohms. FR: better than 1% rated. Radio tuner: band coverage: FM/L/M. FR: 50-15,000Hz. THD: stereo 0.85%. Tape deck: W and F: 0.23% WRMS. S/N: 55dB. Speakers: 12WRMS. Imp: 8 ohms. Drive units: 16cm and 5cm. Dimensions: 27.5 × 19 × 47cm. Main unit: dimensions: 69 × 38 × 17cm. Features: Dolby noise reduction with auto shut-off. MQS-autoplay, auto CrO₂ tape selector. Price: £284.44 (plus VAT).

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Toshiba SM-3100

SM-3000

Record deck: 33 $\frac{1}{3}$, 45rpm. Radio tuner: FM, L/M. Tape deck: 4-track 2 channel. W and F: 0.3%. S/N: more than 40dB. FR: 50-10,000Hz. Speakers: 2 x 16cm, 2 x 2.5cms. Dimensions: 62.9 x 39.6 x 17.8cm. Matching speakers. Price: on application.

SM 3150

Same as 3100 plus full cueing facility and Dolby. Price: £284.00 (plus VAT).

■ VAN DER MOLEN

Van Der Molen, 101 Hainault Road, Romford, Essex.
Tel: Romford 22018.

T 16SCW

BSR P182 record deck with ceramic cartridge. Amplifier output: 12.5W. FR: 20Hz-20kHz \pm 2dB. Tuner: VHF/L/M. Tape deck — W and F: better than 0.25%. Speakers 5ins. wide range. Dimensions: 25.4 x 18.41 x 40.64. Main unit dimensions: 82.58 x 18.41 x 39.37cms. All wood cabinet with latching cover. No rec. retail price.

T25 SCW

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 $\frac{1}{2}$ ins. bass, 2ins. tweeter. Dimensions: 25.4 x 19.05 x 40.64cms. Main unit dimensions: 82.55 x 18.41 x 39.37cms. All wood cabinet with latching cover. No rec. retail price.

Lambourne

Garrard 35SB 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 $\frac{1}{2}$ ins. bass, 2ins. tweeter. Dimensions: 28 x 20.32 x 52.70cms. Main unit: 97.8 x 67.3 x 41.9cms. Burr walnut inlaid, period styling. Price: £458.66 (plus VAT).

Having

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 $\frac{1}{2}$ ins. bass, 2ins. tweeter. Dimensions: 28 x 20.3 x 52.7cms. Main unit: 78.7 x 73.7 x 43.2cms. Burr walnut inlaid, period style. Storage for 150 LP's. Price: £495.11 (plus 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 $\frac{1}{2}$ ins. bass, 2ins. tweeter. Dimensions: 28 x 20.3 x 52.7cms. Main unit dimensions: 68.6 x 43.2 x 88.9cms. Walnut period style. Storage for 80 LP's. Price: £495.11 (plus VAT).

■ WALTHAM

Telerenters Electronics (UK) Ltd.
155-159 Queens Road, Watford,
Herts WD1 2QH.
Tel: Watford 24543.

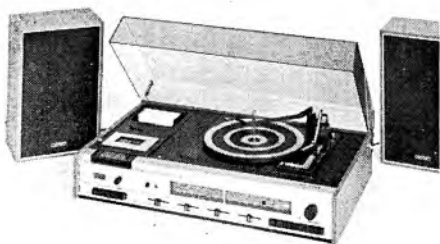
STM30 ★

Record deck: turntable: BSR autochange C123R. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. W and F: *



Van Der Molen Aveley

★ Indicates entry is illustrated



Waltham STM 30



Waltham STM 45

0.2% WRMS. Cartridge: SC 7 M2. Stylus: sapphire ST16. Amplifier: output: 8WRMS. FR: 20Hz-20kHz. Radio tuner. Band coverage: MW 535-1620kHz, FM 88-108MHz, SW 5.8-16.3MHz, LW 148-255kHz. Switchable AFC. Tuning level meter. Cassette deck: W and F: 0.2% WRMS. Crosstalk: 32dB. FR: 100Hz-15kHz. Single VU meter. Auto level record speech/music. Manual record level. Auto switching. Speakers: HC: 10W. Imp: 8 ohms. 6 1/2in dual cone drive unit. Dimensions (each speaker): 15 × 23 × 35.5cm. Weight: 2.9kg. Finish: simulated teak/walnut. Main unit: dimensions: 40 × 65 × 20cm. Weight: 13.6kg. Finish: simulated teak/walnut. Price: £157.99 (plus VAT).

STM 45 ★

Same as STM 30 but with black front. Price: £157.99 (plus VAT).

STM 35 ★

BSR C123 record deck with SC11M cartridge. Amplifier output: 5W per channel. Tuner: FM

stereo/L/M/S. Speakers: 23 × 35.5 × 15cms. Main unit dimensions: 20 × 40 × 65cms. Price: £138.16 (plus VAT).

■ WYE ELECTRONICS LTD

27 Station Road, Brimington, Chesterfield, Derbyshire. Tel: 0246 70297.

808

BSR 129 R2 record deck. Amplifier output: 6W. FR: 60Hz-20kHz ± 3dB. THD: 10%. Tuner: VHF/L/M. Tape deck — W and F: 0.15%. Speakers: 8 × 5ins. Dimensions: 20.6 × 15 × 35cms. Main unit dimensions: 61 × 46 × 18cms. Teak finish. Auto stop, pause, ALC. No rec. retail price.

902

BSR 123 R2 record deck. Amplifier output: 10W. FR: 60Hz-20kHz ± 3dB. THD: 10%. Tuner: VHF/L/M. Tape deck with noise reduction. W and F: 0.15%. Speakers: 8 × 5ins. Dimensions: 20.6 × 15 × 35cms. Main unit dimensions: 61 × 46 × 18cms. Teak finish. CrO₂. Auto stop, pause, separate level controls and VU meters. No rec. retail price.



Waltham STM 35



York 5000



York 3500

■ 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 2×7 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.

DN 3500M ★

An inexpensive but complete home entertainment. The BSR autochanger and high quality cassette deck combines with the 2 waveband FM/AM stereo decoder radio to give a good all round performance. The unit is supplied complete with loudspeakers and all over dust cover. The 7 watts per channel output power gives a really good sound.

DN 5600

LW-MW-VHF stereo decoder radio fitted with BSR autochanger and sensitive cassette record/playback deck. Output is 2×7 watts and the unit 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.

DN 3600

A complete but inexpensive home entertainment. The BSR autochanger and high quality cassette deck combined with the 3 wavebands LW-MW-VHF stereo decoder radio to give good all round performance. The unit is supplied complete with loudspeakers and all over dust cover. The unit has 7 watts per channel output power.

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I enclose Cheque/P.O. value £ _____ (please do not send postage stamps)

NAME _____

ADDRESS _____
(BLOCK CAPITALS PLEASE)

POSTCODE _____
Prices only applicable to the UK

Pickup Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ADASTRA

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

Discoduster

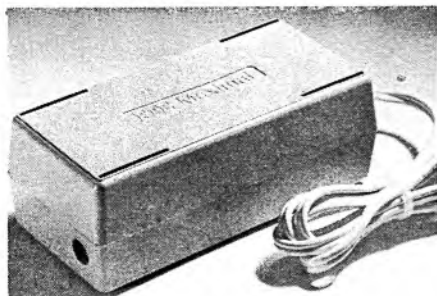
A comprehensive record cleaning kit with balanced aluminium arm, impregnated cylinder and superfine groove brush. The weighted base can be permanently fixed or used free standing, and the two pivots with choice of arm location enable the Discoduster to be used with a wide variety of automatic, or transcription type decks. Supplied with two replacement treated cylinders, and fluff removing brush. Price: £2.30 (plus VAT).

Audio Leads

Over 40 different audio leads are now available in the Adastra hanging pack covering practically all audio applications.

A.112/E.1310

Stereo, solid state, 4 low-noise silicon transistors pre-amplifier with built-in RIAA equalisation, gain of 34dB and FR of 30-20,000kHz. Input load 50K, output from 50K-500K. Amplifies signals from 3mV to 38mV. Internal



Audio Packs 441 Mains Unit

9V operation. Channel separation over 50dB. Twin phono input and output sockets. On/off switch. Silver and black metal case. Price: £7.90 (plus VAT).

A.114/E.1306

Completely cabineted mains operated stereo pre-amplifier suitable for low output magnetic cartridges, tape head, etc. On/off switch. Tape/phono input selection, pilot lamp. Input impedance: up to 70K, cross-talk: -40dB, noise ratio -45dB. Input: 60mV max. Output: 2V. Price: £10.10 (plus VAT).

■ AUDIO PACKS

Tape Recorder Spares Ltd,
206-210 Ilderton Road, London SE 15 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 showrooms and for comparative tests. Prices on request.

Bulk Spares Service ★

75 matching presentation packs containing 100 pieces — DIN, Jack, power, aerial plug and sockets.

★ Indicates entry is illustrated

■ AUDIO TECHNICA

Shriro (UK) Ltd, Shriro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652222/7.

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.

AT 6010 Record Cleaning Kit

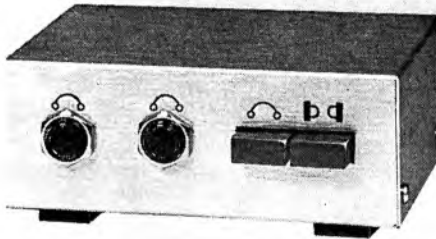
Special cleaning solution AT 6008, included in kit, is effective in loosening coagulated dirt in the groove. Price: on application.

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 ★

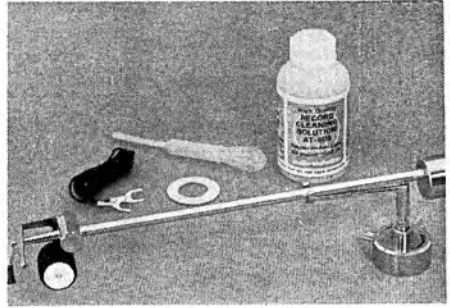
For 1005 arm. Weight: 8gm. Price: on application.



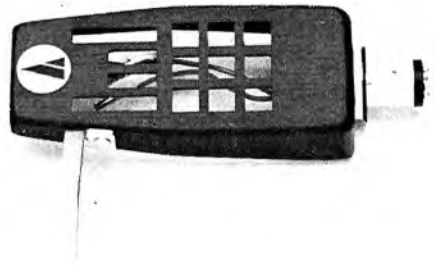
Audio Pack 790



Audio Packs Bulk Spares Service



Audio Technica AT 6002



Audio Technica ATS

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 L2

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.

■ **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: £2.12 (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: £1.06 (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: £1.27 (inc. VAT).

Model 43 Record care kit

Contains Groov-Kleen in chrome finish, record dust off, spirit level, stylus and turntable cleaner. Price: £2.98 (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 1/4 to 5gm and calibrated to be accurate to within 1/4gm. Simple to use and supplied with full instructions. In presentation case. Price: £1.58 (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: 3 1/2in long, 1in wide. Velvet cleaning pad with foam backing. Is applied to record on turntable while rotating to remove dust and dirt. Price: 28p (inc. VAT).

Model 2000 Groov-Kleen ★

Cleans records while you play them. Improves reproduction and reduces record and stylus wear. Fitted with adjustable counterweight and arm rest. Finished in chrome. Spare replacement roller and tracking brush provided. For low level turntables (model 2000/L). Price: £2.94 (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. 30p (inc. VAT).

Ref: 69 Anti-Static Liquid

Non-flammable, non-toxic, ideal for cleaning tape heads, record styli, glass, plastic and colour TV screens. 26p (inc. VAT).



Audio Technica AT 6005

Bib®

Over 80 items for Hi-Fi, Record and Tape Care



▲ Model 2000



▲ Model 42



▲ Model 45

Model 45 AUTO-CHANGER GROOV-KLEEN

Finished in chrome - fits most units with flat top cartridge housings. Adaptor available for Zero 100. Velvet and stylus cleaning brush included. Pat. App. No. 1361732 Reg. Des. No. 958457

£1.06



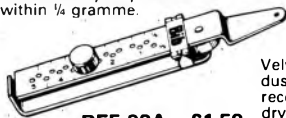
RECORD DUST-OFF - WITH COVER

Velvet pad gently collects and removes dust from delicate grooves. Reduces record and stylus wear. Can be used dry or moist.

REF 71 78p

STYLUS BALANCE

Precision built Calibrated. Measures stylus pressure within 1/4 gramme.



REF 32A £1.58

Record Care

GROOV-KLEEN automatic record cleaners

ALL GROOV-KLEENS remove and collect dust whilst records are played. Improve reproduction and reduce record and stylus wear. Quick and simple to fit.

Model 2000 This has it all - efficiency, styling and chrome finish. Complete with stylus brush, plus spare velvet roller, self-adhesive base pad and tracking brush. Des. Reg. App. No. 967842 **£2.94**

Model 42 Finished in chrome, bright anodised aluminium and shiny black. **£2.12**

STYLUS AND TURNTABLE CLEANING KIT

Contains stylus cleaning brush absorbent cleaning cloth, bottle of approved, non-flammable, anti-static cleaner and stylus inspection mirror, in PVC wallet.

REF 70

81p



Cassette Care

CASSETTE FAST TAPE WINDER

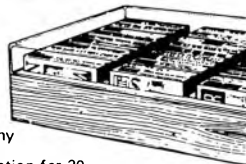
Very simple and easy to use. The BIB cassette fast winder enables you to wind tape in one cassette whilst you are listening to another cassette. If you have a battery recorder, always use the Fast Winder to save the high battery consumption when fast winding. It winds a C.90 cassette in 60 seconds - faster than most recorders *Patent Pending*.



REF 78 £1.19

CASSETTE CABINET

This elegant unit with hinged acrylic tinted cover complements any equipment. Provides individual accommodation for 30 cassettes. Attractive teak-finish base fitted with protective feet. Dimensions 15" long by 10" wide by 4" high, approx.



REF 86 £7.13

CASSETTE HEAD CLEANER

For all cassette machines. Removes oxide and dirt from heads. Packed in plastic "library" case



REF 31 70p

Other lines include:

	Ref.	Price
Cassette Tape Editing & Joining Kit	24	£2.38
Hi-Fi Stereo Test Cassette	53	£2.85
Tape Care		
Tape Head Cleaning Kit	J	90p

■ Please write for fully illustrated catalogue showing our comprehensive range of Hi-Fi Accessories.

■ All prices shown are recommended retail, inc. VAT.

Bib Hi-Fi Accessories Limited

P.O. Box 78, Hemel Hempstead, Herts. HP2 4RH. Telephone: 61291.

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. 71p (inc. VAT).

Ref: 76 Stylus Cleaner.

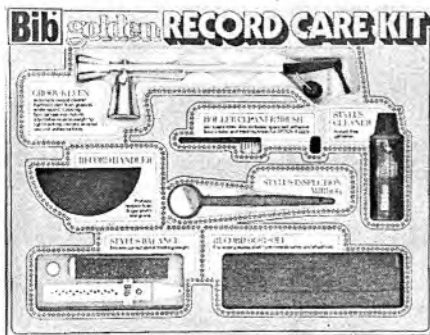
A special purpose stylus cleaning brush and bottle of stylus liquid cleaner, packed in a dust-free container. Essential for maintaining stylus free from dust and dirt. 39p (inc. VAT).

Ref: 79 'Golden' Record Care Kit ★

This attractive kit comprises: Model 2000 Groov-Kleen, stylus cleaner in dust-free container, record handler, stylus inspection mirror, stylus balance, record dust-off, complete with full instructions. £6.26 (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: £2.98 (inc. VAT).



Bib Golden Record Care Kit Ref 79

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: £2.48 (inc. VAT).

Ref: 94 Static Tester ★

A simple but effective way of testing static charge on records or similar plastic surfaces. Price: 99p (including VAT).

Ref: 106 Anti-Static Record Care Kit ★

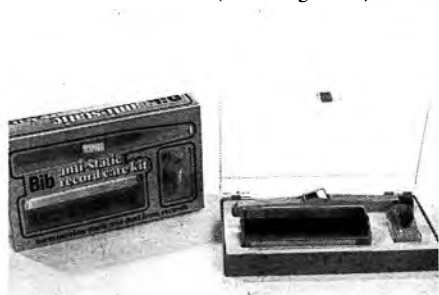
The complete kit for overcoming the problem of static on records. Contains the Bib Groov-Stat, static tester and record dust-off, neatly housed in a hinged plastic box. Price: £7.78 (including VAT).

Ref: 95 The Bib Book of Hi-Fi

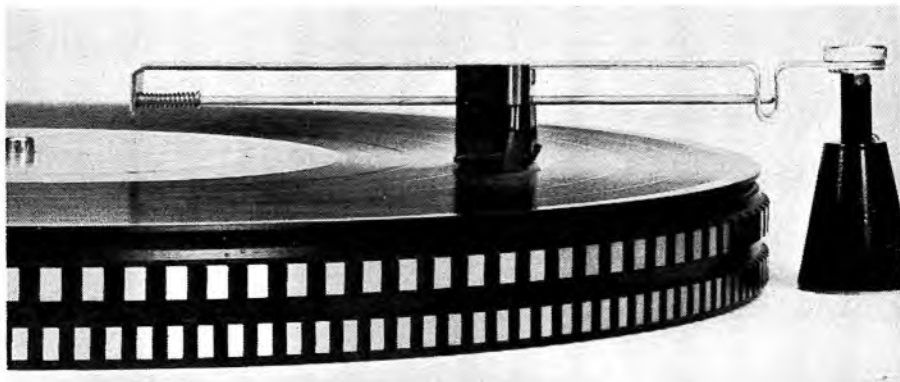
A hard-back book containing 123 pages and over 50 illustrations on a wide range of Hi-Fi topics. Price: £1.98 (VAT exempt).

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: £3.97 (including VAT).



Bib 106 Anti-Static Record Care Kit



Bib 101 Parallel Tracking Groov-Kleen

★ Indicates entry is illustrated



Bib 103 Stylus Cleaner



Bib Music Centre Care Kit



Bib 102 Stat-Kleen Anti-Static turntable mat

Ref: 102 Stat-Kleen Anti-Static Turntable Mat ★

A most effective way of removing static-charge from records immediately the record starts to play. The mat can be suited to fit all turntables and is placed over, or replaces, the existing mat. Price: £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: £4.82 (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: £1.20 (plus VAT).

■ COLTON

Musonic Ltd, 34-38 Verulam Road,
St. Albans, Herts AL3 4DF.
Tel: St. Albans 50611

Electroduster ★

A pad of soft but firm fibres traverses the record, lifting dust and dirt out of the groove. It is then deposited on to a separate felt pad. Air-borne dust settling on a record while it is playing is instantly picked up. No rec. retail price.

Variscale ★

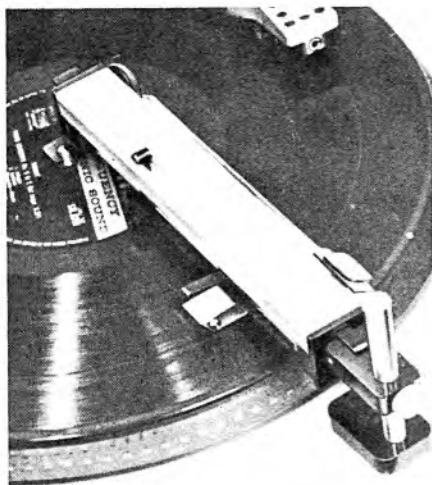
A precision engineered stylus balance for determining stylus pressure from 1/2 to 5 gm (adequate to cover all modern lightweight pick-ups). Finished in silver on black base. No rec. retail price.

Magnalift (MC102)

An automatic centre lift off for pick-up arms, and designed to meet the need on professional turntables where no provision is made for the arm to leave the record when the stylus reaches the run-out groove. When the pick-up has completed the playing cycle the Magnalift will lift the pick-up arm clear of the record thereby obviating stylus wear. No rec. retail price.

Varilift (MC104)

A precision instrument designed to meet the needs of those requiring a 'hydraulic' pick-up control. It employs a silicon damped piston for slow descent. Finished in black and chrome. No rec. retail price.



Colton Electro-duster



Connoisseur Stylus Balance

Antistatimat (MC106)

This all-rubber 12in turntable mat is so made that when a record is brought into contact with the mat, it drains off the static charge from the record, thereby freeing the reproduction from static induced noises, without the aid of fluid or cloths. No rec. retail price.

Precision Turntable Level (MC107)

A circular spirit bubble level accurately made and mounted in plastic with a transparent plastic dome. Accurate levelling ensures correct tracking and minimises stylus and record wear and assists stereo balance. Can be stuck or screwed to any turntable or autochange unit. No rec. retail price.

Times Fifty (MC108)

A pocket microscope of ×50 magnification and specifically designed for stylus inspection and as such, has a special slotted hood to accommodate stylus assemblies. Provides an amateur enthusiast with a visual check on the condition of his stylus. No rec. retail price.

Gripex (MC109)

An anti-slip dressing for drive-belts and idler wheels, it is a spirit suspended solution supplied in 1 fl oz bottles with a special applicator brush. When applied thinly to drive surfaces of belts or friction wheels it will dry off in 15-20 minutes leaving a powerful anti-slip surface. Gripex is ideal for turntables, tape recorders or even car fan belts. No rec. retail price.

■ CONNOISSEUR

A.R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 2142.

Connoisseur Stylus Balance ★

Precision stylus balance with sliding weight adjustment. Scale calibrated 0-6gm. Simple operation giving accurate stylus pressure settings. Price: £1.43 (including VAT).

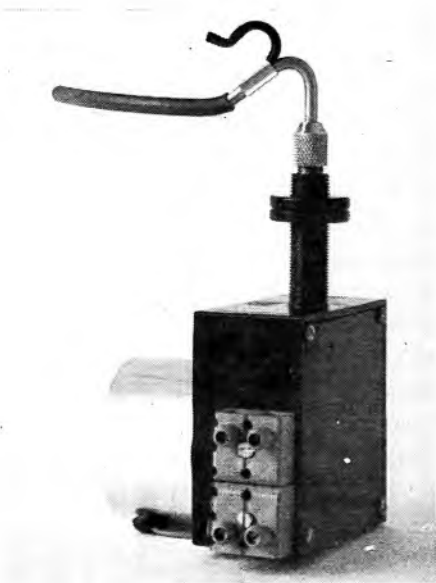
★ Indicates entry is illustrated

■ DECCA

Decca Special Products, Ingate Place,
Queenstown Road, London SW8 3NT.
Tel: 01-622 6677.

Magnetic bias compensator

Neat, simple, unobtrusive device using magnetism precisely to neutralise the 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).



Deccalift

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).

Deccalift ★

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).

London cartridge adaptors

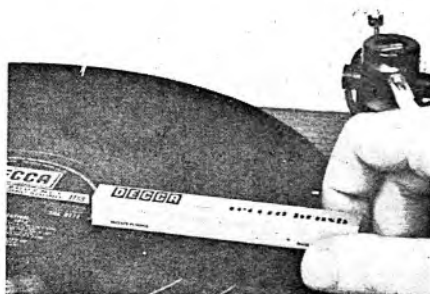
Type A. Simple slide-on adaptor for use with *ffss* arms (Mk I, Mk I Super and Professional) to accommodate the London cartridge. Automatically adjusts playing weight. Price: £1.50 (plus VAT). Type B. Simple slide-on adaptor for use with International arm to accommodate the London cartridge. Collar arrangement 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).



Decca Record Brush



Decca Record Cleaner



Disc-A-Vac

■ **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 all dust through rear vent. As record revolves velvet pads clean the grooves and carbon fibre bristles 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: £6.45 (plus VAT).



Eagle PRE 402

■ **EMI-MAT**

EMI Records Ltd, Hayes, Middlesex.

Emi-mat

A new approach to record protection containing an active carbon core which neutralises the static charge which clings to records, so preventing crackle. Records remain virtually static-free and the mat keeps the stylus free from dust, prolonging its playing life. Price: £2.99 (inc. VAT).

■ **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 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.

★ Indicates entry is illustrated

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.

■ GROOVAC

R.I. Audio, Kernick Road, Penryn, Cornwall TR10 9DQ.
Tel: Penryn 72753.

Antistatic Vacuum Record Cleaner ★

Consists of a precision lightweight arm and a suction unit acoustically isolated in a special enclosure, fitted with mains switch and indicator. 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. Counterbalanced 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: £6.20 (plus VAT).

■ 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: £1.30 (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).



Anti-Static Groovac III

Lencofix

Plattensicherung
Appareil pour immobiliser les Disques
Rekordhalter - holder



Supporto regg. copertina
Sustentador porta-cubierta para discos
holder voor plaatbeelden
Disvinntigghilare



Lencofix

■ LINN PRODUCTS LTD

235 Drakemire Drive, Castlemilk,
Glasgow G45 9SZ.
Tel: 041-634 3860.

Clean-ol

A natural fibre (Angora goat hair) disc cleaning device, used dry without antistatic fluids or water. Does not generate static and removes smallest particles from the bottom of the groove. Price: £2.50 (plus VAT).

■ METROCARE

Metrosound Audio Products Ltd,
Audio Works, Cartersfield Road,
Waltham Abbey, Essex EN9 1JF.
Tel: Lea Valley 712712.

M.3 Record Care Kit No. 1

Comprising bottle of Metro-Spray spirit-based anti-static record cleaning fluid; special texture sponge applicator with moulded handle; and soft stylus cleaning brush. Price: 70p (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: £1.30 (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: 60p (plus VAT).

M26 Ioniser

High-fidelity record cleaner. Permanently anti-static humid soft velvet enclosed in plastic moulding. Price: 72p (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: £2.60 (plus VAT).

M52 Metrocare Hi-Fi Kit No. 2

Moulded record cleaner with plush velvet foam backed pad held in protective tray. Bottle of record/stylus cleaning fluid and stylus cleaning brush. Price: £1.00 (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: £1.60 (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: £4.10 (plus VAT).

M55 Autchange 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: £1.70 (plus VAT).

M64 Phonn Cartridge Kit ★

Comprising microscope, screwdriver, tweezers, stylus cleaning fluid and brush. An essential for the safe installation and maintenance of pickup cartridges. Price: £2.50 (plus VAT).

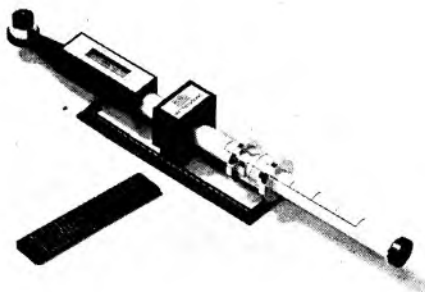
M66 Stylus Balance ★

A professional stylus balance calibrated to within ½ngm with scale divisions at ½ngm between 0 and 3gm. Ensures accurate tracking weight of pickup in tone arm. Price: £2.80 (plus VAT).



Metrosound M64

★ Indicates entry is illustrated



Stylus Balance

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: £3.10 (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).

M 85 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).

M 90 Lin-Track

Linear tracking cleaning arm with tracking force of 0.5gm fully adjustable to fit most turntables. Price: £2.76 (plus VAT).

■ MUSONIC LTD

34-38 Verulam Road, St. Albans, Herts. AL3 4DF.

Tel: St. Albans 50611.

DiscRack (MR1) (MR2) (MR3) (MR4)

A range of high quality record racks constructed of heavy gauge steel, welded at all joints. Fitted with plastic feet, available in two sizes, with or without handles, to hold 50 12" records or 36 7" records. Six colours, blue, black, red, grey, gilt or copper. No rec. retail price.

Kleen Sweep (MR23)

Record and Stylus cleaner. Can be used wet or dry.

DisCase (MR5) (MR6) (MR7)

A sturdy, elegant case in wood and plastic. Three sizes (MR5) which holds up to 60 7" records, the (MR6) which holds up to 30 12" records, and the (MR7) which holds up to 60 12" records. There is a choice of 10 colours. No 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.

Discentres (MR10)

These are record centre adaptors moulded in black high impact polystyrene, designed to convert 7in 45 rpm records from large to standard spindle size. They are easy to fit by simply springing into position, and are almost unbreakable. Available in packs of 10. No rec. retail price.

DiscSleeves 12in (MR12)

Discsleeves are made from 200 gauge polythene, specifically to protect stereophonic or monophonic microgroove records from dust and damp. The round cut base ensures that the disc fits snugly and safely for maximum protection. For sale in packs of 12. No rec. retail price.

DisCovers (MR13)

Discovers are made from 200 gauge polythene to protect colourful and elaborate LP record sleeves against scratching and rubbing. Available in packets of 12 or in bulk for the record retailer. 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. Prices: MR16, 26p (plus VAT); MR17, 20p (plus VAT).

Steel Needles (MR18)

Steel needles in packs of 20. Price: 33p (plus VAT).

Stroboscope (MR19)

Enables you to check accuracy turntable speed. Price: 12p (plus VAT).

Styli

Large range manufactured at Musonic factory. Details on request. Many products above supplied in bulk for dealers.

■ **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 and remote control stations.

Dusta-Disc

Counterbalanced arm to mount alongside turntable for cleaning records while playing. Comprises base with height adjustment, arm with counterbalance weight, super-fine brush for cleaning grooves, plus a soft fabric roller for applying anti-static fluid.

See Speaker Accessories Section for details of other QAS equipment.

Record Care ★

Anti-static record cleaning pads, anti-static cleaning clothes (2 per pack), anti-static fluid 30cc bottle.



QAS Record Care

■ **ROSS ELECTRONICS**

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

Connecting Leads

Purpose made connecting leads with a variety of end fittings that permit instant connection or extension between pickup sources and amplifiers with dissimilar input/output connectors. Display packed with header card.

Shielded Adaptors

One-piece, male/female interconnectors to provide direct connection between a wide variety of dissimilar plugs and sockets.

RE-612

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.

★ Indicates entry is illustrated

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).

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 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.

■ 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: £3.90 (plus VAT).

M64-2E

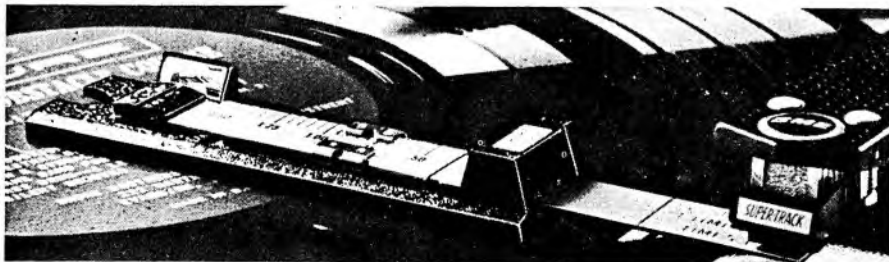
Preamplifier for use with magnetic pickup head and amplifier not having sensitive enough input. Full specification and price in Amplifier Section.

■ SONY (U.K.) LTD

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

Head Shells

SH 135 for PS1350, PS2350, PS1700, PS3300, PS4300. SH 160 for PS4750, PS6750, PS4300, PS8750. Carbon-clad headshell. SH 150 for PS4750, PS6750, HMK70, HMP70. No retail price.



Shure SFG2 Stylus Force Gauge



Zeepa Static Eliminator

■ CECIL E. WATTS LTD

Darby House, Sunbury-on-Thames,
Tel: Sunbury-on-Thames 83252.

Watts Dust Bug

Claimed to be the most efficient method of removing static and dust from records as they are played. Instantly fitted, suitable for all types of records. Record quality is improved, surface noise and wear reduced. Price: £1.41 (including VAT).

Watts Disc Preener

For record maintenance where anti-static agents are not desirable (where stylus force is less than 2gm). Price: 85p (including VAT).

Watts Manual Parastat with Humid Mop

Manual model Parastat record cleaning machine. For cleaning and applying anti-static agents to LP records. Complete with humid mop for cleaning bristles and velvet pads. Price: £4.81 (including VAT).

Watts Manual Parastat

Available separately (without Humid Mop). Price: £4.29 (including VAT).

Watts Humid Mop

Available separately. Price: 52p (including VAT).

Hi-Fi Parastat Model Mk 4

Gramophone record maintenance and stylus cleaning kit. Designed for use on records in new condition which are played with pickups requiring very low tracking pressures. Price: £3.64 (including VAT).

Watts Stylus Cleaner

As included with Hi-Fi Parastat kit. Price: 33p (including VAT).

Watts Spares and Replacements

Dust bug nylon bristle and plush pad. Price: 16p (including VAT).

New Formula Dispenser. Price: (1/2oz) 20 1/2p (including VAT); (1oz) 33p (including VAT).

Preener Wicks. Price: (packet of four) 14p (including VAT).

Manual Parastat Brush. Price: £1.41 (including VAT).

Parastat Nylon Velvet Pad Covers. Price: 27p (including VAT) a pair.

Parastat White PVC Sponge. Price: 7p (including VAT).

Humid Mop (sponge and four wicks). Price: 21p (including VAT).

STYLUS SERVICE?

We make a point of it!

- our own range of 800 types
- sapphires – diamonds – double diamonds
- also many manufacturers' originals
- and all at competitive prices

STRICTLY TRADE ONLY
AGENTS THROUGHOUT THE COUNTRY
There's no service like SWA Service!



E. and W. MAGEE LTD.
SPRING GARDENS,
BIGBURY,
KINGSBRIDGE,
DEVON TQ7 4AP
BIGBURY-ON-SEA 323
STD CODE: 054 881 323

SWA means Styli With Assurance

★ Indicates entry is illustrated

Hi-Fi Parastat Distilled Water Dispenser.
Price: 27p (including VAT).

Hi-Fi Parastat pad cover and ribbons. Price:
14p (including VAT).

■ WILSON STEREO LIBRARY LTD

104-106 Norwood High Street,
London, SE27.
Tel: 01-670 6394.

W.S.L. Blank Disc

Highly polished blank vinyl disc for adjusting side thrust and alignment. Indicates the amount of side thrust to be corrected. Mirror-like surface reflects underside of cartridge and stylus and assists in accurate alignment. Supplied with instructions for correcting side thrust. Price: £1.50, postage and packing included.

■ ZEEPA

Zeepa Instruments Ltd, 15 Richmond Grove,
Surbiton, Surrey.
Tel: 01-399 0966.

Static Eliminator ★

For neutralising static charges on records.
Price: £6.95 (plus VAT).

Dust Lifter ★

Using carbon fibre conductive bristles for cleaning records and neutralising static. Price: £1.48 (plus VAT).

Tone-Arm Record Cleaner

For cleaning dust off records while on turntable using carbon fibre conductive brush earthed to the record deck. Price: £2.73 (plus VAT).

■ ZEROSTAT

Zerostat Instruments Ltd,
Edison Road Industrial Estate,
St. Ives, Huntingdon, Cambs.
Tel: St Ives 62225.

Anti-Static Pistol

Where static is a problem, the use of the Zerostat pistol in conjunction with existing record care products assists the cleaning process and eliminates the subsequent attraction of airborne dust particles, reducing background noise and disc wear. The pistol which is hand-operated uses a high energy piezo-electric element to produce a high corona discharge at the barrel of the device. The ions produced are attracted to oppositely-charged surfaces until the surface charge is neutralised. The pistol produces positive ions on squeezing the trigger, negative ions on release. Price: £6.99 (including VAT).



Zeepa Dust Lifter

THE AWARD WINNER

The Sixth Japan Stereo Components Grand Prix Committee has presented a citation to Zerostat Instruments Ltd manufacturers of the Zerostat Anti-Static Pistol.

This award recognises Zerostat's unique contribution to the alleviation of the problems caused by static charge on gramophone records.

Zerostat

This product of your company has been chosen as one of the top products in the Foreign Products Division by the Selection Committee of the Sixth Japan Stereo Components Grand Prix.

We congratulate you for a high honour, and hope you will continue to make contributions towards the development of the audio world.

*Isamu Asano, Chairman
Japan Stereo Components Grand Prix Selection
Committee*

*Eikichi Ishihara, Representative Director
Radio Technique Ltd.
January 1977*

The Zerostat pistol is available from Hi-Fi and record shops and large stores price £6.99 inc. VAT.

Department, J
Zerostat Instruments Limited,
Edison Road, Industrial Estate,
St. Ives, Huntingdon, Cambs PE17 4LF
Telephone St. Ives (0480) 62225

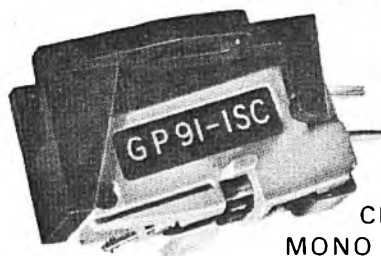
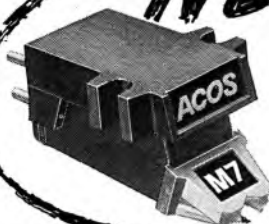
ZEROSTAT



NEW!

M7 MAGNETIC CARTRIDGE

The M7 is a general purpose, stereo, moving magnet, high quality, magnetic cartridge, UK manufactured and designed for use with most types of record players. The cartridge is designed as a low mass device when compared with equivalent units readily available. It has stylus assembly which is easy to replace and allows accurate and easy cueing.

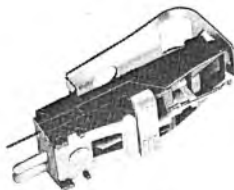


CRYSTAL
MONO AND STEREO
CARTRIDGES



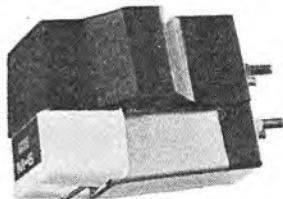
STEREO CERAMIC
CARTRIDGES

M6 MAGNETIC
CARTRIDGES



REPLACEMENT STYLI

Acos replacement styli are available for most cartridges. A comprehensive stylus booklet listing the stylus types and the cartridges for which they are suited is available on request.



ACOS FOR SOUND ENJOYMENT

Cosmocord Limited, ACOS Works, Eleanor Cross Road, Waltham Cross, Hertfordshire, England, EN8 7NX.

Telephone Lea Valley 716666

Pickup, Cartridges and Arms

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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. Stylus 0.6/0.8 thou diamond or sapphire, 2.5 thou sapphire. Pw: 4-8gm. Tip mass: 2.5mg dynamic. Compliance: vertical 2.2×10^{-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 thous. 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, vertical 5×10^{-6} cm&dyne. FR: 70Hz-12kHz

± 5 dB. 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

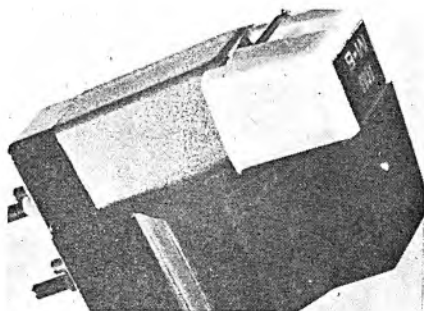
Stereo magnetic cartridge. Sensitivity: 1.25mV at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR: 10Hz-25kHz. Stylus: 0.25 \times 0.8 thou. Pw: 1¼-2gm. Price: (diamond) £17.01 (plus VAT).



Acos GP91-1



Acos GP93-1



Acos M6

★ Indicates entry is illustrated

M6EX

Stereo magnetic cartridge. Sensitivity: 0.8mV at 1cm/sec. Rec load: 47K. Separation: >18dB at 1kHz. FR:10Hz-30kHz. Stylus: 0.25 × 0.8 thou. Pw: 1-2gm. Price: (diamond) £21.74 (plus VAT).

GP 91-3 SC

Mono/stereo compatible cartridge with turn-over dual stylus. Playing weight: 5-10gms. Tip mass: 3.5mg sapphire, 3.8mg diamond. Compliance: 2 × 10⁻⁶cm/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: 1.5-2.5gms. 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 N22, 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 pick-up 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 × 10⁻⁶cm/dyne. Frequency: 30-15,000Hz. Stylus pressure: 5-8gm. Size: 19 × 20 × 46mm. Weight: 9 gm. Price: £1.15 (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 × 10⁻⁶cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4gm. Size (less shield): 18 × 21 × 32mm. Weight: 4.6gm. Price: £1.20 (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 × 10⁻⁶cm/dyne. FR: 30-15,000Hz. Stylus pressure: 4-6gm. Size: 18 × 20 × 51mm. Weight: 10gm. Price: £1.40 (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 × 10⁻⁶cm/dyne. FR: 20-15,000Hz. Stylus pressure: 4-6gm. Size (less shield): 18 × 22 × 32mm. Weight: 3.0gm. Price: £1.90 (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.

D16

Pickup cartridge with diamond stylus. Playing weight: 1-3gm. Compliance: 10 × 10⁻⁶cm/dyne @ 100Hz. FR: 20Hz-25kHz. Output: 4mV. Recommended load: 30-100K ohms. Low cost diamond tipped, moving magnet, easy slideout replacement for stylus. Price: £5.40 (plus VAT).

■ **ADC**

BSR Ltd, Monarch Works, Cradley Heath, Warley, Worcs. B64 5QH. Tel: Cradley Heath 69272.

Magnetic Pickup Carts.

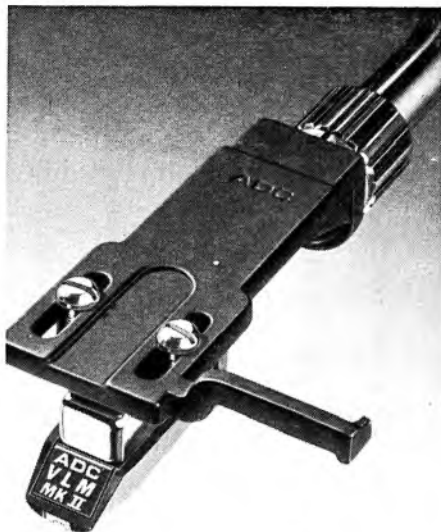
Super XLM MkII. Output at 5.5cms/sec 3.3mV. Tracking force: ¾ to 1½gm. Response: 15Hz to 50Hz + 2dB - 5dB. Separation: 28dB. Stylus tip: nude shibata style .0002" × .002" radii. Price £48.62 (plus VAT).

XLM Mk II

Output at 5.5cms/sec 4.9mV. Tracking force: ¾ to 1½gms. Response: 15Hz to 20kHz ± 1.5dB. Separation: 28dB. Stylus tip: nude elliptical, .0007" × .0003" radii. (Price £34.38 (plus VAT).

VLM Mk II ★

Output at 5.5cms/sec 4.9mV. Tracking force: 1 to 2gms. Response: 15Hz to 20kHz ± 1.5dB.



ADC VLM Mk II

Q30

Output at 5.5cms/sec 5mV. Tracking force: 1 to 2gms. Response: 15Hz to 20kHz \pm 3dB. Separation: 24dB. Stylus tip: spherical .0005" radius. Price £9.29 (plus VAT).

K8

Output at 5.5cms/sec 5mV. Tracking force: 2 to 4gms. Response: 15Hz to 18kHz \pm 4dB. Separation: 20dB/1kHz. Stylus tip: spherical .0007" radius. Price £7.86 (plus VAT).

K7E

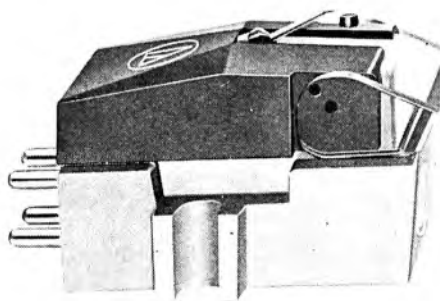
Output at 5.5cms/sec 5.5mV. Tracking force: 2 to 3gms. Response: 15Hz to 18kHz \pm 3dB. Separation: 20dB/1kHz. Stylus tip: elliptical .0007" \times .0003" radii. Price £10.18 (plus VAT).

K5E

Output 5.5cms/sec 5mV. Tracking Force: 1½ to 2½gms. Response: 15Hz to 20Hz \pm 3dB. Separation: 24dB/1kHz. Stylus tip: elliptical .0007" \times .0003" radii. Price £11.81 (plus VAT).

K3E

Output at 5.5cms/sec 5mV. Tracking force: 1 to 2gms. Response: 15Hz to 20kHz \pm 3dB. Separation: 24dB/1kHz. Stylus tip: elliptical .0007" \times .0003" radii. Price £12.35 (plus VAT).



Audio Technica AT 15 SA

Separation: 24dB. Stylus tip: elliptical .0007" \times .0003" radii. Price £27.91 (plus VAT).

Q36

Output at 5.5cms/sec 5.5mV. Tracking force ¾ to 1½gms. Response: 15Hz to 20kHz \pm 3dB. Separation: 26dB. Stylus tip: elliptical .0007" \times .0003" radii. Price £16.40 (plus VAT).

Q32

Output at 5.5cms/sec 5mV. Tracking force: 1 to 2gms. Response: 15Hz to 20kHz \pm 3dB. Separation: 24dB Stylus tip: elliptical .0007" \times .0003" radii. Price £12.68 (plus VAT).

■ **AUDIO TECHNICA**

Distributors: Shriro (UK) Ltd,
Shriro 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 \times 10⁻⁶cm/dyne.

AT-15SA ★

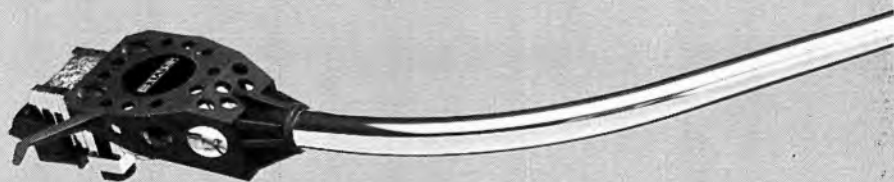
Stereo/CD-4 V-magnet cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel separation: 33dB at 1kHz. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec. Compliance: 30 \times 10⁻⁶cm/dyne. Channel separation: 33dB. Channel balance: 1.5dB. Output: 2.7mV at 5cm/sec.

AT-10

Stereo V-magnet cartridge. Stylus: 0.7 spherical diamond. FR: 20Hz-20kHz. Channel separation: 30dB at 1kHz. Channel balance: 2dB. Output: 4.8mV at 5cm/sec.

3009 Series III

Now more than ever . . .
the best pick-up arm in the world

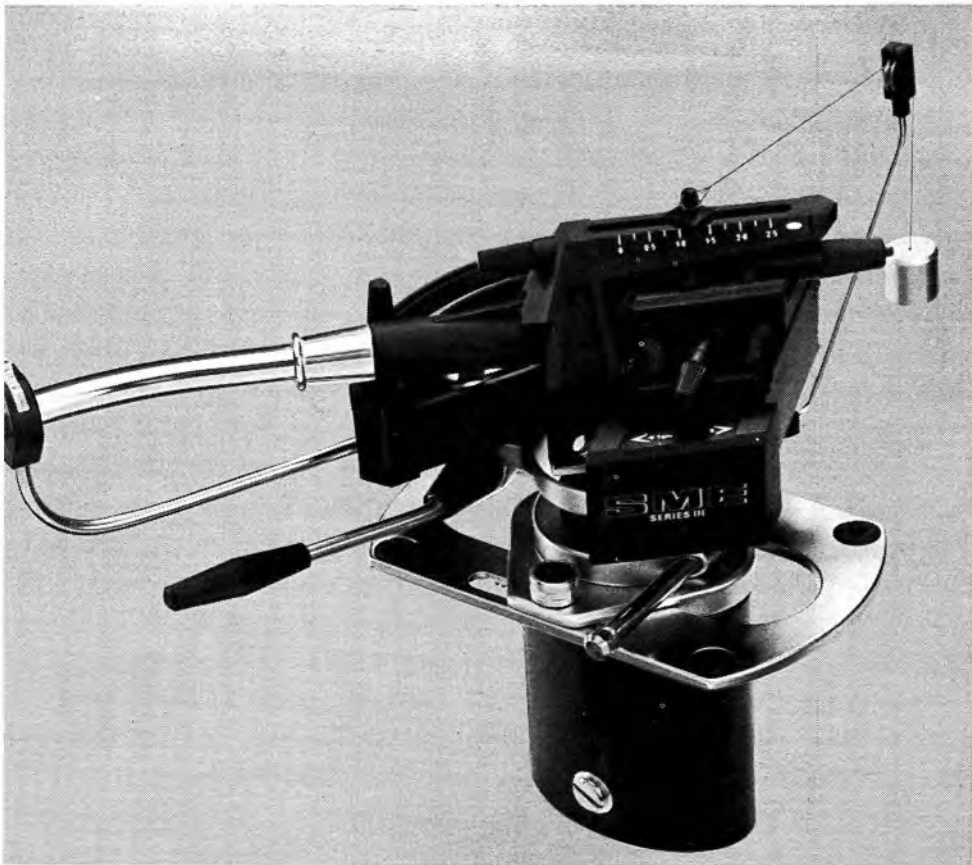


- Unique balance system to give minimum-inertia operation for cartridges weighing anything from 12g down to zero.

- Ingenious construction, with high-density metal cores in precision plastic mouldings.

- Conventional tone-arm and shell are replaced by an integral carrying arm which is interchangeable for multi-cartridge use. Carrying arm is formed of moulded carbon fibre and nitrogen-hardened titanium, achieving a rigidity many times that of aluminium or other conventional materials, and providing a natural loss of unwanted acoustic information.

- Viscous damping in both planes, with choice of three damping rates covering all cartridge compliances.



- Bias graduated from 0 to 2.5g with fine adjustment.
- Tracking force of 2.5g, with 0-1.5g fine adjustment and 1g of coarse adjustment.
- Longitudinal and lateral balance with fine adjustment.
- Fluid-damped lowering and raising control.
- Output : twin gold-plated phono sockets plus separate ground.

For further information, write to
SME Limited • Steyning • Sussex • BN4 3GY

SME

★ Indicates entry is illustrated

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.

AT-20SL

Stereo/CD-4 V-magnetic cartridge. Stylus: nude Shibata diamond. FR: 10Hz-50kHz. Channel separation: 35dB. Channel balance: 1dB. Output: 2.7mV at 5cm/sec.

Prices for cartridges range from around £8 to £50. Full details on request.

AT1005 II ★

Tubular counter-balanced pickup arm. Overall length: 323mm. Effective length: 240mm. Tracking force: 0.3gm. 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.

■ 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: >25 dB/1000Hz. Output: 2×0.6 cmV cm/sec. Impedance: 47K Ω . ETM: 0.4mg. $\frac{1}{2}$ " mounting bracket available. Price around £32.00 (inc. VAT).

MMC 3000

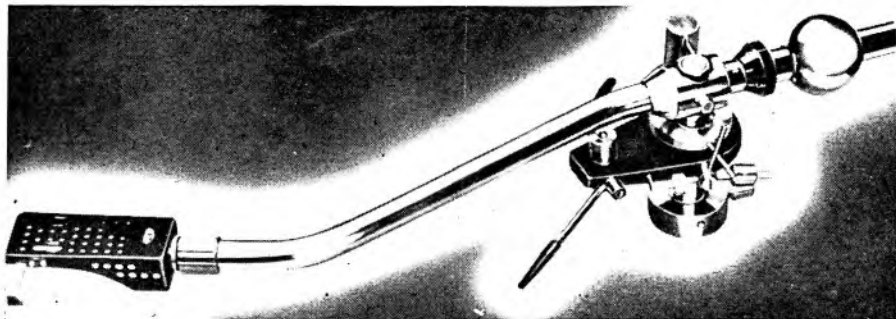
Integrated electro-mag cartridge with spherical stylus. Playing weight: 1.2gms. Tip mass: 0.5mg. Compliance: 25×10^{-6} cm/dyne. FR: 16Hz-25kHz ± 3 dB. Output: 2×0.6 mV



Audio Technica AT 1005 II



Audio Technica AT 1009



Colton MC 101

cm/sec. Recommended load: 47K ohms. Features: integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £23.00 (plus VAT).

MM 5000

CD4 integrated electro-mag cartridge with Shibata type cartridge. Playing weight: 1.5gms. Tip mass: 0.4mg. Compliance: 30×10^{-6} cm/dyne. FR: 20Hz-15kHz \pm 1.5dB. 30kHz-45kHz JVC "A" rating; Output: 2×0.6 mV cm/sec. Recommended load: 100K ohms. Features: CD4 integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £41.00 (plus VAT).

MMC 6000

CD4 integrated electro-mag cartridge with Pramanik diamond stylus. Playing weight: 1gm. Tip mass: 0.22mg. Compliance: 30×10^{-6} cm/sec. Recommended load: 100K ohms. Features: CD4 integrated pickup cartridge. Available with $\frac{1}{2}$ in. mounting bracket. Price: £50.00 (plus VAT).

■ COLTON

Musonic Ltd, 34-38 Verulam Road, St Albans, Herts AL3 4DF.
Tel: St Albans 50611.

MC101 ★

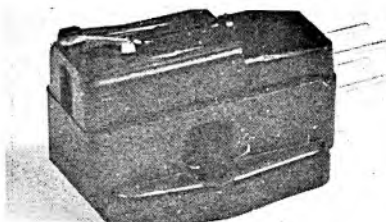
Pick-up arm with lateral balance and anti-skate bias adjustment. Tracking error: $+1.5^\circ$, -0.5° . No rec. retail price.

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 2142.

SCU1 ★

Stereo ceramic cartridge with $\frac{1}{2}$ in fixing



Connoisseur SCU 1

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. Range: 25Hz-18kHz \pm 3dB. Separation (1kHz) 25-30dB; (10kHz) 18dB. Output with rec load of 100K, 50mV per channel, RIAA equalisation required. Output with 2M load, 150mV per channel, no equalisation required. Features: four-terminal output, easily replaceable diamond stylus. Price: £7.64 (including VAT).

SAU2

Pickup arm with gimbal mountings on ball bearings set at 45/45. Automatic bias compensator. Hydraulic lowering device. Decoupled counter balance weight. Additional weight supplied to accommodate different cartridges. Single hole fixing. Height adjustable from 1in to 2in. Lightweight shell with $\frac{1}{2}$ in fixing centres. Five-pin plug connection to base of pick-up. Low resistance self-cleaning contacts. New head shell allows backward-forward horizontal adjustment so that minimum tracking error is obtained with all cartridges. Alignment protractor provided. Supplied with set of leads and separate precision balance with range 0.6gm. Price: £18.90 (including VAT). Extension stem for use with high turntables. Price: 58p (including VAT).

★ Indicates entry is illustrated

SAU2

Playing weight: 0.6gm. Gimbals 45 deg/45 deg precision stylus balance. Price: £16.80 (plus VAT).

SCU1

Ceramic cartridge with diamond stylus. Tip mass: 1gm. Compliance: Lat— 12×10^{-6} , vert 8×10^{-6} . FR: 30Hz-16kHz \pm 2dB. Price: £6.82, stylus £2.47 (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 \pm 3dB. Separation better than -20dB at 1kHz. Output: 200mV at 5cm/sec. Rec load impedance: 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); elliptical £2.20 each (plus VAT).

London

Stereo magnetic cartridge: *jjss* sum-and-difference system. Stylus: 0.6 thou spherical diamond. Pw: 3gm. Effective tip mass: < 1mg. Compliance: (lateral) 12×10^{-6} 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 *jjss* 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: 1.5-2.5 gms. Compliance: 12×10^{-6} cm/dyne. FR: 20-21,000 Hz. Output: 7mV at 5 cms⁻¹. Rec. Load: 47 K ohms. Price: £6.80. Replacement stylus LCS07: £8.60 (plus VAT).

LC05 ★

Moving magnet stereo cartridge. Stylus: conical 0.7 mil. Playing weight: 2-4 gms. Compliance: 9×10^{-6} cm/dyne. FR: 30-18,000 Hz. Output: 6mV at 5 cms⁻¹. Rec. Load: 47 K ohms. Price: £6.95 (plus VAT).

■ EMPIRE SCIENTIFIC CORP

Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter SL9 9EW. Tel: Gerrards Cross 88447.

2000

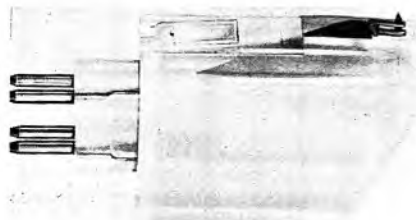
Diamond cartridge 0.7 mil. Playing weight: 1 1/2-3 gms, tip mass 1 mg. Compliance: 14×10^{-6} cm/dyne. FR: 20-20,000kHz \pm 3 dB. Output: 7mV. Rec. Load: 47K ohms. Price: £9.90 (plus VAT).

2000E

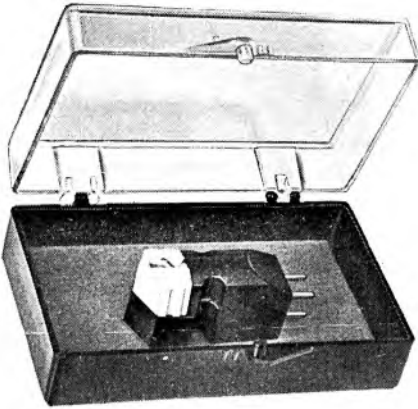
Diamond cartridge 0.3 \times 0.7 mil. Playing weight: 1 1/4-2 1/2 gm. Tip mass 0.9 mg. Compliance: 16×10^{-6} cm/dyne. FR, Output and load as 2000. Price: £10.90 (plus VAT).

2000E-1

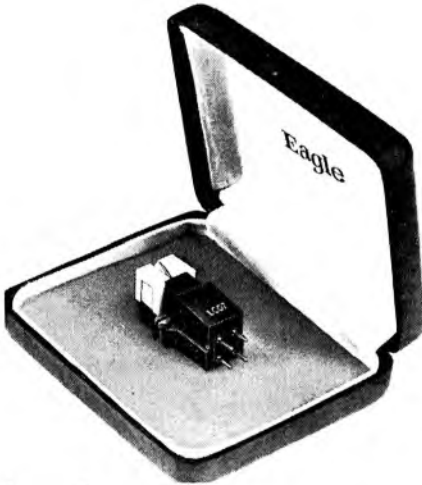
Diamond cartridge 0.2 \times 0.7 mil. Playing weight: 1-2 gms. Tip mass: 0.6 mg. Compliance: 17×10^{-6} cm/dyne. FR, output and load as 2000. Price: £15.50 (plus VAT).



Decca Deram



Eagle LC 05



Eagle LC 07

4000D-I

Quad/stereo cartridge 0.2 mil tracing radius. Playing weight: $\frac{1}{4}$ - $1\frac{1}{4}$ gm. Tip mass: 0.4 mg. Compliance: 30×10^{-6} cm/dyne. FR: 15-45,000Hz \pm 3dB. Output: 3 mV. Rec load: 100K ohms. Price: £29.50 (plus VAT).

4000D-II

Similar to 4000D-I except Playing weight: $\frac{3}{4}$ -1 gm. FR: 15-50,000Hz \pm 3 dB. Price: £87.00 (plus VAT)

4000D-III

Same as 4000D-II except playing weight is $\frac{3}{4}$ - $1\frac{1}{4}$ gm. Price: £99.00 (plus VAT).

■ **FIDELITY RESEARCH**

Wilmex Ltd, Compton House, New Malden, Surrey KT3 4DE.

Tel: 01-949 2545

FRI Mk2 + FRT3 transformer

Magnetic moving coil cartridge. Stylus: 0.2×0.8 elliptical. Playing weight: 0.75-1.5 gms. FR: 20 Hz-20 kHz 0.5 dB. Output: 0.1mV 5 cm sec at 45. Rec load on transformer 47K-50K. State of the Art cartridge supplied with FRT3 transformer for coupling to normal magnetic input on amplifier. Price: £79.95 (plus VAT).

FRI Mk 3 and FRT 4 transformer

To be announced.

Fidelix LNI

Battery operated pre-amp for moving coil pickups. Details to be announced.

FRI Mk 3 and FRT 5 transformer

To be announced.

Fidelity LNI

Battery operated pre-amp for moving coil pick-ups. Details to be announced.

2000E-II

As per 2000E-I except Playing weight is $\frac{3}{4}$ - $1\frac{1}{2}$ gm and compliance 18×10^{-6} cm/dyne. Price: £18.00 (plus VAT).

2000E-III

As per 2000E-I except compliance: 20×10^{-6} cm/dyne and Output: 4.5 mV. Price: £19.20 (plus VAT).

2000Z

Stereo cartridge. As per 2000E-I except Playing weight: $\frac{3}{4}$ - $1\frac{1}{4}$ gm. Compliance: 30×10^{-6} cm/dyne. Output: 3 mV. Price: £60.00 (plus VAT).

■ **FORMULA 4**

Mayware Ltd.

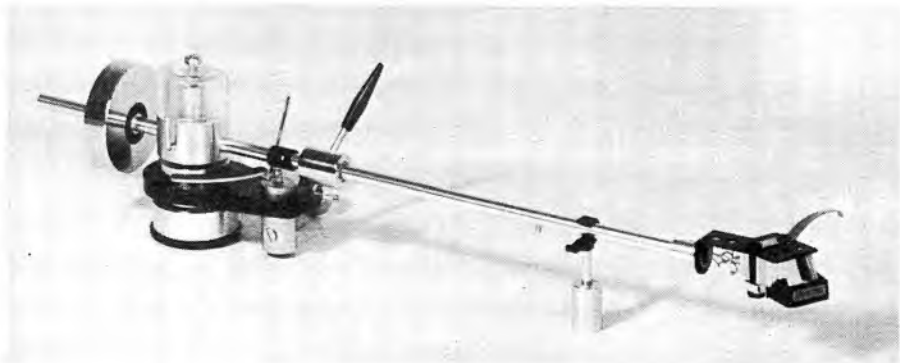
15 Heather Walk, Edgware, Middx. HA8 9TS.

Tel. 01-958 9421

PLS4D MkII 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 quadraphonic transcription due to the suppression of instantaneous tracking-force extremes which reduce record wear and high frequency playback dis-

★ Indicates entry is illustrated



Formula 4 PLS4/D Mk II tone arm

tortion. Viscous silicone damping means better tracking even of warped records the sound having exceptionally good definition rich full and clean bass. Jewelled uni-pivot friction below 0.005 gm. VTF 0-3 gm. Bias Control. Stylus-to-pivot 224 mm. Suitable cartridges weighing 2-10 gm. Price: on application.

■ GOLDRING

Goldring Ltd, Anglian Lane,
Bury St. Edmunds, Suffolk IP32 6SS.
Tel: Bury St. Edmunds 64011.

■ GOLDRING LTD

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

G900 Super E ★

Micro mass moving magnet cartridge. Stylus: Elliptical 0.07×0.002 . Playing weight: 0.75-1.5 gm. Tip mass: 0.32 mg. Compliance: Lat 40×10^{-6} cm/dyne ver 20×10^{-6} cm/dyne. FR: 20Hz - 20 kHz ± 2 dB. Output: at 5cm/sec, 1K Hz 5mV RMS. Rec. Load: 47 K/150 - 200 pF. Because of its extraordinarily low mass, the G900 tracking at less than 1 gm, provides extremely low intermodulation 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: 0.0005in. Playing weight: 1½-2½ gms. Tip Mass less than 1 mg. Compliance: 20×10^{-6} cm/dyne. FR: 20 Hz - 20kHz ± 3 dB. Output: 8mV at 5 cm/sec 1 kHz. Rec. Load: 47K Separation: 20dB at 1K Hz. Price: £7.50 (plus VAT).

G800H

Stereo magnetic cartridge. Stylus: 0.0007in. Playing weight: 2½-3½ gm. Tip mass: 1.2 mg.

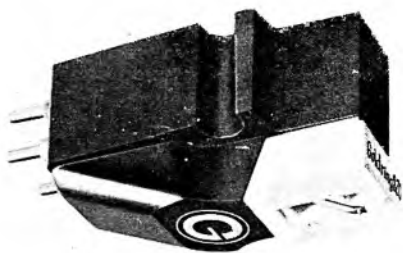
Compliance: 18×10^{-6} cm/dyne. FR: 8 mV at 5 cm/sec 1 kHz. Rec. Load: 47K. Separation: 20dB at 1 kHz. Price: £7.50 (plus VAT).

G800E

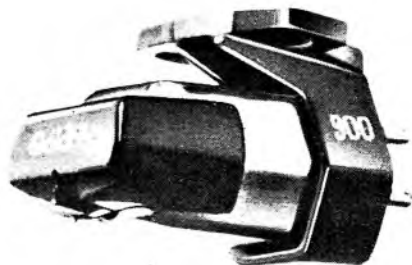
Stereo magnetic cartridge. Stylus: Elliptical: 0.0007×0.0003 in. ($18 \times 8\mu$ m). Playing weight: ¾-1½ gm. Tip mass: less than 1 mg. Compliance: 30×10^{-6} cm/dyne. FR: 10Hz 23kHz ± 3 dB. Output: 5 mV at 5 cm/sec 1 kHz. Rec. Load: 47 K. Separation: 20dB at 1 kHz. Price: £11.40 (plus VAT).

G800 Super E

Stereo magnetic cartridge. Stylus: Elliptical 0.07×0.03 ins ($18 \times 8\mu$ m) Playing weight: ½-1¾ gm. Tip mass: less than 1 mg. Com-



Goldring 820



Goldring G900 Super

pliance: 35×10^{-6} cm/dyne. FR: 10Hz-23kHz. Output: 4mV at 5 cm/sec 1 kHz. Price: £17.40 (plus VAT).

G820★

Stereo magnetic cartridge. Stylus: 0.0005. Playing weight: 1.5-4gm. Tip mass: 1 mg. Compliance: 20×10^{-6} cm/dyne. FR: 20Hz-20kHz. Output: 5mV at 5 cm/sec 1 kHz. Rec. Load: 47 K. Separation: 1 kHz 20 dB. Price: £10.50 (plus VAT).

G820/E

Stereo magnetic cartridge. Stylus: Elliptical 0.0007 \times 0.0003in ($18 \times 80\mu$ m). Playing weight: 3/4-2 gm Tip mass: 1mg. Compliance: 25×10^{-6} cm/dyne. FR: 10Hz-25kHz. Output: 5 mV at 5 cm/sec 1 kHz. Rec. Load: 47 K. Separation: 1kHz 20dB. Price: £15.00 (plus VAT).

G820/SE

Stereo magnetic cartridge. Stylus: Elliptical 0.0007 \times 0.0003in ($18 \times 8\mu$ m). Playing weight: 0.6-1.75 gm. Tip mass: 0.9 mg. Compliance: 35×10^{-6} cm/dyne. FR: 10 Hz-25 kHz. Output: 4mV at 5 cm/sec. Rec. Load: 47K. Separation: at 1kHz 25dB. Price: £21.00 (plus VAT).

G850

Stereo magnetic cartridge. Stylus: Spherical 0.0007in. Playing weight: 2 1/2-4 gm. Tip Mass: 1.2 mg. FR: 20 Hz-18 kHz. Output: 8mV at 5 cm/sec RMS. Rec. Load: 47K. Separation: 20 dB at 1kHz. £5.25 (plus VAT).

■ G.F.C.HADCOCK

Audio Division, The Old Vicarage, Doveridge, Derby DE6 5NN. Tel: Uttoxeter 2452.

GH 228 Super arm ★

Provides exceptionally low bearing friction of 6mgm and ultra low mass construction. Features: detachable headshell fitting. Accepts all cartridges from 3.6gm to 13gm weight. Suitable

for Decca London Cartridge with standard counterweight. Supplied with additional counterweight sleeve as standard for heavier cartridges up to 13gm. Silicone fluid damping, adjustable pivoted bias assembly, tracking force adjustment by venier, counterweight double decoupled, alignment protractor provided, single hole fixing, separate headshells available. Specification: overall length 28.9cms. Height 43mm, 90mm. Pivot stem length to top of arm 86.4mm. Pivot to stylus point 228.6mm. Pivot to centre of turntable 212.85mm. Offset angle 23°. Rear overhang 60.9mm. Maximum headshell mounting 12.7mm centres. Bearing friction 6mgm. Length of leads 1219mm. Price: £36.00 (plus VAT).

■ LENCO

Goldring Ltd, Anglian Lane, Bury St. Edmunds, Suffolk IP32 6SS. Tel: Bury St. Edmunds 64011.

L75 Arm

Transcription pick-up arm, calibrated stylus pressure adjustment, removeable plug-in shell with adjustable stylus position. Anti-skating bias compensator. Price: £18.50.

L69

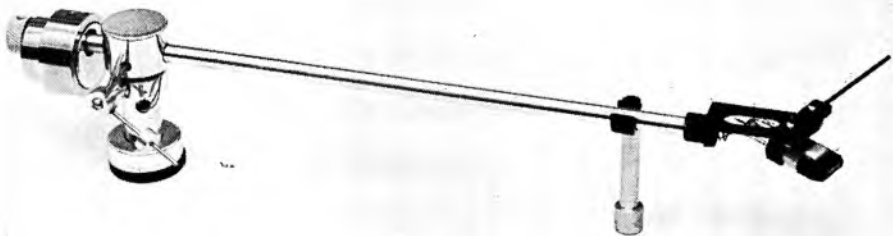
Pick-up arm—calibrated stylus pressure adjustment. Removable plug-in shell with adjustable stylus position. Anti-skating bias compensator. Price: £16.00.

■ 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 1/2gm. If a suitable pre-amplifier



Hadcock GH 228 Super Arm

★ Indicates entry is illustrated

is not available, as the output voltage is 0.2mV, a matching transformer should be employed. Price: £85.00 (plus VAT).

Supex SDT-77

Transformer for use with SD-900/E stereo cartridge. Price: £60.00 (plus VAT).

Supex SDT-180

Transformer for use with SD-900/E stereo cartridge. Price: £180.00 (plus VAT).

Supex SM-100

Stereo conical cartridge tracking at 1½gm with a 4mV output. Price: £22.00 (plus VAT).

Supex SM-100/E

Elliptical cartridge tracking at 1½gm with a 4mV output. Price: £36.00 (plus VAT).

Grace F-9E

Stereo cartridge stylus. 0.2 × 0.8 mil elliptical diamond stylus. Playing weight: 1gm. Output: 3.5mV. Price: £70.00 (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: £8.50 (plus VAT).

Grace G-707

Pick-up arm. 9in Quadmaster fixed headshell tone arm, complete with bias compensation and arm lift/lowering device, and low capacitance shielded cord for optimum CD-4 performance. Effective length: 237mm. Stylus overhang: 15mm. Stylus pressure adjustment calibrated to 0.1gm calibration. Price: £65.00 (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: £100.00 (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 840 F 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

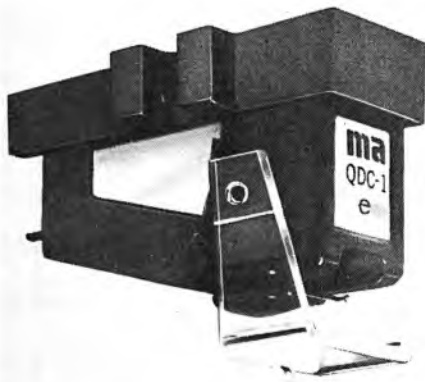
pivot. All arms are resonance free within the audio frequency range. The G-707 arm is free of tube resonance to above 50kHz.

■ MICRO-ACOUSTICS

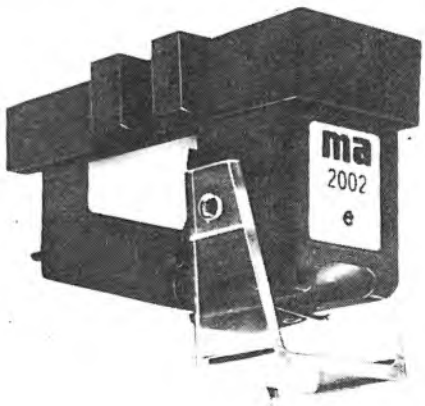
Webland International Ltd, Mirabel House, 117-121 Wandsworth Bridge Road, London SW6.

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 frequency response caused by any value of cable capacitance up to 1000F.



Micro Acoustics QDC1e



Micro Acoustics 2002e

2002-e ★

Elliptical diamond, beryllium cantilever. FR: 5Hz-20kHz \pm 1.5dB. Tracking force: 0.7-1.4gms. Weight: 4gms. Price: £65.78 (plus VAT).

QDC-1qB.

Quadra-point CD4 diamond, beryllium cantilever. FR: 5Hz-50kHz \pm 3dB. Tracking force: 1 to 1.75gms. Weight: 4gms. Price: on application.

QDC-1e ★

QDC-1e uses an elliptical stylus (0.0002" \times 0.0007") 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: 5.2gms. 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: £2.00 (plus VAT).

SX6H ★

Stereo crystal cartridge. LP/78 diamond stylus. Pw: 7gm. Output: 700mV. Price: £2.00 (plus VAT).

X5M ★

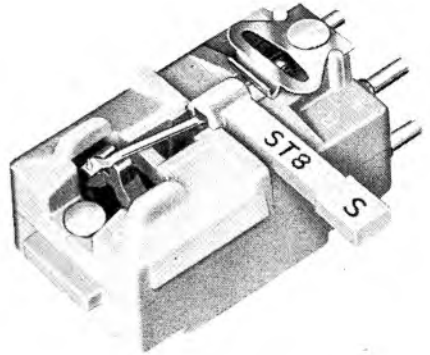
Monaural crystal compatible cartridge, sapphire stylus. Pw: 3-6gm. Output: 400mV. FR: 40Hz-10kHz. Price: £1.50 (plus VAT).

X5H ★

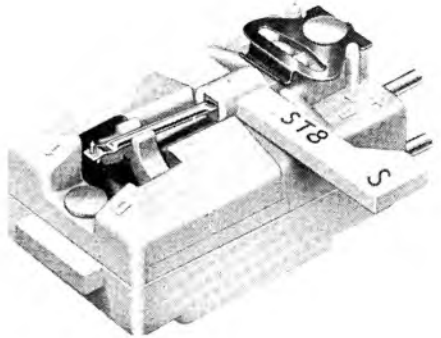
Monaural crystal compatible cartridge, sapphire stylus. Pw: 5-9 gm. Output: 1V. FR: 40Hz-10kHz. Price: £1.50 (plus VAT).

SCI2M

Stereo ceramic cartridge. Output: 100mV. Stylus pressure: 2-6gm. Sapphire or diamond stylus. Price: (sapphire) £2.50 (plus VAT); (diamond) £3.10 (plus VAT).



Miers X5H and X5M



Miers SX6H and SX6M

SCI2H

Stereo ceramic cartridge. Output: 170mV. Stylus pressure: 4-6gm. Sapphire or diamond stylus. Price: (sapphire) £2.50 (plus VAT); (diamond) £3.10 (plus VAT).

K8

Magnetic cartridge with spherical 0.0007" stylus. Playing weight: 2-4gm. Compliance: 18. FR: 15Hz-18kHz. Output: 5mV. Recommended load: 47,000 ohms. Exclusive ADC induced magnet system. Price: £7.86 (plus VAT).

K7E

Magnetic cartridge with elliptical 0.007" \times 0.003" stylus. Playing weight: 2-3gms. Compliance: 20. FR: 15Hz-18kHz. Output: 5.5mV. Recommended load: 47,000 ohms. Price: £10.18 (plus VAT).

XLM Mk II

Magnetic cartridge with nude elliptical stylus 0.0007" \times 0.0003". Playing weight: 1-2gm. Compliance: 50 \times 10⁻⁶cm/dyne. FR: 15Hz-

★ Indicates entry is illustrated

20kHz. Output: 4.9mV. Recommended load: 47,000 ohms. Induced magnet system, controlled electro-dynamic damping, low cartridge mass. Price: £34.38 (plus VAT).

VLM

Magnetic cartridge with elliptical stylus 0.0007" × 0.0003". Playing weight: 1-2gms. Compliance: 35×10^{-6} cm/dyne. FR: 15Hz-20kHz. Output: 4.9mV. Recommended load: 47,000 ohms. Low mass cartridge, induced magnet. Price: £27.91 (plus VAT).

■ KEITH MONKS

Keith Monks (Audio) Ltd,
26-28 Reading Road South, Fleet,
Aldershot, Hants.
Tel: Fleet 7316.

M9BA Mk 3 (Improved) ★

Pick-up arm. 9in arm length pivot to stylus. Designed for low mass ultra high compliant cartridges tracking at very low stylus pressures. Damped unipivot with mercury contact pins and no lead out wires. Bias correction and anti-skating built-in. Damped lift/lowering device. Effective mass: 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).

■ ORTOFON

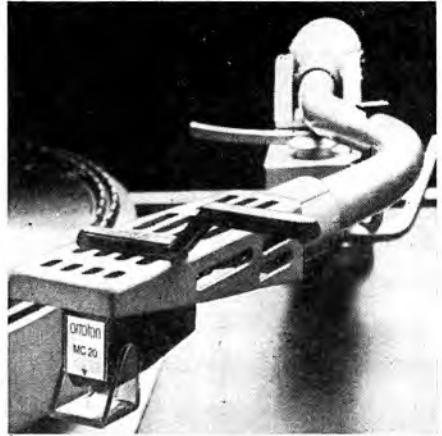
Tannoy, St. Johns Rd., Tylers Green,
High Wycombe, Bucks.
Tel: Penn 5221.

SL20E

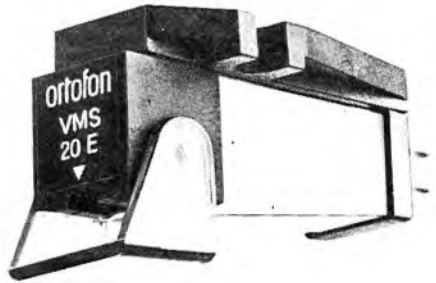
Moving coil cartridge with elliptical diamond stylus. Playing weight: 1.7gms. Tip mass: 0.5. Compliance: vert $15 \cdot 10^{-6}$ hor. $26 \cdot 10^{-6}$. FR: 5Hz-50kHz. Output via transformer: 3.5mV.



Keith Monks M9BA Mk 3



Ortofon tone arm AS 212 Mk II.

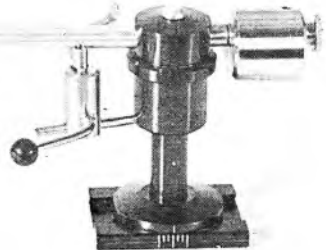


Ortofon VMS20E

Recommended load: 47K ohms. Factory exchange system for stylus replacement. Price: £50.67 (plus VAT).

SL20Q

Moving coil cartridge with bi-elliptical diamond stylus. Playing weight: 1.7gm. Tip mass 0.5gm. Compliance: vert $15 \cdot 10^{-6}$ hor.





The Test of Time

Critics were most generous in their praise when the Shure V-15 Type III pickup cartridge was introduced. The ultimate test, however, has been time. The original engineering innovations, the uniquely uniform quality and consistent performance reliability of the V-15 Type III have made it THE classic choice as the source of sound for the finest music systems, both here and abroad.

Consider making the relatively modest investment of a new cartridge to upgrade the performance of your entire hi-fi system. Why not ask Shure Electronics Limited for their recommendation?

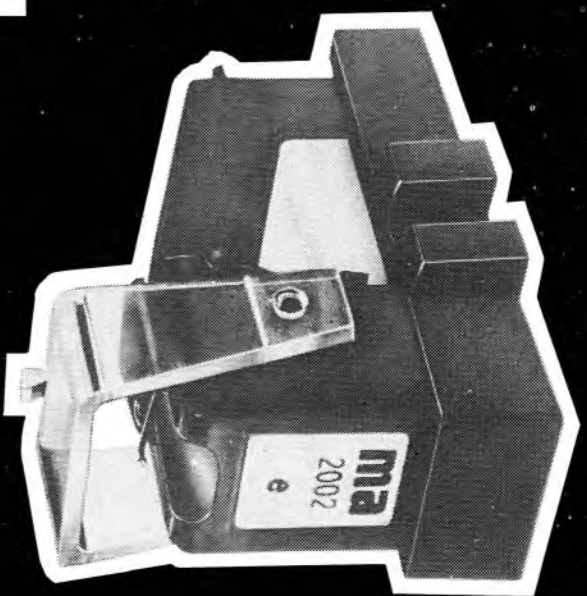
Please write stating the name of your present turntable, arm, cartridge, amplifier, and your name and address.

The original manuscript by J. S. Bach shown is reproduced by kind permission of The British Library.

Shure Electronics Limited, Dept. 5-78
Eccleston Road, Maidstone ME 15 6AU
Telephone: Maidstone (0622) 59881



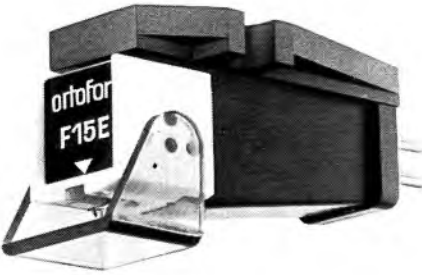
**Because good
tracking
isn't enough.**



Micro- Acoustics

For further details write or phone:
Weiland Electronics Ltd, Mirabel House, 117-121 Wandsworth Bridge Road, London SW6. 01-736 0987.

PICKUP, CARTRIDGES AND ARMS



Ortofon FF15E

Igm. Compliance: vert $30 \cdot 10^{-6}$. hor. $40 \cdot 10^{-6}$. Price on application.

FF15E

Cartridge: variable reluctance. Stylus: elliptical diamond. Playing weight: 2gm. Tip mass: 0.9mg. Compliance: vert. $20 \cdot 10^{-6}$. hor. $20 \cdot 10^{-6}$. FR: 20Hz-20kHz. Output: 5mV. Recommended load: 47K ohms. Price: £13.78 (plus VAT).

F15

As FF15E except: playing weight: 1.5gm. Compliance: vert. $25 \cdot 10^{-6}$. hor. $25 \cdot 10^{-6}$. Price: £16.00 (plus VAT).

MC 20 ★

Moving coil cartridge with fine line diamond stylus. Playing weight: 1.7gm. Tip mass: 0.5mg. Compliance: vert. $15 \cdot 10^{-6}$. Hor. $25 \cdot 10^{-6}$. FR: 5Hz-50kHz. Output via transformer: 3.5mV. Recommended load: 47K ohms. Price: £58.?? (plus VAT).

AS 212 Mk 2 Tone Arm ★

Tone arm with total length: 29.5cm. Effective length from centre of arm base to stylus tip: 22.8cm. Optimum overhang: 1.6cm. Off-set angle: 22.7. Maximum tracking angle error: 0.16 deg/cm. Effective mass excl. cartridge 12-18gm. Adjustable tracking force 0-20mN (0-2g) with 3g cartridge or 5-60mN (0.5-6g) with 8g cartridge. Total weight: 365g. Price: on application.



Ortofon MC20

$25 \cdot 10^{-6}$. FR: 5Hz-70kHz. Output via transformer: 3.5mV. Recommended load: 47K ohms. Factory exchange system for stylus replacement. Price: £75.56 (plus VAT).

M15E SUP

Cartridge: Variable reluctance. Stylus: elliptical diamond. Playing weight: 1gm. Tip mass: 0.5mg. Compliance: vert. $30 \cdot 10^{-6}$. hor. $50 \cdot 10^{-6}$. FR: 20Hz-20kHz. Output: 4mV. Recommended load: 47K ohms. Price £44.44 (plus VAT).

F15E ★

Cartridge: Variable reluctance. Stylus: elliptical diamond. Playing weight: 1.5gm. Tip mass: 0.9mg. Compliance: vert. $25 \cdot 10^{-6}$. hor. $25 \cdot 10^{-6}$. FR: 20Hz-20kHz. Output: 5mV. Recommended load: 47K ohms. Price: £20.44 (plus VAT).

VMS20E ★

As F15E except tip mass 0.5. Playing weight:

■ PHILIPS

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

GP400 Mk2 Super M Cartridge ★

Type: stereo magnetic, $\frac{1}{2}$ in. fixing. Stylus: $15\mu\text{m}$ diamond. Compliance: $\geq 20\text{mm/N}$ lateral. $\geq 16\text{mm/N}$ vertical. Separation: $\geq 29\text{dB}$. Sensitivity: 1.3mV/cm/sec at 1kHz. Stylus pressure: 1.5-3gm. Weight 6gm.

GP401 Mk2 Super M Pickup Cartridge ★

Type: stereo magnetic $\frac{1}{2}$ in fixing. Stylus: $7 \times 18\mu\text{m}$ diamond (elliptical). Compliance: $\geq 20\text{mm/N}$ lateral. $\geq 16\text{mm/N}$ vertical. Separation: $\geq 29\text{dB}$. Sensitivity: 1.3mV/cm/sec at 1kHz. Stylus pressure: 1.5-2.5gm. Weight: 7gm.

GP412 Mk2 Super M pickup Cartridge ★

Type: stereo magnetic $\frac{1}{2}$ in fixing. Stylus: $7 \times 18\mu\text{m}$ diamond (elliptical). Compliance:

★ Indicates entry is illustrated

$\geq 30\text{mm/N}$ lateral. $\geq 20\text{mm/N}$ vertical. Separation: $\geq 30\text{dB}$ at 1kHz . Sensitivity: 1.5mV/cm/sec at 1kHz . Stylus pressure: $0.75\text{--}1.5\text{gm}$. Weight: 7gm .

GP422 Mk2 Super M Pickup Cartridge ★

Type: stereo magnetic $\frac{1}{2}\text{in}$ fixing. Stylus: $7 \times 18\mu\text{m}$ diamond profiled for supersonic tracking. Compliance: $32 \times 10^{-6}\text{cm/dyne}$. Separation: $\geq 30\text{dB}$ at 1kHz . Sensitivity: 1.1mV/cm/sec at 1kHz . Stylus pressure: $0.75\text{--}1.5\text{gm}$. Weight: 6.9gm .

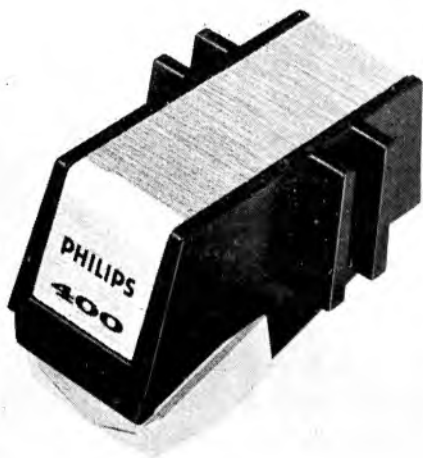
■ **PICKERING**

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

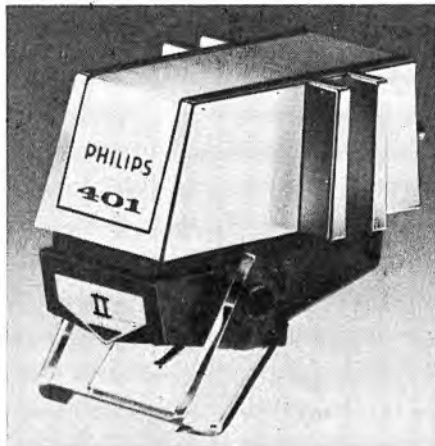
Large range. Details on request.

■ **SEAC**

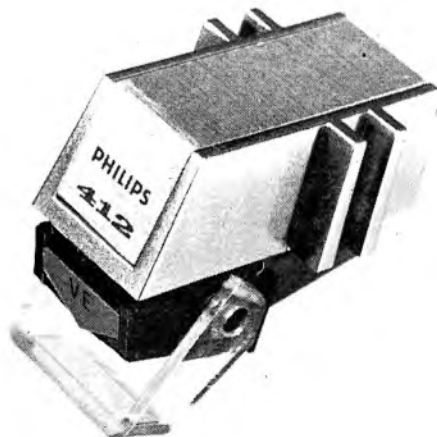
Zeepa Instruments Ltd, 15 Richmond Grove,
Surbiton, Surrey.
Tel: 01-399 0966.



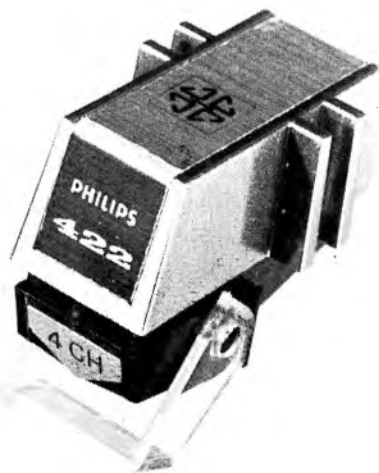
Philips GP 400



Philips GP 401 Mk II



Philips GP 412 Mk II



Philips GP 422 Mk II

WE-308 L ★

Tone arm with double knife edge bearing, automatic tracking force. Length overall: 367.5mm. Effective length: 270mm. Price: £108.00 (plus VAT).

WE-308

As above but with overall length: 329mm and effective length 240mm. Price: £99.50.

ULS-20 ★

Two Ultimate headshell 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).

■ SHURE

Shure Electronics Ltd, Ecclestone Road, Maidstone ME15 6 AU.
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. Output: 1mV. Load impedance: 47K. Price: £7.20 (plus VAT).

M44C

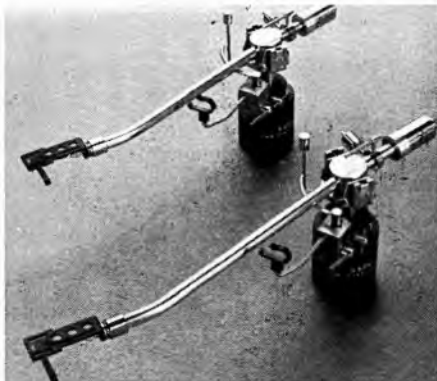
Stereo Dynetic cartridge. Moving magnet. 1/2in fixing centres. Stylus: 0.7 thou diamond (1 thou and 3 thou styli available). Pw: 3-5gm. Compliance: 7.5×10^{-6} cm/dyne. FR: 20Hz-20kHz. Separation: 20dB at 1kHz. Output: 1.8mV. Load impedance: 47K. Price: £9.30 (plus VAT).

M44E

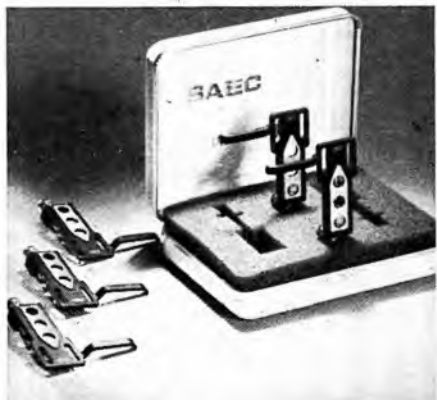
Stereo Dynetic cartridge. Moving magnet. 1/2in fixing centres. Stylus: 0.7 x 0.4 thou bi-radial diamond (3 thou stylus available). Pw: 1 3/4-4gm. Compliance: 15×10^{-6} cm/dyne. FR: 20Hz-20kHz. Separation: >20dB at 1kHz. Output: 1.8mV. Rec load: 47K. Price: £9.30 (plus VAT).

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. Output: 1.4mV. Load impedance: 47K. Price: £9.30 (plus VAT).



Seac WE 308L



Seac ULS-20 Headshell

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. Output: 2.2mV. Load impedance: 47K. Price: £9.30 (plus VAT).

M55E ★

Stereo Dynetic cartridge. Moving magnet. 1/2in fixing centres. Stylus: 0.7 x 0.2 thou elliptical diamond (3 thou stylus available). Pw: 3/4-2gm. Compliance: 15×10^{-6} cm/dyne. Separation: 22dB at 1kHz. Output: 1.3mV. Load impedance: 47K. Price: £11.10 (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

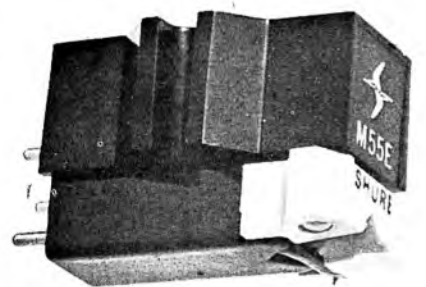
★ Indicates entry is illustrated



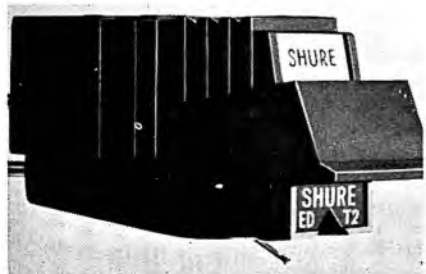
Shure M24H



Shure V15 Type III



Shure M55E



Shure M75 ED Type 2

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: £14.10 (plus VAT).

M75ED Type 2 ★

Stereo Dynetic cartridge. Moving magnet. $\frac{1}{2}$ in fixing centres. Stylus: 0.7×0.2 thou elliptical diamond (3 thou stylus available). Pw: $\frac{3}{4}$ - $1\frac{1}{2}$ gm. 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: £20.70 (plus VAT).

M75G Type 2

Stereo Dynetic cartridge. Moving magnet. $\frac{1}{2}$ in fixing centres. Stylus: 0.6 thou conical diamond (3 thou stylus available). Pw: $\frac{3}{4}$ - $1\frac{1}{2}$ gm. Trackability (see note at end) at 1gm in SME3009 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: £15.90 (plus VAT).

M75EJ Type 2

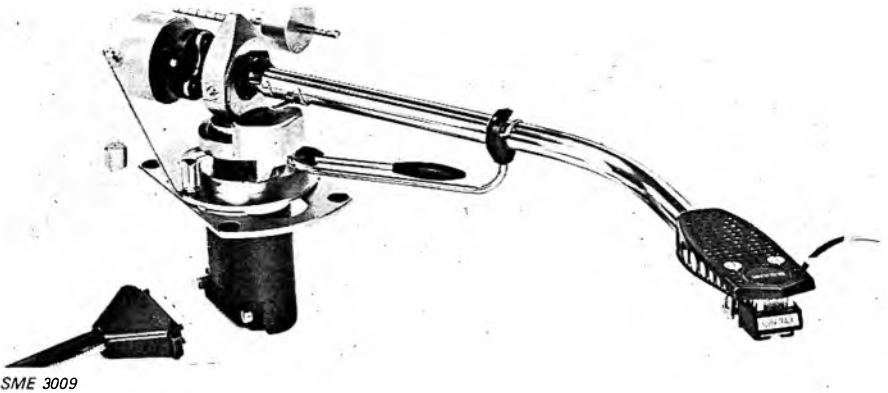
Stereo Dynetic cartridge. Stylus: 0.7×0.4 thou bi-radial diamond. Pw: $1\frac{1}{2}$ -3gm. Trackability at 2gm in SME 3009 arm: 400Hz 28cm/sec, 1kHz 35cm/sec, 10kHz, 20cm/sec. Output: 1mV. Separation: 20dB at 1kHz. Price: £17.40 (plus VAT).

V15-Type III ★

Stereo Dynetic cartridge. Moving magnet. $\frac{1}{2}$ in 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: $\frac{3}{4}$ - $1\frac{1}{2}$ gm. Trackability (see note at end) at 1gm in SME 3009 arm: 400Hz 26cm/sec, 1kHz 38cm/sec, 5kHz 35cm/sec, 10kHz 26cm/sec. FR: 10Hz-25kHz. Separation: 25dB at 1kHz, 15dB at 10kHz. Output: 0.7mV at 1kHz. Rec load: 47K. Price: £53.70 (plus VAT).

M95ED

Stereo Dynetic cartridge. Moving magnet. $\frac{1}{2}$ in fixing centres. Stylus 0.7×0.2 thou bi-radial diamond. (2.5 thou spherical 78 rpm tip also available) Pw: $\frac{3}{4}$ - $1\frac{1}{2}$ gm. Trackability (see note at end) at 1gm in SME3009 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 ohms per channel. Price: £26.10 (plus VAT).



SME 3009

M95EJ

Stereo Dynetic cartridge. Moving magnet. 1/2in fixing centres. Stylus 0.7 x 0.4 thou biradial diamond. (2.5 thou spherical 78 r.p.m. tip also available). Pw: 1 1/2-3gm. 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 ohms per channel. Price: £18.00 (plus VAT).

M24H ★

Stereo and discrete 4-channel cartridge with Hyperbolic diamond tip. Playing weight: 1-1 1/2gm. 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 ohms in parallel with 100 pico farads. Price: £33.60 (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 pick-up arm. Non-detachable shell. Pivot to stylus: 9in nom-

inal. 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: 0.15gm applied precisely without the use of a gauge. Lever operated hydraulically damped lowering and raising control. Shell accepts all cartridges with 1/2in (12.7mm) fixed centres, weighing 4-9gm. 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: £50.40 (plus VAT).

Model 3009/S2

Series II Improved precision pick-up arm. Detachable shell. Effective mass: 9.5gm. Other details as above. Price: £55.26 (plus VAT).

■ **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 41131.

Silver Label P

Stereo magnetic cartridge with multi-radial

★ Indicates entry is illustrated



Sonus Range

diamond stylus. Playing weight: $\frac{3}{4}$ -1 $\frac{1}{4}$ gm. Compliance: 30×10^{-6} cm/dyne. FR: 5Hz-20kHz \pm 2dB, 20Hz-45kHz \pm 6dB. Output: 1mV. Recommended load: 47K. Price: £35.00 (plus VAT).

Silver Label E.

Stereo magnetic cartridge with elliptical diamond stylus. FR: \pm 2dB 5Hz-20kHz. Other details as Silver Label P. Price: £33.00 (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} cms/dyne. FR: \pm 1 $\frac{1}{2}$ dB 5Hz-20kHz \pm 6dB 20kHz to 45kHz. Output: 0.8mV. Recommended load: 47K ohms. Price: £65.00 (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: £51.00 (plus VAT).

Green Label ★

Stereo magnetic cartridge with spherical diamond stylus. FR: \pm 2dB 5Hz-20kHz. Other details as Blue Label. Price: £43.00 (plus VAT).

■ SONY (U.K.) LTD

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

Cartridges

VM 26 G Cartridge for PS5520/PS230/
HP511A/ SQP20/ PS5550/ HMP70/ HMK70.
VL 30 G Cartridge for HMP40/ HMK40/
HMK40A/ HMK70/ HMP70. VL 32 G Car-
tridge for PS1350/ PS2350/ PS1700/ PS3300/
VM 10P Cartridge for HP211A/ HP239A. VX
24P Cartridge for HMP20/ HMW20/ HMK20.

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/
PS1700/ PS3300. ND 114P Stylus for HP211A/
HP239A. ND 150P Stylus for PS5011. NS 128P
Stylus for HMP20/HMW20/ HMK20 (pair).
ND 1006 Stylus for EX1K, EX2K. No rec.
retail prices.

■ STANTON

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

500A

Magnetic cartridge with D5107A stylus. Play-
ing weight: 2-5gms. FR: 20Hz-20kHz. Output:
1mV. Rec. load: 47K. Price: £16.60 (plus
VAT).

500AL

Magnetic cartridge with D5107AL stylus. Play-
ing weight: 3-7gms. FR: 20Hz-17kHz. Output:
1mV. Recommended load: 47K. Specially de-
signed for disco and industrial use. Price:
£16.60 (plus VAT).

500E

Magnetic cartridge with D5100E stylus. Play-
ing weight: 2-5gms. FR: 20Hz-20kHz. Output:
1mV. Rec. load: 47K. Price: £19.99 (plus
VAT).

500EE

Magnetic cartridge with D5100EE stylus. Play-
ing weight: 1-2gms. FR: 10Hz-20kHz. Output:
1mV. Rec. Load: 47K. Price: £23.25 (plus
VAT).

680EE

Magnetic cartridge with D680 stylus. Playing
weight: 0.75-1.5gms. FR: 20Hz-20kHz. Out-

put: 0.82mV. Rec. load: 47K. Price: £34.35 (plus VAT).

681EEE

Magnetic cartridge with D6800EEE stylus. Playing weight: 0.75-1.5gm. FR: 12Hz-22kHz. Output: 0.7mV. Rec. load: 47K. Price: £53.30 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Bucks. SL1 3DR. Tel: Slough 34522.

EPC-207C ★

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, 5cms/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).

■ **TOSHIBA**

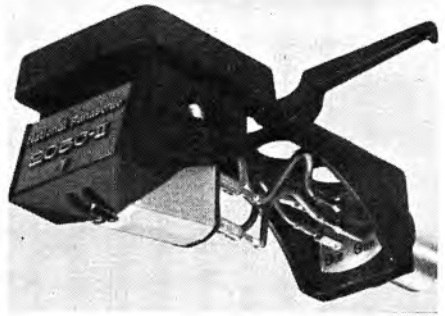
Toshiba (UK) Ltd, Toshiba House, Great South West Road, Feltham, Greater London. Tel: 01-751 1281.

C-55M

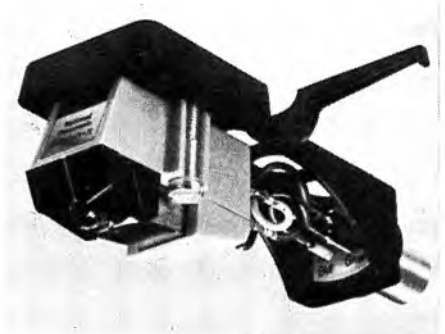
Moving magnet cartridge with diamond stylus. Compliance: 7×10^{-6} cms/dyne. FR: 3.5mV. Rec. load: 47K ohms. Dual magnet type, 45 deg. Price: £7.07 (plus VAT).

■ **ULTIMO**

Chave Innovations Ltd, The Granary, Jackass Lane, Keston, Kent BR2 6AH. Tel: 0689-66 52051.



Technics EPC 205C



Technics 207C

DV38/20A

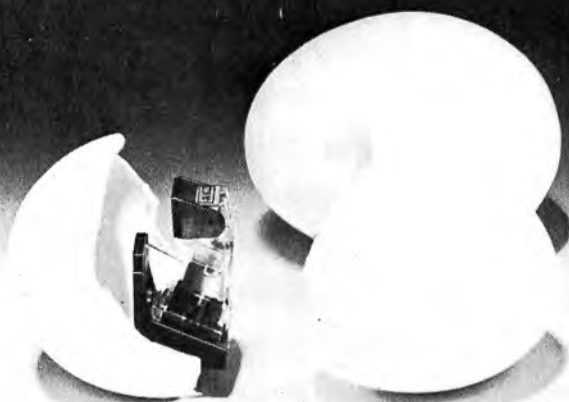
Moving coil cartridge with diamond stylus, playing weight 1.5 ± 0.3 gm. Compliance: $8-17 \times 10^{-6}$ cm/dyne. FR: 20Hz-30kHz. Output: 2mV at 1kHz 5cm/sec. Rec load: 47K. No transformer required. Suitable for quadraphonic records. Price: £75.00 (plus VAT).

■ **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.



** Transversal Suspension*

The ultimate conception



P 8ES

AKG P 8ES stereo cartridge

incorporates a unique and brilliantly designed single pivot point suspension system which ensures that every instrument and performer will be reproduced not only with the highest possible fidelity and sound definition, but also with an almost uncanny aural sense of "depth" and directional detail.

DON'T JUST BELIEVE US! TRY IT! FOR YOURSELF!



FEATURES: Unique AKG designed TS (Transversal Suspension) stylus system. Universal symmetry in respect to transversal movements. Superb transient response. Ultra high tracking ability. Very low effective moving mass. Every P 8ES individually numbered and supplied with a calibrated frequency response/crosstalk curve. Made with the same meticulous care as the world famous AKG studio microphones. The P 8ES is the premier cartridge in a completely new range of five models.

182/4 Camoden Hill Road, Kensington AKG Equipment Ltd., London W8 7AS Tel. 01-229-3695, 01-727-0788

Radio Tuners

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ACCUPHASE

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

Tel: Edenbridge 4111.

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 impedance: 200 ohms (fixed), 2.5K (controlled). Signal strength meter, centre tuning meter and multipath meter. Mains: 100, 117, 220, 240V AC 50/60Hz. Size: $45.5 \times 15.2 \times 35.5$ cms. 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: $44.5 \times 15.2 \times 35.5$ cms. 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 impedance: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $44 \times 33.6 \times 14.1$ cms. Price: £160.89 (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 impedance: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $38 \times 26.3 \times 12.5$ cms. Price: £103.11 (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 designed for use with the Alba UA 700 amplifier. Tuning range: MW 1640-535kHz, LW 280-162kHz, FM 87-104MHz. Switchable AFC. Pushbutton switching for wavebands. Rotary tuning control. Stereo beacon. Stereo broadcast muting facility. THD: less than 1%. VHF aerial impedance: 75 ohms. Price: on application.

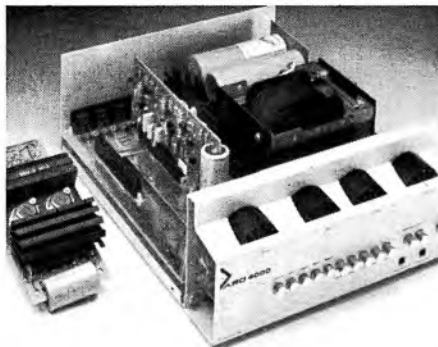


Alba 800A tuner

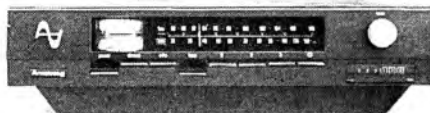


Accuphase T-101 stereo tuner

★ Indicates entry is illustrated



Printed Circuit Board of A/R/D 4000



Armstrong 623

■ ALPHA

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

TX 500

AM/FM tuner. Tuning range: 87.5-108MHz,
550-1,600kHz. Variable tuning. Manual
(pushbutton) AFC. Sensitivity: $1.5\mu\text{V}$. Image
frequency rejection: -50dB . Signal strength
meter. Capture ratio: 2dB . Output level:
50mV-500mV. Aerial input impedance: 75Ω
unbalanced. Dimensions: $21 \times 44 \times 10\text{cm}$.
Mains: 240V AC. Price: £63.50 (plus VAT).

FT 650

Tuning range: 87-108MHz, 540-1,160kHz.
Variable tuning. Automatic AFC. Sensitivity:
 $2\mu\text{V}$. Signal strength and centre tuning meters.
Capture ratio: 2dB . Fixed output: 200mV.
Aerial input impedance: 75Ω unbalanced.
Dimensions: $42.5 \times 24.8 \times 14.2\text{cm}$. Mains vol-
tage tappings: 240V AC. Price: £99.00 (plus
VAT).

■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road,
Dalston, London E8 2NH.
Tel: 01-249 5237/8/9.

3000 Mk II

AM/FM radio tuner. Tuning range: MW 525-

1600kHz, LW 150-270kHz, FM 88-108MHz.
Variable tuning. Switchable AFC. Sensitivity
(mono): $2.0\mu\text{V}$. 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 impedance: 75Ω FM. Dimensions: 36.5
 $\times 15.5 \times 9.5\text{cm}$. Mains: 240V AC. Price:
£40.00 (excluding VAT).

■ A/R/D

Audio Research and Development Ltd,
Navas House, The Maultway,
Camberley, Surrey GU15 1QE.
Tel: Camberley 24654.

A/R/D MkIV 4000 ★

Tuning range: 87.5-104.5MHz. Variable elec-
tronic touch-control tuning plus six pre-set
push buttons. AFC: $\pm 400\text{kHz}$. Sensitivity:
 $1.2\mu\text{V}$ 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
impedance: 75Ω . Dimensions: $26 \times 35.2 \times$
 56cm . 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. Sen-
sitivity: $1.5\mu\text{V}$. Image frequency rejection:
50dB. IF rejection: 100dB. Signal strength and
tuning meters. Capture ratio: 1.75dB . Selec-
tivity: 56dB. S/N: 65dB mono. Fixed output:
High: 0dB (775V) 600Ω . Low: 100mV. Aerial
input impedance: $75-80\Omega$ and $240-300\Omega$.
Dimensions: $31.2 \times 28.5 \times 8.2\text{cm}$. Mains:
105-135 and 215-250V. Price: £140.00 (inc.
VAT).

624 (FM)

FM only, otherwise similar to 623 (AM-FM).
Price: £109.00 (inc. VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 105-109 Oyster Lane,
Byfleet, Surrey.
Tel: Byfleet 41131.

T55 ★

FM stereo tuner with range 88-108MHz. Var-
iable tuning. AFC. Sensitivity: $1.4\mu\text{V}$. Two
indicator lamps for tuning. S/N mono: 65dB.



Cambridge Audio T55

Output: 1V max from 5K ohms source (variable). Aerial input impedance: 75 ohms co-ax or 300 ohms balanced. Dimensions: 41.9 × 24.4 × 5.1cms. Mains voltage tapping: 110/120/220/240V. Price: £125.00 (plus VAT).

■ CHAVE INNOVATIONS LTD

The Granary, Jackass Lane,
Keston, Kent BR2 6AH.
Tel: Keston 52051.

US-1

Tuning range: T/V Band IV, V. Variable tuning. AFC. Image frequency rejection: 55dB. IF rejection: 80dB. Signal strength and tuning meter. Capture ratio: 0.85dB. Sensitivity: 6µV. S/N: 65dB mono. Aerial input impedance: 75. 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 impedance: 75. Dimensions: 35 × 22 × 10cm. Mains: 240, 110 V. Price: £90.00 (plus VAT).

■ DUAI.

Audiodecks Ltd, PO Box 7, Sandbeck Way,
Wetherby, West Yorks.
Tel: Wetherby 5477.

CT 110

Variable tuning. Switchable AFC. Sensitivity mono: <2.5µV. Sensitivity stereo: <18µV. Signal strength tuning meter. Fixed output. Aerial input impedance: 240/300 ohms. Dimensions: 42 × 37 × 10.8cms. Price: £133.79 (plus VAT).



Eagle T6000



Eagle AA 102

CT 19

Variable and pushbutton tuner with switchable AFC. Sensitivity: 22.5kHz 26dB. FM mono µV 1.0. Sensitivity stereo <7µV. Signal strength tuning meter. Fixed output. Aerial input impedance: 240/300 ohms. Dimensions: 47 × 33.5 × 10.8cms. Mains voltage tappings: 220/240. Price: £193.55 (plus VAT).

■ EAGLE

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

AA 102 ★

AM/FM stereo tuner inc. L.W. Tuning range:
AM 540-1600kHz, FM 88-108MHz. Variable

★ Indicates entry is illustrated

tuning. No pre-sets. Sensitivity: (mono) AM $150\mu\text{V}$ (for 20dB quieting), (stereo) FM $7\mu\text{V}$ (for 30dB quieting). Image Frequency Rejection: 45dB. IF Rejection: 50dB. Capture Ratio: 5dB. S/N Ratio: > (stereo) 54dB. Variable output: 0-1000mV. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 27.5 × 22 × 9.6cm. Mains: 110-120, 220-240V AC. Price: £57.40 (excluding VAT).

T4000

AM/FM tuner with range of 88-108MHz on FM and 536-1605kHz on AM. Variable tuning. AFC. Sensitivity: better than $2.0\mu\text{V}$. Signal strength and tuning meter. Variable output. Aerial input impedance 75 ohms 300 ohms. Dimensions: 38 × 30 × 15cms. Mains voltage tapping: 240 50/60Hz. Price: £126.60 (plus VAT).

T6000 ★

AM/FM tuner with range of 88-108MHz on FM and 536-1605kHz on AM. Variable tuning. Sensitivity: better than $1.8\mu\text{V}$. Signal strength

and tuning meter. S/N ratio mono: 65dB. Fixed or variable output. Aerial input impedance: 75 ohms 300 ohms. Dimensions: 40 × 29 × 13.2cms. Mains voltage tapings: 24 50/60Hz. Price: £112.50 (plus VAT).

■ HITACHI

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

FT 920 ★

FM section: Usable sensitivity (IHF): $1.6\mu\text{V}$. Selectivity (IHF): 80dB. Capture ratio: 1dB. Image rejection: 80dB. IF rejection: 90dB. AM suppression: 55dB. Harmonic distortion: Mono 0.15%; Stereo 0.25%. Signal-to-noise ratio: 74dB. Aerial impedance: 75Ω, 300Ω. AM section: Sensitivity: Ferrite $300\mu\text{V/m}$; IHF $15\mu\text{V}$. Selectivity: 40dB. Image rejection: 65dB. IF rejection: 85dB. Signal-to-noise ratio: 50dB. Dimensions: 43.5 × 14.4 × 39.4cm. Weight: $17\frac{3}{16}\text{lb}$. (7.8kg). Price: £165.00 (inc. VAT).

FT 300 ★

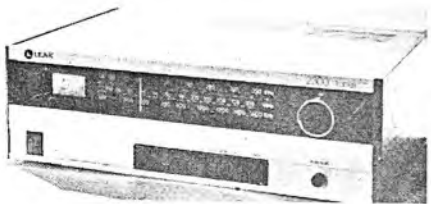
Solid-state AM/FM stereo tuner. FM section: Frequency range: 88-108MHz. Usable sensitivity: $2.2\mu\text{V}$ (IHF), $1.9\mu\text{V}$ (S/N 30dB, 30% modulation). Image rejection: 50dB. IF rejection: 95dB. Distortion: Monaural 0.2% (400Hz); Stereo 0.5% (400Hz). Signal-to-noise ratio: 70dB. Selectivity: 58dB. Stereo separation: 50dB (1kHz). Capture ratio: 1.5dB. Aerial input impedance: 300Ω (balanced type), 75Ω (unbalanced type). AM section: Frequency range: 530-1605kHz. Usable sensitivity: $20\mu\text{V}$ (IHF), $250\mu\text{V/m}$ (bar aerial). Image rejection: 55dB. IF rejection: 45dB. Selectivity: 30dB. Signal-to-noise ratio: 43dB. Output voltage: 300mV (400Hz, 30% modulation). Power source: AC 220V-240V, 50Hz. Power consumption: 15W. Dimensions: 39 × 12.1 × 36.3cm. Accessory circuits: FM/AM combination meter. Mode/ muting switch. AM bar aerial. FM stereo indicator. Stereo/monaural auto changeover. Price: £105.00 (inc. VAT).



Hitachi FT 920



Hitachi FT 300



Leak 2300 tuner

■ LEAK

Rank Audio Visual,
PO Box 70, Great West Road,
Brentford, Middlesex TW8 9HB.
Tel: 01-568 9277.

Model 2300 ★

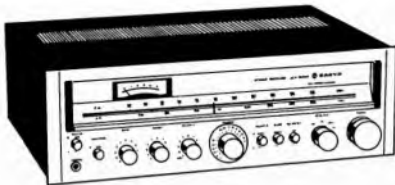
FM/MW/LW stereo tuner. Bands: 87.5-108MHz FM, 150-350kHz LW, 510-1650kHz MW. Manual tuning, switched AFC, centre

Sanyo tuner amps- the heart of a good system

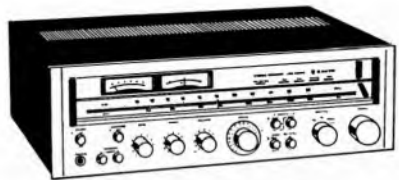


JCX2400K
AM/FM Tuner Amplifier

This new tuner/amplifier was designed with one aim: to give the hi-fi enthusiast a perfect combination of style, performance and advanced technical features. The style speaks for itself. Performance begins with 50 Watts per channel RMS at 0.3% T.H.D. and exceptionally sensitive reception and tuning. The rotary controls utilise a special 'equal stepping' system to give you better, faster control of all sound functions. Connections on rear panel include sockets for 2 or 4 speaker systems, aux, phono, recorder out and monitor in. Dimensions: 440mm W x 330mm D x 146mm H.



JCX2100K AM/FM Stereo Tuner Amplifier. 15 Watts per channel RMS tuner/amplifier. Functional controls include an FM muting button to eliminate interstation hissing. Facilities for 2 or 4 speaker systems. Dimensions: 420mm W x 340mm D x 130mm H.



JCX2300K AM/FM/FM Stereo Tuner Amplifier. 30 Watts per channel RMS at 0.4% T.H.D. and exceptionally sensitive reception and tuning are just some of the features of this outstanding tuner/amp. Connections on rear panel include sockets for 2 or 4 speaker systems, aux, phono, recorder out and monitor in. Dimensions: 440mm W x 330mm D x 148mm H.

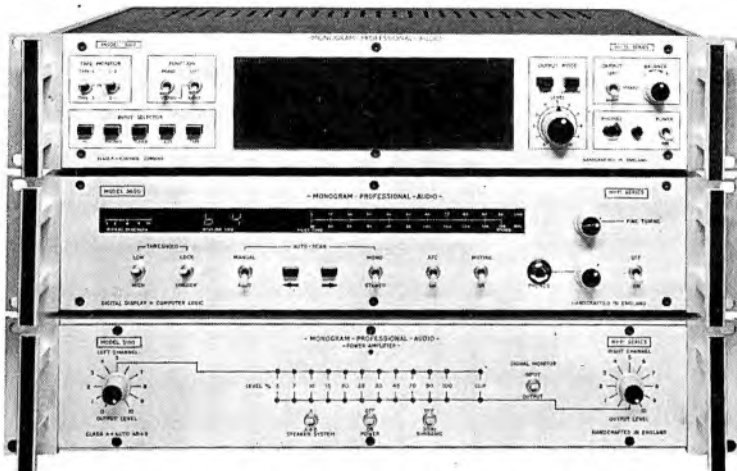


SANYO
a world of difference

Sanyo Marubeni (UK) Limited,

8 Greycaine Road, Greycaine Estate, Watford WD2 4UQ. Telephone: Watford 46363

SUPER AUDIO COMPONENTS



LET'S - - - - COMMUNICATE

3600 FM TUNER.

MAIN FEATURES.

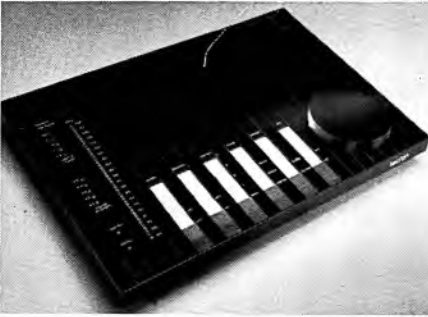
'MICRO-PROCESSOR CONTROLLED THROUGHOUT.'

1. Totally linear electronic frequency display. 88-108 MHz.
2. Electronic LED signal strength meter system. 'Ultra accurate.'
3. Automatic station search. Touch buttons.
4. Automatic fine tuning. 1 MHz 'Read forward' auto scan system.
5. Automatic AFC relay system when scanning stations.
6. Automatic signal strength skip and lock.
7. Automatic digital logging, all stations.
8. Automatic 'Off the air' shift to next station.
9. Automatic 'On the air' pilot tone indication.
10. Threshold level controls, for search tuning.
11. Discreet decoder. Ultra low noise/high separation.
12. Automatic station lock/unlock. All conditions.

MONOGRAM PROFESSIONAL AUDIO

281, Balmoral Drive, HAYES, Middx. LONDON, ENGLAND.

(01-573-1566) USA-(213-393-8037)



Lencos FM1

■ LENCO

C. E. Hammond & Co. Ltd. 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

T30 ★

AM/FM tuner with range 87.5-108MHz and 525-1650kHz. Variable tuning. S/N stereo >55dB, mono 20µV. Dimensions: 43 × 37.2 × 13.2cms. Price: £135.00 (plus VAT).

■ MONOGRAM

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

tuning meter. Sensitivity: 1.6µV IHF (FM), 20µV AM. Aerial: 75 and 300 ohms. S/N: > -65dB. Distortion: 0.5% at 1kHz. Output: 400mV 600 ohms for 30% modulation. Mains: 240V 50-60Hz AC. Size: 5.2 × 16.3 × 12.2in. Teak finish. Variable mute level, quasi stereo control. Price: £138.60 (plus VAT).

3900T

AM/FM tuner with range on FM of 97.5-108MHz and on AM 520-1650kHz. Variable tuning — no presets. Sensitivity: AM: IHF field strength 200µV/m, input socket 20µV. Sensitivity FM: IHF 45dB, quieting 1.6µV/3µV, stereo 30dB, 50dB, 10µV, 45µV. Three meters for FM tuning, signal, multipath. S/N ratio: FM 70dB, AM 45dB. Output: 775 mV fixed, 1-1.5V variable. Aerial input impedance: 300 ohms, 75 ohms. Dimensions: 48.2 × 40.5 × 17.5cms. Mains voltage tappings: 240V. Price: £253.48 (plus VAT).

■ LECSON SYSTEMS LTD

Burrell Road, St. Ives, Huntingdon, Cambs PE17 4LE.
Tel: St. Ives 64124.

FM1 ★

Tuning range 88-108MHz. Variable tuning with four presets. AFC. Sensitivity mono: 1µV for 30dB quieting. Sensitivity stereo: 10µV. LED indicating array. S/N ratio stereo: 70dB. Output: variable for 1V RMS. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 36 × 25.4 × 3.8cms. 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).

3600

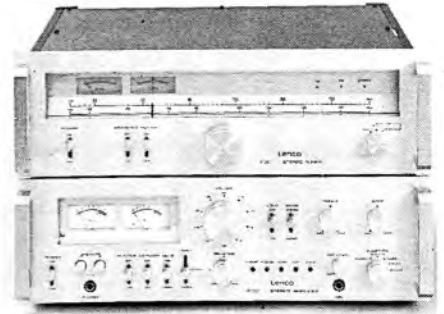
FM Stereo receiver covering bands 87.5-108 MHz. Totally linear electronic display. Auto station search, fine tuning and lock. Auto signal strength skip and lock. Preset scan up to 100 stations. Discrete stereo decoder. Simultaneous/automatic mono/stereo transmission indication. AFC. Mute threshold. Price: £339.00 (plus VAT).

■ NYTECH

Nytech Ltd, 4 High Street, Nailsea, Bristol BS19 1BW.
Tel: Bristol 5267.

T801

AM/FM tuner with tuning range 87.5-104.5MHz. 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 impedance: 75 and 300 ohms. Dimensions: 40 × 30 × 8.8cms. Mains voltage tappings: 110/120, 220/240V. Price: £105.25 (plus VAT).



Lencos A56 with T30

★ Indicates entry is illustrated

T802

AM/FM tuner with range 87.5-104.5MHz on VHF, 520kHz-1.6MHz on MW, 150kHz-350kHz on L.W. Variable and pushbutton tuning with 8 presets on FM. AFC. Sensitivity mono: 2.0 μ V/30dB S/N (FM 80 μ V (MW) 40 μ V (LW)). Sensitivity stereo: 20 μ V/30dB S/N. Signal strength meter and centre zero tuning meter. S/N ratio: 68dB. Output: variable 0-1V. Aerial input impedance: 75 ohms and 300 ohms. Dimensions: 40 x 30 x 8.8cms. Mains voltage tapping: 110/120, 220/240V. Price: £133.16 (plus VAT).

Special features & finishes T.801.

Ultra simple professional grade FM tuner with high performance capability, featuring metered frequency readout, varicap tuning with 8 user adjustable preset pushbuttons.

Finished in brushed satin or black front panel, metal case standard — optional wooden case CAB I available as an extra item (£12.00).

Special features & finishes T.802.

As T.801 but with the addition of MW & LW tuner section and vernier main tuning control, extended scale metered frequency readout.

Finished in brushed satin or black front panel, metal case standard — optional wooden case CAB I available as an extra item (£12.00).



Pioneer TX 9500 II



Pioneer TX 8500 II

■ PHILIPS ELECTRICAL LTD.

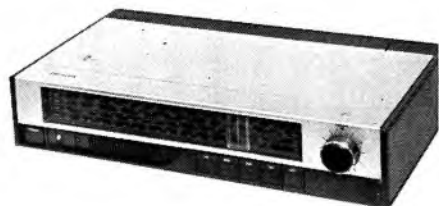
City House, 420 London Road,
Croydon, Surrey.
Tel: 01-689 2166.

RH 640 ★

Tuning range: FM/L/M/S. Variable tuning. Switchable AFC. Sensitivity: AM 80 μ V for 26dB. FM 2.5 μ V (300 ohms), 26dB. Selectivity: AM 37dB for 9kHz, FM 25dB for 300kHz. Fixed output: 500mV-10k ohms. Aerial Input Impedance: 300 ohms. Dimensions: 36 x 22 x 9.2cm. Mains: 110, 127, 220, 240 Volts. No rec. retail price.



Pioneer TX 6500 II



Philips RH 640



Pioneer TX 5500 II

■ PIONEER

Shriro (UK) Ltd, Shriro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 652227.

TX 9500 II ★

AM/FM stereo tuner. Tuning range: FM 88-108MHz, AM 550-1650kHz. 5-ganged variable tuning. Signal strength and tuning meters. S/N ratio: (mono) 55dB, (stereo) 77dB. Fixed and variable outputs. Aerial input impedance: 75 ohms and 300 ohms. Dimensions: 52 × 39.5 × 15cm. Mains: 220 to 240V. Price: on application.

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), AM 50dB. Fixed and variable outputs. Aerial input impedance: 75-300 ohms. Dimensions: 42 × 39.5 × 15cms. Mains voltage tappings: 200/240V. Price: on application.

TX 6500 II ★

AM/FM stereo tuner with range 88-108mHz (FM) and 550-1650kHz (AM). Variable tuning. Signal strength and tuning meter. S/N ratio: FM 68dB, AM 50dB. Fixed and variable output. Aerial input impedance: 75-300 ohms. Dimensions: 38 × 32.2 × 13.9cms. Mains voltage tappings: 220/240V AC. Price: on application.

TX-5500 II ★

AM/FM stereo tuner with range 88-108MHz (FM), 550-1650kHz (AM). Variable tuning. S/N ratio: 68dB FM, 50dB AM. Fixed and variable output. Aerial input impedance: 75-300 ohms. Dimensions: 38 × 26.9 × 12.4cms. Mains voltage tappings: 220/240V AC. Price: on application.

■ QUAD

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

Quad FM3 ★

Stereo FM tuner. Range: 88-108MHz. Variable tuning. High stability tuned stages maintain accuracy without AFC. Sensitivity: 2μV 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 ±1dB. Separation: 40dB at 1kHz. Distortion: 1kHz at 40kHz deviation, 0.3%. Recommended load: greater than 50K. De-emphasis:



Quad FM3



Revox A76

50μSec or 75μSec as required. Mains: 100-125V 200-250V 50-60Hz. Dual gate MOSFET input stage. Integrated circuits (ICs) in IF and decoder. Ceramic filters in IF chain. Output via 5-pin DIN connector. Size: 26 × 16.5 × 9.2cm. Price: £98.00 (plus VAT).

■ RADFORD AUDIO LTD.

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

Model FMT 5

FM tuner with varicap tuning, FET front end. Uses varicap front end having two radio frequency stages of five tuned circuits and four field effect transistors. Intermediate frequency amplifiers contain ceramic ladder filters and high gain integrated circuits. Incorporates phase locked stereophonic decoder. Size: 17 × 4³/₄ × 11in. Price: £200 (plus VAT).

■ REVOX

F.W.O. Bauch Ltd,
49 Theobald Street, Boreham Wood, Herts
WD6 9RZ.
Tel: 01-953 0091.

Model A76 ★

Stereo tuner, VHF only: 87.5-108MHz, variable tuning. Two tuning meters. Sensitivity: 1μV mono (IHF), 10μV stereo (IHF). Aerial: 60+240 ohms. VHF S/N: 70dB at 75kHz deviation. VHF distortion: 0.2% at 1kHz, 40kHz

★ Indicates entry is illustrated

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: 1µV mono (IHF), 10µV 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 ±5dB. Phono 2, (RIAA) 3mV/50K ±5dB. Overload margin on all inputs >30dB. Outputs: 1 and 2: 1.5V into load >10K. Tape out, front panel and two rear: 200mV into load >50K. Phono switches, bass, treble. Low, high and loudness filter. Distortion: 0.1% at 1.5V output. FR: 20Hz-20kHz ±1dB. S/N: phono, 65dB. Other inputs: 85dB. Price: £860.00 (plus VAT).

■ ROGERS

Swisstone Electronics Ltd,
4-14 Barmeston Road, Catford, London SE6 3BN.

Tel: 01-697 8511.

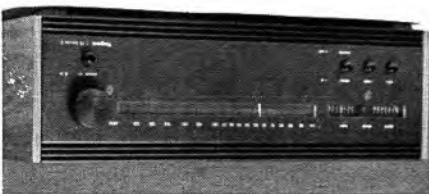
T75 Series II ★

Stereo Tuner. Range: 88-108MHz. Sensitivity: 1.5µV. Capture ratio: 1.5dB. IF Rejection: 80dB. Signal strength meter. Nominal output: (30% modulation) 200mV o/p, 20-15,000Hz < 0.5%. S/N: mono 70dB, Stereo 65dB. Price: £98.00 (plus VAT).

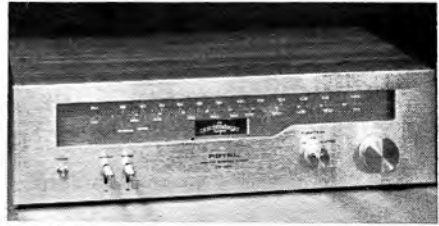
■ ROTEL

Rank Audio Visual, Rank Hi-Fi, PO Box 70,
Great West Road, Brentford TW8 9HR.

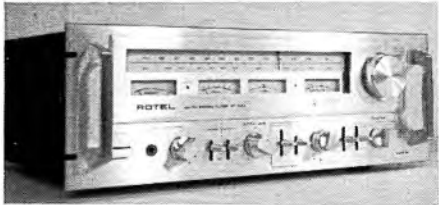
Tel: 01-368 9222



Rogers T75 Series II tuner



Rotel RT 324



Rotel RT 1024

RT 824

Tuning range: FM 88-108MHz, AM 550-1,600kHz. Variable rotary knob tuning. Sensitivity mono: AM/IHF 150µV. FM/IHF 1.6µV. Image frequency rejection: >110dB. IF rejection: >110dB. Signal strength and tuning meters. Capture ratio: 1.0dB. Selectivity: 80dB. S/N: >70dB. Fixed output: 775mV. Variable output: 0-1.5 Volts. Aerial input impedance: FM 300 ohms balanced, 75 ohms unbalanced. AM ferrite loopstick. Dimensions: 43 × 33 × 14cm. Price: £150.25 (plus VAT).

RT 624

Features similar to RT 824 except: Sensitivity: AM/IHF 180 µV, FM/IHF 1.8mV. Image frequency rejection: >80dB. IF rejection: >90dB. Selectivity: 75dB. Price: £118.61 (plus VAT).

RT 324 ★

Tuning range: AM 550-1,600kHz, FM 88-108MHz. Rotary knob for variable tuning. Sensitivity mono: AM/IHF 250 µV. Sensitivity stereo: FM/IHF 1.9µV. Image frequency rejection: >55dB. IF rejection: >70dB. AM/FM tuning meter. Capture ratio: 2dB. Selectivity: 50dB. S/N: 765dB. Fixed output: 775mV. Aerial input impedance: FM 300 ohms balanced, 75 ohms unbalanced. Dimensions: 40 × 24 × 11.5cm. Price: £80.48 (plus VAT).

RT 224

AM 550-1,600kHz, FM 88-108MHz. Rotary knob for variable tuning. Sensitivity mono: AM/IHF 250µV. Sensitivity stereo: FM/IHF 4mV. Image frequency rejection: >40dB. IF

rejection: >70dB. Signal strength meter. Capture ratio: 4dB. Selectivity: 45dB. S/N: >60dB. Fixed output: 775mV. Aerial input impedance: FM 300 ohms balanced, 75 ohms unbalanced. Dimensions: 33.5 × 24 × 11.5cm. Price: £63.21 (plus VAT).

RT 1024 ★

AM/FM stereo tuner with range 87.5-108MHz (FM) and 520-1650 (AM). Variable tuning, no preset. Sensitivity mono: 9.3dB (3.2µV/300 ohms). Sensitivity stereo: 14.5dB (5.8µV/300 ohms). Signal strength and tuning meters. S/N ratio stereo: >70dB. Output: fixed 775mV, variable 0-1.5V. Aerial input impedance: FM 300 ohms/75 ohms unbalanced. Dimensions: 48.2 × 37 × 18cms. Mains voltage tapplings: 240V. Price: £261.62 (plus VAT).

RT 724

Similar features to RT 1024 except: Sensitivity mono: 10.3dB (1.8µV). Sensitivity stereo: 16dB (3.5µV). Tuning meter. Dimensions: 43 × 38 × 14cms. Price: £95.69 (plus VAT).

■ **SANSUI**

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

TU 3900

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: 2µV (IHF). Signal strength and tuning meters. S/N ratio stereo: 60dB. Fixed output: 775mV @ 100 per cent mod. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 40 × 12 × 24cms. Mains voltage tapplings: 110, 220, 240V. Price: £81.01 (inc. VAT).

TU 5900

Features as for TU 3900 except: Sensitivity mono: 1.8µV. Output: variable. Dimensions: 43 × 13.2 × 24.3cms. Price: £119.38 (inc. VAT).

TU 7900

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: 1.7µV (IHF). Signal strength and tuning meters. S/N ratio: 65dB. Output: Variable 1-775µV @ 100 mod. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 43 × 13.2 × 24.3cms. Mains voltage tapplings: 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 impedance: 75-300 ohms. Dimensions: 46 × 16 × 31cms. Mains voltage tapplings: 110, 220, 240V. Price: £219.28 (inc. VAT).

■ **SKANTIC**

Skantic (UK) Ltd, Station Road, Edenbridge, Kent TN8 6EY.

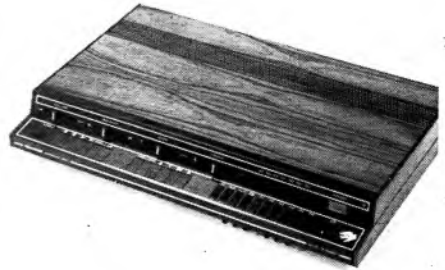
Tel: Edenbridge 5231.

4052 ★

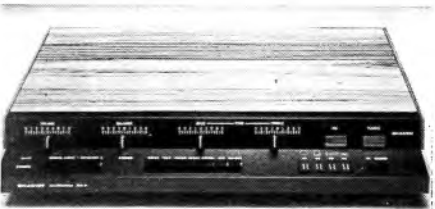
Tuner. Amp of Swedish design. Output: 88W RMS. Built-in facility for simulated four channel reproduction, with volume control for extra speakers. FM radio with 7 programme selectors, light emitting diode indicators. AFC. Sockets for stereo headphones, record deck, tape recorder, auxiliary and additional 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: £190.14 (plus VAT).

3062 ★

Output: 60W RMS. Built-in facility for four-channel 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



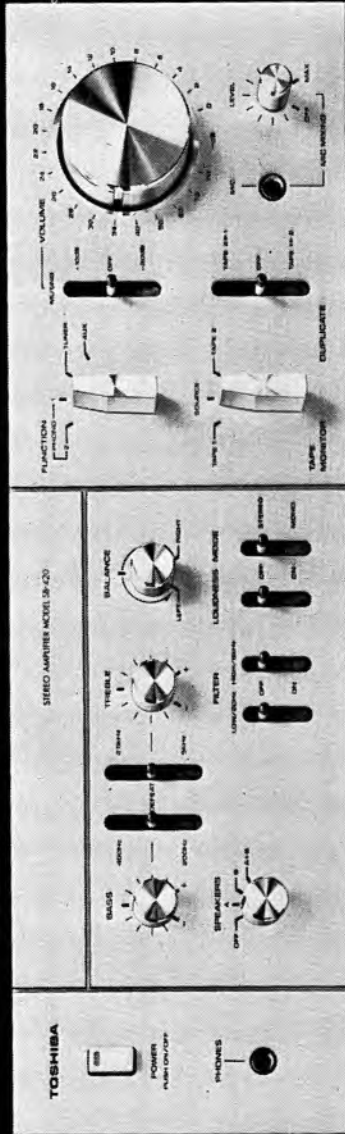
Skantic 4052



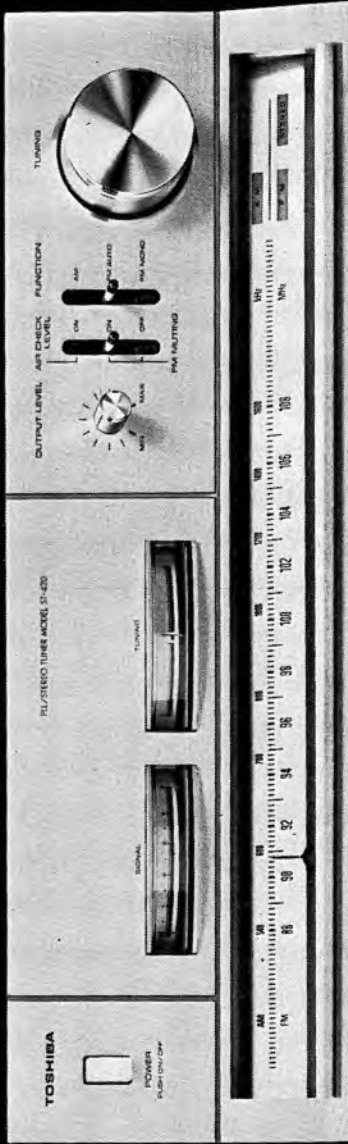
Skantic 3062

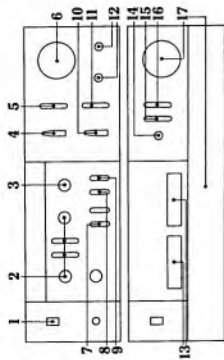
On the face of it, Toshiba has a lot of explaining to do.

Toshiba SB-420
integrated stereo
amplifier



Toshiba ST-420
FM/AM stereo
tuner





SB-420 INTEGRATED AMPLIFIER

- 1. Power Switch**
It has a built-in white-light indicator so that you know when power is ON.
- 2. Tone Controls**
There are two turnover frequencies over which the bass and treble controls operate (BASS, 200Hz, 400Hz, TREBLE, 2.5 kHz, 5 kHz). There is also a TONE DEFEAT switch for each of these controls.
- 3. Balance Control**
Adjusts volume balance of left and right loudspeakers.
- 4. Function Switch**
You can select between turntables 1 or 2, tape deck 1 or 2, tuner, or auxiliary.
- 5. Muting Level**
This reduces the volume level by 10 dB or 20 dB while you, say, answer the phone. The volume control is not disturbed.
- 6. Volume Control**
A new type of precision control with 22 click-stop positions, combined with advanced resistor design, results in a logarithmic change in sound output level to match the response of the human ear. Hence the direct calibration in decibels.

By placing the volume control in the input signal path, large signal peaks are attenuated, preventing pre-amplifier overload.

7. Low and High Filters

Low-filter, filters out subsonic noise below 20 Hz which in extreme cases could damage loudspeaker drive units. The high filter operates above 8 kHz to reduce surface noise from records.

8. Loudness Control

A compensation to low and high frequencies, owing to the fact that the human ear does not hear all frequencies equally at different sound levels.

9. Stereo/Mono Switch

10. Tape Monitor Switch
You can select tape deck 1 or 2, and monitor with a 3-head tape deck.

11. Tape Duplicate Switch

Two tape decks can be connected to the SB-420; you can dub from 1 to 2 or 2 to 1 with the amplifier on or off. Also the duplicate switch allows recording from one tape deck to another, and at the same time it is possible to listen to a radio broadcast or play records.

12. Microphone input with level control

Full mixing facilities and output terminals. You can record the total mix if required.

ST-420 TUNER

13. Signal and Tuning Meters

Wide-ranging tuning and signal-strength meters to ensure maximum accuracy in tuning.

14. Output Level

Variable output level, for direct connection to the line input of a tape deck.

15. Air Check Level

An unusual feature. An internal oscillator delivering a 440 Hz tone at 100% deviation enables you to set

levels on your tape recorder before commencing recording.

16. Function Switch

If you have a bad signal on an FM stereo broadcast, you can still receive good quality sound by switching to FM Mono.

17. Tuning dial/knob

Full-width linear tuning dial angled back for easy reading. It is combined with a precise fly-wheel tuning knob which enables quick and easy station selection.

The Toshiba SB-420 integrated amplifier, and the ST-420 tuner; they are separate units, but you can see from their beautifully machined faces that they work in total harmony.

That immaculate finish is a perfect complement to the excellence of Toshiba's electronic engineering. Who else can give you so many features of such quality within this price range?

The SB-420 has a continuous power output of 42 watts RMS per channel minimum (both channels driven) into 8 ohms, 20 Hz to 20 kHz, with a maximum harmonic distortion of 0.3%.

If that isn't enough for you, the SB-620 produces 62 watts under the same circumstances, and the remarkable SB-820, 82 watts.

Your Toshiba dealer will be pleased to demonstrate to you the virtues of Toshiba amplifiers, turntables, receivers, tuners, cassette decks and loudspeakers.

Simply fill in and post the coupon, and we'll send you his name and address, and our comprehensive hi-fi brochure, which includes full specification and performance figures.

Please send me the Toshiba hi-fi brochure and the name and address of my nearest dealer.

NAME _____

ADDRESS _____

TOSHIBA

...In Touch with Tomorrow

Toshiba (UK) Ltd., Toshiba House, Girling Way,
Great South West Road, Feltham, Middlesex TW14 0PG.
Tel: 01-751 1281/7

★ Indicates entry is illustrated



Sony ST 5950 SD



Sony ST 2950 F/TA 2650

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 2950 F ★

Tuning range: VHF — 87.5-108MHz, MW: 530-1605kHz, LW — 130-350kHz, SW — 6-18MHz. Variable tuning. Sensitivity mono: $4.0\mu\text{V}$ mono (at 50dB quieting 75kHz dev). Sensitivity stereo: $50\mu\text{V}$ stereo IHF (at 50dB quieting). Signal strength and tuning meters. S/N ratio stereo: 68dB. Output: fixed 750mV. Aerial input impedance: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $39 \times 31 \times 15\text{cms}$. Mains voltage tappings: 110, 127, 220, 240 50/60Hz. No rec. retail price.

ST 3950

Tuning range: VHF — 87.5-108MHz, MW — 530-1605kHz. Variable tuning. Sensitivity mono: $3.0\mu\text{V}$ mono (50dB quieting 75kHz). Sensitivity stereo: $40\mu\text{V}$ stereo (50dB quieting). $1.5\mu\text{V}$ S/N 26dB (40kHz). Signal strength and tuning meter. S/N ratio stereo: 70dB. Output: fixed 750mV, 10K ohms. Variable 1-1.5V, 1.5K ohms. Aerial input impedance: 300 ohms balanced, 75 ohms unbalanced. Dimensions: $46 \times 34 \times 17\text{cms}$. Mains voltage tappings: 110, 127/220/240. 50/60Hz. No rec. retail price.

ST 5950 ★

Tuning range: VHF 87.5-108MHz, MW 530-1605kHz. Variable tuning. AFC. Sensitivity mono: $2.8\mu\text{V}$ mono IHF (at 50dB quieting). 1.4mV mono (S/N 26dB). Sensitivity stereo: $35\mu\text{V}$ stereo IHF (at 50dB quieting). Signal strength and tuning meters. S/N ratio stereo: 70dB. Output: Fixed — 750mV, 10K ohms. Variable 0.2V, 3K ohms. Dimensions: $45 \times 33 \times 17\text{cms}$. Mains voltage tappings: AC 110, 127, 220, 240V 50/60Hz. No rec. retail price.

ST 73

Tuning range: VHF 87.5-108MHz, MW 530-1605kHz. Variable tuning. Further details on application. No rec. retail price.

■ J. E. SUGDEN & CO LTD.

Carr Street, Cleckheaton, Yorks BD19 5LA.
Tel: Cleckheaton 872 2501.

RS1 ★

FM stereo tuner. Range: 88-108MHz. Variable and pre-set tuning. Quadrature detector peak tuning indicator. Sensitivity: $2\mu\text{V}$ for 20dB quieting. Aerial input: 75 ohms coaxial and 300



J. E. Sugden T4R



J. E. Sugden R51

ohms balanced. Output: 0.5V. Stereo decoder fitted. AFC. Mains: 110, 120, 220, 230 and 240V AC. Thermometer type tuning dial. Special decoder filter to prevent spurious responses. Switchable decoder filter for low-level transmissions. Size: 29 × 25 × 14cm. Price: £104.00 (plus VAT).

T48 ★

Tuning range: 88-108MHz. Six push buttons. AFC. Sensitivity mono: 2.0µV. Sensitivity stereo: 6.0µV. Image frequency rejection: 70dB. IF rejection: 80dB. Capture ratio: 2.5dB. Selectivity: 40dB. S/N mono: 70dB. S/N stereo: 66dB. Fixed output: 0.5 volt. Aerial input impedance: 75 or 300 ohms. Dimensions: 16 × 28 × 13cms. Mains: 110, 120, 220, 230, 240 Volts. Price: £88.00 (plus VAT).

■ **TECHNICS**

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks. SL1 3DR.
Tel: Slough 34522.

ST-9600

FM Tuner Section

FR: 88-108MHz. S/N: 75dB. Capture ratio: 1.0dB. THD: 0.15% mono, 0.25% stereo. Image rejection: 95dB. IF rejection: 105dB.

AM Tuner Section

FR: 525-1605kHz. Sensitivity: 30µV. Selectivity: 25dB. Image rejection: 80dB. IF rejection: 85dB.

General

Dimensions: 45 × 17.3 × 36.2cms. Price: £319.95 (inc. VAT).

ST-3500

FM Tuner Section

FR: 88-108MHz. S/N: 75dB or 60dB stereo. Capture ratio: 1.0dB. THD: 0.2% mono, 0.3% stereo. Image rejection: 95dB. IF rejection: 30dB.

AM Tuner Section

FR: 520-1610kHz. Sensitivity: 15µV. Selectivity: 30dB. Image rejection: 100dB. IF rejection: 80dB.

General

Dimensions: 41 × 14 × 36cms. Price: £199.95 (inc. VAT).

ST-7500

FM Tuner Section

FR: 88-108MHz. S/N 68dB mono. 60dB stereo. Capture ratio: 1.0dB. THD: 0.2% mono, 0.4% stereo. Image rejection: 55dB. IF rejection: 82dB.

AM Tuner Section

FR: 525-1605kHz. Sensitivity: 30µV. Selectivity: 25dB. Image rejection: 45dB. IF rejection: 40dB.

General:

Dimensions: 41 × 14 × 35.2cms. Price: £110.95 (inc. VAT).

ST-7200

FM Tuner Section

FR: 88-108MHz. S/N: 68dB mono. 60dB stereo. Capture ratio: 1.0dB. THD: 0.2% mono, 0.4% stereo. Image rejection: 55dB. IF rejection: 85dB.

AM Tuner Section

FR: 525-1605kHz. Sensitivity: 30µV. Selectivity: 25dB. Image rejection: 45dB. IF rejection: 40dB.

General:

Dimensions: 41 × 14 × 35.2cms. Price: £83.95 (inc. VAT).

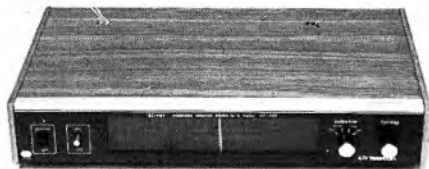
■ **TELETON**

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 impedance: FM 300 ohms; AM 75 ohms. Sensitivity: VHF/FM 2µV 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: 9.8 × 42.2 × 23cm. Net weight: 3.5kg approx. Price: on application.

★ Indicates entry is illustrated



Teleton GI 202



Teleton GI 203

T300B Stereo Tuner

Wavebands: VHF/FM 88-104MHz; MW 510-1605kHz; LW 150-350kHz. Aerial impedance: FM 240 ohms. AM 75 ohms. Sensitivity: VHF/FM $3.5\mu\text{V}$ 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 x 9.8 x 23cm. Price: on application.

GT 202 Stereo Tuner ★

Wavebands: VHF/FM 88-104MHz; MW 520-1600kHz; LW 150-350kHz. Aerial impedance: (FM) 75 or 300 ohms. (AM) 75 ohms. Sensitivity: VHF/FM $3.5\mu\text{V}$ 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: 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-910

Tuning range: 87.5-107.9MHz. Touch sensitive controls with seven pre-sets. Sensitivity: $1.8\mu\text{V}$. (stereo). Image frequency rejection:

100dB, IF rejection: 100dB. Signal strength and tuning meters. Capture ratio: 1.5dB. Selectivity: 85dB. S/N: 75dB. Fixed output: 650mV. Variable output: 0-2V. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: 45 x 34 x 13cm. Price: £520.00 (plus VAT).

ST-220

Tuning range: FM/AM. Variable tuning. Sensitivity $2.0\mu\text{V}$ 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 impedance: 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: $1.9\mu\text{V}$ 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 impedance: 300 ohms-75 ohms. Dimensions: 45 x 34 x 13.5cms. Mains: 220-240V. Price: £124.00 (plus VAT).

■ TRIO

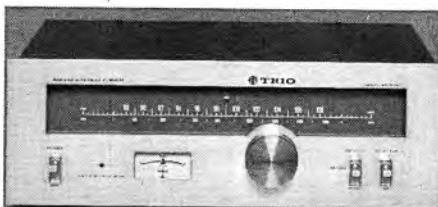
Distributors: B. H. Morris & Co (Radio) Ltd, Precision Centre, Heather Park Drive, Wembley, Middlesex HA0 1SU. Tel: 01-902 9422.

KT 5300 ★

Tuning Range: 88-108MHz FM, 535-1,600kHz AM. Variable tuning. Automatic AFC. Sensitivity: $1.9\mu\text{V}$. Image frequency rejection: 50dB, IF rejection: 90dB. Signal strength meter. Capture ratio: 1dB. Selectivity: 60dB. S/N mono: 70dB. Fixed output: average 300mV. Dimensions: 38 x 30 x 14cms. Mains: 240 Volts AC. Price: £93.33 (plus VAT).

KT 8300

Tuning range: 88-108MHz FM, 535-1,600kHz AM. Variable tuning. Automatic AFC. Sen-



Trio KT 5300



Trio 600T

sitivity: $1.6\mu\text{V}$. 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 output: average 300mV. Variable output: 0-300mV average. Aerial input impedance: 75 ohms unbalanced, 300 ohms balanced. Dimensions: $43 \times 38 \times 15\text{cms}$. Mains: 240V. Price: £293.33 (plus VAT).

KT 7500

Tuning range: 88-108MHz VHF, 540-1600MW. Variable tuning. Sensitivity stereo: $1.7\mu\text{V}$ signal strength and tuning meters. S/N ratio stereo: 70dB. Output: variable 0-300mV average. Aerial input impedance: 75×300 ohms. Dimensions: $43 \times 38 \times 15\text{cms}$. Mains voltage tappings: 240. Price: to be announced.

600T ★

Tuning range: 88-108MHz. Variable tuning. Sensitivity mono: 14.2dB, 50dB S/N. Sensitivity stereo: 36.8 dB, 50dB S/N. Signal strength and tuning meters. S/N Ratio: 80dB. Output: variable 0-1.5V. Aerial input impedance: 75 ohms, 300 ohms. Dimensions: $44 \times 38 \times 15\text{cms}$. Mains voltage: 240V. Price: £511.11 (plus VAT).

■ **YAMAHA**

Natural Sound Systems Ltd,
Strathcona Road, North Wembley MA9 8QL.
Tel: 01-904 0141.

CT 7000

Tuning range: 88-108MHz. Variable tuning. AFC (automatic on touching tuning knob). Sensitivity: (mono) $0.8\mu\text{V}$. IF rejection: >120dB. Image frequency rejection: >120dB. Signal strength and tuning meter. Capture ratio: >0.7dB. Selectivity: >85dB. S/N ratio: (mono) >78dB, (stereo) >75dB. Fixed output: 775mV. Variable output: 70mV-2V. Aerial

input impedance: 75 ohms and 300 ohms. Dimensions: $43.6 \times 31.8 \times 14.4\text{cm}$. Mains: 117/240V 50/60Hz. Price: £533.20 (plus VAT).

CT 800

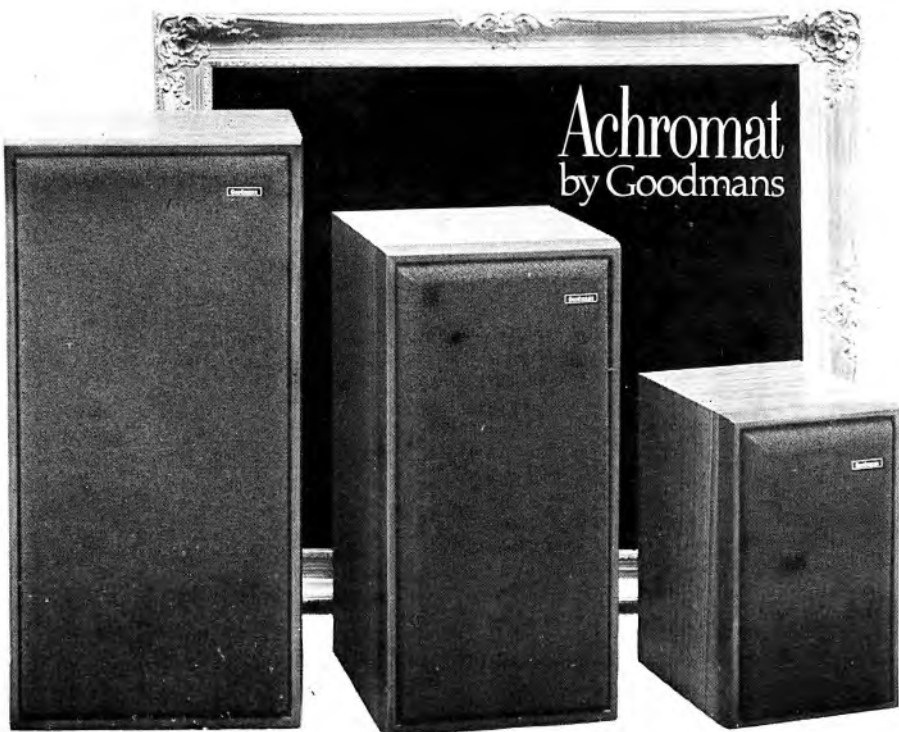
Tuning range: 88-108MHz. Variable tuning. AFC (automatic on touching tuning knob). Sensitivity: (mono) $>1.1\mu\text{V}$. IF rejection: 100dB. Image frequency rejection: >90dB. Signal strength and tuning meter. Capture ratio: 1.0dB. Selectivity: 80dB. S/N ratio: (mono) 75dB, (stereo) 72dB. Fixed output: 775mV. Variable output: 70mV-2V. Aerial input impedance: 75 ohms and 300 ohms. Dimensions: $43.6 \times 32.3 \times 14.4\text{cm}$. Mains: 117/240V 50/60Hz. Price: £197.60 (plus VAT).

CT 410

AM/FM stereo tuner. Tuning range FM 88-108MHz. AM: 525-1,605kHz. Variable tuning. Sensitivity: $1.8\mu\text{V}$ (300 ohms), $0.9\mu\text{V}$ (75 ohms); Sensitivity AM: 52dB/m. Signal strength and tuning meter. S/N ratio (FM) Mono 0.15%, stereo 71dB. S/N ratio (AM): 48dB. Dimensions: $43.5 \times 14.1 \times 34.6\text{cms}$. Mains: 110-130V 50/60Hz. Price: £102.12 (plus VAT).

CT 610

AM/FM stereo tuner. Tuning range FM 88-108MHz. AM: 525-1,605kHz. Variable tuning. Sensitivity: $1.8\mu\text{V}$, sensitivity AM: 52dB/m. S/N ratio (FM) — mono 77dB, stereo 71dB. S/N ratio AM: 50dB. Dimensions: $43.5 \times 16 \times 34.9\text{cms}$. Price: £119.88 (plus VAT).



A reproduction masterpiece —with no colouration

To match our receivers we developed the Achromat range of high fidelity speaker systems, each sharing the same superb performance but differing in size and power handling capacity.

Achromat speakers will recreate music and speech with unsurpassed accuracy. This degree of quality has been obtained by giving attention to each and every component and design detail so that colouration—exhibited by all loudspeakers—is negligible.

Although the technical development

took place in the laboratory, the final tests were carried out in living room conditions to ensure constant energy distribution over the operating range.

For details of these products and the full range of Goodmans associated high fidelity equipment write to the Technical Assistance department.

Goodmans Loudspeakers Limited
Downley Road, Havant
Hampshire, PO9 2NL, England

Goodmans High Fidelity

Receivers

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ AKAI ■

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

AA 1020

Amplifier

Power output: 20 watts per channel. THD: 0.4%. Inputs: phono (2). Aux. tape (2).

Tuner

Sensitivity FM: 2.0 μ V. Sensitivity AM: 5 μ V. Image rejection FM: better than 65dB. Image rejection AM: better than 55dB. Spurious rejection: less than 43dB. IF rejection: better than 90dB. Stereo separation: better than 40dB. THD: less than 0.8%. Wavebands: FM/AM.

General

Dimensions: 44 × 14 × 35cm. Price: £154.00 (plus VAT).

AA1030

Amplifier

Power output: 30 watts per channel. THD: 0.3%. Power bandwidth: 10-60,000Hz. Inputs: phono (2). Aux. tape (2). Bass and treble tone controls, scratch filter, rumble filter.

Tuner

Sensitivity FM: 1.0 μ V. Sensitivity AM: 5 μ V. Image rejection FM: better than 65dB. Image rejection AM: better than 55dB. Spurious rejection FM: better than 70dB. IF rejection: better than 90dB. Stereo separation: better than 40dB. THD stereo: 0.4%. Waveband coverage: FM/AM.

General

Dimensions: 44 × 14 × 35cms. Price: £167.70 (plus VAT).

AA 1050

Amplifier

Power output: 50 watts per channel. THD: 0.15%. Power bandwidth: 7-70,000Hz. Inputs: phono (2). aux. tape (2). Bass and treble controls. Scratch filter, rumble filter.

Tuner

Sensitivity FM: 1.8 μ V. Sensitivity AM: 8 μ V. THD stereo: less than 0.3%. Waveband coverage: FM/AM.

General

Dimensions: 48 × 16 × 39cm. Price: £227.60 (plus VAT).

AA 1010 ★

Amplifier

Power output: 14 watts per channel. Inputs: phono 3mV/47K ohms; aux 150mV/100K ohms; tape 150mV/100K ohms. Controls: power, speaker selection, bass, treble, volume, loudness, mode, tape monitor selector.

Tuner

Sensitivity FM: 20 μ V. Sensitivity AM: 200 μ V bar antenna 8 μ V external antenna. Waveband coverage: FM/AM. Variable tuning.

General

Dimensions: 44 × 26.5 × 12.5cms. Price: £158.67 (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 2.5mV/50K, cer 60mV. Overload capability: P.U. 130mV; tape 10V. Tape output (DIN): 120mV. Tone controls. Bass \pm 13dB at 100Hz. Treble \pm 10dB at 10kHz. Crosstalk: better than -38dB.



Akai AA-1010

★ Indicates entry is illustrated

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: $44.2 \times 19.6 \times 13.7\text{cms}$. Finish in teak veneer. Black and silver trim. Price: on application.

■ ALPHA

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

FR5000

Stereo VHF/AM receiver. VHF 88-108MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF) $3\mu\text{V}$, AM $25\mu\text{V}$. Aerial impedance: 300(75) ohms. S/N ratio: (VHF) IHF 50dB. Output voltage: 250mV. Load impedance: 100K. Mains: 110-240V AC. Loudness control, low filters, high filters. Size: $16\frac{1}{2} \times 11\frac{3}{4} \times 5\frac{1}{2}\text{in}$. Finish: teak with brushed aluminium front. Price: £99 (plus VAT).

FR6000

Stereo VHF/AM receiver. VHF 88-108MHz, MW 535-1605kHz. Variable tuning. AFC. Sensitivity: VHF (IHF) $2\mu\text{V}$. AM $25\mu\text{V}$. Aerial impedance: 300 (75) ohms. S/N ratio: (VHF) IHF 50dB. Output voltage: 250mV. Load impedance: 100K. Mains: 110-240V AC. Loudness control, low filters, high filters. Size: $17\frac{1}{4} \times 11\frac{3}{4} \times 6\frac{3}{16}\text{in}$. Price: £115 (plus VAT).

FR 8000

Amplifier

Power output: $2 \times 45\text{W RMS}$. FR: 10Hz-40kHz.

Tuner:

Sensitivity: $20\mu\text{V}$. Wavebands: FM/AM. This is a new model. Full details and price from the importer.

■ AMSTRAD

AMS Trading (Amstrad) Ltd,
89 Ridley Road, Dalston, London E8 2NH.
Tel: 01-249 5237/8/9.

5050 ★

Amplifier

Power output: 25W RMS. 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: $66 \times 36 \times 11\text{cms}$. Price: approx £80 (inc. VAT).

■ ARMSTRONG AUDIO LTD.

Warlters 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. Capture ratio: 1.75dB. Image rejection FM: 50dB. IF rejection FM: 100dB Stereo separation: 40dB at 1kHz. Pilot tone rejection: 65dB. Pilot harmonic rejection: 65dB. THD Stereo: $<0.2\%$. Waveband coverage: 87.5-108MHz.

General

Dimensions: $50 \times 28.5 \times 8.2\text{cms}$. Teak or rosewood finish. Variable tuning and 6 presets. Price: £198.00 (inc. VAT).

626(AM-FM) ★

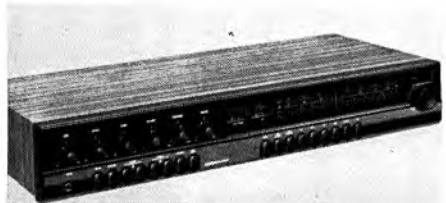
AM-FM versions of 625 with similar specifications. 3 AM and 3FM presets and variable tuning. Price: £232.00 (inc. VAT).

■ BEOMASTER

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

Beomaster 901 ★

20W per channel tuner/amplifier. Tuning range: FM 87.5-104MHz, LW 147-350kHz, MW 520-1610kHz. Variable tuning. 'Balanced light' tuning indicator. Sensitivity: $<1.8\mu\text{V}$



Amstrad 5050

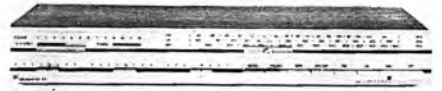


Armstrong 626

FM; $<15\mu\text{V}$ LW; $<20\mu\text{V}$ MW. AFC. Aerial input: 75 ohms coaxial and 300 ohms balanced. FR: 20Hz-30kHz $\pm 1.5\text{dB}$. HD: $<5\%$ at full output. S/N ratio: mag PU $>55\text{dB}$, other inputs $> 65\text{dB}$. Inputs: mag PU 2.5mV 47K, tape 150mV 470K. Outputs: 4 ohms and headphones 100 ohms minimum. Mains: 110-130 and 220-240V AC 50/60Hz. Size: 19.6 \times 9 \times 2.95in. Two separate speaker connections. Price: £160.00 (plus VAT) approx.

Beomaster 1100 ★

Stereo FM tuner/amplifier with four pre-set stations. Tuning range: 87.5-108MHz. Variable tuning. Power output: 22W RMS per channel. AFC Sensitivity: $<2.5\mu\text{V}/75$ ohms IHF. FR: 20Hz-30kHz $\pm 1.5\text{dB}$ (DIN). HD: $<0.5\%$ at full output. Inputs: mag PU 2.5mV/47K. Speakers: 4 ohms. Headphones: max 10V/200 ohms. Mains: 110-240V AC switchable. Two sets of speaker connections. Finish: black anodised fascia. Size: 19 $\frac{3}{4}$ \times 3 $\frac{1}{2}$ \times 10 $\frac{1}{4}$ in. Approx. £154.00 (plus VAT).



Beomaster 901



Beomaster 1100



Beomaster 6000

Beomaster 6000 ★

4-channel FM tuner/amplifier with remote control capable of reproducing mono/stereo/SQ and discrete. Variable tuning with five pre-set stations. FM tuning range: 87.5-104MHz. Cordless remote control unit. Feather-touch controls with large illuminated scales. AFC. Sensitivity: $<2\mu\text{V}/75$ ohms IHF. FR: 20Hz-30kHz $\pm 1.5\text{dB}$. HD: 0.1% at 40W. Power output: 40W RMS all channels. Inputs: phono (4) 200mV 470K, aux (2) low 2.5mV 47K switchable to high 200mV 470K, tape (4) 200mV 470K. Outputs: tape (4) 15mV 10K. Stereo headphones: (2 pairs) 13V/200 ohms. Speakers: 4 ohms each channel. Size: (Beomaster 6000) 26 $\frac{1}{4}$ \times 3 $\frac{1}{4}$ \times 12 $\frac{1}{2}$ in. Price: Approx. £580.00 (plus VAT).

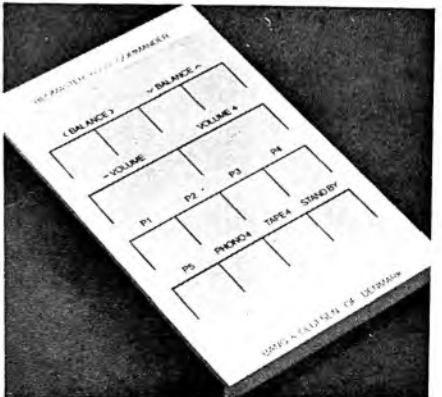
Beomaster 6000 Commander ★

Remote control unit for Beomaster 6000 receiver. Price: on application.

3400 (Type 2802)

Amplifier

Power output: 2 \times 30 watts RMS or 4 \times 20



Beomaster 6000 Commander

★ Indicates entry is illustrated

watts RMS. THD: <0.06% at 50mW or 0.1% at full power. Total music power: 160 watts. Power bandwidth: 10-40,000Hz. Damping factor: >36/1kHz/4Ω. Inputs: phono low Z 2 channel, low Z 4 channel, Hi z 2 channel, Hi z 4 channel. Tape output: 30mV 22k ohms. Crosstalk: >40 dB 250-10,000Hz.

Tuner

Sensitivity FM: <2.5μV/75Ω IHF. Sensitivity AM: <1.5μV/75 Ω 26dB. S/N 40kHz DIN. THD stereo: <0.5%. Waveband coverage: 87.5-104MHz.

General

Dimensions: 68.5 × 27 × 7.5cms. Teak or rosewood finish, white and oak to special order. Price: Approx. £350.00 (plus VAT).

Beomaster 1900 ★

Stereo FM receiver featuring low profile look with touch operation of programme selection and volume control. Amplifier: Power: 2 × 30W per channel. THD: less than 0.13%. Damping factor: better than 70 into 4 ohms. Inputs: sockets for magnetic pick-up and tape recorder. FR: 20Hz-40kHz ± 1.5dB. Features: Three position pre-set level for volume control and visual indication of volume level, programme source, tone controls, tuning balance, stereo/mono and standby. Finish: matt black and anodised aluminium with side panels in teak or rosewood. Oak and white finishes to special order. Dimension: 62 × 25 × 6cms. Price: £220.00 (plus VAT).

Beomaster 2400

Same as 1900 but with cordless remote control commander. Price: £280.00 (plus VAT).

■ DANSK

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW.

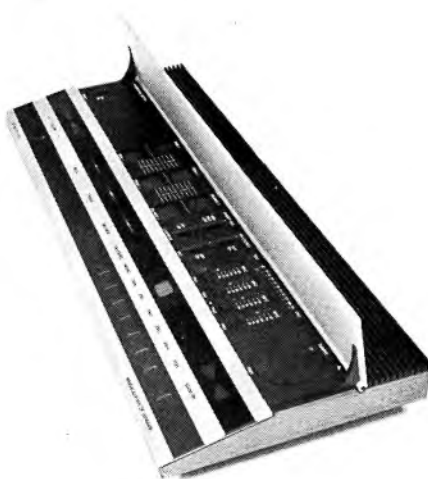
Tel: Newcastle (Staffs) 615131.

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: £185.56 (plus VAT).

Amplifier

Power output: 2 × 30W sinus/4 ohm, 2 × 45W music/4 ohm. Distortion: less than 0.8%/max. output/1kHz. Frequency response: 20-25,000Hz. Effective band width: 10-60,000Hz. Signal-to-noise ratio: better than 85dB max. output. Channel separation: better than 50dB/1kHz. Inputs: DIN 45,500.



Beomaster 1900

FM Section

IF: with ceramic filters. Tuning range: 87-104MHz. Pre-select stations: 5 diode tuned. IHFM Sensitivity: 1.8μV. Lighting: 1.8μV/3dB. S/N ratio: 1.8μV for 30dB/100% mod. 1kHz. Distortion: 0.4% for 100% mod. 1kHz. Capture ratio: 2dB. Channel separation: better than 35dB, 1kHz. Frequency response: 50-15,000Hz ± 1.5dB. Pilot suppression: 19kHz better than 30dB, 38kHz better than 40dB.

AM Section

Tuning range LW: 145-360kHz. Tuning range MW: 510-1660kHz. Sensitivity: 1μV/3dB signal-to-noise ratio. S/N ratio: 53dB/1mV.

Connections

FM aerial: 300 ohm balance. AM aerial and earth wire: Phono, 2mV/47K ohm; Tape, 200mV/470K ohm; Speakers, 2 × stereo (4-16 ohm). Finish in black or teak. Price: on application.

2200

Receiver unit with output of 2 × 22W. Features a range of connections so that it is possible to use this as the basis for a sophisticated hi-fi system incorporating record and tape decks. Price: £159.74 (plus VAT).

Amplifier

Power output: 2 × 22W sinus/4 ohm. Distortion: less than 0.5% max. output/1kHz. Frequency response: 20-25,000Hz. S/N: better than 70dB max. output. Channel separation: better than 50dB/1kHz. Inputs: Phono/tape.

FM Section

IF: with ceramic filters. Tuning range: 87-104MHz. Pre-select stations: diode tuned. Sensitivity: $1.8\mu\text{V}/26\text{dB}$. S/N $\pm 75\text{kHz}$. Distortion: 0.4% for 100% mod., 1kHz. Channel separation: better than 40dB, 1kHz. Frequency response: 50-15,000Hz $\pm 1.5\text{dB}$. Pilot suppression: 19kHz better than 50dB, 38kHz better than 60dB.

AM Section

Tuning range LW: 145-360kHz. Tuning range MW: 510-1660kHz. Sensitivity: $1\mu\text{V}/3\text{dB}$ S/N ratio. Signal-to-noise ratio: 53dB/1mV.

Connections

FM antenna: 75 ohm. Phono: 2mV/47K ohm. Tape: 200mV/1m ohm. Speakers: 2 \times stereo (4-16 ohm). Black finish. Price: on application.

5000 ★

7 pre-select stations and FM tuning. Output: 2 \times 40W. Special feature is finger-touch sensor controls, one of the very latest developments in electronics.

Amplifier

Power output: 2 \times 40W sinus/4 ohm. Distortion: less than 0.1% max., output/1kHz. Frequency response: 25-30,000Hz. Effective band width: 15-40,000Hz. S/N ratio: better than 75dB/max. output. Channel separation: better than 50dB/1kHz.

FM Section

Tuning range: 87.5-108MHz. Limiting: $1.5\mu\text{V}/3\text{dB}$. S/N ratio: $1.8\mu\text{V}$ for 62dB/100% mod. 1kHz. Distortion: 0.3% for 100% mod., 1kHz. Capture ratio: 1.5dB. Channel separation: better than 40dB, 1kHz. Frequency response: 20-15,000Hz $\pm 1.5\text{dB}$. Pilot suppression: 19kHz better than 55dB. 38kHz better than 52dB.

Connections

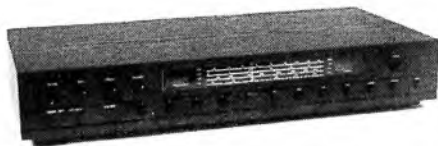
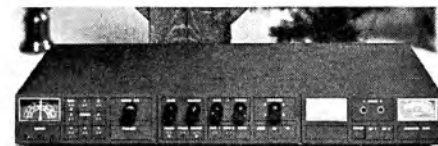
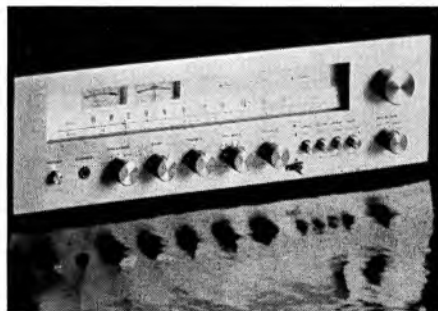
FM antenna: 75/300 ohm. AM antenna with earth wire: phono, 2mV/47K ohm. Tape, 200mV/470K ohm. Speakers, 2 \times stereo (4-8 ohm)/m. pushbutton. Finish in black or teak. Price: £305.36 (plus VAT).

■ EAGLE INTERNATIONAL

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

R 2020**Amplifier**

Power output: 20 + 20 watts RMS at 8 ohms. THD: less than 0.2%. Total music power: 80

*Dansk 2100**Dansk 5000**Eagle R6300*

watts. FR: 15-36,000Hz. Power bandwidth: 13-50,000Hz. Damping factor: 30 at 8 ohms. Inputs: Phono (2), Aux, tuner, tape (2). Over-load capability: 70mV (phono 1). Tape output: both 180mV at 100 ohms. Tone controls: $\pm 10\text{dB}$ at 12kHz, $\pm 12\text{kHz}$ at 40Hz. Loudness: +6dB at 100Hz and 10kHz. Scratch filter. Crosstalk: better than -56dB.

Tuner

Sensitivity FM: $3\mu\text{V}$ for 30dB quieting. Sensitivity AM: $150\mu\text{V}$ for 20dB quieting. Capture ratio: 3dB at $3\mu\text{V}$. Image rejection FM: 50dB. Image rejection AM: 46dB. IF rejection FM: 60dB. Stereo separation: 30dB at 1kHz. Pilot tone rejection: 60dB. THD: less than 0.5%. Waveband: 88-108MHz, 540-1,600kHz.

General

Dimensions: 53 \times 27 \times 10.5cms. Teak, brushed metal finish. Price: £154.70 (plus VAT).

R6300 ★**Amplifier Section:**

RMS Power output per channel: 30W. FR:

★ Indicates entry is illustrated

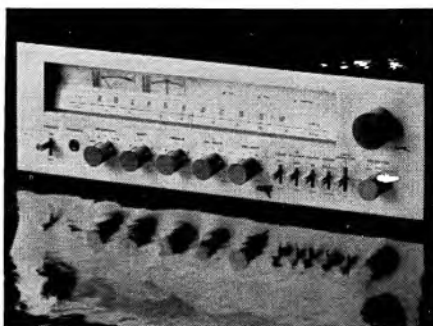
9Hz-31kHz-3dB. Inputs: phono — 3mV @ 47K ohms, aux — 180mV @ 100K ohms, tape — 180mV @ 100K ohms. Controls: volume, balance, bass, treble, speaker selection, tuning, input, loudness, muting, mono/stereo/tape monitor.

Tuner Section

Sensitivity FM — 1.9 μ V. Sensitivity AM — 250 μ V. Waveband coverage: 88-108MHz (FM), 540-1605kHz (AM). Variable tuning.

General

Dimensions: 45.6 × 32 × 13.2cms; brushed metal fascia and controls, wood finish cabinet. Price: £145.50 (plus VAT).



Eagle R6500

R6500 ★

Mainly same as R6300 except: Power output: 40W. To inputs add tape B at 180mV @ 100K ohms. Add filter and mode controls. Price: £174.70 (plus VAT).

■ GOODMAN'S LOUDSPEAKERS LTD.

Downley Road, Havant, Hants.
Tel: Havant 6344.

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 1 μ V into 75 ohms. Sensitivity AM: 20 μ V MV, 40 μ V 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 1 μ V input. THD Stereo: 0.5% (67.5kHz deviation). Wavebands 87.5-108MHz, 148-350kHz, 520-1,625kHz.

General

Dimensions: 54 × 36 × 20cms. Black fascia, teak or walnut veneer case. No rec. retail price.

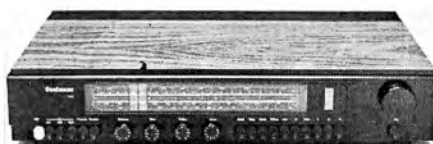
Model 120 ★

Amplifier

Power output: 50 + 50 watts RMS into 4 ohms.



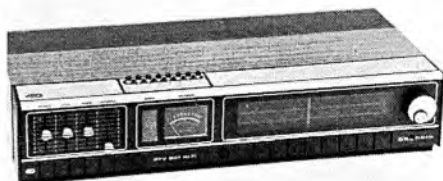
Goodmans 120



Goodmans 150



Goodmans Module 90



Grundig RTV 901

THD: 0.01%. Total music power: 110 watts. FR: 20-20,000Hz \pm 1dB. Power bandwidth exceeds response bandwidth. Damping factor: 80 into 8 ohms. Inputs: magnetic, aux, tape. Overload capability: +30dB any input. Tape output (DIN) 100mV into 10K ohms (for 10mV into mag. input). Scratch filter, rumble filter. Crosstalk: -45dB.

Tuner

Sensitivity FM: 1μ V into 75 ohms. Sensitivity AM: 20μ V MV, 40μ V LW, 20μ V SW. Image rejection AM: better than 55dB. Image rejection FM: 90dB. Stereo separation: 35dB. Pilot tone rejection: better than -50dB. Overload capability: 120dB alone, 1μ V input. THD stereo: 0.2% (75kHz deviation). Waveband coverage: 87.5-108, 150-265kHz, 525-1,605kHz, SW 5.9-6.25MHz bandspread.

General

Dimensions: 58.4 \times 30.5 \times 11.5cms. Black fascia with teak or walnut sleeve. 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, \pm 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: 1μ V into 75 ohms. Sensitivity AM: 50μ V. 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.

General

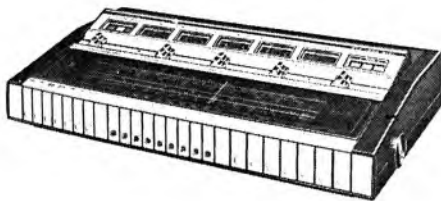
Dimensions: 61.6 \times 40 \times 21cms. Black fascia with teak, walnut case. No rec. retail price.

■ GRUNDIG

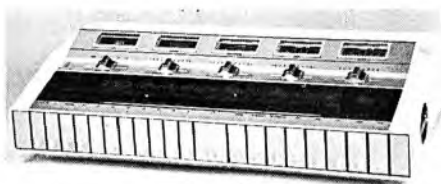
Grundig (Great Britain) Ltd, Hi-Fi Division, Newlands Park, London SE26 5NQ.
Tel: 01-659 2468

RTV 901 ★

FM/AM stereo and synthesized four channel receiver. Bands: 87.5-108MHz FM, 145-350kHz LW, 510-1620kHz MW, 5.4-16.2MHz



Grundig RTV 1040Q



Grundig RTV 820

SW. Seven pre-set selectors for FM, manual for AM. Sensitivity: 1.9μ V DIN (FM), 12-25 μ V MW, 21-21.5 μ V LW, 4.7-5.2 μ V SW. Aerials: 240 ohms (FM) wire (AM). Inputs: phono (mag) 3.3mV 470K, phono (ceramic) 300mV 470K, tape 300mV 470K. Output: 25W per channel into 4 ohms. Damping factor: 20. THD: 0.5% at 1kHz and full rated power. FR: 40Hz-16kHz \pm 2dB. Size: 23 $\frac{1}{2}$ \times 5 $\frac{1}{4}$ \times 1 $\frac{1}{2}$ in. No rec. retail price.

RTV 1040Q ★

Four-channel receiver. Bands: FM 87.5-108MHz, LW 145-350kHz, MW 510-1620kHz, SW 5.4-16.2MHz. Seven pre-set selectors for FM. Sensitivity: 1.6μ V 240 Ω . FM, 4-12 μ V MW, 11-25 μ V LW, 5-6.5 μ V SW. AFC. Stereo decoder. Aerial sockets: FM VHF dipole 240K. AM external aerial and earth. Distortion: \leq 0.3% at 1kHz. Output: 30W per channel, 25W all channels. FR: 20-20,000Hz \pm 1dB (discrete/stereo), 40-20,000Hz \pm 1.5dB (matrix). Damping factor: 28.5 at 4 ohms. Mains: 110, 130, 220 and 240V AC 50/60Hz. Size: 61 \times 15 \times 33cm. No rec. retail price.

RTV 820 ★

Stereo receiver, with facilities for 4D stereo. Automatic stereo decoder built-in. Bands: FM 87.5-108MHz, LW 145-350kHz, MW 510-1620kHz, SW 5.4-16.2MHz. Sensitivity: FM 2.2 μ V 240 Ω , MW 8 μ V, LW 11 μ V SW 5 μ V. Aerial sockets: FM VHF dipole 240 Ω , AM external aerial and earth. A switch allows the VHF aerial to be used on AM. Distortion: \leq 0.5% at 1kHz. FR: 40-16,000Hz \pm 1.5dB for input tape/phono crystal and \pm 2dB for input phono magnetic. No rec. retail price.

★ Indicates entry is illustrated

Receiver 20

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: 1.5 μ V (300 ohms) 0.75 μ V (75 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 x 15 x 32cms. 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) 6-15 μ V. Waveband coverage: 87.5-108MHz, 510-1620kHz. Variable tuning with 8 preset VHF touch sensors.

General

Dimensions: 54 x 15 x 32cms. No rec. retail price.

■ HARMAN KARDON

1 annoy, St. Johns Road, Tylers Green, High Wycombe, Bucks HP10 8HR.
Tel: Penn 5221.

730

Amplifier Section

Power output: 40W. FR: 4Hz-130kHz. Damping factor: 30. Inputs: aux 150mV, tape monitor 150, phono 2.5. Controls: tape monitor 1 & 2, Hi-cut, lowcut, contour, bass, treble, balance, volume, function, tuning.

Tuner Section

Sensitivity FM — 1.9 μ V. Sensitivity AM — 150 μ V.

General

Dimensions: 43 x 36.8 x 14cms. Price: to be announced.

330C

Amplifier Section

Power output: 20W. FR: 10Hz-80kHz. Damping factor: 30. Inputs: phono 2.8mV, aux 200mV. Controls: speakers 1 & 2, mono,



Harman Kardom HK 430

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 x 33.1 x 11.5cms. Price: to be announced.

430 ★

Amplifier Section

Power output: 25W. FR: 4Hz-140kHz. Damping factor: 40. Inputs: phono 2.7mV, aux 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 x 36.8 x 14cms. Price: to be announced.

■ HITACHI SALES (UK) LTD.

Hitachi House, Station Road,
Hayes, UB3 4DR.
Tel: 01-848 8787.

SR 303

Amplifier

RMS power: Both channels driven (1kHz, 0.8% THD) 16W x 2 (8 Ω); (1kHz, 0.5% THD) 20W x 2 (4 Ω); (20-20,000Hz, 0.8% THD) 15W x 2 (8 Ω). Music power (IHF): 25W x 2 (8 Ω); 28W x 2 (4 Ω). Frequency response: 20Hz - 20kHz (\pm 1dB). Power bandwidth (IHF): 10Hz 50kHz (0.3% THD). Harmonic distortion: At rated output 0.8%; at -3dB output less than 0.1%. S/N ratio (IHF): 72dB (phono) Damping factor: 30 (8 Ω). Input sensitivity: 2.5mV (47 Ω) (phono); 200mV (40k Ω) (aux); 200mV (50k Ω) (tape). Output sensitivity: 200mV (10kHz) (tape); 40mV (80kHz) (DIN) Tone control: \pm 10dB (100Hz) (bass); \pm 10dB (10kHz) (treble). Loudness (volume at -30dB): +9dB (100Hz); +4dB (10kHz)

Tuner

FM Section: Frequency range: 88-108MHz. Usable sensitivity: $1.9\mu\text{V}$ (IHF). Selectivity: 56dB. Capture ratio: 1.0dB. IF rejection: 90dB. AM suppression: 56dB. Harmonic distortion: 15% (mono); 0.3% (stereo). Stereo separation: 40dB (1kHz). S/N ratio: 72dB. Aerial impedance: 300Ω . AM Section: Frequency range: 530-1605kHz. Sensitivity: $20\mu\text{V}$ (IHF). Selectivity: 36dB. IF rejection: 40dB. S/N ratio: 50dB.

General

Dimensions: $43.5 \times 14.4 \times 36.4\text{cm}$. Weight: 7.6Kg. Loudness Sw. FM muting. Tuning meter speaker A,B. Headphone Jack. Price: £153.00 (inc. VAT).

SR 503**Amplifier**

Power: 2-25W (8Ω) 2-30W (4Ω) FR: 20Hz-20kHz. FR: 20-30KH $\pm 1\text{dB}$. HD: at rated output 0.8% at -3dB output, less than 0.1%. S/N ratio (IHF): 74dB (phono). Damping factor: 30 (8Ω). Input sensitivity: 2.5mV ($47\text{k}\Omega$) (phono); 200mV ($47\text{k}\Omega$) (aux); 200mV ($50\text{k}\Omega$) (tape). Output sensitivity: 200mV (10kHz) (tape); 40mV (80kHz) (DIN). Tone control: $\pm 10\text{dB}$ (100Hz) (bass); $\pm 10\text{dB}$ (10kHz) (treble). Loudness (volume at -30dB): $+9\text{dB}$ (100Hz) + 4dB (10kHz).

Tuner

FM Section: Frequency range: 88-108MHz. Usable sensitivity: $1.9\mu\text{V}$ (IHF). Selectivity: 56dB. Capture ratio: 1.0dB. IF rejection: 90dB. AM suppression: 56dB. Harmonic distortion: 0.15% (mono); 0.4% (stereo). Stereo separation: 40dB (1kHz). Signal-to-noise ratio: 74dB. AM Section: FR: 530-1605KHz. Sensitivity: $20\mu\text{V}$; Selectivity: 36dB. IF rejection: 40dB. S/N: 50dB.

General

Dimensions: $43.5 \times 14.4 \times 36.4\text{cm}$. Weight: 8.4kg. Features: Loudness switch, tape monitor switch, 1,2, speaker selector A, B and A+B. Headphone jack. Price: No rec. retail price.

SR 603**Amplifier Section**

Power output: $35\text{W} \times 2$ (0.3% THD) 8 ohms. $40\text{W} \times 2$ (0.3% THD) 4 ohms. FR: 20Hz-20kHz $\pm 1\text{dB}$. Damping factor: 45. Inputs: phono (1) $2.5\text{mV}/47\text{K}$ ohms, aux $200\text{mV}/40\text{K}$ ohms, tape (1) (2) $200\text{mV}/40\text{K}$ ohms. Controls: 41 click volume, bass, treble, balance, speaker A, B, A+B, loudness, mono/stereo, function/AM/FM/phono, aux, tape monitor 2, copy 2, FM mute, on/off.

Tuner Section

Sensitivity: $1.6\mu\text{V}$ DIN.

General

Dimensions: $43.5 \times 36.4 \times 14.4\text{cms}$. Walnut finish. Price: £180.00 (inc. VAT).

SR 703**Amplifier Section**

Power output: $55\text{W} \times 2$ (0.3%) 8 ohms, $60\text{W} \times 2$ (0.3%) 4 ohms. FR: 20Hz-20kHz $\pm 1\text{dB}$. Damping factor: 45. Other features at ST 603.

General

Dimensions: $49 \times 40 \times 14.4\text{cms}$. Walnut colour. Price: £220.00 (inc. VAT).

SR 902**Amplifier Section**

Power output: $75\text{W} \times 2$ (8 ohms) THD: 0.1%, music power $160\text{W} \times 20.1\%$. FR: 10Hz-30kHz $\pm 0.5\text{dB}$. Damping factor: 50. Inputs: phono $1.9\text{mV}/47\text{K}$ ohms, aux $150\text{mV}/50\text{K}$ ohms, tapes 1 & 2 $150\text{mV}/50\text{K}$ ohms. Controls: on/off, speaker A, B, A+B, bass, mid, treble, hi filter, lo filter, balance, volume, tape copy 1 & 2, tape monitor 1 & 2, function AM/FM auto/lock, phono, mono/stereo, loudness, FM Dolby adaptor.

Tuner section

Sensitivity FM: $1.2\mu\text{V}$ DIN. Sensitivity AM: $300\mu\text{V}/\text{m}$. Variable tuning.

General

Dimensions: $49 \times 40 \times 14.4\text{cms}$. Walnut finish. Price: £334.00 (inc. VAT).

LEAK

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

3200**Amplifier Section**

Power output: $25\text{W} \pm 1\text{dB}$ at 1W per channel. Damping factor: 30. Inputs: 2 spks, tape monitor, phono, aux. Controls: bass, treble, balance, volume controls.

Tuner Section

Sensitivity FM: 1 HF $2\mu\text{V}$. Sensitivity AM: 1HF $200\mu\text{V}/\text{m}$. Waveband coverage: FM/L/M.

General

Dimensions: $47.5 \times 32 \times 11.5\text{cms}$. Satin aluminium front panel with charcoal finish. Price: £170.95 (plus VAT).

3400**Amplifier Section**

Power output: $35\text{W} \pm 1\text{dB}$ at 1W per channel.

★ Indicates entry is illustrated

Damping factor: 40. Inputs: 2 phono, 2 aux, 2 pairs speakers. Controls: bass, treble, balance, volume with multi-detents.

Tuner Section

Sensitivity FM: 1HF 1.2 μ V. Sensitivity AM: 200 μ V/m. Wavebands: FM/AM.

General

Dimensions: 57 × 33 × 13.5cms. Finish as 3200. Price: £214.95 (plus VAT).

■ Lenco

C. E. Hammond and Co. Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

R25

Power output: 2 × 19W. FR: 10Hz-40,000Hz. Dimensions: 4.9 × 3.9 × 1.32cms. Price: £175.00 (plus VAT).

R50 ★

Power output: 2 × 40W 8 ohms. FR: 10Hz-40kHz. Dimensions: 4.9 × 3.9 × 1.32cms. Price: £205.00 (plus VAT).

■ NAD

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

NAD 140

AM/FM stereo receiver. Power output: 30W + 30W. Power bandwidth: 10Hz-50,000Hz. FR: 20Hz-20,000Hz ± 0.5dB. Damping factor: min 45.

Tuner

FM sensitivity: 2.0 μ V. Capture ratio: 2dB. Stereo separation at 1kHz: 40dB min. Image rejection: 70dB. IF rejection: 90dB. Dimensions: 45 × 13 × 35cms. Price: £195.00 (plus VAT).

NAD 160A

AM/FM stereo receiver. Power output: 45W + 45W. Power bandwidth: 10Hz-50,000Hz. FR: 20Hz-20,000Hz ± 5dB. Damping factor: min 45.

Tuner

FM sensitivity: 1.8 μ V. Capture ratio: 2dB. Stereo separation at 1kHz: 40dB min. Image rejection: 80dB. IF rejection: 90dB. Dimensions: 45 × 14 × 36cms. Price: £228.00 (plus VAT).

NAD 300

AM/FM stereo receiver with Dolby NR. Power output: 100W + 100W. Power

bandwidth: 10Hz-50,000Hz. FR: 20Hz-20,000Hz ± 5dB. Damping factor: Min 45.

Tuner

FM sensitivity: 1.8 μ V. Capture ratio: 1.2dB. Stereo separation at 1kHz: 40dB min. Image rejection: 85dB. IF rejection: 90dB. Dimensions: 50.8 × 15.7 × 44cms. Price: £409.00 (plus VAT).

NAD 120 ★

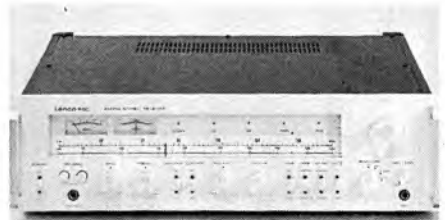
AM/FM receiver. Power output 20W per channel. FR: 20Hz-50,000Hz. + 0.5dB-1.5dB. S/N: 60dB phono, 80dB aux and tape.

Tuner

Sensitivity FM: 2.5 μ V. AM sensitivity: 30mV. Stereo separation at 1kHz: 35dB. Variable tuning. Features include bass and treble tone controls, signal strength meter, front panel tape monitoring jack, headphone jack, loudness switch and FM muting push-switch. Price: £166.00 (plus VAT).

■ NORDMENDE

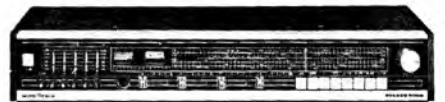
Vessco Vision & Radio Ltd, Unit 4,
Blackwater Way, Ash Road, Aldershot,
Hants GU1 4DL.
Tel: Aldershot 312661.



Lenco R50



NAD 120



Nordmende 6005 S1

6005 ST ★

Stereo tuner/amplifier. Ranges: VHF, LW, MW, SW and 49 metre band. Electronic mono/stereo switching with indicator. Five VHF pre-sets. Signal strength meter. Output: 15W RMS per channel. Price £113.33 (plus VAT).

■ NYTECH

Nytech Ltd, 4 High Street, Nailsea, Bristol BS19 1BW.
Tel: Nailsea 5267.

CTA 252 ★

Tuner/amp of original design.

Amplifier Section

Power output: 15W into 8 ohms, 25W into 4 ohms. FR: 20Hz-40kHz \pm 3dB. Damping factor: 50. Inputs: Disc, tape. Controls: volume, bass, mid, treble, balance, high and low filter, contour, mono, AFC, tape monitor.

Tuner Section

Sensitivity: 2.0 μ V/30dB/S/N. Waveband: 87.5-104.5MHz, four presets and 1 main.

General

Dimensions: 21 \times 34.5 \times 11.7cms. Finish in black satin with choice of black, white, rose, teak and walnut trim. Price: £135.30 (plus VAT).

CTA 302

Similar specs. Price: £162.36 (plus VAT).

■ PHILIPS ELECTRICAL LTD.

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

RH 752 ★**Amplifier**

Power output: 2 \times 30 watts RMS. THD: <1% for 2 \times 30 watts. Total music power: 2 \times 40 watts. FR: 20-25,000Hz. Inputs: Recorder, aux, mic. Crosstalk: better than -40dB at 1000Hz and better than -30dB between 250-10,000Hz.

Tuner

Sensitivity FM: 2 μ V term. volt for 26dB at 40kHz deviation. Sensitivity AM: 90 μ V EMF for 26dB S/N. Stereo separation: -40dB at 1kHz. Pilot tone rejection: -35dB at 19kHz. Pilot harmonic rejection: -35dB at 38kHz. THD: <1% at 75kHz deviation. Waveband coverage: FM/L/M/S.

General

Dimensions: 63 \times 34.4 \times 12.2cms. Matt silver



Nytech CTA 252



Philips RH 752

and black finish. Electronic Search Tuning. Price: on application.

RH 743

Tuner pre-amplifier for use with motional feedback speakers.

Amplifier

Output: 1 volt per channel at 1k ohms. THD: <0.1% at 1 volt. FR: 20-25,000Hz \pm 1.5-3dB. Tape output (DIN): 2mV/20k ohms. Crosstalk: better than -40dB at 1,000Hz. -30dB between 250 and 10,000Hz.

Tuner

Sensitivity FM: 2 μ V for 26dB S/N at 40kHz deviation. Sensitivity AM: 90 μ V EMF for 26dB S/N. Stereo separation: -40dB at 1kHz. Pilot tone rejection: -35dB at 19kHz. Pilot harmonic rejection: -35dB at 38kHz. THD: <1% at 75kHz deviation. Waveband coverage: FM/L/M/S.

★ Indicates entry is illustrated

General

Dimensions: 60.5 × 30 × 12.2cms. Black finish. Price: on application.

AH 762

Tuner preamplifier for use with MFB's. Features electronic search tuning on FM, five FM presets, double stereo facility.

Amplifier section

FR: 20Hz-25,000Hz + 1.5-3dB. Inputs: mag PU, tape, aux, mic. Controls: volume, balance, bass, treble, presence.

Tuner Section

Sensitivity FM: 2μV (for 26dB S/N @ 40kHz across 300 ohms). Sensitivity AM: 90μV (for 26dB S/N). Waveband coverage: FM/L/M/S. Variable tuning plus 5 presets and electronic search tuning.

General

Dimensions: 63 × 34.4 × 12.2cms. 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: 5Hz-40kHz, DIN THD 0.1% DIN. 25, 20Hz-20kHz 8 ohms. Input: phono 1 & 2 2.5mV/50K, mic 6.5mV/50K, aux/tape play 1 & 2/tuner 150mV/50K. 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: din mono 1.6 mic 26dB S/N. Stereo 44 mV dB S/N. Sensitivity AM: IHF 15 micro per metre. Waveband coverage FM 87.5-108MHz. AM 525-1605kHz variable.

General

Dimensions: 52.6 × 41.1 × 17.3cms. Walnut finish with aluminium front. Price: on application.

SX 750 ★

Amplifier Section

Output: 50W at 8 ohms, 60W at 4 ohms. FR: 5Hz-50kHz DIN. THD 1.0% DIN 20Hz to 20kHz at 8 ohms. 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,



Pioneer SX 750



Pioneer SX 650



Pioneer SX 950

mode, duplicate, tape monitor, function, FM muting, tuning.

Tuner Section

Sensitivity FM: Mono 1.7mV DIN, stereo 50mV DIN. Sensitivity AM: 15mV per metre IHF. Wavebands: FM 87.5-108MHz, AM 525-1605kHz. Variable tuning.

General

Dimensions: 48 × 37.1 × 14.9cms. Walnut finish with aluminium front. Price: on application.

SX 650 ★

Amplifier Section

Power output: 35W to 8 ohms, 35W to 4 ohms. FR: 5Hz-50kHz DIN. THD: 0.3% DIN. 30-20Hz to 20kHz — 8 ohms. Phono 2.5mV/50K, mic 7mV/50K. aux/tape play 1 & 2. tuner

150mV/50K. 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 1.7mV DIN. Stereo 44 micro DIN. Sensitivity AM: 15 micro per metre IHF (AM). Wavebands: FM 87.5-108MHz, AM 525-1605kHz. Variable tuning.

General

Dimensions: 48 × 37 × 14.9cms. Walnut finish with aluminium front. Price: on application.

SX 550

Amplifier Section

Power output: 20W to 8 ohms, 20W to 4 ohms. FR: 5Hz-50kHz DIN. THD: 0.3% DIN, 25-20Hz to 20kHz 8 ohms. 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 1.8mV DIN, stereo 50mV DIN. Sensitivity AM: 50mV per metre IHF. Waveband coverage: FM 85.5-108MHz, AM 525-1605kHz. Variable tuning.

General

Dimensions: 44.8 × 30.7 × 14.1cms. Walnut finish with aluminium front. Price: on application.

SX 450

Amplifier Section

Power output: 15W 8 ohms, 15W 4 ohms. FR: 7Hz-70kHz DIN. THD: 0.5% DIN, 25-20Hz to 20kHz 8 ohms. Inputs: phono 2.5mV/50K, mic, 7.5/50K, 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 1.8mV DIN, stereo 50mV DIN. Sensitivity AM: 15mV per metre IHF. Waveband coverage: FM 87.5-108MHz, AM 525-1605kHz. Variable tuning.

General

Dimensions: 44.8 × 30.7 × 14.1cms. Walnut finish with aluminium front. Price: on application.

SX-950 ★

Amplifier

Continuous power output is 85W per channel, min. RMS at 8 ohms or 110W per channel at 4

ohms from 20Hz-20,000Hz with no more than 0.1%. THD: (20Hz-20,000Hz, from aux): no more than 0.1% (continuous rated power output); no more than 0.05% (43W per channel power output, 8 ohms); no more than 0.05% (1W per channel power output, 8 ohms). Intermodulation distortion (50Hz-7,000Hz = 4:1, from aux): no more than 0.1% (continuous rated power output); no more than 0.05% (43W per channel power output, 8 ohms); no more than 0.05% (1W per channel power output, 8 ohms). FR: 7Hz-90,000Hz +0dB, -1dB. 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). Output level/impedance: tape rec 1: 150mV; tape rec 2: 150mV; tape rec 2 (DIN connector): 30mV/80K ohms. Pre out: 1V/100 ohms. THD: no more than 0.05% (20Hz to 20kHz, 1V output). FR phono (RIAA equalisation): 30Hz-15kHz, ±0.2dB) aux, tape play: 15Hz-40kHz, +0dB, -1dB. Tone control: bass: ±7dB/±10dB (100Hz); turnover frequency 200Hz/400Hz. Treble: ±7dB/±10dB (10kHz). Turnover frequency 5kHz/2.5kHz. Filter: low: 30Hz (12dB), high: 6kHz (12dB). Loudness contour: +6dB (100Hz), +3dB (0kHz). (volume control set at -40dB position). H & N (IHF, short circuited A network, rated power). Phono: 75dB; aux, tape play: 90dB. Muting: -20dB.

FM Tuner

Usable sensitivity: Mono: 10.3dB (3.6μV/300 ohms), Stereo: 22.2dB (14.1μV/300 ohms). Usable Sensitivity (IHF): Mono: 1.8μV. 50dB Quieting Sensitivity: Mono: 17.2dB (8.0μV/300 ohms), Stereo: 38.0dB (87μV/300 ohms). S/N Ratio (at 65dB): Mono: 72dB, Stereo: 67dB; Distortion (at 65dB), 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 ± 0.2dB, -2.0dB. Capture Ratio: 1.0dB; Alternate channel selectivity: 8.0dB; Spurious response ratio: 100dB; Image response ratio: 85dB; IF response ratio: 100dB; AM suppression ratio: 55dB; Muting threshold: 14dB (5.5μV/300 ohms); Stereo separation: 40dB (1kHz), 30dB (30Hz-15kHz). Subcarrier product ratio:

★ Indicates entry is illustrated

62dB. SCA rejection ratio: 62dB. Antenna input: 300 ohms balanced, 75 ohms unbalanced.

AM Tuner

Sensitivity: $300\mu\text{V/m}$ (IHF, antenna ferrite), $15\mu\text{V}$ (IHF, ext. antenna). Selectivity: 40dB. S/N ratio: 55dB. Image response ratio: 65dB. IF response ratio: 85dB. Antenna: Built-in ferrite loopstick antenna.

SX 1250

Power amplifier

Continuous power output is 160W per channel, min. RMS at 8 ohms or 200W per channel at 4 ohms from 20 Hz-20,000 Hz with no more than 0.1%. THD: (20 Hz-20,000 Hz, from AUX). No more than 0.1% (continuous rated power output). No more than 0.05%, (80 W per channel power output, 8 ohms). No more than 0.07%. (1W per channel power output, 8 ohms). FR: 5 Hz-100,000 Hz. + 0dB, -1dB. Input sensitivity/impedance: 1V/50 K ohms (Poweramp. in) Output speaker: A, B, C, A+B, B+C, A+C. Headphone: Low impedance. Damping Factor: 30 (20 Hz-20,000 Hz, 8 ohms). Hum and noise: 100dB. (IHF, short-circuited A network).

Preamplifier

Input sensitivity/impedance. Phono 1: $2.5\text{mV}/50\text{K}$. Phono 2: $2.5\text{mV}/50\text{K}$ ohms. Mic: $6.5\text{mV}/50\text{K}$ ohms. Aux: $150\text{mV}/50\text{K}$ ohms. Tape play 1: $150\text{mV}/50\text{K}$ ohms. Tape play 2: $150\text{mV}/50\text{K}$ ohms. Tape play 2 (DIN connector): $150\text{mV}/50\text{K}$ ohms. Phono overload Level (THD 0.1%). Phono 1: 500mV (1kHz). Phono 2: 500mV (1kHz). Output level/impedance: Tape rec 1: 150mV. Tape rec 2: 150mV. Tape rec 2 (DIN connector): $30\text{mV}/80\text{K}$ ohms. Pre out: 1V/1 K ohms. Total harmonic distortion: No more than 0.02%. (20Hz-20,000Hz, 1V output). FR: Phono (RIAA equalization): 30Hz-15,000Hz $\pm 0.2\text{dB}$. Aux. tape play: 10Hz-50,000Hz + 0dB, -1dB. Tone control. Bass: $\pm 10\text{dB}$ (100Hz) main control. $\pm 5\text{dB}$ (5 kHz) sub control. Treble: $\pm 10\text{dB}$ (10kHz) main control. $\pm 5\text{dB}$ (20kHz) sub control. Filter: Low: 30Hz (12dB/oct.). High: 8kHz (12dB/oct.). Loudness contour: +6dB (100Hz), +3dB (10kHz). (volume control set at -40dB position) Hum and noise (IHF, short circuited A network, rated power). Phono: 75dB. Aux, tape play: 90dB. Muting: -20dB.

FM Tuner section

Usable sensitivity: Mono: 8.7dB ($3.0\mu\text{V}/300$ ohms), Stereo: 14.5dB ($5.8\mu\text{V}/300$ ohms). Usable sensitivity (IHF) $1.5\mu\text{V}$. 50dB quieting sensitivity: Mono: 11.5dB ($4.1\mu\text{V}/300$ ohms), Stereo: 36.0dB ($69\mu\text{V}/300$ ohms). Signal-to-noise ratio (at 65dB): Mono: 80dB, Stereo:

74dB (Max. 75dB). Distortion (at 65dB). 100Hz: 0.1% (mono), 0.25% (stereo). 1kHz: 0.1% (mono), 0.2% (stereo). 6kHz: 0.3% (mono), 0.3% (stereo). Frequency response: 30Hz-15,000Hz + 0.3dB, -1.0dB. Capture ratio: 1.0dB. Alternate channel selectivity: 83dB; Spurious response ratio: 110dB. Image response ratio: 110dB. IF response ratio: 120dB. AM suppression ratio: 60dB. Muting threshold: 13dB ($4.9\mu\text{V}/300$ ohms). Stereo separation: 50dB (1kHz), 35dB (30Hz-15kHz). Subcarrier product ratio: 74dB. SCA rejection ratio: 74dB. Antenna input: 300 ohms balanced, 75 ohms unbalanced.

AM Tuner Section

Sensitivity: $300\mu\text{V/m}$ (IHF, ferrite antenna), $15\mu\text{V}$ (IHF, ext. antenna). Selectivity: 40dB. Signal-to-noise ratio: 55dB. Image response ratio: 65dB. IF response ratio: 85dB. Antenna: Built-in ferrite loopstick antenna.

SX 300

Amplifier

Power output: at 1kHz both channels driven into 8 ohms 7 + 7 watts. THD: less than 1% at rated output. Frequency response: Aux. Input (DIN) 30 Hz $\pm 1\text{dB}$. Power bandwidth DIN: 40 Hz to 30kHz both channels driven into 8 ohms. Damping factor: more than 20 (1kHz 8 ohms). Inputs: Phono: $2.5\text{mV}/50\text{K}$ ohms; aux, $150\text{mV}/100\text{K}$ ohms; Tape monitor $150\text{mV}/100\text{K}$ ohms; Tape monitor (DIN connector) $150\text{mV}/100\text{K}$ ohms; Tape record 150mV ; Tape record (DIN) $30\text{mV}/80\text{K}$ ohms. Tone controls: Bass 9dB -9dB (100Hz) Treble +6dB -1dB (10kHz). Loudness: Yes.

Tuner

Sensitivity (FM): $2.3\mu\text{V}$ (IHF). Sensitivity (AM): $300\mu\text{V/m}$ (UHF ferrite antenna). Capture ratio: 3.5dB (IHF). Image rejection (FM): more than 80dB (98MHz). Image rejection (AM): more than 45dB. Spurious rejection (FM): more than 70dB. IF rejection (FM): more than 80dB. Stereo separation: more than 40dB (1kHz). Pilot tone rejection: 35dB. THD (stereo): 0.8%. Waveband coverage: FM 88-100MHz. AM 550-1600kHz.

General

Dimensions: 44.1 x 32.4 x 13.2cm. Finish: Walnut type finish sleeve. Price: on application.

■ REALISTIC

Tandy Corporation (Branch UK), Bilston Road, Wednesbury, West Midlands WS10 7JN.
Tel: 021-556 6101.

STA-64

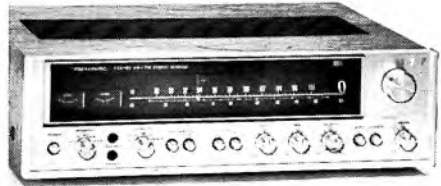
AM/FM stereo receiver.

Amplifier SectionPower output at 8 ohms 40W. FR: 15Hz-30kHz \pm 2dB. S/N ratio: 65dB.**Tuner Section**Sensitivity IHF: 2.2 μ V. AM tuner sensitivity: 200 μ V for 20dB.**General**Mains voltage: 220/240V AC. Dimensions: 13.3 \times 47 \times 33.5cms. Price: £169.95.**STA-77L**

AM/FM stereo receiver

Amplifier SectionPower output 8 ohms, 54W music, 44W RMS. FR: 15Hz-25kHz \pm 2dB. S/N: 60dB.**Tuner Section**Sensitivity IHF: 1.9 μ V. AM tuner sensitivity: 200 μ V for 20dB.**General**Mains: 220/240V AC 50/60Hz. Size: 13.5 \times 47 \times 35.5cms. Price: £189.95.**STA-90 ★**

AM/FM stereo receiver.

Amplifier SectionPower output: 114W RMS, 140W music at 8 ohms. FR: 20Hz-20kHz \pm 2dB. S/N ratio: 60dB. Input sensitivity: 3mV (phono), 250mV (aux/tape).**Tuner Section**Sensitivity IHF: 2.0 μ V. AM tuner sensitivity: 250 μ V for 20dB.**General**Mains voltage: 220/240V 50Hz. Size: 14.9 \times 48.8 \times 36.8cms. Price: £249.95.**■ ROTEL**Rank Audio Visual Ltd, PO Box 70,
Great West Road, Brentford TW8 9HR.
Tel: 01-568 9222.**RX-802**AM/FM stereo receiver. FR: 10Hz-100,000Hz. Damping factor: 40. Variable tuning. Sensitivity: (IHF) FM 1.5 μ V, AM 15 μ V. S/N ratio: FM 70dB, AM 55dB. IF rejection: FM 100dB, AM 75dB. Output: 50W. S/N ratio: phono/tape 70dB/80dB. Phono overload: 130mV. Controls: bass \pm 10dB 50Hz, treble \pm 10dB 10kHz, loudness +8dB/+4dB 50Hz/10kHz, high filter 12dB/Oct 50Hz, low filter 12dB/Oct 10kHz. Audio muting -20dB at 1kHz. Residual noise: 0.5mV. Speaker impedance: 4-16 ohms. Size 61 \times 38 \times 14cms. Fin-*Tandy Realistic ST A-90**Rotel RX 202*

ish: teak or rosewood. Price: £241.11 (plus VAT).

RX-152 Mk. IIAM/FM stereo receiver. FR: 20Hz -60kHz. Damping factor: 30. Variable tuning. Sensitivity: (IHF) FM 4 μ V, AM 20 μ V. S/N ratio: FM 65dB, AM 50dB. IF rejection: FM 65dB, AM 45dB. Output: 15W. S/N ratio: phono/tape 65dB. Phono overload: 80mV. Speaker impedance: 4-16 ohms. Controls: FM, AM, Loudness, Vol, treble, balance, bass, phones, tuning meter, FM, Stereo. Size: 47.5 \times 27 \times 11.5cms. Price: £95.90 (plus VAT).**RX-202 Mk II ★**AM/FM stereo receiver. FR: 20Hz-70,000Hz. Damping factor: 30. Variable tuning. Sensitivity: (IHF) FM 2.9 μ V, AM 20 μ V. S/N ratio: FM 65dB, AM 50dB. IF rejection: FM 70dB, AM 45dB. Output: 20W. S/N ratio: phono/tape 65dB/78dB. Phono overload: 80mV. Speaker impedance: 4-16 ohms. Controls: bass, treble, loudness, high filter, balance. FM/AM, Stereo, volume, phones, tuning meter. Size: 47.5 \times 27 \times 11.5cms. Price: £109.72 (plus VAT).**RX-402**AM/FM stereo receiver. FR: 15Hz-75,000Hz. Damping factor: 30. Variable tuning. Sensitivity: (IHF) FM 2.0 μ V, AM 20 μ V. S/N ratio: FM 67dB, AM 50dB. IF rejection: FM 80dB, AM 45dB. Output: 25W. S/N ratio: photo/tape 65dB/80dB. Phono overload: 85mV. Speaker impedance: 4-16 ohms. Controls: FM, AM, stereo, loudness, filter, mounting, volume, bass, phones, tuning meter, balance, selector. Separate left and right control

★ Indicates entry is illustrated

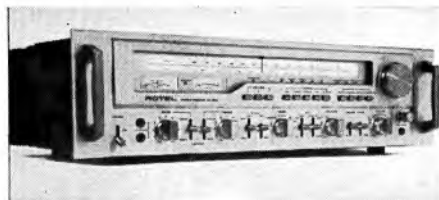
for bass and treble. Two speaker switches. FM muting. Size: 47.5 × 32 × 11.5 cms. Price: £145.53 (plus VAT).

RX-602 ★

AM/FM stereo receiver. FR: 10Hz-75kHz. Damping factor: 40. Variable tuning. Sensitivity: (IHF) FM 1.8 μ V, AM 20 μ V. S/N ratio: FM 70dB, AM 50dB. IF rejection: FM 80dB, AM 50dB. Output: 35W. S/N ratio: phono/tape 65dB/80dB. Phono overload: 130mV. Speaker impedance: 4-16 ohms. Controls: FM, Audio tone defect, bass, treble, loudness, volume, phones, tuning, signal meters, high filter, audio muting switch, tape monitor, balance, selector. AC outlets. Finish: black aluminium front panel. Size: 57 × 33 × 13.5 cms. Price: £191.73 (plus VAT).



Rotel RX 602



Rotel RX 1603

RX 102 Mk II

Amplifier

Power Output: 10 Watts. THD: 1% FR: 20-50,000 Hz. Damping factor: 30 Inputs: phono, tape, aux, tape monitor, two speakers. Tape Output (DIN): 5 mV: 100 mV/90 k ohms. Crosstalk: 50 dB/10 kHz.

Tuner

Sensitivity FM: IHF/4 μ V. Sensitivity AM: IHF/300 μ V. Capture Ratio: 4dB. Image Rejection: 740dB. Spurious Rejection FM: >55dB. IF rejection FM: >60dB. Stereo separation: 35dB. Wavebands: 88-108MHz, 525-16,000kHz.

General

Dimensions: 47.5 × 27 × 11.5cms. Black fascia, teak surround. Price: £84.31 (plus VAT).

RX 7707

Amplifier Section

Power output: 35W. FR: 10Hz-65kHz. Damping factor: 35. Inputs: aux, phono, tape, mon, 2 pairs speakers. Controls: bass, treble, balance, volume, VU meters, phones, high, low, loudness, mode, muting AFC, AM, FM, FM stereo, touch sensitive tuning buttons, 5 presets on FM.

Tuner Section

Sensitivity: 2.0 μ V, 3.6 μ V. Sensitivity AM: 200 μ V/m.

General

Dimensions: 56.6 × 33 × 12cms. Wood finish with black aluminium front panel. Price: £187.25 (plus VAT).

RX 1603 ★

Amplifier Section

Power output: 180W. FR: 5Hz-100,000Hz.



Sansui 221

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 μ V, 3 μ V. Sensitivity AM: 200 μ V/m.

General

Dimensions: 60 × 48 × 18cms. Wood finish with black aluminium front panel. Price: £525.00 (plus VAT).

■ SANSUI

Vermiron Ltd, Thornhill, Southampton SO9 5QF.

Tel: Southampton 444811

221 ★

FM/AM Stereo Receiver. Audio Section: Music Power (IHF) 40 watts into 4 ohms at 1,000Hz, 30 watts into 8 ohms at 1,000Hz. THD: Overall (Aux to speaker terminals) less than 1.0% at rated power output. IHF Power Bandwidth: 20 to 30,000Hz at rated distortion. Frequency Response (at 1 watt): Overall (AUX to power output) 25 to 30,000Hz

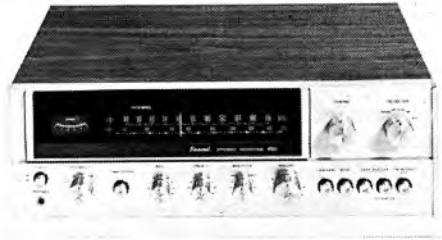
+2.0dB. -3.0dB. Damping Factor: approximately 30 into 8 ohms load. Input Sensitivity and Impedance (at rated output 1,000Hz): Phono: 2.5mV (50k ohms), Max. input capability 120mV RMS (THD: less than 0.5%). Aux: 150mV (50k ohms). Tape Monitor (PIN): 150mV (50k ohms). Tape Monitor (DIN): 150mV (50k ohms). Tuner FM Section: Tuning Range: 88 to 108MHz. Sensitivity (IHF) 2.5 μ V (DIN) 1.3 μ V. THD: Mono less than 0.8%, Stereo less than 1.0%. S/N Ratio: better than 65dB. AM Section: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz. Selectivity (\pm 10kHz): better than 40dB at 1,000kHz. Dimensions: 42.4 \times 12.5 \times 26.6 cms. Price: £141.62 (inc. VAT).

331

Audio Section: Music Power (IHF) 50 watts into 4 ohms at 1,000Hz, 40 watts into 8 ohms at 1,000Hz. THD: Overall (Aux to speaker terminals) less than 1.0% at rated power output. IHF Power Bandwidth: 20 to 30,000Hz at rated distortion. Frequency Response (at 1 watt): Overall (AUX to power output) 25 to 30,000Hz +2.0dB -3.0dB. Damping Factor: approximately 30 into 8 ohms load. Input Sensitivity and Impedance (at rated output 1,000Hz): Phono: 2.5mV (50k ohms), Max. input capability 120mV RMS (THD: less than 0.5% distortion). Aux: 150mV (50k ohms). Tape Monitor (PIN): 150mV (50k ohms). Tape Monitor (DIN): 150mV (50k ohms). Tuner FM Section: Tuning Range: 88 to 108MHz. Sensitivity (IHF) 2.5 μ V (DIN) 1.3 μ V (at 1,000Hz, 30% mod, S/N 26dB). THD: Mono less than 0.8%, Stereo less than 1.0%. S/N Ratio: better than 65dB. Frequency Response: 30 to 12,000Hz + 1dB, -3dB. Antenna Input Impedance: 300 ohms balanced, 75 ohms unbalanced. AM Section: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz. Selectivity (\pm 10kHz): better than 40dB at 1,000kHz. Dimensions: 42.4 \times 12.5 \times 26.6 cms. Price: £155.76 (inc. VAT).

551

Audio Section: Music Power (IHF) 70 watts into 4 ohms at 1,000Hz, 50 watts into 8 ohms at 1,000Hz. IHF Power Bandwidth: 25 to 30,000Hz at rated distortion. Frequency Response (at 1 watt): Overall (Aux to power output) 15 to 30,000Hz +1.0dB. -2.0dB. RIAA Curve Deviation: (Phono): +1.5dB -1.5dB (30 to 15,000Hz). Damping Factor: approximately 20 at 8 ohms load. Input Sensitivity and Impedance (at rated output 1,000Hz): Phono: 2.5mV (50k ohms), Max. input capability 90mV (THD: less than 0.5%). Aux: 150mV (50k ohms). Tape Monitor (DIN):



Sansui 661

150mV (50k ohms). Filter: High -10dB at 10,000 Hz (6dB/oct). Tuner FM Section: Tuning Range: 88 to 108MHz. Sensitivity (IHF) 2.5 μ V. S/N Ratio: better than 65dB. Selectivity: better than 60dB. Frequency Response: 30 to 15,000Hz. Antenna Input Impedance: 300 ohms balanced, 75 ohms unbalanced. AM Section: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 53dB/m at 1,000kHz. Dimensions: 42.4 \times 13.5 \times 28.5 cms. Price: £209.21 (inc. VAT).

661 ★

Audio Section: Power Output (at rated distortion) continuous RMS power: both channels driven, 20W + 20W into 8 ohms (20-20,000Hz), 27W + 27W into 8 ohms at 1,000Hz; each channel driven, 40/40W into 4 ohms at 1,000Hz, 32/32W into 8 ohms at 1,000Hz. Music Power (IHF) 110 watts into 4 ohms at 1,000Hz, 75 watts into 8 ohms at 1,000Hz. Frequency Response Aux to power amp output 15-30,000Hz +1.0dB. -2.0dB. Equalization (at Rec out) RIAA Curve 30-15,000Hz \pm 1.0dB. Load Impedance: 4-16 ohms. Damping Factor: approximately 60 at 8 ohms load. Tuner FM: Tuning Range: 88 to 108MHz. Sensitivity (IHF) 2.2 μ V THD: Mono 0.5%, Stereo 0.7%. S/N Ratio: better than 60dB. Selectivity: better than 50dB. Frequency Response: 30 to 12,000Hz + 0.1dB, -3.0dB. AM: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz. Selectivity: better than 80dB at 1,000kHz \pm 10kHz.

General:

Voltage: 100, 117, 220, 240V 50/60Hz. Dimensions: 44.4 \times 13.5 \times 30.0 cms. Price: £268.14 (inc. VAT).

771

Audio Section: Power Output (at rated distortion) continuous RMS power: both channels driven 32W + 32W into 8 ohms (20-20,000Hz), 40W + 40W into 8 ohms at 1,000Hz, each channel driven 55/55W into 4

★ Indicates entry is illustrated

ohms at 1,000Hz, 45/45W into 8 ohms at 1,000Hz, Music Power (IHF) 140W into 4 ohms at 1,000Hz, 110W into 8 ohms at 1,000Hz. Power Bandwidth (IHF): 15 to 40,000Hz. Frequency Response: AUX to power amp output 15 to 30,000Hz +1.0dB, -2.0dB. Load Impedance: 4-16 ohms. Damping Factor: approximately 60 at 8 ohms load. Tuner FM: Tuning Range: 88 to 108MHz. Sensitivity (IHF) $2.0\mu\text{V}$. THD: Mono 0.4%, Stereo 0.6%. S/N Ratio: better than 60dB. Selectivity: better than 60dB. Frequency Response: 30 to 12,000Hz + 1.0dB, -3.0dB. AM: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz.

General

Voltage, 100, 117, 220, 240V 50/60Hz. Dimensions: 48 × 13.5 × 30 cms. Price: £332.79 (inc. VAT).

8080 ★

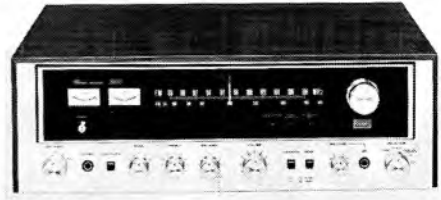
Audio Section: Power Output (at rated distortion). Music Power (IHF) 250W into 4 ohms at 1,000Hz, 230 watts into 8 ohms at 1,000Hz. Continuous RMS Power: both channels driven 110W per channel into 4 ohms at 1,000Hz, 90W per channel into 8 ohms at 1,000Hz, 80W per channel into 8 ohms from 20 to 10,000Hz. Power Bandwidth (IHF): 5 to 45,000Hz at rated distortion. Frequency Response (at 1 watt): Overall (from Aux) 10Hz to 30kHz + 1.0dB, -1.0dB. Damping Factor: approximately 10 at 8 ohms load. FM Section: Tuning Range: 88 to 108MHz. Sensitivity (IHF) $1.7\mu\text{V}$ (DIN) $0.9\mu\text{V}$. S/N Ratio (Mono): better than 70dB. Selectivity: better than 85dB. Frequency Response: 30Hz to 15kHz + 0.5dB, -2dB. AM Section: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz. Selectivity: better than 50dB at 1,000kHz. Power Voltage: 100, 120, 220, 240V. 50/60Hz. Dimensions: 54 × 18.2 × 39.7 cms. Price: £502.48 (inc. VAT).

9090

Audio Section: Power Output (at rated distortion). Music Power (IHF) 450W into 4 ohms at 1,000Hz, 300 watts into 8 ohms at 1,000Hz. Continuous RMS Power: both channels driven 150W per channel into 4 ohms at 1,000Hz, 120W per channel into 8 ohms at 1,000Hz, 110W per channel into 8 ohms from 20 to 20,000Hz. Power Bandwidth (IHF): 5 to 45,000Hz at rated distortion. Frequency Response (at 1 watt): Overall (from Aux) 10Hz to 30kHz + 1dB -1dB. Damping Factor: approximately 10 into 8 ohms load. FM Section: Tuning Range: 88 to 108MHz. Sensitivity (IHF) $1.7\mu\text{V}$ (DIN) $0.9\mu\text{V}$. S/N Ratio (Mono):



Sansui 8080



Sansui 5050



Sansui 6060

better than 70dB. Selectivity: better than 85dB. Capture Ratio: less than 1.5dB. Frequency Response: 30Hz to 15kHz + 0.5dB, -2dB. AM Section: Tuning Range: 535 to 1,605kHz. Sensitivity (Bar Antenna): 50dB/m at 1,000kHz. Selectivity: better than 50dB at 1,000kHz. Power Voltage: 100, 120, 220, 240V. 50/60Hz. Dimensions: 54 × 18.2 × 39.7 cms. Price: £633.35 (inc. VAT).

5050 ★

Amplifier Section

Power output: 33W. FR: 15Hz-40kHz. Inputs: phono, aux, tape mon, mic, Controls: speakers, bass, treble, balance, volume, mic level, selector switch.

Tuner section

Sensitivity: $2\mu\text{V}$ (IHF). Wavebands: AM/FM. Variable tuning.

General

Dimensions: 46.2 × 14.6 × 29.9cms. Price: £268.14 (inc. VAT).

6060 ★

Amplifier Section

Power output: 44W per channel. FR: 15Hz-

40kHz. Inputs: phono, aux, tape mon, mic. Controls: same as 5050.

Tuner Section

Sensitivity: $1.9\mu\text{V}$ (IHF). Wavebands: AM/FM. Variable tuning.

General

Dimensions: $46 \times 14.6 \times 29.9\text{cms}$. Price: £322.05 (inc. VAT).

■ SONY

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

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: $49 \times 42 \times 17\text{cms}$. Walnut side panels. No rec. retail price.

STR 5800 ★

Amplifier Section

Power output: 60W per channel. Inputs: phono, aux, ext adpt, 2 × 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: $49 \times 42 \times 17\text{cms}$. Walnut side panels. No rec. retail price.

STR 5800 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: $1.7\mu\text{V}$ IHF. Sensitivity AM: $250\mu\text{V/m}$. Waveband coverage as STR 4800. Variable tuning.

General

Dimensions: $49 \times 42 \times 17\text{cms}$. Walnut side panels. No rec. retail price.

STR 1800/STR 2800

Details on application.

■ 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: $2.0\mu\text{V}$. Capture Ratio: 2.5dB.



Sony STR 4800



Sony STR 5800



J. E. Sugden R48

★ Indicates entry is illustrated

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: 20µV. 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).

Solvsuper 12

Amplifier

Power Output: 12W. THD: 0.2%. Total music power: 20W. Power bandwidth: 30-25,000Hz. Damping factor: 30 at 1kHz.

Tuner

Sensitivity FM: 40µV. Sensitivity AM: 50µV. Capture Ratio: 1.5dB. Image rejection FM: 46dB. Image rejection AM: 46dB. IF Rejection: 90dB. Stereo separation: 40dB. Pilot Tone rejection: 50dB. THD stereo: 0.5%.

General

Dimensions: 49.5 × 11.7 × 25.7cm. Teak or rosewood finish. Price: £191.11 (plus VAT).

TR 2075 ★

Amplifier

Power output: 75W per channel. THD: 0.08%. Total music power: 100W. FR: 6-80,000Hz. Inputs: Tape (2), phono. Loudness compensation button.

Tuner

Sensitivity FM: 20µV. Sensitivity AM: 20µV. Capture ratio: 0.9dB. Image rejection FM: 70dB. Image rejection AM: 70dB. IF rejection FM: 95dB. Stereo separation: 40dB. Pilot Tone rejection: 70dB. THD stereo: 0.15%. Waveband coverage: 87.5-108MHz.



Tandberg TR 220



Tandberg TR 2075

General

Dimensions: 51 × 15.3 × 35.3cm. Teak or rosewood finish. Price: £422.22 (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, speaker, tape copy, loudness, high and low filters, muting.

Tuner Section

Sensitivity: 20µV (40µV). Waveband coverage: 87.5-108MHz. Variable tuning.

General

Dimensions: 20 × 14 × 6ins. Teak or rosewood finish. Price: £333.33 (plus VAT).

TR 2025

Amplifier Section

Power output: 25W. FR: 8Hz-50kHz, 20Hz-20kHz. Inputs: 2 × tape, phono. Controls: low and high filters, muting, signal and tuning indicators, vol, bass, treble, balance, 2 × tape monitors.

Tuner Section

Sensitivity: 20µV. Waveband coverage: 87.5-108MHz. Variable tuning plus five pre-sets.

General

Dimensions: 20½ × 12¾ × 5¾ins. Teak or rosewood finish. Price: on request.

■ 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: 1.9μV (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: 2.5μV (IHF). Sensitivity AM: 200μV (IHF). Variable tuning.

General

Dimensions: 45 × 31.5 × 15.3cms. Price: on application.

■ TECHNICS

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Berks SL1 3DR. Tel: Slough 34522.

SA-5460**Amplifier Section**

Power: 2 × 78W (4 ohms), 2 × 68W (8 ohms) at 1kHz, 2 × 72W (4 ohms), 2 × 65W (8 ohms) at 20Hz-20kHz. THD: 0.1%. Power bandwidth: 10Hz-40kHz-3dB. FR: 20Hz-20kHz ± 0.5dB. Inputs: phono, aux. Tone controls: bass 50Hz ± 13dB, treble 10kHz ± 12dB.

FM Tuner Section

Sensitivity: S/N 30dB, 300 ohms 1.8μV. S/N 20dB, 75 ohms 0.9μV. S/N ratio stereo: 54dB. Image rejection 53dB. IF rejection 80dB. Stereo separation 45dB.

AM Tuner Section

Sensitivity: 30μV, 260μV/m. Selectivity 22dB.

General

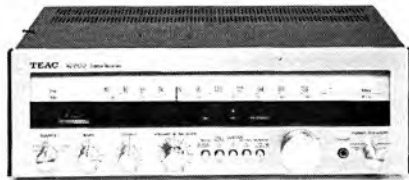
Dimensions: 50 × 15 × 42cms. Price: £349.95 (inc. VAT).

SA-5360**Amplifier Section**

Power: 2 × 47W (4 ohms), 2 × 42W (8 ohms), at 1kHz, 2 × 42W (4 ohms), 2 × 38W (8 ohms), at 20Hz-20kHz. THD: 0.3%. Power bandwidth: 7Hz-40kHz-3dB. FR: 20Hz-20kHz ± 0.5dB. Inputs: phono, aux. Tone controls: bass 50Hz ± 13dB, treble 10kHz ± 13dB.

FM Tuner Section

Sensitivity: S/N 30dB, 300 ohms 1.8μV. S/N



Teac AG-2700

20dB, 75 ohms 0.9μV. S/N ratio stereo: 54dB. Image rejection: 53dB. IF rejection: 80dB. Stereo separation: 42dB.

AM Tuner Section

Sensitivity: 30μV, 300μV/m. Selectivity 22dB.

General

Dimensions: 42 × 14.2 × 35.5cms. Price: £234.95 (inc. VAT).

SA-5160**Amplifier Section**

Power: 2 × 30W (4 ohms), 2 × 26W (8 ohms) at 1kHz. 2 × 26W (4 ohms), 2 × 25W (8 ohms) at 20Hz-20kHz. THD: 0.5%. Power bandwidth: 7Hz-40kHz-3dB. FR: 20Hz-20kHz ± 0.5dB. Inputs: phono, aux. Tone controls: bass 50Hz ± 13dB, treble 10kHz ± 12dB.

FM Tuner Section

Sensitivity: S/N 30dB, 300 ohms 1.8μV. S/N 20dB, 75ohms 0.9μV. THD: 0.3% S/N ratio stereo: 54dB. Image rejection: 53dB. IF rejection: 80dB. Stereo separation: 42dB.

AM Tuner Section

Sensitivity: 30μV, 300μV/m. Selectivity: 22dB.

General

Dimensions: 42 × 14.2 × 35.5cms. Price: £172.95 (inc. VAT).

SA-5060**Amplifier Section**

Power: 2 × 16W (4 ohms), 2 × 15W (8 ohms) at 1kHz. 2 × 13W (4 ohms) 2 × 13W (8 ohms) at 20Hz-20kHz. THD: 0.9%. Power bandwidth: 5Hz-30kHz-3dB. FR: 20Hz-20kHz + 1.5-0.3dB. Inputs: phono, aux. Tone controls: bass 50Hz ± 10dB, treble 10kHz ± 10dB.

FM Tuner Section

Sensitivity: S/N 30dB, 300 ohms 2.3μV. S/N 20dB, 75 ohms 0.9μV. S/N ratio stereo: 54dB. Image rejection: 50dB. IF rejection: 75dB. Stereo separation: 42dB.

★ Indicates entry is illustrated

AM Tuner Section

Sensitivity: $30\mu\text{V}$, $300\mu\text{V/m}$. Selectivity: 20dB.

General

Dimensions: $42 \times 14.2 \times 31.5\text{cms}$. Price: £119.95 (inc. VAT).

■ 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 channel stereo); two speakers, room 2. Adjustable muting. Price: £259.00 (including VAT).

Electronic centre 6001 hifi

4 wavebands: FM, MW, LW, SW. 7 FM pre-selectors. Sensor switches for all functions (16). 7 rocker switches. Incorporates S500 record player. $2 \times 35\text{W}$. 6 loudspeaker sockets 4 ohms. 2 headphone sockets. Input: phono (mag) $2.5\text{mV}/47\text{K}$. Input: ceramic ($200\text{mV}/600\text{K}$). Input: tape recorder $200\text{mV}/600\text{K}$. FR: 22Hz-20,000kHz $\pm 5\text{dB}$. Distortion factor: $\leq 0.2\%$. Price: £579.00 (including 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 (including VAT).

Studio Center 5030

Compact hi-fi system which includes a sensi-

268

tive receiver, a high quality belt drive turntable and a cassette recorder. Receiver output: $2 \times 30\text{W}$ (cont sine) into 4 ohms. Frequency response: 20-20,000Hz $\pm 1.5\text{dB}$. 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: £599.00 (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 toning 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 4Ω from four channels or $2 \times 60\text{W}$ RMS into 4Ω 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. Aftertape 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.

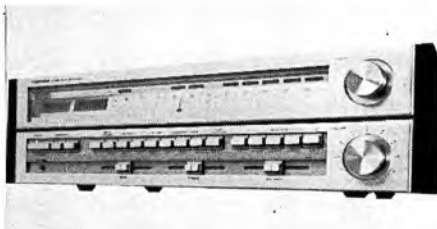
Price: approx. £898.00 (inc. VAT).



Toshiba SA-220L



Toshiba SA-320L



Toshiba SA-620

■ TELETON

Teleton Electro (UK) Company Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW.
Tel: Chelmsford 62442.

TFS 80B

Amplifier Section

Power output: 33W into 8 ohms. FR: 20Hz-30kHz \pm 1.5dB. Damping factor: 27. Inputs: phono, aux, tape. Controls: bass, treble, hi-cut, loudness, volume, balance, 6 sensor tuning controls.

Tuner Section

Sensitivity: 1.5 μ V for 30dB. Waveband coverage: FM, SW, LW, MW. Six sensor FM.

General

Dimension: 48 \times 33 \times 10.6cms. Black finish. No rec. retail price.

■ TOSHIBA (UK) LTD

Toshiba House, Great South West Road, Feltham, Middlesex.
Tel: 01-751 1281.

SA-220L ★

Amplifier

Power output: 11W \times 2 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 μ V. Sensitivity AM: 15 μ 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 13cm. Woodgrain finish. Price: £95.55 (plus VAT).

SA-320L ★

Amplifier

Power output: 15W \times 2 RMS. THD: 0.8% rated. Total music power: 50W. FR: 30-30,000Hz. Power bandwidth: 10-60,000Hz. Inputs for phono, tape, aux. Overload capability: 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 \times 38.7 \times 16.3cm. Woodgrain finish. Price: £124.00 (plus VAT).

SA-420

Amplifier

Power output: 25W \times 2 RMS. THD: 0.4% rated. Total music power: 70W. Other details as per SA320L plus rumble filter. Tuner and

★ Indicates entry is illustrated

General details as per SA-320L. Price: £164.44 (plus VAT).

SA-520

Amplifier

Power output: 40W × 2RMS at 8 ohms. THD: 0.4% rated. Total music power: 100W. FR: 20-30,000 Hz. Power bandwidth: 5-60,000 Hz. 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: 1.8μV. Sensitivity AM: 15μV. 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 × 38.7 × 16.3cm. Woodgrain finish. Price: £212.89 (plus VAT).

SA-620 ★

Amplifier

Power output: 60W × 2 RMS. THD: 0.4%

rated. Total music power: 140W. Other details as per SA-520. Price: £288.44 (plus VAT).

■ TRIO

B. H. Morris & Co (Radio) Ltd,
Precision Centre, Heather Park Drive,
Wembley, Middx. HA0 1SU.
Tel: 01-902 9422.

KR 2600 ★

Amplifier

Power output: 15 + 15W. THD: 0.8% at rated power. Power bandwidth: 10-70,000Hz. Damping factor: 30 at 8 ohms. Inputs for phono, aux, tape. Overload capability: phono 140mV. Scratch filter.

Tuner

Sensitivity FM: 2.5μV. Sensitivity AM: 25μV. Capture ratio: 2.5dB. Image rejection FM: 50dB. Image rejection AM: 45dB. Stereo separation: 33dB at 1kHz. Pilot tone rejection: 40dB. THD stereo 0.5%. Waveband coverage: 88-108MHz, 535-1,600kHz.

General

Dimensions: 44 × 30 × 136cm. Teak finish. Price: £133.28 (plus VAT).

**For people
who use more than
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

KR 3600**Amplifier**

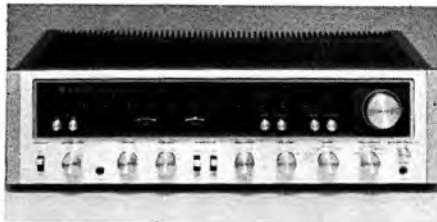
Power output: 22 +22W. THD: 0.8% at rated power. Power bandwidth: 7-35,000Hz. Damping factor: 35 at 8 ohms. Inputs: phono, aux, tape. Overload capability: phono 150mV. Tape output (DIN): 30mV. Scratch filter.

Tuner

Sensitivity FM: $2.3\mu\text{V}$. Sensitivity AM: $25\mu\text{V}$. Capture ratio: 2dB. Image rejection FM: 50dB. Image rejection AM: 45dB. Spurious rejection FM: 80dB. IF rejection FM: 90dB. Stereo separation: 35dB from 50-10,000Hz. Pilot tone rejection: 40dB. THD stereo: 0.4%. Waveband coverage: 88-108MHz FM.

General

Dimensions: 50 × 30 × 14cm. Brushed aluminium finish. Price: £175.55 (plus VAT).

*Trio KR 2600**Trio KR 6600**Trio KR 9600***KR 4600****Amplifier**

Power output: 30 +30W. THD: 0.8% at rated power. Power bandwidth: 7-35,000Hz. Damping factor: 40 at 8 ohms. Inputs: phono (2), aux, tape (2). Overload capability: phono 170mV. Tape output (DIN): 30mV at 80K ohms. Scratch filter.

Tuner

Sensitivity FM: $1.8\mu\text{V}$. Sensitivity AM: $20\mu\text{V}$. Capture ratio: 1.5dB. Image rejection: 85dB. Image rejection AM: 45dB. Spurious rejection FM: 85dB. IF rejection FM: 100dB. Stereo separation: 35dB from 50-10,000Hz. THD stereo: less than 0.25%. Waveband coverage: 88-108MHz, 535-1,600kHz.

General

Dimensions: 50 × 34 × 14cm. Brushed aluminium finish. Price: £220.00 (plus VAT).

KR 5600**Amplifier**

Power output: 40 +40W. THD: 0.5% at rated power. Power bandwidth: 7-35,000Hz. Damping factor: 40 at 8 ohms. Inputs: phono (1) (2), aux, tape (A), (B). Overload capability: mono 170mV. Tape output (DIN): 30mV at 80 K. Scratch filter.

Tuner

Sensitivity FM: $1.8\mu\text{V}$. Sensitivity AM: $20\mu\text{V}$. Capture ratio: 1.5dB. Image rejection FM: 85dB. Image rejection AM: 45dB. Spurious rejection FM: 85dB. IF rejection FM: 100dB. Stereo separation: 35dB from 50Hz-10,000Hz. THD stereo: less than 0.25%. Waveband coverage: 88-108MHz, 535-1,600kHz.

General

Dimensions: 50 × 34 × 14cm. Brushed

aluminium finish. Price: £255.55 (plus VAT).

KR 6600 ★**Amplifier Section**

Power output: 60W. FR: 20Hz-50kHz ± 0.5dB. Inputs: phono (2), aux, tape, mic. Controls: volume, bass, treble, mode, loudness, sound injection, filters.

Tuner Section

Sensitivity FM: $1.7\mu\text{V}$. Sensitivity AM: $20\mu\text{V}$. Wavebands: 88-108MHz, 450-1600kHz. Variable tuning.

General

Dimensions: 53 × 36 × 16cms. Price: £337.77 (plus VAT).

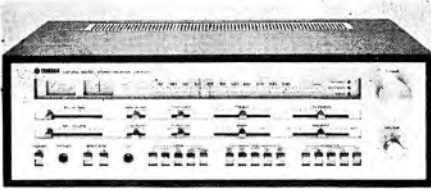
KR 9600 ★**Amplifier Section**

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, loudness, balance, attenuator, filters speakers, sound injection.

Tuner Section

Sensitivity FM: $1.5\mu\text{V}$. Sensitivity AM: $10\mu\text{V}$.

★ Indicates entry is illustrated



Yamaha CR 1000

Waveband coverage: 88-108MHz, 450-1600kHz. Variable tuning.

General

58 × 42 × 17cms. Brushed aluminium finish. Price: £586.66 (plus VAT).

VIDEOTONE

Videotone, 98 Crofton Park Road, London SE4.

Tel: 01-690 1914.

2020

Amplifier

Power output: 18W RMS into 8 ohms, 20-20kHz. THD: >0.1%. FR: 25-20,000Hz. Damping factor: 50 at 1kHz. Inputs: tape, tuner, aux. Overload capability: 30dB. Tape output (DIN): 100mV average. Scratch filter. Rumble filter. Crosstalk: 40dB.

YAMAHA

Natural Sound Systems Ltd,
Strathcona Road, North Wembley,
London HA9 8QL.

Tel: 01-904 0141.

CR1000 ★

FM stereo receiver. Band: 88-108MHz. Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 1.7µV (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic 3mV 50K, tape 150mV 40K. S/N: phono 80dB, mic 70dB, tape 90dB. Outputs: 70W per channel into 8 ohms, 20Hz-20kHz. Damping factor: 70. THD: <0.04% at any power up to rated output. FR: 10Hz-50kHz +0.5dB -1dB. Size: 20 × 6¾ × 13¼in. Five gang front end, variable muting and loudness. Price: £488.00 (plus VAT).

CR800

FM/AM stereo receiver. Bands: 88-108MHz (FM), 550-1600kHz (MW). Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 1.7µV (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic

3mV 50K, tape A & B 150mV 45K. S/N: phono 75dB, mic 70dB, tape 90dB. Output: 45W per channel into 8 ohms, 20Hz-20kHz. THD: <0.06%. FR: 10Hz-50kHz +0.5dB -1dB. Size: 18¾ × 6¼ × 11¾in. Price: £299.00 (plus VAT).

CR600

FM/AM stereo receiver. Bands: 88-108MHz (FM), 550-1600kHz (MW). Manual tuning, auto-touch AFC (off when tuning knob touched), signal strength and tuning meters. Sensitivity: 2.0µV (IHF) (FM). Aerial: 75 and 300 ohms. Inputs: phono (1 & 2) 3mV 50K, mic 3mV 50K, tape A & B 150mV 100K. S/N: phono 72dB, mic 70dB, tape 90dB. Output: 16W per channel into 8 ohms at 1kHz. Damping factor: 70. THD: 0.06%. FR: 10Hz-50kHz +0.5dB -1dB. Size: 18¾ × 6¼ × 11¾in. Price: £239.76 (plus VAT).

CR200

Amplifier

Power output: 15 + 15W. THD: <0.1%. Power bandwidth: 20-50,000Hz. Damping factor: 40. Inputs for phono, tape, aux. Overload capability: 135mV. Tape output (DIN) 150mV (50K ohms).

Tuner

Sensitivity FM: 2.5µV. Sensitivity AM: 52dB. Capture ratio: 2.0dB. Image rejection FM: 55dB. IF rejection FM: 75dB. Stereo separation: 40dB. THD stereo: 0.3%. Waveband coverage: 88-108MHz. 525-1,605kHz.

General

Dimensions: 40 × 29.3 × 13.3cm. Simulated American walnut finish. Price: £124.32 (plus VAT).

CR450

Amplifier

Power output: 25 + 25W. THD: <0.1%. FR: 20-20,000Hz. Damping factor: >50. Inputs for phono, tape, aux. Overload capability: 150mV. Tape output (DIN): 150mV (<500 ohms). Scratch filter. Rumble filter. Crosstalk: 65dB.

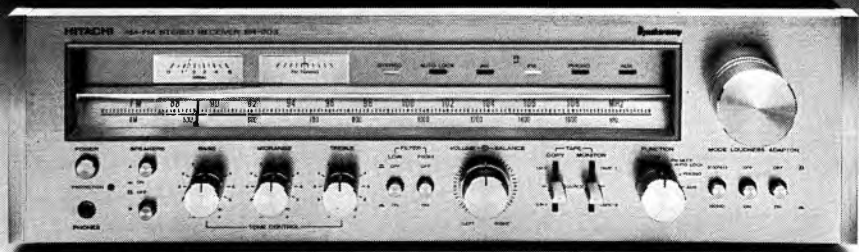
Tuner

Sensitivity FM: 1.5µV. Sensitivity AM: 50dB. Capture ratio: 1.5dB. Image rejection FM: 45dB. Image rejection AM: 40dB. Spurious rejection, FM: 45dB. IF rejection, FM: 60dB. Stereo separation: 40dB. Pilot tone rejection: 40dB. THD stereo: >0.3%. Waveband coverage: 88-108MHz. 525-1,605kHz.

General

Dimensions: 46.5 × 33.5 × 15.7cm. American walnut finish. Price: £197.68 (plus VAT).

The 75 watt receiver that delivers 160 watts when you need it.



"What I know about hi-fi you could write on a matchbox but I just have to tell you about the new Hitachi SR-903 stereo receiver I heard the other day.

Apparently, with something called Dynaharmony, Hitachi have cracked the problem of high output amps costing a fortune to buy. And they've overcome the difficulty of low and medium output amps 'clipping' the high peaks that only bigger amps can handle.

High peaks, so I'm told, only occur for under 2% of the total listening time so really high output amps are very inefficient and wasteful.

Anyway, Hitachi have cracked it with Dynaharmony.

Basically Dynaharmony is two amps in one. One 75 watt per channel (RMS) for low and medium outputs and another that boosts the power to 160 watts for those momentary high peaks.

Of course, if you could afford it you could buy a 160 watt amp, but really I wouldn't bother. You get the same amount of power with Dynaharmony, but only when it's needed.

Actually, there's a lot more to it than that but to be honest I don't understand it. But what a sound. And what a receiver.

It has a tuning control with a touch-sensitive Auto Lock. It somehow homes into the strongest signal for any frequency and stays there until you touch the tuning control again.

There's a built-in protection circuit that cuts off the power if the amp gets overloaded. And a midrange tone control as well as bass and treble.

When it comes to specifications I get left behind. But I'm sure you'll understand when I say harmonic distortion is an incredibly low 0.3% and the sensitivity of the FM receiver is an unbelievable 1.2μ volts (DIN).

The SR-903 sounds very expensive but at £334* it costs no more than an ordinary 75 watt receiver.

I'm now the proud possessor of a great receiver and a very small overdraft."



HITACHI

A genuine advance in hi-fi.

Hitachi (UK) Sales Ltd., Hitachi House, Station Road, Hayes, Middlesex, UB3 4DR..

* Recommended retail price including VAT.

Connoisseur's Choice



BD2/A
With SAU2 Arm,
on Slimline Plinth



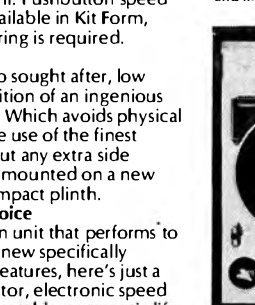
BD103 with Arm
and Lifting Device



BD1 with
SME 3009 Srs 2 Arm,
Plinth & Cover



BD103/LA
without arm
and lifting device



BD1 Kit

The Connoisseur range of precision transcription units set standards which make them the perfect choice for beginners and professionals alike, from the proven BD1 to the superb new BD103.

BD1 - the Connoisseurs Budget Choice

Combines top performance, simplicity and reliability at moderate costs. A slow speed synchronous motor means a low humfield allowing the use of the most sensitive pick-ups, such as the Connoisseur SAU2 or SME 3009 srs II. Pushbutton speed change is also featured, and the BD1 is available in Kit Form, assembled within the hour, and no soldering is required.

BD2/A the Connoisseurs First Choice

With all the features that made the BD2 so sought after, low rumble, wow and flutter, there is the addition of an ingenious electromagnetic automatic lift off system. Which avoids physical contact with the pick-up arm allowing the use of the finest cartridges tracking at less than 1gm without any extra side pressure on the stylus. BD2/A is available mounted on a new slimline plinth, in chassis form or on a compact plinth.

BD103 The Connoisseurs Professional Choice

A new and quite exceptional transcription unit that performs to truly professional standards. Fitted with a new specifically designed arm and a whole list of superb features, here's just a few: low voltage DC servo controlled motor, electronic speed control on all three speeds, aluminium turntable, automatic lift off and override. Available as a complete unit or as BD103/LA without arm and lifting device enabling use of most high quality pick-up arms.

* Still available separately SAU2 Pick-up arm and SCU1 cartridge.

For Full Details of all Connoisseur Products Contact Your Local Dealer or Write Direct.

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.

Record Decks

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ADC

BSR Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH.
Tel: Cradley Heath 65191.

Accutrac 4000 ★

The Accutrac 4000 is a "computerised" turntable operated by remote control, and consists of three separate but interrelated component pieces, the automatic direct drive electronic turntable, a sleek and sculptured space-age 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. The receiver's L.E.D. (light emitting diode) winking 'eye' lets the listener know that the information has been received and held in total memory. Up to twenty-four commands can be programmed in any order required. The transmitter can also be programmed to reject, cue, repeat and clear, as well as play. Turntable system. Type: two-speed direct drive. Motor drive system: low speed, electronically controlled, DC brushless direct drive motor. Speeds: 33 $\frac{1}{3}$ and 45 rpm (electronic speed change). Turntable platter: die-cast aluminium alloy, dynamically balanced, 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 $\frac{1}{2}$ 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 15.2cms. Price: £255.20 (plus VAT).

■ AKAI

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

AP 001 ★

Record deck with pickup arm, plinth and hinged cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow: 0.06% WRMS. Flutter: 0.06% WRMS. Belt drive, 4-pole synchronous motor. Stainless steel tubular pickup arm, length: 220mm. Features: manual start with oil-damped arm filter. Electrical auto-stop mechanism. Price: £85.33 without cartridge (plus VAT).



ADC Accutrac 4000 Computerised Turntable



Akai AP 001

★ Indicates entry is illustrated



Akai 003

AP 003 ★

Record deck with pickup arm, plinth and hinged cover. Speeds: $33\frac{1}{3}$, 45 rpm. Wow: 0.05% WRMS. Flutter: 0.05% WRMS. Belt drive, 4-pole synchronous motor. Stainless steel tubular pickup arm, length: 265mm. Features: heavy gauge aluminium deck plate. Plastic simulated wood grain veneer plinth. Manual start, auto return, oil damped cut-off lever. Price: £122.22 with cartridge (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. Pick-up 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

AMS Trading (Amstrad) Ltd, 89 Ridley Road, Dalston, London E8 2NH.
Tel: 01-249 5237/8/9.

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 headshell. Viscous cueing device. Finish: teak veneered base with removable hinged transparent dust cover. Price: approx. £40 (plus VAT).

AR

Teledyne Acoustic Research International, High Street, Houghton Regis, Dunstable, Beds LU5 5QJ.
Tel: Dunstable 603151.

XBI

Complete fitted pick-up arm. Hinged lid. Speeds: $33\frac{1}{3}$, 45rpm. Wow: 0.03%. Flutter: 0.03%. Rumble: less than -40dB. Turntable: 29.8cm. Belt drive, synchronous motor 220-240V 50Hz. Pickup arm made of light alloy. Walnut base with transparent plastic dust cover. Price: on application.

BEOGRAM

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

Beogram 3400

Integrated record deck with plinth, arm, pick-up and dust cover. Shibata stylus. Speeds: $33\frac{1}{3}$, 45rpm. Wow: $\pm 0.07\%$. Rumble: >42dB DIN unweighted, >62dB DIN weighted. Speed constancy: $\pm 0.1\%$ for $\pm 6\%$ mains volts variation. Turntable: 30cm made of aluminium alloy. Belt drive with synchronous 110-220V motor. Pickup arm: ultra low mass—magnesium alloy—integrated bias compensation. Optional CD4 demodulator can be fitted (available late 1976). Teak or rosewood white finish. Price: on application.

Beogram 6000 ★

Integrated stereo/CD4 record deck, tangential tracking, including CD4 pickup and dust cover. Speeds: $33\frac{1}{3}$, 45rpm. W and F: $\pm 0.05\%$. DIN. Rumble: <-45dB DIN unweighted, <-65dB DIN weighted. Speed constancy: <0.02% for $\pm 6\%$ change in mains volts. Turntable: 30cm aluminium alloy. Belt drive with DC tachomotor oscillator, 6V.

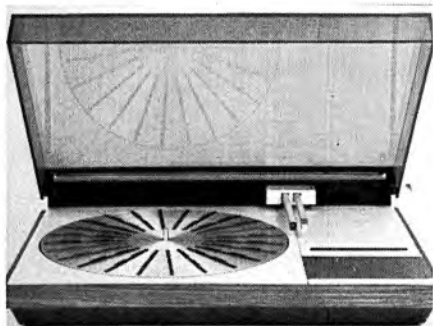
Aluminium low mass pickup arm with tangential tracking, servo driven. White/rosewood finish and fitted with CD4 demodulator. Full automatic operation. Price: approx £400 (plus VAT)

Beogram 4002

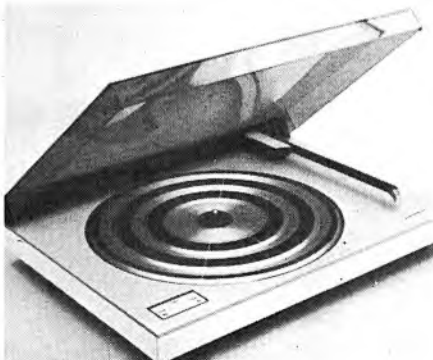
Plinth-mounted motor unit with tangential arm and MMC 4000 integrated cartridge. Hinged translucent dust cover. Servo driven tone arm plus detector arm for automatic record size and speed sensing. Computer-like data unit gives completely automatic operation. Speeds: 33 $\frac{1}{3}$ and 45rpm (with 6% fine speed adjustment). 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 tacho-motor. Individual speed indicator lights. Power supply: 110, 130, 220 and 240V AC 50/60Hz. Price: approx £325 (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



Beogram 6000



Beogram 1902

drive DC tacho-motor. Magnesium alloy pickup arm, anti-skating device. Finish: teak/rosewood. Price: approx. £95 (plus VAT).

1902 ★

Automatic integrated record player fitted with pickup arm and MMC 4000 cartridge on plinth with hinged dust cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: $\pm 0.03\%$ WRMS. Rumble: < 63 dB DIN weighted. Turntable: 12ins aluminium with rubber facing. Belt drive, DC tacho-motor. Magnesium alloy pickup arm, anti-skating device. Finish: teak/rosewood. Price: approx £120 (plus VAT).

■ B.I.C.

B.I.C. 24 Godstone Road,
Purley, Surrey CR2 2D3.
Tel: 01-668 6474/5.

BIC 960

Automatic belt drive turntable complete with base, cover and tone arm. Speeds: 33 $\frac{1}{3}$ and 45rpm. 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 27cms. 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.

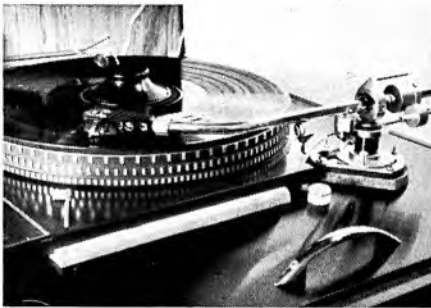
★ Indicates entry is illustrated

■ BLACK KNIGHT RUMBLECURE

Bank Top Workshop, Currier Lane,
Ashton-under-Lyne, Lancs. OL6 6TA.
Tel: 061-330 2836.

Rumblecure ★

Rumblecure specialise in vibration problems arising from inter-action between speakers and turntable when these are used together in an outfit. All items are made up to suit each particular case and the firm deliver, install, demonstrate and instruct. For example, Rumblecure make special corner speakers, and anti-vibration cushioning is built in to prevent vibration entering the house structure. Average cost of a visit would be £75. Countless permutations of equipment, rooms and houses reduce this to a very personal service and 2 × 9p stamps must be included with every letter before a quotation can be expected. The £75 average fee includes goods specially prepared and visits, including Sunday if required.



Black Knight Rumblecure Equipment



BSR MP 60

■ 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 pick-up arm. Bias compensator calibrated for spherical and elliptical, styli. Viscous damped cue control. Calibrated stylus pressure gauge. Muting switch. Price: Module K8 £46.86, Module £40.30. Chassis K8 £30.00. Chassis £23.43 (plus VAT).

BDS80 ★

Transcription-engineered single player with belt drive. Speeds: 33½ and 45rpm. 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 £52.50, Module £45.00. Chassis/K5E £37.50. Chassis £30.00 (plus VAT).

BDS90 ★

Transcription-engineered belt drive single play turntable. Speeds: 33½ and 45rpm. Total wow and flutter: within DIN weighted specification. Rumble: better than -55dB weighted (measured according to DIN 45 500). Dynamically-balanced, high torque, synchronous, 4-pole motor. 11in diameter, 4lb, precision-engineered diecast alloy turntable with integral rotating record spindle. Low resonance aluminium tone arm floats in a concentric gimbal style mount. Automatic tone arm lock. Silicone damped viscous cueing device. Slider controls. Size: 286 × 334 × 91mm. Mains: 100-120V AC 60Hz or 200-240V AC 50Hz. Finish: satin black mainplate and a combination of black and silver on tone arm, turntable and control panel. Price: Module K5E £55.30. Module £46.86. Chassis/K5E £40.34, Chassis £31.87 (plus VAT).



BSR BDS 80

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: $33\frac{1}{3}$, 45rpm. Wow: $< \pm 0.2\%$. 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 £57.18, Module £48.74, Chassis/K5E £42.18, Chassis £33.74 (plus VAT).

■ CONNOISSEUR

A. R. Sugden & Co (Engineers) Ltd,
Connoisseur Works, Atlas Mill Road,
Brighouse, Yorks HD6 1ES.
Tel: Brighouse 2142.



BSR BDS 90

BD1 ★

Two-speed motor unit supplied as motor only. Two fixed speeds, $33\frac{1}{3}$ and 45rpm. Wow: $< 0.1\%$. Flutter: $< 0.1\%$. Rumble: -65dB . $10\frac{1}{4}\text{in}$ 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: £23.03 (including VAT).

BD2 ★

Integrated transcription unit. Includes a BD1 motor unit (mounted on a larger platform and fitted with pressbutton speed change) and a type SAU2 pickup arm. Hydraulic arm lift, operated from front. Anti-vibration 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:



BSR McDonald BDS 95



Connoisseur BD1

★ Indicates entry is illustrated



Connoisseur BD2

(chassis model) £43.25 (including VAT); (assembly mounted on plinth complete with acrylic cover) £57.37 (including VAT).

BD3

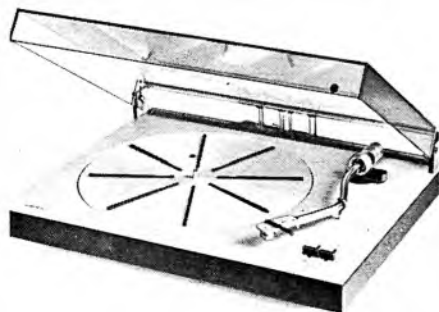
9V DC servo controlled motor with electronic speed variation on all 3 speeds - 33 $\frac{1}{3}$, 45 and 78rpm. Externally housed power source, eliminating hum fields, convertible for 120 or 230V mains supply. Belt drive. Studio type turntable, 11 $\frac{1}{2}$ in diameter. Neon illuminated stroboscope underneath turntable viewed through mirror at front of platform available with either 50 or 60Hz stroboscope. Adjustable magnetic bias, calibrated for spherical and elliptical stylus. Stylus balance. Hinged acrylic dust cover. Price: £100.41 (plus VAT).

■ 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).



Dansk SD 1702

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. Pick-up lift: viscosity damped. Anti-skating: magnetic action. Pickup. Type: Ortofon F 15 Q. 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/sec. Stylus pressure: 0.75-2gm/7.5-20mN. Stylus angle: 15°. Compliance: 25 \times 10⁻⁶ cm/dyne. Stylus-tip-radius: 15 μ m (0.015mm). Cabinet. Dimensions: 100 \times 450 \times 360mm. Price: £129.20 (plus VAT).

■ DUAL

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

601

Belt drive, two-speed turntable fitted with Shure V 15 Mark 3 LM cartridge, plinth and cover. Dual 8-pole synchronous motor through precision flat belt to platter base. Non-magnetic, dynamically-balanced platter. Speeds: 33 $\frac{1}{3}$ and 45rpm. Speed control: with illuminated stroboscope for platter speeds 33 $\frac{1}{3}$ and 45rpm, adjustable to 50 or 60Hz. W and F: $< \pm 0.08\%$. Rumble: unweighted: >42 dB, unweighted: >63 dB. Tonearm: torsion-resistant tubular aluminium tonearm in self-adjusting pivot bearing. Effective length: 222mm. Cartridge holder: removable, accepting any cartridges with $\frac{1}{2}$ in mounting and weighted from 2-10gm (including mounting hardware). Adjustable overhang: 5mm. Size: 420 \times 147 \times 365mm. Weight: approx. 7.4kg. Line voltage: 110-130V or 220-240V. AC 50/60Hz. Power input: approx. 8W. Price: £188.62 (inc. VAT).

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 45rpm. Speed check with illuminated strobe for platter speeds of 33 $\frac{1}{3}$ and 45rpm, 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 syn-



Dual CS 510

chronous 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).

CS1225/1

For universal use as a manual, fully automatic or changer. Rim-drive system. The CS1225/1 has a single phase 4-pole induction motor and a die-cast platter. The tonearm is of torsion resistant tubular aluminium fitted with Shure M75D cartridge and mounted in a self-adjusting pivot bearing. Other features include: pitch control, anti-skating and cue-control. Wow and flutter is better than $\pm 0.12\%$. Rumble is better than -57dB weighted. Price: £87.86 (inc. VAT).

CS 704

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: $>46\text{dB}$, unweighted: $>67\text{dB}$. Die-cast aluminium platter 30cms, weight 1.8kg. Strobe for speed control. Counterbalanced tubular aluminium tonearm. Dimensions: $42.4 \times 15 \times 36.8\text{cms}$. Price: £173.64 (plus VAT).

CS 1249

Belt drive two speed turntable fitted with Shure DM 103M-E magnetic cartridge includ-

ing pickup arm plinth and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $< \pm 0.06\%$. Rumble unweighted: $>44\text{dB}$, weighted $>63\text{dB}$. Anti-magnetic, dynamically balanced detachable 30.5cm turntable, weight 1.3kg. All-metal tonearm with four-point gimbal suspension. Dimensions: $42 \times 14.8 \times 36.5\text{cm}$. Price: £156.20 (plus VAT).

■ EAGLE

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

D2005B ★

Belt driven, two-speed record deck in plinth with cover, 4-pole synchronous motor. Rumble: -55dB . W and F: 0.18% RMS. Static balance S-type tone arm. Tracking weight: $0-3\text{gm}$. Fixed mechanical torque bias. Turntable weight: 1.1kg. Size: $19 \times 50 \times 37.5\text{cms}$. Shure M75ED type II Cartridge. Finish: teak with smoked acrylic dust cover. Price: £82.00 (plus VAT).

D2006A ★

Belt driven, electronically-monitored two-speed record deck in plinth and cover. Speed control: $\pm 2.5\%$. Speed stabilization: electronic (tachometer) $\pm 10\%$ mains variation. Rumble: -55dB . W and F: 0.18% RMS. Tone arm: static, balance, S-type. Tracking weight:



Eagle D2005B/2006A

WE SAID OUR PL-12D TURNTABLE WOULD NEVER BE BEATEN.

IT TURNS OUT WE WERE WRONG.

To be fair, we weren't the only ones who considered the Pioneer PL-12D was probably the best value for money you were ever likely to expect.

The experts all concurred. And the PL-12D became something of a legend.

But we've been proved wrong. All of us. Now there is a turntable offering even better value for money.

The PL-112D. Made, not surprisingly, by Pioneer.

Like its predecessor, the 112D features an S-shaped tone-arm for precision tracking capability and improved tonal quality.

But unlike the 12D, both arm and platter are isolated from the main plinth. So you don't have to hold your breath when operating the cueing device.

This also contributes to some impressive performance characteristics.

63dB of S/N (Din B) and less than 0.07% 'wow and flutter' (WRMS).

Anti-skating device, direct readout counterweight and lateral balancer are all standard features too.

Because the PL-112D combines practicality with style.

Even the walnut grain cabinet is specially designed to reduce external vibrations.

So it's beautiful. But functional.

After all, you don't beat a turntable like the 12D just by looking good.

Please send (Name) _____
Address _____

The PL-112D specifications sheet The Pioneer Colour Catalogue

Please tick boxes as required then post to: Shiro (UK) Ltd., Shiro House, The Ridgeway, Iver, Bucks. SL0 9JL

 **PIONEER**
Everything you hear is true.



★ Indicates entry is illustrated



Eagle D2006

0-3gm. Fixed mechanical torque bias. Turntable weight: 1.1kg. Size: 19 × 50 × 37.5cms. Finish: teak with smoke acrylic dust cover. Price: £93.80 (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: 12ins dia weighing 7lbs 30zs. 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 2gm 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

J. B. Manufacturing Acoustics & Design Ltd, High Street, Northallerton, North Yorks. Tel: Northallerton 5434/5.

EST4 ★

Direct drive deck mounted on solid plinth in black laminate, featuring integral pickup arm which replaces lead-out wires with mercury/gold contacts, removing one of the problems of light tracking. Speeds: $33\frac{1}{3}$, fine adjustment $\pm 3\%$. W and F: 0.08% DIN weighted. Rumble: 66dB (DIN). Fabricated acrylic and alloy turntable 30cms in diameter and weighing 4.5k. DC motor at 18V. Uni pivot design pickup. Playing weight adjustment in increments of 0.2gms. Modern finish, stroboscopic fine speed adjustment, smoked acrylic dust-cover using friction hinges. Price: £124.35 (plus VAT).

EST4X

Slim-line version of EST4 incorporating adjustable feet. Price: £132.44 (plus VAT).

EST5

Direct drive deck without PU arm but cut for simple mounting of the SME, adjustable feet. Speeds: $33\frac{1}{3}$ rpm, fine adjustment $\pm 3\%$. W and F: 0.08% DIN weighted. Rumble: 66dB (DIN). Fabricated acrylic and alloy turntable weighing 2 kilos, 30cms diameter. DC motor at 18V. Modern design, stroboscope fine speed adjustment, smoked dust-cover using friction hinges. price: £96.89 (plus VAT).



Environmental Sound EST4



Fons CQ30

■ FONS

Fons International (U.K.) Ltd,
Maybole, Ayrshire KA19 7BH, Scotland.
Tel: Maybole 82424.

CQ30 ★

Variable speed transcription record deck complete with plinth and cover. Speeds: 29-100rpm (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 walnut black or rosewood (extra). Tone arm not supplied. Price: (walnut) £92.50 (plus VAT); (rosewood) £95.00 (plus VAT).

■ GALE

Gale Electronics & Design Ltd, 23 Bruton Place, London W1.
Tel: 01-499 9966.

GT2101 Optical Servo Turntable ★

State of art direct drive turntable. Brushless DC servo motor. Speed variable from 10-99 rpm. Available with SME 3002 or adaptor plates for other tone arms. Further details on request. Price: £1195 (plus VAT).

■ GARRARD

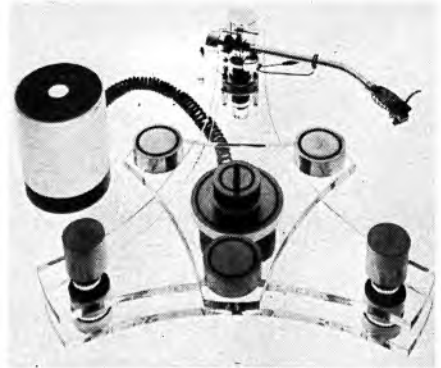
Garrard Engineering Ltd.
Newcastle Street, Swindon, Wilts. SN1 1DA.
Tel: Swindon (0793) 35381.

GT20

A manual single record player with integrated plinth and spring counterbalanced tinted dust cover. Drive: 4 pole synchronous motor: speeds 33 and 45 rev/min; flexible belt drive. Pickup arm: fully counterbalanced 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; capable of tracking at 1.00gm stylus force. Platter: heavy die cast machined and balanced alloy with castellated mat. Performance (provisional): rumble DIN A - 43dB, rumble DIN B - 63dB, wow/flutter 0.12% (slow weighted). Dimensions: 450mm long \times 350mm front to back \times 160mm high. No price available at time of going to press.

GT25P

A semi-automatic two speed record player with integrated plinth and spring counterbalanced tinted cover. Also available as a record changer. Drive: 4 pole synchronous motor: speeds 33 and 45 rev/min; flexible belt drive. Pickup arm: fully counterbalanced low



Gale GT2101

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; capable of tracking at 1.00gm stylus with castellated mat. Performance (provisional): rumble DIN A - 43dB, rumble DIN B - 63dB, wow/flutter 0.12% (slow weighted). Dimensions: 450mm long \times 350mm front to back \times 160mm high. No price available at time of going to press.

GT35P

Semi-automatic 2 speed record player with DEC servo controlled motor, pitch control and stroboscope. Integrated plinth with spring counterbalanced tinted cover. Also available as a record changer. Drive: flexible belt drive; speed 33 and 45 rev/min; electronic pitch control $\pm 3\%$; stroboscope on outside edge of turntable illuminated by LED; separate pitch controls for 33 and 45. Pickup arm; fully counterbalanced 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; capable of tracking at 1.00gm stylus force. Platter: heavy die cast machined and balanced alloy with castellated mat. Performance (provisional) rumble DIN - 45dB, rumble DIN B - 65dB, wow/flutter 0.1% (slow weighted). Dimensions: 450mm long \times 350mm front to back \times 160mm high. No price available at time of going to press.

DD751

A high performance semi-automatic direct drive turntable with integrated wooden plinth, fitted with a spring counter-balanced hinged dust cover. Drive: DC direct drive; speeds 33 and 45 rev/min $\pm 3\%$ fine speed adjustment and illuminated stroboscope. Pickup arm: low mass "S" shape; adjustable counterweight

★ Indicates entry is illustrated



Goldring Lenco L84



Goldring Lenco L80



Goldring Lenco L84

balance; jewel and ball bearing pivots; adjustable stylus force; calibrated anti-skating adjustment; viscous damped cue control; minimum tracking capability .75 grams. Platter: die cast aluminium; 307 diameter. Performance (provisional): rumble DIN A - 50dB, rumble DIN B - 70dB, wow/flutter 0.05% (slow weighted). Dimensions: 44mm x 380mm x 160mm. No price available at time of going to press.

■ GOLDRING LTD

Anglian Lane, Bury St. Edmunds,
Suffolk. IP32 6SS.
Tel: Bury St. Edmunds 64011.

Goldring 103

Two speed unit on plinth with cover, pickup arm. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: 0.15% peak. Rumble: -60dB weighted. 10 ins. turntable, belt driven. 16 pole synchronous motor. Counter balanced pickup arm. Removable shell. Bias compensation, viscous damped lowering device. Modern functional styling in low line wooden cabinet. Price: £48.00 (plus VA1).

Lenco L90 ★

Two speed motor unit with pickup arm, on plinth with cover, illuminated stroboscope. Viscously damped spring suspension, viscously damped lift/lowering device. Speeds: 33 $\frac{1}{3}$, 45rpm with electronic fine speed adjustment of $\pm 7.3\%$. W and F: weighted $\pm 0.08\%$. Rumble: unweighted -45dB weighted -63dB. 31.6cm dia. turntable with belt drive by 16 pole synchronous motor. Counter balanced, mounted on four sets of precision ball bearings. Stylus pressure adjustable 0.5gm. Equipped with IC electronics ensuring trouble free switch off and lifting off of pick up arm. Price: £148.00 (plus VA1).

Lenco L80 ★

Two-speed motor unit with special light S type tone arm on plinth with cover. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: 0.08%. Rumble: unweighted -40dB, weighted -60dB. Turntable diameter 30cm. Belt driven by 16 pole synchronous motor 110/220 volts 50-60Hz. Counter balanced arm, bias compensation, removable headshell. Price: £70.00 (plus VA1).

Lenco L84 ★

Transcription unit on plinth with cover. An improved version of L82 with special light tone arm fully automatic. Speeds: 33 $\frac{1}{3}$, 45rpm. W and F: $\pm 0.12\%$. Rumble: unweighted -38dB. Weighted -57dB. Turntable diameter 30cm. Belt driven by 16 pole synchronous motor

110/220 Volts, 50-60 Hz. Counter balanced arm, bias compensation, removeable head-shell. Price: £95.00 (plus VAT).

■ HARMON KARDON

Tannoy, St. Johns Road, Tylers Green, High Wycombe, Bucks. HP10 8HR.
Tel: Penn 5221.

ST7 ★

Belt drive deck complete with plinth, lid and servo, parallel tracking arm. Speeds: 33½, 45 rpm. W and F: 0.4% NAB weighted. Rumble: -68dB. Aluminium turntable 31cms dia, weighing 1.1kg. Brushless DC motor (Hall effect). Low mass, Rolanite bearings to eliminate warp wow. Damped cueing, brushed aluminium finish. Fine speed adjustment. Price: to be announced.



Harmon Kardon ST7

■ HITACHI

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

PS8 ★

Motor: 16-pole synchronous motor. Drive system: Belt drive. Speeds: W and F, 33½, 45rpm, 0.1% WRMS. SN: 50dB. Turntable platter: 300mm (11.8in): Aluminium die-cast. Tone arm: Static balance. Effective length: 220mm. Overhang: 0.6in (15mm). Max. usable cartridge. Weight: 0.4oz (12g) Cueing device: Oil damper. Dimensions 476 × 159 × 374mm. Weight: 15 lbs. (800g). Price: £79.00 (inc. VAT).



Hitachi PS8

PS38

Phono motor: Drive system: Direct-drive. Speeds: 33½, 45rpm. Pitch control range: ±3%. W and F: 0.04% (WRMS). Signal-to-noise ratio: 60dB. Turntable platter: 305mm aluminium die-cast.

Tone Arm

Type: Static-balance-type S-shape pipe arm. Head shell: plug-in type. Arm length: 301mm. Effective length: 220mm. Overhang: 15mm. Tracking error: 2°. Stylus pressure range: 0-3g. Max./usable cartridge. Weight: 4-10g.

Cartridge

Type: VM type (VFS-260). Frequency response: 20-20,000Hz. Output voltage: 2-4.5mV (1kHz 50mm/sec). Channel balance: 2dB. Crosstalk: 20dB. Stylus pressure: 2g. Stylus: 0.5mil diamond stylus (DS-ST26). Dimensions 476 × 157 × 368mm. Weight: 18lbs. (8.3kg). Price: £116.00 (inc. VAT).

PS 48 ★

Direct drive deck with plinth, PU arm and cover. Speeds: 33½, 45 rpm. W and F: 0.025%.



Hitachi PS48

★ Indicates entry is illustrated

Rumble: DIN B 74dB. Aluminium diecast turntable 30.8cms. dia. and, weighing 1.6kg. Utorque DC servo motor. Pickup arm: effective length 220mm, track error 2 deg, pressure range 0-3gms, anti-skate dial, viscous damped cueing. Individual speed control strobe. Price: £136.00 (inc. VAT).

■ **LEAK**

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

3001

Flat belt drive deck complete with tone arm, plinth, free stop dust cover. Speeds: 33½, 45 rpm, electronically changeable. W and F: 0.05% DIN. Rumble: -63dB DIN B, -38dB DIN A. Aluminium alloy diecast turntable 31cms dia. DC servo motor with frequency generator 240V. Pickup arm: length: 215mm, mass 17.5 inc 6g. Anti-skating, static balanced, shaped arm, tracking error adjustment. Polished aluminium/charcoal finish. Price: £98.95 (plus VAT).

■ **LENCO**

C. E. Hammond and Co. Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

L133 ★

Transcription unit on plinth with cover. Rumble: RFS -45dB, RGS -62dB. W and F: ± 0.08%. Anti-skate, belt drive with 16 pole synchron motor. Speeds: 33½, 45 rpm. Manual record player with auto-stop, on/off switches. Price: £80.00 (plus VAT).

L130

As above but without auto-stop. Price: £75.00 (plus VAT).



Lenco L133

L236 ★

Version with auto start and return. Rumble: RFS -46dB, RGS -65dB. W and F: ± 0.08%. Anti-skating. Belt drive with 16 pole synchron motor. Manual record player with auto-stop. Speeds: 33½, 45 rpm. On/off switches. Price: £94.00 (plus VAT).

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: £169.00 (plus VAT).

L830

Manual version of above. Price: £139.00 (plus VAT).

■ **LINN-SONDEK**

Linn Products Ltd, 235 Drakemire Drive, Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.



Lenco S236



Lenco L833



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 £235.00.

What might shock you, however, is the price of our KD 1033 turntable in the picture.

It runs into two figures.

Or 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 in our free colour catalogue and get another shock.

You can get your catalogue by writing to us. You'll find our address next to our slogan.

Which, just for this once, you can safely ignore.

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

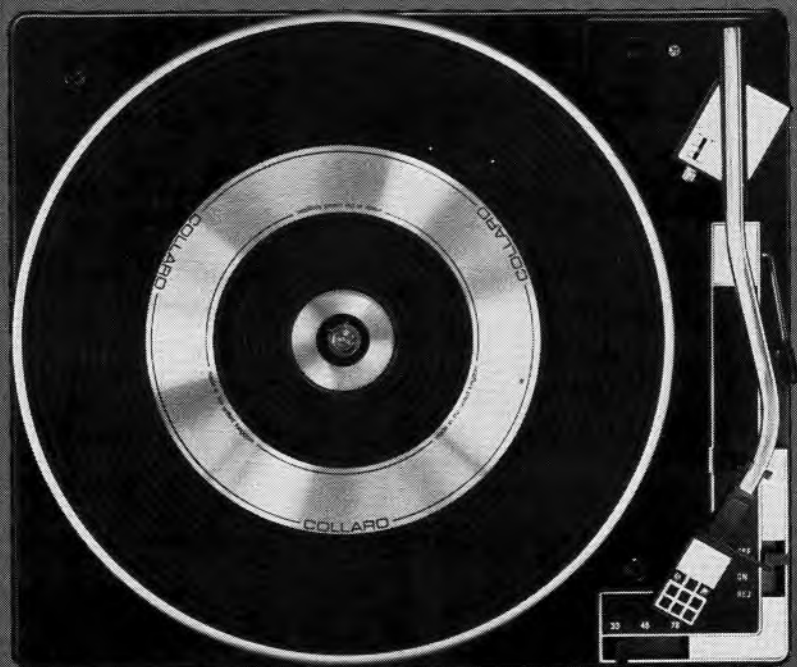
COLLARO WITH AN 'S'

The CBS turntable - of the new-line of Collaro, incorporating the latest 5-speed square-section pick-up arm. Designed for accurate tracking, lightweight strength. Precision pivot bearings, automatic bias compensator, velocity control, 3-speed selector, graduated stylus pressure adjustment, sturdy 11-gauge motor. Synchronous motor optional extra. Available as a complete unit with low profile dust cover, fitted with quality cartridge, or as a chassis.

All adding in style and performance you'll be proud to own - at a price that's surprisingly reasonable. Find out more - see the Collaro CBS and other models in the range of your local dealer, or write for further information.

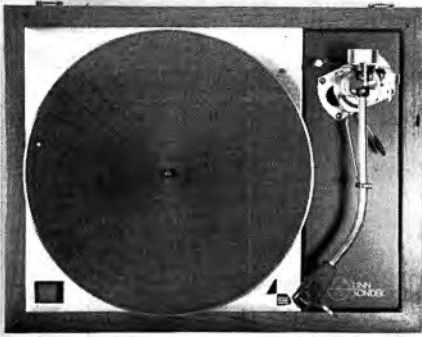
Manufactured in Britain by The Magorvan Company, Barking, Essex. Tel: 01-594 3533

Sole trade distributors in the UK: Highgate Acoustics, 38 James's Way Road, London NW9 2BQ. Tel: 01-267 4936

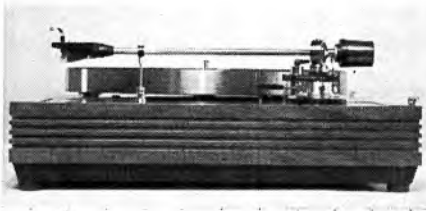


Manufacturers of quality British turntables and record decks for over fifty years.

COLLARO



Linn-Sondek LP12 (aerial view)



Linn-Sondek LP12 (side view)

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. Standard 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 £106.00 (chassis only), £138.00 (with plinth and cover), £203.00 (with plinth, cover and arm). All 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: £52.50 (plus VAT).

BDS95 ★

Transcription engineered unit with gimbal style tonearm. Slider controls. Chassis or plinth mounted with ADC-K5E magnetic cartridge. Speeds: 33 $\frac{1}{3}$ and 45rpm. W and F: typically $\pm 0.13\%$. Rumble: typically -58dB. Turntable: precision machined non-magnetic alloy, weighing 4lb. Belt drive. Motor: dynamically balanced high torque synchronous four-pole motor. PU arm: low resonance tubular aluminium located in a concentric gimbal style with calibrated balance adjustments. Finish: satin black mainplate and a combination of black and silver on tonearm and control panel. Price: £57.96 (plus VAT).

C123R2

Pulley drive deck with auto changer, single play. PU arm with cartridge. Speeds: 33 $\frac{1}{3}$, 45, 78 rpm. Pressed steel turntable 11ins dia. Two shaded pole motor 240V 50Hz. Tubular anodised PU arm. Black/silver finish. Price: £83.50 (plus VAT).

MARANTZ

Audio UK Ltd, Debmare 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: 31cms dia.



Lyrichord BDS 95

★ Indicates entry is illustrated



Marantz 6300



Marantz 6200



Marantz 6100

weighing 1.6kg. Direct drive DC servo controlled motor. S-shaped arm statically balanced. Price: £211.54 (plus VAT).

6100 ★

Turntable complete with pickup arm, plinth and cover. Speeds: $3\frac{3}{4}$, 45 rpm. W and F: 0.08%. Rumble: -60dB. Turntable: 30cms weighing 1.6 lbs. Belt drive AC sync. motor. S-shaped arm, statically balanced. Walnut finish. Price: £75.67 (plus VAT).

6200 ★

Turntable complete with pickup arm, plinth

and cover. Speeds: $3\frac{3}{4}$, 45 rpm. W and F: 0.06%. Other details as 6100. Price: £138.28 (plus VAT).

■ MICRO-SEIKI

Tannoy, St. Johns Road, Tylers Green, High Wycombe, Bucks. HP10 8HR.
Tel: Penn 5221.

MB 10

Belt drive deck complete with arm, plinth and lid. Speeds: $3\frac{3}{4}$, 45 rpm. W: less than 0.6%. Rumble: better than -60dB. Aluminium turntable 30.4cms. dia. 4-pole synchronous motor. Static balance arm with detachable head shell and anti-skate. Oil damped cueing, anti feedback feet. Price: to be announced.

DD 20

Direct drive deck complete with arm, plinth and lid. Speeds: $3\frac{3}{4}$, 45 rpm. Wow: less than 0.03%. Rumble: better than -60dB. Aluminium turntable 32cm dia., 1.5kg weight. DC servo motor. Static balance arm with detachable head shell and anti-skate. Fine speed control, floating sub-chassis. Price: to be announced.

DD 40

Direct drive deck complete with arm, plinth and lid. Speed: $3\frac{3}{4}$, 45 rpm. W and F: less than 0.038%. Aluminium turntable 32cm dia, 1.5kg weight. DC servo motor. Dynamic balance with detachable headshell, anti-skate, height adjustment. Deck and lid anti shock mounted, interchangeable sub arm base, fine speed adjustment. Price: to be announced.

DDX 1000 ★

Direct drive deck, with motor chassis and control unit supplied less arm. Speeds: 33½, 45 rpm. W and F: less than 0.025%. Rumble: better than -63dB. Turntable dia. 31cm, weight 2kg. DC servo motor, AC sensed speed stabilisation. Facility for mounting 3 arms. Separate control unit, antifeed back, feet integral with chassis. Price: to be announced.

■ MONITOR AUDIO LTD

347 Cherry Hinton Road, Cambridge CB1 4DJ.
Tel: Cambridge 42898/46344.

Monitor

Direct drive turntable. Rumble: better than -63dB weighted. W and F: 0.03% weighted. Speeds: 33, 45 rpm. LED strobe calibrator, numerical LED display of speed control. Neatly styled plinth, 3cm deep standing approx. 12cm high overall. Touch controls with all electronic operation. Transformer built into mains plug so that there are no high AC voltages near turntable. Arm lift and auto switch off. Price: £165.00 (plus VAT).

■ PHILIPS

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

GA222

Complete with plinth, arm, cover and GP 401 magnetic cartridge. Speeds: 33½, 45rpm. W and F: <0.08%. Rumble: -62dB. Speed adjustment range ±3%. Drift <0.2%. Turntable: 29.1cm diameter with stroboscopic rings. Belt drive. DC motor with frequency controlled tacho generator. Stylus force adjustable to 0.75-3gm. Touch controls. Automatic arm return. Price: on application.

GA 312 ★

Belt drive with GP401 bi-radial diamond stylus, plinth mounted, transparent cover including PU arm. Speeds: 33½, 45 rpm. W and F: <-41dB (DIN A), -62dB (DIN B). Turntable dia: 29cms. DC motor with electronic speed control via tacho generator. Gimbal mounted pickup arm of tubular aluminium. Walnut finish. Complete with plinth and cover. Price: on application.

GA 222

Belt drive with pickup cartridge GP401, plinth, dust cover. Speeds: 33½, 45 rpm. W and F: better than 0.08% (DIN), 0.055% (WRMS).



Micro Seiki DDX 1000



Phillips GA 312

Rumble: <-41dB (DIN A), <-62dB (DIN B). Turntable dia: 29.1cms. DC motor with electronic speed control via tacho generator. Aluminium pickup arm. Black/silver finish. Touch controls, semi-automatic. Price: on application.

GA 312 ★

Belt driven deck with GP 400 Super M pickup, plinth, dust cover. Speeds: 33½, 45 rpm. W and F: <0.15%. Rumble: <-38dB (DIN A), <-58dB (DIN B). Turntable dia: 29.2cms. Synchronous 24 pole motor. Black/silver finish, stylus force gauge and side thrust compensation. Price: on application.

■ PIONEER

Shiro (UK) Ltd, Shiro House,
The Ridgeway, Iver, Bucks SL0 9JL.
Tel: Iver 65222/7.

★ Indicates entry is illustrated



Pioneer PL-112D



Pioneer PL 115D



Pioneer PL-117D



Pioneer PL 570

PL-112D ★

Integrated turntable and arm with plinth and cover. Speeds: 33½ and 45rpm. W and F: not more than 0.07% WRMS. S/N ratio: 50dB. Aluminium alloy die cast turntable, 12in (300mm) diameter. Belt drive. 4-pole synchronous motor. Static balance type S-shaped pipe arm. Usable cartridge weight 4gm (min) to 10gm (max). Anti-skating device, plug-in headshell. Viscous damped cueing device. Lateral balance. Free adjustable hinges. Price: on application.

PL-117D ★

Fully automatic integrated turntable with plinth and cover. Speeds: 33½ and 45rpm. W and F: not more than 0.07% WRMS. S/N ratio:

50dB. Aluminium alloy die cast turntable, 12in (300mm) diameter. Belt drive system. 4-pole synchronous motor. Static balance S-shaped pipe arm. Usable cartridge weight 4gm (min) to 10gm (max). Double floating suspension system. Fully automatic arm mechanism. Free adjustable hinges. Price: on application.

PL-510A ★

Integrated turntable and arm with plinth and cover. Speeds: 33½ and 45rpm. 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. Free adjustable hinges. Price: on application.

PL 530

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: 330cms made of diecast aluminium alloy. Brushless DC servo controls 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 4 grammes minimum to 14.5 grammes maximum. Anti-skating device. Lateral balancer. Stylus pressure direct read out counter weight. Viscous damped cueing device. Walnut finish. Size: 48 x 17 x 39cms. Price: on application.

PL 115D ★

Automatic return integrated turntable with S shaped pipe arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.07%. Rumble: S/N ratio more than 63dB (DIN B). Aluminium alloy diecast turntable 30cms. Belt drive. 4-pole synchronous motor. Pickup arm: static balanced S shaped pipe arm. Effective arm length 221mm. Overhang 15.5mm. Usable cartridge weight 4 grammes minimum to 10 grammes maximum. Anti-skating device. Plug in type headshell. Viscous damped cueing device. Lateral balancer. Walnut finish. Size: 44 x 15.9 x 36.2cms. 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 32.5cms 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 4 grammes (minimum) to 13.5 grammes (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 32.4cms



Pioneer PL 510A

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 4 grammes minimum to 14.5 grammes maximum. 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.

■ ROTEL

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

RP-3000

Direct-drive driven turntable with arm, plinth and cover. Pulse-determinant AC servo motor. Speeds: 33 $\frac{1}{3}$ and 45rpm. Speed control change: $\pm 5\%$. W and F: less than 0.05% WRMS. S/N ratio: better than 60dB. Full-size aluminium alloy diecast platter (310mm) with embossed strobe markings on trim. Static balanced S-shaped tone arm, with plug in headshell, oil-damped cueing device, direct readout stylus gauge counter-weight, anti-skating device. Mains: 100-120V 50/60Hz or 220-240V 50/60Hz. Power consumption: max. 10W. Size: 470 x 35 x 19cms. Total weight: 7.7kg. Horizontal spirit level meter, 45rpm EP adaptor with overhang readout, height adjustable insulator legs, removable free-stop hinge dust cover, low capacitance phono cords, strobe light housing. Price: £119.92. Without arm £117.53 (plus VAT).

★ Indicates entry is illustrated



Rotel RP 900

RP-2500

Semi-automatic deck. Speeds: $33\frac{1}{3}$, 45rpm. W and F: less than 0.05%. Speed controls variable by $\pm 5\%$. Turntable 12in diameter. Belt drive. FG DC servo motor. Static balanced S-shaped pipe arm, plug-in headshell. Counter weight. Anti-skating device. Teak finish. Semi-automatic. Reject facilities. Strobe markings. Five speed controls. Strobe light. Price: £89.77 (plus VAT).

RP 900 ★

S-shaped tone arm and plinth and free stop dust cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $<0.1\%$. Turntable: 31cms dia. Belt drive. 4-pole synchronous motor. Price: £60.69 (plus VAT).

RP 1500 ★

S-shaped tone arm, plinth, free stop, dust cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $<0.05\%$. Turntable: 31cms dia. Belt drive. FG DC servo motor. Embossed strobe marking on platter rim. Free stop dust cover/45 rpm adaptor. Wood finish. Price: £71.36 (plus VAT).

■ SANSUI

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

SR222

Manual 2-speed belt-drive turntable, $33\frac{1}{3}$, 45 rpm. W and F: 0.07%. Rumble: better than -60dB. S-shaped tone arm. Price: £83.25 (inc. VAT).

SR525

Direct-drive electronic transcription turntable. Manual single play. W and F: 0.03%. Rumble: better than -72dB. Statically balanced S-shaped tone arm. Price: £188.40 (inc. VAT).



Rotel RP 1500



Skantic 93412

SR 929

PU arm, plinth and cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $<0.028\%$. Rumble: better than -74dB (DIN B). Turntable 30.2cms, weight 1.4kg. Direct drive. 20 pole DC brushless motor with built-in frequency generator. Statically balanced S shaped tone arm. High gloss finish. Price: on application.

FR 1080

Belt driven deck with PU arm, plinth, cover. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: $<0.08\%$. Rumble: better than -58dB (DIN B). Turntable 30cms, aluminium diecast. 4-pole syn-

13 tracks in any order you like,
must have a very good memory.

Find out how Accutrac, the world's
first computerised turntable, remembers
everything you tell it, and much more,
by sending for our brochure.

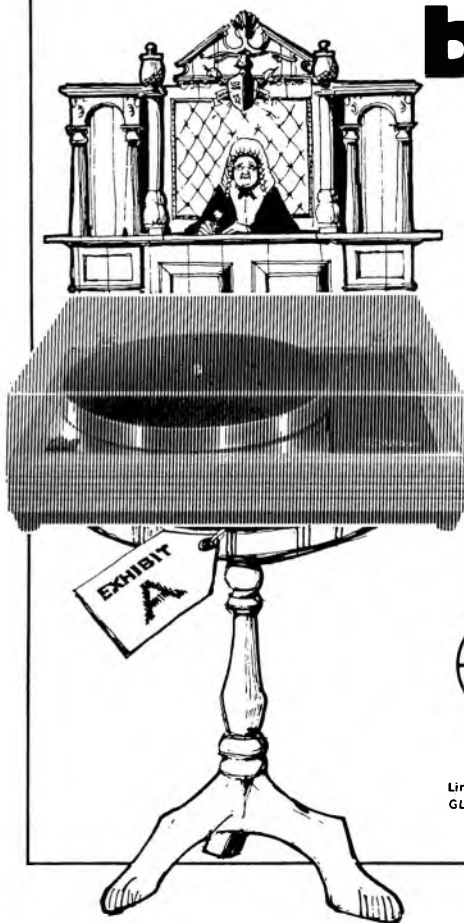
ADC AccutracTM 4000

The turntable that's revolutionised hi-fi.



Distributed by BSR Limited,
Powke Lane, Cradley Heath, Warley,
West Midlands B64 5QH.

The truth the whole truth and nothing but the truth.



When it comes to really faithful reproduction of any record thousands of ear witnesses will testify that the LP 12 deck from Linn Sondek doesn't lie.

Compare Exhibit A with any other deck in an A - B comparison and you'll find conclusive proof that the LP 12 has an unique point in its favour — a point that really turns the tables on other turntables — it sounds better.

We claim it will improve any system. Why? We changed the rules!

At Linn Products Ltd. we redefined the function of a turntable. The object of the LP 12 is to reproduce as closely as possible, in playback, the conditions under which the record was originally cut.

We welcome any fair trial.



LP12

LINN
SONDEK

simply better! /

Linn Products Ltd., Sondek Division, 235 Drakemire Drive,
GLASGOW, G45 9SZ, U.K. Tel: 041-634 3860 Cables: 'Eurodeck'

TELEX 77301 SONDEK G

chronous motor. Statically balanced S shaped tubular tone arm. Auto return. Price: on application.

FR 5080

Direct drive deck with PU arm, plinth, cover. Speeds: 33½, 45 rpm. W and F: <0.03%. Rumble: better than -70dB (DIN B). Aluminium diecast turntable 31cms dia. weighing 1.4kg. 20 pole brushless motor for platter drive, 16 pole geared synchronous for auto operation. Statically balanced S shaped tone arm, 2 point pivot support. Price: on application.

■ 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. 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: Teak £80.06, walnut/whi/rose £82.41 (all plus VAT).

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: Teak: £87.97, Walnut/Whi/Rose £90.65 (all plus VAT).

93412 ★

Record deck handling speeds: 33½, 45 rpm. Anti-skating, adjustable stylus pressure, auto operation of pickup arm. Single lever switch for stop, start, and pick arm. Transparent tinted lid and finish in teak, rosewood, white or black lacquer. Price: £85.00 (plus VAT). This is minimum price which rises according to finish.

■ SONY

Sony (UK) Ltd, Consumer Information Showroom,
134 Regent Street, London W1R 6DJ
Tel: 01-439 3874.

PS 6750 ★

Manual integrated direct drive turntable, mounted on plinth complete with dust cover. Supplied without cartridge. Speeds: 33½,



Sony PS 6750



Sony PS 1450

45rpm. W and F: 0.045%. S/N: 70dB. Speed control range: ±4%. Turntable 32cm diameter. Direct drive. DC servo controlled motor. Static balanced tone arm made from carbon fibre. New low resonance construction, fluid filled platter mat for disc isolation, built-in illuminated stroboscope, anti-static grid on dust cover prevents static influencing tone arm tracing performance. No rec. retail price.

PS 1450 ★

Belt drive deck fitted with PU arm, VL 30G cartridge, semi-auto, plinth mounted. Speeds: 33½, 45 rpm. W and F: ± 0.08% DIN, 0.06% WRMS. Rumble: 60dB DIN-B. Aluminium diecast turntable 30cms dia. 4-pole synchronous motor. Pickup arm: static balanced, shell weight 7.5gm. Finish: metallic grey. No rec. retail price.

★ Indicates entry is illustrated

PS 1700 ★

Belt drive deck with VL32 cartridge. Semi automatic. Rumble: 63dB DIN. Other details as PS 1450. No rec. retail price.

PS 3300 ★

Direct drive deck mounted in two-tone grey plinth, supplied with PU arm and VL 32 Cr cartridge. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: less than 0.04%. Rumble: 65dB DIN. Turntable of diecast aluminium 30cms. DC servo motor. Pickup arm: overall length: 30cms, pivot to stylus 216.5mm. Overhang 16.5mm. Auto return, stroboscope. No rec. retail price.

PS 4300

Direct drive in grey plinth, supplied with PU arm but without cartridge. Rumble: 70dB DIN. Turntable: 31.4cms. Other details as per PS 3300. No rec. retail price.

PS 8750

Direct drive deck on plinth. Carton fibre tone arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Details on application.

■ **STRATHEARN**

Strathearn Audio Ltd, Kennedy Way Industrial Estate, Belfast BT11 9BL. N. Ireland.

Tel: Belfast 623231/611100.



Sony PS 1700



Strathearn STA4



Sony PS 3300



Strathearn STM4

STA4 ★

Integrated automatic/manual electronic servo direct-drive turntable with plinth fitted with low mass arm. Speeds: $33\frac{1}{3}$, 45rpm. Adjustable $\pm 7\%$. W and F: 0.11% weighted peak, 0.2% unweighted peak. Rumble: -60dB DIN B (Ref. 10cm/sec). Aluminium turntable, 277mm diameter. Weight: 1.6kg. Motor: electronic servo controlled 110/240V 50/60Hz. Low mass pivoted arm with Shure M-75-EJ cartridge. Semi-automatic single play deck. Finish: black or satin silver. Price: £79.64 (plus VAT).

SMA2

Integrated manual turntable with electronic servo direct-drive, touch controls and low mass arm. Speeds: $33\frac{1}{3}$, 45rpm. W and F: 0.08% weighted peak, 0.15% unweighted peak. Rumble: -65dB DIN B (Ref. 10cm/sec). Aluminium turntable, 300mm diameter. Weight: 0.82kg. Electronic servo controlled 110/250V 50/60Hz. Low mass friction pivoted arm. Cartridge not supplied. Electronic touch switch control, electronic strobe, variable speed, low profile. Finish: black or satin silver. Price: £132.78 (plus VAT).

STM4 ★

Direct drive integrated manual electronic turntable. Servo direct drive, plinth, fitted with low mass arm. Speeds: $33\frac{1}{3}$, 45 rpm, $\pm 7\%$. W and F: 0.11% weighted peak, 0.2% unweighted. Rumble: -55dB DIN B. Aluminium turntable 27.7cm dia., weight 1.6kg. Electronic servo-controlled motor. Pickup arm: low mass pivoted arm with Shure M75 ED cartridge factory fitted. Finish: black or satin silver. Price: £71.06 (plus VAT).

■ TECHNICS

National Panasonic (UK) Ltd, 107-109 Whitby Road, Slough, Bucks. SL1 3DR.
Tel: Slough 34522.

SL-2000 ★

Black finish and complete with tone arm. 12in aluminium turntable. W and F: 0.045%. Rumble: -47dB (DIN A), -70dB (DIN B). Direct drive motor. S-shaped tonearm with oil-damped cueing and illuminated strobe light. Main feature is "one-chip" integrated circuit. Speeds: $33\frac{1}{3}$, 45 rpm. Price: No rec. retail price.

SL-1700 ★

Semi-auto unit complete with tone arm with new double-insulated system to help prevent acoustic feedback problems. "One-chip"



Technics SL2000



Technics SL1700

drive control, easy-view strobe lamp, variable pitch control, oil-damped cueing lever. Floating double insulated system to counteract external sounds and vibrations. Auto return and shut off. W and F: 0.025%. Rumble: -50dB (DIN A), -73dB (DIN B). Speeds: $33\frac{1}{3}$, 45 rpm. Price: no rec. retail price.

SPI0 Mk 2

Obsidian base and dust cover as optional extras. Speeds: $33\frac{1}{3}$, 45, 78 rpm. Wow: 0.025%. Flutter: $\pm 0.035\%$. Rumble: -50dB (DIN A), -70dB (DIN B). 12½ins aluminium turntable weighing 6.4lbs. Direct drive. Brushless DC quartz-controlled servo circuit motor. No rec. retail price.

SL 150

Supplied with plinth but no arm. Has pre-cut plate for SME tone arm. Speeds: $33\frac{1}{3}$, 45 rpm. Wow: 0.03%. Rumble: -50dB (DIN A), -70dB (DIN B) 13ins aluminium turntable weighing 17.2lbs. Direct drive. Ultra low-speed brushless DC motor. Pitch control strobe. No rec. retail price.

SL-23

Belt-drive semi-auto turntable driven by FG servo controlled motor. Auto return. Speeds: $33\frac{1}{3}$, 45 rpm. W and F: 0.05 per cent WRMS. Rumble: -40dB (DIN A), -65dB (DIN B).

★ Indicates entry is illustrated



Thorens TD 160



Thorens TD 166



Thorens TD145



Thorens TD 126 Mk II

Electronic speed switching, pitch controls, illuminated strobe markings. Hinged detachable dust cover and headshell. No rec. retail price.

SL-20

Belt-drive 12 ins aluminium turntable with servo controlled DC motor. Speeds 33 $\frac{1}{3}$, 45 rpm. W and F: 0.05% WRMS. Rumble: -40dB (DIN A), -65dB (DIN B). Hinged detachable dust cover and headshell. No rec. retail price.

■ 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 $\frac{1}{4}$ lb. Fine speed adjustment ($\pm 5\%$). Illuminated stroboscope on outer rim of turntable. Belt drive with tachometer governed direct-current 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 14in (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 >56dB. Shure M75-6SM magnetic stereo cartridge. Anti-skating device. Price: £135.00 (inc. VAT).

■ TELETON ELECTRO (UK) CO LTD

Teleton House, Waterhouse Lane, Chelmsford, Essex CM1 3DW.

Tel: 01-857 7633.

S100B

Record deck mounted in silver and black cabinet with hinged plastic lid. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: 0.1%. Turntable: 12in aluminium die cast, belt driven. Bias compensated arm with fine stylus force adjustment. Magnetic cartridge with 0.5 mil diamond stylus and plug-in headshell. Price: on application.

■ THORENS

Metrosound Audio Products I.td, Cartersfield Road, Waltham Abbey, Essex EN9 1JF.

Tel: Lea Valley 712712.

TD 166C ★

Belt drive deck with PU arm, plinth. Speeds: 33½, 45 rpm. W and F: less than 0.06%. Rumble: -65dB. Zinc alloy turntable 12ins dia., weight 2.7kg. 16-pole synchronous dual motor. PU arm: low mass 7.5gm arm 9ins Iso-track. Finish: aluminium sheet base, hinged lid. Price: £95.00 (plus VAT).

TD 160C (BC) ★

As TD 166C but BC excludes arm. Turntable weight 3.2kg. Anti-skate. Otherwise spec. as per TD 166C. Price: £109.00 (plus VAT). BC—£89.00 (plus VAT).

TD 145C ★

Deck similar to TD 166C in spec., except weight of turntable 3.2kg. Autostop/lift. Price: £129.00 (plus VAT).

TD 126C (BC) ★

Deck complete (BC excludes arm). Speeds: 33½, 45, 78 rpm. W and F: less than 0.04%. Rumble: -70dB. Zinc alloy turntable 12ins dia., weight 3.2kg. 16 pole synchronous dual motor. Pickup arm as TD 160C with auto stop lift. Finish: walnut veneered base, fully electronic controls. Price: £250.00 (plus VAT). BC—£199.00 (plus VAT).

■ TOSHIBA (UK) LTD

Toshiba House, Great South West Road, Feltham, Middlesex.

Tel: 01-751 1281.

SR220

Plinth mounted with arm but without cartridge. Speeds: 33½ and 45rpm. W and F: 0.08% WRMS. Rumble: 48dB. Turntable 30cm diameter. Belt drive. 16-pole hysteresis synchronous motor. S-shaped pickup arm, spring adjusted. Bias compensation. Cueing lever. Woodgrain plinth with smoked acrylic cover. Price: £63.55

SR355 ★

Plinth mounted with arm but without cartridge. Speeds: 33½, 45rpm. 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).

SR255 ★

With arm on A.D. Solid steel base with A.D. solid platter - without cartridge. Speeds: 33½, 45rpm. W and F: 0.05% WRMS. Rumble: 58dB. Turntable 33cm diameter. Direct drive DC servo motor. S-shaped spring adjusted



Toshiba SR 355



Toshiba SR 225



Toshiba SR 370

★ Indicates entry is illustrated

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: 30cms. DC servo motor. Finish: AD 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).

■ 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 $\frac{1}{3}$, 45rpm. 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: £186.66.

KD 2055

Belt drive turntable, ARCB plinth mounted, supplied with S-type pickup arm. Speeds: 33 $\frac{1}{3}$, 45 rpm. Wow 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: £87.15 (plus VAT).

KD 1033 ★

Belt drive, plinth mounted PU arm and magnetic cartridge supplied. Speeds: 33 $\frac{1}{3}$, 45 rpm. W



Trio KD 1033

and F: less than 0.06%. Rumble: -64dB DIN. Turntable of cast aluminium, 30cms dia., weighing 1.05kg. Synchronous 4-pole motor. Pickup arm: S-type, static balance. Finish: simulated walnut. Price: £69.77 (plus VAT).

■ YAMAHA

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

YP211

Automatic belt-drive turntable with arm, plinth and cover. Speeds: 33 $\frac{1}{3}$, 45 rpm. W and F: better than 0.08% WRMS. S/N: better than 52dB. Turntable platter: 30cm die-cast aluminium. Motor: 4-pole synchronous. S-type static balance tone arm, effective length 21.5cms, overhang 15mm. Suitable cartridge weight 5-11gms. HS-800 plug-in type headshell. Price: £79.98 (plus VAT).

YP511

Direct drive turntable with arm, plinth and cover. Speeds: 33 $\frac{1}{3}$ and 45 rpm. W and F: better than 0.04% WRMS. S/N: better than 55dB. Motor: 8-pole 24-slot DC servomotor. Turntable platter 30cms die-cast aluminium, 1.6kg, with stroboscopic speed markings engraved on rim. S-type static balance tone arm, effective length 22.2cm, overhang 17mm. Suitable cartridge weight 4-13gm. Plug-in type headshell. Price: £133.20 (plus VAT).

Speaker Accessories

★ Indicates entry is illustrated
Abbreviations used in this section are given on page 43.

■ 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) £3.20; (triple) £3.30. All plus VAT.

CN104 Crossover Unit

A two-way half-section parallel network. Crossover frequency: 5kHz. Imp: 8 or 15 ohms. Price: £7.00 (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: on application.

CN1220 Crossover Unit

Three-way half-section. Crossover frequencies: 700Hz and 7kHz. Price: £9.65 (plus VAT).

CN820 Two-way Crossover

Frequency 3.5kHz. Low pass 12dB/Oct. High pass 18dB/Oct. Nominal imp: 8 ohms. Price: £3.25 (plus VAT).

CN8280 Three-way Crossover

Frequencies: 250Hz, 3.5kHz. Low pass 6dB/Oct, band pass 12dB/Oct and 18dB/Oct. High pass 24dB/Oct. Nominal imp: 8 ohms. Price: £20.50 (plus VAT).

CN54M Two-Way Crossover

Frequency 6kHz. Low pass 6dB/oct. High pass 12dB/oct. Nominal impedance 8 ohms. Price: £3.30.



Apollo II Stand

CN54C Three Way Crossover

Frequencies 1200 + 6kHz. Low pass 12dB/oct. Band pass 6dB/oct. High pass 12dB/oct. Nominal impedance 8 ohms. Price to be announced.

■ APPOLO

Grabern Audio, 13 Farnet Avenue, Purley,
Surrey CR2 2DN.
Tel: 01-660 4780.

Apollo 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: £16.00 pair (plus VAT).

Apollo Wall Brackets

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: £8.00 pair (plus VAT).

Sabre I ★

Manufactured in steel and coated in nylon. Platform lined in neoprene, lead can be concealed inside down tube. With castors. Height 255mm, width 255mm, depth 243mm. Price: £22.00 pair (plus VAT).

Sabre II

A heavy duty stand manufactured in steel and coated in nylon. Platform lined in neoprene, with castors. Comes in flat pack. Height 255mm, width 305mm, depth 305mm. Price: £26.00 pair (plus VAT).

★ Indicates entry is illustrated



Sabre I from Appolo

■ 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.

■ CURB HI-FI

Arnold Electronics (Hitchin) Ltd, 40c Queen Street, Hitchin, Herts.
Tel: Hitchin 59387.

Chrome loudspeaker stands ★

Price: £15.81 per pair (plus VAT).

Matt Black Trolley Stands

Price: £19.50 per pair (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).

CO/1/8 Crossover

Crossover network specially designed for use with the DK30 ribbon speaker. Ferrite cored inductors and close tolerance capacitors. Low-pass section is constant 12dB/octave, high-pass section is variable slope multi-stage network of novel design. Price: on application.

CO/1000/8

Crossover network designed for use with London ribbon speaker. Mounted on printed circuit board. Close tolerance carbon polyester capacitors and inductors. Low-pass section is standard constant-impedance 6dB/octave filter, high-pass section attenuates at 12dB/octave. Crossover frequency: 1kHz. Negligible intermodulation distortion. Price: £7.25 (plus VAT).

■ EAGLE INTERNATIONAL

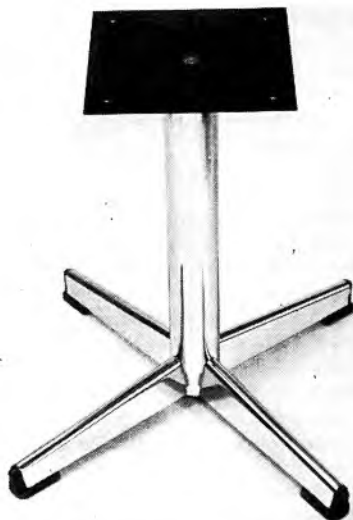
Precision Centre, Heather Park Drive,
Wembley, Middx. HA0 1SU.
Tel: 01-902 8832.

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.



Curb Hi-Fi Loudspeaker Stand

Nominal capacity: 40W RMS. Crossover frequency: 3kHz. Price: £2.15 (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/R 3-way crossover. Nominal imp: 8 ohms. Nominal capacity: 25W RMS. Crossover frequency: 1kHz/5kHz. Variable resistance controls to midrange and tweeter. External mounting. Price: £8.95 (plus VAT).

■ GOODMAN'S

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

Loudspeaker stand type CS3

Packed in pairs. No rec. retail price.

Loudspeaker Stand Type CS4

Packed in pairs, suitable for all floor standing speakers with a face area of from 26mm. Price: (to be announced).

■ 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 25W 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: £7.90 (plus VAT).

■ KEF

KEF Electronics Ltd, Tovil, Maidstone, Kent ME15 6QP. Tel: Maidstone 57258.

Crossover networks

DN 12 (SP1004) combines B139, B110 and T27. Price: £8.40. DN13 (SP1017) combines B110 and T27. Price: £5.50. DN13 (SP1015) combines B200 and T27. Price: £5.75 All prices shown exclude VAT which must be added.

104F

Loudspeaker stand. Price: £25.00 per pair.

■ 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, record cleaner and remote control stations. All items individually blister-packed for over-the-counter or self-service sales.

Audio Switch

For use with two sets of stereo speakers and two sets of headphones. Pushbuttons provide any combination of speakers and phones. Headphones attenuated by 100 ohms. Connections by DIN and jack sockets. Size: 5½ × 1¼ × 2¾in. Finish: brushed aluminium. Price: £6.75 (excluding VAT).

De Luxe Audio Switch

Provides for two sets of headphones and two sets of stereo speakers. Pushbutton switches permit any combination to be used. Monitor socket for adjusting level of remote speakers. Level controls for left and right channels. Headphones attenuated by 100 ohms. Wirewound potentiometers handle up to 35W. Size: 7½ × 1½ × 2¾in. Finish: brushed aluminium. Fixing brackets provided. Price: £8.75 (excluding VAT).

Phone Switch

Designed to cater for two sets of stereo headphones and one set of speakers. Pushbutton switches provide any combination. Headphones attenuated by 100 ohms. Connections by DIN and jack sockets. Size: 5½ × 1¼ × 2¾in. Finish: brushed aluminium. Fixing brackets included. Price: £4.75 (excluding VAT).

Output Selector

For connecting three sets of stereo speakers from one source. Suitable for retailers' showrooms for comparison of speakers. Also for supplying three sets of speakers in different rooms in the home. Units can be stacked to provide additional facilities. Pushbutton switches. Size: 5½ × 1¼ × 2¾in. Finish: brushed aluminium. Fixing brackets included. Price: £6.75 (excluding VAT).

■ RADFORD

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

FN8

Three-way 17-element crossover network. Impedance: 8 ohms in four types to match various drive unit combinations. HC: 100W. FR:

★ Indicates entry is illustrated

25Hz-25kHz. Crossover frequencies: 500Hz and 4.2kHz. Price: £11.00 (plus VAT).

FN831

Filter network 3-way. Crossover frequencies 600Hz and 7kHz. Rating 150 watts. 8 ohms or 4 ohms for Radford designs A90, M90, T90, M180 and A270. Price: £13.50 (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. Impedance: 8 ohms. Crossover frequency: 3000Hz. 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. Impedance 8 ohms. Crossover frequency: 3000Hz. Max. system input: 50 watts. Price: £2.70 (plus VAT).

■ SMC LOUDSPEAKERS

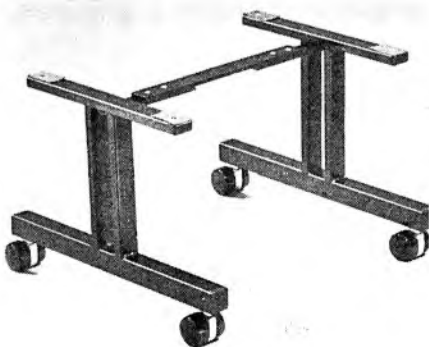
76 Bedford Road, Kempston, Beds.
Tel: Bedford 854133.

T12 Trolley

To take AL 12 speakers. Price: £22.44 (plus VAT).

■ TRISTAN

Danil Engineering Co, Old Teme Bridge, Lower Wick, Worcester WR2 4BY.
Tel: Worcester 425595.



Tristan 22C

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: £8.67 per pair (plus VAT).

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: £10.58 per pair (plus VAT).

Tristan 15T

Speaker stand. Details as Tristan 15 but holds speaker 10½in (267mm) above floor. Price: £10.88 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 (432mm). Holds speaker 9½in (244mm) above floor. Price: £18.22 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: on application.

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: on application.

Speaker Chokes

Details and prices on application.

APPOLO



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MADE
IN THE U.K.

AVAILABLE
FROM
LEADING
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DEALERS

ALL APPOLO MODELS ARE
MANUFACTURED IN HIGH
GRADE STEEL AND COATED
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With swivel action.
For speakers up to
50lb weight. Complete
screws and wall plugs.



Sabre II

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13 FAMET AVENUE,
PURLEY, SURREY CR2 2DN.
TELEPHONE: 01-660 4780



Appolo II

Take it from the Top.



Since its introduction two years ago, the Sonaudax soft dome tweeter has received the highest acclaim from many of the top hi-fi manufacturers in the UK.

Its smooth performance and high power handling have assured it a place in some of the best speaker systems currently on the market. But that's just the beginning.

The Tweeter spearheads a whole new range of sensational drive units, from soft dome midrange units to bextrene cone bass drivers. Each one designed with painstaking care and attention to achieve the most faithful reproduction. Catalogues are available on request. Sonaudax deal direct with manufacturers. Our newly appointed agents, Falcon Acoustics, will be happy to handle all trade and retail enquiries.



SONAUDAX

LOUDSPEAKERS LTD.

Station Approach, Grove Park Road, Chiswick W4

(A Subsidiary of Audax S.A. of France)

Agents:

Falcon Acoustics Ltd.,
Tabor House, Norwich Road, Mulbarton,
Norwich, Norfolk.

Speaker Drive Units

★Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ 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. Impedances: 8 or 16 ohms. Gap flux: 15,000 lines. HC: 50W (peak 100W), FR: 20Hz-15kHz. Ceramic magnet. Price: £33.00 (plus VAT).

Hi-Ten

Full-range 10in loudspeaker. Voice coil dia: 1in. Impedance: 8 or 15/16 ohms. FR: 40Hz-13kHz. Bass resonance: 70Hz. Power handling: 10W. Flux density: 10,000 lines. Price: £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. Impedance: 8 or 15/16 ohms. Power handling: 25W (40W peak). Flux density: 12,000 lines. Voice coil dia. 1½in. Weight: 4½lb. Price: £16.60 (plus VAT).

L.51/K.2006 Horn Tweeter

3in pressure-driven tweeter with 10W rating. FR: 1.5Hz-16kHz. Crossover frequency: 3kHz. Sensitivity: -104dB. Impedance: 8 or 15/16 ohms. Price: £3.40 (plus VAT).

L.52/Foster FHT6 Horn Tweeter

Ceramic magnet horn tweeter with 20W handling capacity. FR: 5Hz-20kHz. Sensitivity: -102dB. Flux density: 10,000 lines. Impedance: 8 ohms. Price: £6.40 (plus VAT).

L.55/K.2003 Cone Tweeter

3W, compact HF unit with foam cone. FR:

3Hz-15kHz. Sensitivity: -95dB. Flux density: 8,000 lines. Impedance: 8 ohms. Price: £2.20 (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. Impedance: 8 ohms. Price: £7.00 (plus VAT).

L.57 Dome Tweeter

Slimline dome tweeter for front mounting. Heavy duty ceramic magnet. 10W power. FR: 1.5Hz-20kHz. Crossover frequency: 3kHz. Sensitivity: -98dB. Flux density: 14,000 lines. Impedance: 8 ohms. Price: £6.40 (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 ¼in. Gap flux 0.8 Tesla. HC: in systems up to 30W. Imp: 8 or 15 ohms. FR: 2kHz-17kHz. ref: 5kHz. Price: £3.25 (plus VAT).

DT20

20mm dome tweeter. Low mass, plastic foil dome. Ceramic magnet. Voice coil 20mm. Gap flux 1.2 Tesla. FR: 3kHz-25kHz. HC: in systems up to 100W. Imp: 8 or 15 ohms. rcf: 7kHz. Price: £6.75 (plus VAT).

CF5

5in mid-range unit. Coated paper cone with PVC surround. Ceramic magnet. Voice coil 1in. Gap flux: 0.8 Tesla. HC: in systems up to 30W. FR: 250Hz-15kHz. vci: 8 or 15 ohms. Price: £5.90 (plus VAT).

CB5

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 £6.40 (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: £8.00 (plus VAT).

CP8

8in mid-range unit. Paper cone. Doped cam-

★ Indicates entry is illustrated

bric surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1 Tesla. HC: 10W. vci: 8 or 15 ohms. FR: 100Hz-12kHz. Price: £6.50 (plus VAT).

CB8

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: £7.00 (plus VAT).

CB8T

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: £7.50 (plus VAT).

CBF8

8in bass/mid-range unit. Paper cone. Moulded polyurethane surround. Ceramic magnet. Voice coil: 1in. Gap flux: 1.2 Tesla. HC: 20W. vci: 8 or 15 ohms. FR: 40Hz-10kHz. Price: £7.25 (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: £9.00 (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: £9.50 (plus VAT).

CF8L

8in bass unit. Coated paper cone. Moulded polyurethane surround. Ceramic magnet. Resonance 25Hz. Voice coil: 1in. Gap flux: 1.4 Tesla. HC: 20. vci: 8 or 15 ohms. FR: 35Hz-2.5kHz. Price: £9.75 (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: £14.65 (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: £15.15 (plus VAT).

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: £15.75 (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: £16.25 (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: £21.00 (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: £30.60 (plus VAT).

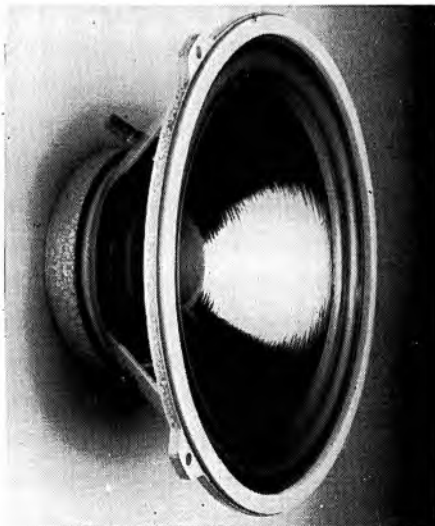
Richard Allan full-range speaker modules are included in Speaker Enclosure section. Twin Assembly, Triple-8 Assembly speaker kits are in the Constructional Kits section.

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 £10.00 (plus VAT).

HP8B

8in Bextrene cone. PVC roll surround. Ceramic magnet. Voice coil: 38mm high tem-



Richard Allan HP12B

perature winding. Flux density: 1.3 Tesla. HC: 45W vci: 8 or 15 ohms. FR: 25Hz-4.5Hz. Price: £14.65 (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: £24.00 (plus VAT).

DT30

Soft dome tweeter, moving coil. Nominal cone dia: 2.5cms. Voice coil dia: 2.5cms. Nominal Impedance: 8 or 15 Ohms. Gap flux: 1.2 Tesla. Nominal capacity: 10W RMS. FR: 2 kHz-20kHz. ±3dB. Recommended crossover frequency: 2.5kHz min. Price: £7.50 (plus VAT).

F88

Moving coil bass/midrange. Nominal cone dia: 20cms. Voice coil diameter: 2.5cms. Nominal impedance: 8 or 15 Ohms. Gap flux: 1.2 Tesla. Nominal capacity: 20W RMS. FR: 30Hz-8kHz. Rec. crossover frequency: 6kHz Max. Price £7.25 (plus VAT).

CG12C

Moving coil bass. Nominal cone dia: 30cms. Voice coil dia: 4cms. Nominal impedance: 8 or 15 ohms. Gap flux: 1.2 Tesla. Nominal capacity: 30W RMS. FR: 25Hz-5kHz. Rec. crossover frequency: 2kHz. Price: £15.75 (plus VAT).

AB8

Auxiliary bass radiator. Nominal cone dia: 20 cms. Treated polystyrene cone with polyurethane surround. Free air resonance 10 Hz. Price: £4.25 (plus VAT).

■ 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: 1½in. Copper voice coil. VCI: 3, 8 or 15 ohms. Gap flux: 12,000 gauss. HC: 20W. FR: 45Hz-13kHz. Price: £16.00 (plus VAT).

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



Baker 12in Major



Baker Superb Twelve

aluminium chassis. Weight: 6lb. Price: £19.50 (plus VAT).

Deluxe Mk II

Full range 12in cone speaker. 15W. Bass resonance: 30Hz. Gap flux: 14,000 gauss. Copper voice coil: 1½in diameter. VCI: 8 or 15 ohms. Paper cone with foam plastic surround. Built-in tweeter cone. FR: 25Hz-16kHz. Cast aluminium chassis. Depth: 6in. Weight: 6lb. Price: £22.50 (plus VAT).

Superh Twelve ★

Full range 12in speaker with built-in tweeter cone. Foam plastic surround. Coil diameter: 1½in. vci: 8 or 15 ohms. Gap flux: 16,500 gauss. HC: 25W. FR: 20Hz-17kHz. Bass resonance: 25Hz. Copper speech coil. Diecast aluminium chassis. Weight: 10lb. Price: £28.50 (plus VAT).

Auditorium 12

Full range 12in cone speaker suitable for bass unit multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1½in diameter. vci: 8 or 15 ohms. FR: 25hz-16Hz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: £27.00 (plus VAT).

Auditorium 15

High power 15in speaker suitable for bass unit

★ Indicates entry is illustrated

unit multi-speaker system. HC: 35W. Bass resonance: 35Hz. Gap flux: 15,000 gauss. Copper voice coil: 1½in diameter. vci: 8 or 15 ohms. FR: 25Hz-16kHz. Paper cone with roll surround. Cast aluminium chassis. Depth: 7in. Weight: 10lb. Price: £27.00 (plus VAT).

Group 25

12in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 30W. vci: 3, 8 or 15 ohms. Bass resonance: 55Hz. FR: 30Hz-13kHz. Gap flux: 12,000 gauss. Voice coil: 1½in. Depth: 6in. Weight: 5lb. Price: £16.50 (plus VAT).

Group 35

12in cone speaker with heavy duty suspension for electronic music, guitars, etc. HC: 40W. vci: 3, 8 or 15 ohms. Bass resonance: 55Hz. FR: 30Hz-13kHz. Gap flux: 17,000 gauss. Voice coil: 1½in. Depth: 6¼in. Weight: 6 lb. Price: £18.50 (plus VAT).

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: £33.00 (plus VAT).

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: 1½in. Depth: 4¾in. Weight: 10lb. Price: £27.00 (plus VAT).

■CASTLE ACOUSTICS LTD

Shortbank Road, Skipton, N. Yorks.
Tel: Skipton 5333.

8 RS DD

Full range. Cone diameter 20cm. Coil diameter 2.5cm. Impedance: 8 ohms. Flux: 54,000 maxwells. Gap flux: 15 watts. Peak Cap: 25 watts. FR: 50-20,000Hz ± 6dB. Resonant Frequency: 37Hz. Price: £11.00 (plus VAT).

■COLES

Coles Electroacoustics Ltd,
Pindar Road, Hoddesdon, Herts EN11 0RZ.
Tel: Hoddesdon 66685.

4001G

High frequency pressure unit. Nominal cone diameter 3cm. Plastic cone, steel surround. VCI: 2cm. Voice coil material: copper, Impedance: 8 and 15 ohms nominal. Flux density:

14,000 Gauss. Peak capacity: 3W RMS. FR: 6kHz-20kHz±3dB. Price: £5.63 (plus VAT).

3000

Moving coil unit. Voice coil dia: 2cm. Nominal imp: 8 or 15 ohms. Gap flux: 14,000. Nominal capacity: 30-50W amps. FR: 1.6-16kHz. Rec. crossover frequency: 2-3kHz. Price: £6.00 (plus VAT).

■ DECCA

Decca Special Products, Ingate Place, Queenstown Road, London SW8 3NT.
Tel: 01-622 6677.

DK30 Ribbon ★

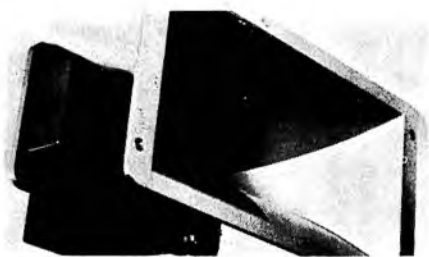
Horn-loaded high frequency ribbon speaker sold complete with acoustic lens. Size: 6½ × 3½ × 2in. Aluminium ribbon element. Impedance: 8 ohms constant. HC: 30W maximum. FR: 2.5kHz-25kHz. ref: 2.5kHz. Price: £21.50 (plus VAT).

London Ribbon ★

Horn-loaded high frequency ribbon speaker. Size: 9½ × 4½ × 7½in. Aluminium ribbon element. Impedance: 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



Decca DK30 Ribbon



Decca London Ribbon Speaker

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).

DTC70

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 x 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 9.5cms dia. Nom. imp: 8 ohms. Gap flux: 11,000 gauss. FR: 1,500-18,000Hz. Price: £7.45 (plus VAT).

DTS 280

Dome tweeter 11cms 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 13cms 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 16.5cms 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 13cms 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 16.5cms. dia. Nom. imp: 8 ohms. Gap flux: 9,100 gauss. Nom. cap: 50W. FR: 800-8,500Hz. Price: £12.50 (plus VAT).

■ GOODMAN'S

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

Twin Axiom 8 ★

8in full-range twin-cone driver. Paper cone. Rubber surround. Voice coils: lin diameter



Goodmans Twin Axiom 8

★ Indicates entry is illustrated

copper wound. Impedance: 8 ohms. Gap flux: 13,500 gauss. Total flux: 53,000 maxwells. HC: 15W (DIN). FR: 40Hz-18kHz. No rec. retail price.

Axiom 402

12in full range twin-cone driver. Nominal cone diameter 30.5cm. Paper cone, plastic surround. Voice coil diameter: 4.5cm. Impedance: 8 and 15 ohms nominal. Total flux: 164,750 maxwells. Gap flux: 14,500 gauss. Nominal capacity: 60W DIN. FR: 40-11,000Hz. Resonant frequency: 30Hz. No rec. retail price.

Audiom 200

10in. long throw bass unit recommended for use with Axent 100. Nominal cone diameter 25cm. Paper cone, rubber surround. Impedance: 8 ohms nominal. Total flux: 68,750 maxwells. Gap flux: 7,500 gauss. Peak capacity: 60W DIN. Resonant frequency: 24Hz. Crossover frequency: 3,000Hz. Price: No rec. retail price.

Audiom 8PA

8in heavy duty. 20cm cone diameter. Paper cone material. Paper surround. Nominal Impedance: 8 or 15 ohms. Capacity: 15 watts. FR: 50-9000Hz. Resonant frequency: 85Hz. No rec. retail price.

Audiom 10P

10in heavy duty. HC: 15W. Impedance: 8 or 15 ohms. No rec. retail price.

Audiom 12P

12in heavy duty. HC: 50W. Impedance: 8 or 15 ohms. No rec. retail price.

Audiom 12P-G

12in heavy duty. HC: 50W. Impedance: 8 or 15 ohms. No rec. retail price.

Audiom 12P-D

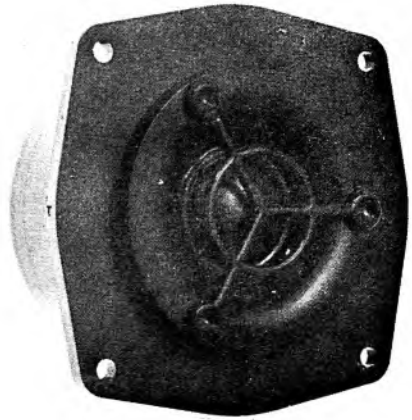
12in heavy duty twin-cone. HC: 50W. Impedance: 8 or 15 ohms. No rec. retail price.

Audiomax 12AX

Bass drive unit. Nominal diameter: 12in. (312mm). Nominal impedance: 8 or 15 ohms. Nominal power handling: 100W. Resonance frequency: 55Hz. Sensitivity (96dB at 1m): 0.12W. 10cm diameter edge wound voice coil. No rec. retail price.

Audiomax 15AX

Bass drive unit. Nominal diameter: 15in. (395mm). Nominal impedance: 8 or 15 ohms. Nominal power handling: 100W. Resonance



Goodmans Axent 100

frequency: 55Hz. Sensitivity (96dB at 1m): 0.25W. 10cm diameter edge wound voice coil. No rec. retail price.

Audiom 15P

15in. heavy duty drive unit. Paper cone. Impedance: 8 or 15 ohms nominal. Peak capacity: 75W. Resonant frequency: 60Hz. 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: 16 $\frac{1}{4}$ in. Depth: 8 $\frac{3}{4}$ in. Weight: 26lb. Recommended sealed enclosure (per speaker): 7000 cu in. No rec. retail price.

Axent 100★

Domed diaphragm high-frequency direct radiator with built-in filter network. Plastic cone. Voice coil: 1in diameter copper wound. Impedance: 8 ohms. HC: for use in systems rated at not more than 30W. FR: typically 2kHz-22kHz. Crossover: cut-off of 12dB/octave from 3kHz down. No rec. retail price.

Hifax 750P

High power HF horn unit. Nominal impedance: 8 or 15 ohms. Designed for systems rated at 50W. FR: 1kHz-10kHz. Recommended crossover: 2kHz. 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 ohms or 15 ohms. No rec. retail price.

■ JORDAN-WATTS

Benlow Works, Silverdale Road,
Hayes UB3 3BW.
Tel: 01-573 6928.

Jordan-Watts Module Mk II ★

15cm square frame. Aluminium diaphragm with plastic surround. Voice coil: 1½in. Ceramic magnet. VCI: 4, 8 or 16 ohms. HC: 15W. FR: 25Hz-20kHz. Price: £17.75 (including VAT).

■ KEF

KEF Electronics Ltd, Tovil, Maidstone,
Kent ME15 6QP.
Tel: Maidstone 672261.

B139 SP1044 ★

11.82 × 8.25in. 8lb. HC: 50W. Resonance: 23Hz. Impedance: 8 ohms. FR: 20-1,000Hz. Price: £29.50 (plus VAT).

B200 SP1014

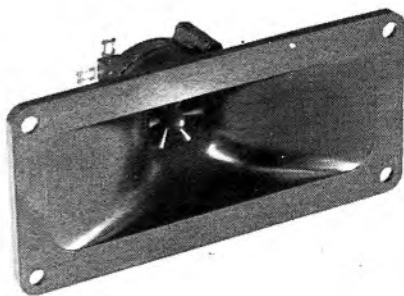
8¾in dia × 4in. 3¾lb. HC: 25W. Resonance: 25Hz. Impedance: 8 ohms. FR: 25-3,500Hz. Price: £13.95, (plus VAT).



Jordan-Watts speaker drive module



KEF B139 SP1044



Motorola KSN 6016A

B110 SP1003

5½ dia × 3½in. 3.6lb. HC: 20W. Resonance: 30Hz. Impedance: 8 ohms. FR: 55-5,000Hz. Price: £12.50 (plus VAT).

T27 SP1032

4¼ dia × 1¾in. 1.4lb. HC: 8W. Resonance: 900Hz. Impedance: 8 ohms. FR: 3,500-40,000Hz. Price: £9.50 (plus VAT).

See also entry in Speaker Accessories section.

■ MOTOROLA

Soundout Productions Ltd, 91 Ewell Road,
Surbiton, Surrey KT6 6AH.
Tel: 01-339 3392.

Range of Piezo-Electric Tweeters

Relatively pure response, low distortion. Imp: over 1,000 ohms at 1kHz, above 20 ohms at 40kHz. The Piezo-electric tweeter presents no added load to the amplifier and rejects low frequency power without requiring a crossover network. Bulky magnetic structure eliminated thereby reducing overall size and weight, and eliminating stray magnetic fields. No voice coil, low dynamic mass.

KSN6016A ★

Wide dispersal 2 × 5 inch horn, with 90 deg. horizontal dispersion.

KSN6006A

3.5 inch. Dual horn with 360 deg. dispersion.

KSN6011A

3.5 inch direct radiating tweeter. Only 1 inch deep.

KSN6001A/KSN6005A

3.5 inch super horn suitable for sound reinforcement systems and high efficiency hi-fi. KSN6001A has a 5 inch recessed flange for

★ Indicates entry is illustrated

rear-of-cabinet mounting. KSN6005A is flush flanged for front-of-cabinet mounting.

KSN6010A

2.5 inch direct radiating tweeter. Full details available from Soundout Productions.

■ 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. Impedance: 8 ohms. Price: £3.21 (plus VAT).

MT 225 HFC ★

Cone tweeter. 58 × 58mm. HC (System Max.): 50W. FR: 1500-20,000 Hz. Impedance: 8 ohms. Price: £3.33 (plus VAT).

MT 25 HFC

Cone tweeter. 68 × 68mm. HC (System Max.): 50W. FR: 2000-18,000 Hz. Impedance: 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. Impedance: 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. Impedance: 8 ohms. Price: £8.78 (plus VAT).



Peerless MT 225 HFC



Peerless MT 24CT

KO 40 MR†

Enclosed Midrange. 122 × 122 × 110mm. deep. HC (System Max.): 50W. Cone resonance: 230Hz. Rec. FR: 500-5,000Hz. Impedance: 8 ohms. Price: £11.48 (plus VAT)

KO 65 WG

Woofers, rubber roll surround. 165mm. diam × 84mm. deep HC: 20W. Cone resonance: 35Hz. Upper freq. limit: 4,000Hz. Impedance: 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

Woofers, foam roll surround, 130 × 130mm. HC: 20W. Cone resonance: 45Hz. Upper freq. limit: 4000Hz. Price: £9.68 (plus VAT).

KO 825 WF

Woofers, foam roll surround, 210mm diameter. HC: 50W. Cone resonance: 36Hz. Upper freq. limit: 5000Hz. Price: £10.50 (plus VAT).

KP 825 WF

Woofers, foam roll surround, 210mm diameter. HC: 70W. Cone resonance: 32Hz. Upper freq. limit: 5000Hz. Price: £15.71 (plus VAT).



Peerless KP100WF

KP 100 WF ★

Woofer, foam roll surround, 250mm diameter. HC: 70W. Cone resonance: 26Hz. Upper freq. limit: 5000Hz. Price: £15.96 (plus VAT).

■ RADFORD

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

BD25

Bass driver, nominal 12in. Cast frame heavy plasticised diaphragm for use up to 1kHz with a 1³/₄in aluminium former voice coil. Impedance 8 ohms or 4 ohms for use in 75W rating systems. Price: £24.50 (plus VAT).

MD6

Midrange driver. 6cm diameter soft dome unit for use in the frequency range 500Hz-10kHz. 1³/₄in aluminium former voice coil. Impedance 8 ohms or 4 ohms, for use in 75W rating systems. Price: £16.50 (plus VAT).

TD3/2

Treble driver. 3cm diameter soft dome unit designed for 2 or 3-way systems operating up to 25kHz. Aluminium former voice coil. Impedance 8 ohms or 4 ohms for use in 75W rating systems. Price: £7.80 (plus VAT).

TD3/3

Treble driver. 3cm diameter soft dome unit

designed for use in high efficiency 2 or 3-way systems operating up to 18kHz with a crossover frequency down to 2.5kHz. Aluminium former voice coil. This unit is approximately 3dB more sensitive than the TD3/2 driver. Impedance 8 ohms or 4 ohms for use in 75W rating systems. Price: £7.00 (plus VAT).

TD 3/4

Tweeter — extended range with dome 3cm. Nom. imp: 4 or 8 ohms. Nom. cap: for use in 75W systems. FR: 1kHz-30kHz. Rec. crossover frequency: 5kHz or above. For operation with FN 831 crossover. Price: £7.50 (plus VAT).

■ SONAUDAX

Sonaudax Loudspeakers Ltd, Station Approach, Grove Park Road, Chiswick, London W4. Tel: 01-995 2496/7.

HD13D34H

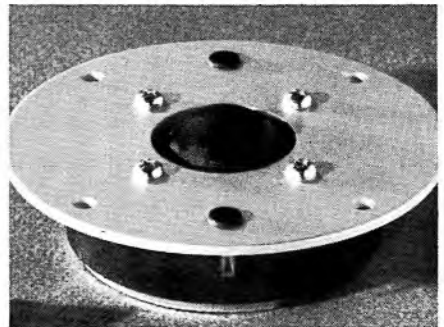
Midrange tweeter. Voice coil: 34mm dia. Nom. imp: 8 ohms. Gap flux: 16,000 gauss, 52,200 maxwells. FR: 700 c/s-20 k/c/s. Rec. crossover frequency: 2,500 c/s @ 12dB/octave. Aluminium former, linear frequency response. Price: £12.93 (plus VAT).

HD35S66

Bass unit of 35cm dia. Voice coil dia: 66mm. Nom. imp: 8 ohms. Gap flux: 115,500 gauss, 195,000 maxwells. Nom. cap: 100W. FR: 30 c/s-2,500 c/s. Rec. crossover frequency: 350 c/s @ 12dB/octave. Lowbass resonance 17Hz, 4 layer coil, aluminium former. Price: £90.00 (plus VAT).

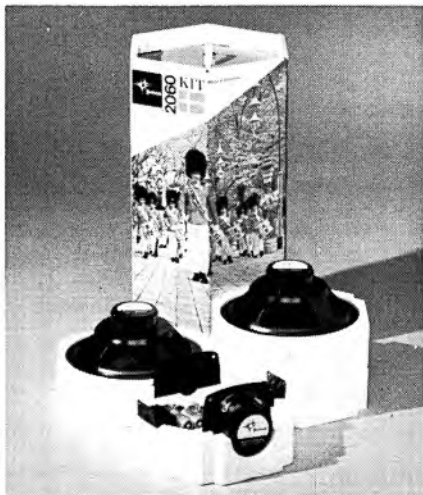
HD100D25 ★

Soft dome tweeter. Voice coil dia: 25mm. Nom. imp: 8 ohms. Gap flux: 15,000 gauss 36,000 maxwells. Nom. cap: 60W system. FR:



Sonaudax HD100D25

★ Indicates entry is illustrated



Sonaudax HD17B25J

cap: 30W. FR: 50 c/s-5,000 c/s. Rec. crossover frequency: 4,500 c/s @ 12dB/octave. Bextrene cone treated with Plastiflex on both sides. Price: £10.45 (plus VAT).

HD17B37

Bass midrange with nominal cone dia: 17cm. Voice coil dia: 37mm. Nom. imp: 8 ohms. Gap flux: 12,000 gauss, 86,200 maxwells. Nom. cap: 40W. FR: 50 c/s-5,000 c/s. Rec. crossover frequency: 5,000 c/s @ 12dB/octave. Die-cast chassis. Bextrene cone PVC surround. Price: £18.50 (plus VAT).

HD17B25J ★

Bass midrange with nominal cone diameter of 17cms. Voice coil dia: 25mm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss, 52,900 maxwells. Nom. cap: 30W continuous. FR: 40 c/s-7,000 c/s. Rec. crossover frequency 4,000 c/s @ 12dB/octave. Pressed steel chassis. Price: £9.46 (plus VAT).

■ TANNOY

Tannoy Products Ltd, St. Johns Road, Tylers Green, High Wycombe, Bucks. HP10 8HR. Tel: Penn 5221.

HPD295A

Integrated dual concentric system. Nominal cone dia: 25.4cms, HF diaphragm 5.05cms. Voice coil dia: LF 5.05cms, HF 5.05cm. Nominal imp: 8 ohms. Nom. cap: 50W. FR: 20Hz-20kHz. Supplied complete with crossover at 1kHz. Phase linear single source. Price: to be announced.

HPD315A Mk II ★

Integrated dual concentric system. Nominal cone dia: LF cone 30.5cms, HF diaphragm 5.05cms. Voice coil dia: LF 5.05cms, HF 5.05cms. Nom. imp: 8 ohms. Nom. cap: 60W. FR: 20Hz-20kHz. Unit supplied complete with crossover at 1kHz. Phase linear single source. Price: to be announced.

HPD389A Mk II.

Integrated dual concentric system. Nominal cone dia: LF cone 38.1cms, HF diaphragm 5.05cms. Voice coil: LF 5.05, HF 5.05cms. Nom. imp: 8 ohms. Nom. cap: 85W. FR: 20Hz-20kHz. Supplied complete with crossover at 1kHz. Phase linear single source. Price: to be announced.

1,000 c/s-20,000 c/s. Rec. crossover frequency: 5000 c/s @ 12dB/octave. Linear frequency response curve. Excellent power handling capacity. Dome protection grille available to manufacturers only. Price: £7.15 (plus VAT).

HD20B25J

Bass mid-range with nominal cone dia. 20cm. Voice coil dia: 25mm. Nom. imp: 8 ohms. Gap flux: 11,000 gauss, 53,000 maxwells. Nom.

Speaker Enclosures

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 43.

■ AKAI

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

SA 800 ★

Infinite Baffle speaker with 8in woofer and 3in tweeter. Crossover frequency: 2.5 kHz. FR: 40-20,000 Hz. Impedance: 8 ohms. Amplifier requirements: 10-40 Watts. Dimensions: 25 × 47 × 24 cms. Weight: 7.5 kg. Walnut veneer finish. Price per pair: £98.80 (plus VAT).

SA 1000

Infinite Baffle speaker with 8in woofer, 3in mid-range, and 3in tweeter. Crossover frequency: 1.2 kHz, and 12 kHz. FR: 35-20,000 Hz. Impedance: 8 ohms. Amplifier requirements: 10-40 Watts. Dimensions: 32 × 59 × 26cms. Weight: 12.3 kg. Walnut veneer finish. Price per pair: £158.00 (plus VAT).

SA 1200

Infinite Baffle speaker with 12in woofer, 3in mid-range, 3in tweeter. Crossover frequency: 1.2 kHz, 12 kHz. FR: 35-20,000 Hz. Impedance: 8 ohms. Amplifier requirements: 10-40 watts. Dimensions: 36 × 67 × 27 cms. Weight: 16.2 kg. Walnut veneer finish. Price per pair: £207.60 (plus VAT).

■ ALBA (RADIO AND TELEVISION) LTD

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

300A

Infinite Baffle speaker with 16.5mm bass and 86mm tweeter. Impedance: 8 ohms. Dimensions: 21.3 × 15.2 × 42.5 cms. Weight: 3.7 kg.



Akai SA 800

Teak veneered with black fabric finish or alternative white (optional). Price: on application.

901

Infinite Baffle speaker with 200 mm bass and 25.4mm dome tweeter. FR: 20-22,000 Hz. Impedance: 4 ohms. Dimensions: 31.6 × 21 × 53.6 cms. Weight: 10 kg. Teak veneered with black fabric finish. Price: on application.

■ 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. Impedance: 8 ohms. FR: 50Hz-20kHz. Crossover: 3.5kHz. Handling capacity: 20W. Finish: teak or walnut. Size: 395 × 266 × 247mm. Price: £68 00 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: £130 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: £203 00 per pair (plus VAT).

Tango

Infinite baffle speaker with 25mm dome treble and 200mm bass/mid. Crossover frequency: 6kHz. FR: 90Hz-20kHz ± 3dB. Impedance: 8 or 15 ohms. Rec. amplifier output: max 30W

★ Indicates entry is illustrated



Richard Allan RA 928LP



Alpha HT17 MkII

RMS. Dimensions: 40 × 35 × 29cms. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £66.00 (plus VAT).

Maramba

Auxiliary bass radiator. Drive units: 25mm dome treble, 200mm bass/mid, 200mm ABR. Crossover frequency: 6kHz electric, 120Hz acoustic. FR: 80Hz-20kHz ± 3dB. Impedance: 8 or 15 ohms. Rec. amplifier output: max 30W RMS. Dimensions: 60 × 25 × 22cms. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £85.00 (plus VAT).

Charisma

Reflex speaker. Drive Units: 300mm bass, 200mm mid, 25mm dome treble. Crossover frequency: 1.2kHz + 6kHz. FR: 40Hz-20kHz ± 3dB. Impedance: 8 or 15 ohms. Rec. Amplifier output: max 45W RMS. Dimensions: 67 × 39 × 30cms. Finish: teak or walnut. Other features: acoustic foam front. Price per pair: £150.00 (plus VAT).

■ ALPHA

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

HT12

Infinite baffle omni-directional speaker enclosure. One drive unit. FR: 50Hz-18kHz. Impedance: 8 ohms. Dimensions: 16 × 16 × 24cm. Finish: teak. Price: £16.00 per pair (excluding VAT).

HT17 Mk2 ★

Infinite baffle speaker enclosure. Two drive units. Crossover frequency: 3.5kHz. FR: 50Hz-18kHz. Impedance: 8 ohms. Dimensions: 25 × 14 × 36cm. Weight: 4.2kg. Finish: teak. Price: £15.00 per pair (excluding VAT).

HT20 Mk3

Infinite baffle speaker enclosure. Three drive units. Crossover frequencies: 750Hz and 3kHz. FR: 35Hz-20kHz. Dimensions: 28 × 22 × 44cm. Weight: 9.2kg. Finish: teak. Price: £29.00 per pair (excluding VAT).

HT50

Infinite baffle speaker enclosure. Two drive units. Crossover frequency: 3kHz. FR: 45Hz-20kHz. Impedance: 8 ohms. Dimensions: 25 × 20 × 36cm. Weight: 5.5kg. Finish: teak. Price: £18.00 per pair (excluding VAT).

■ ALTEC LANSING

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

Model 1

Infinite baffle speaker. Drive Units: 1 × 220mm, 1 × 110mm. Crossover frequency: 3kHz. FR: 50Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 12-75W. Dimensions: 29 × 28 × 53cms. Finish: Oak. Tweeter control. Price per pair: £144.00 (plus VAT).

Model 3

Bass reflex speaker. Drive units: 1 × 250mm, 1 × 110mm. Crossover frequency: 1.5kHz. FR: 50Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 10-100W. Dimensions: 32 × 29 × 60cms. Finish: oak. Tweeter control, mid control. Price per pair: £190.00 (plus VAT).

5

Bass reflex speaker. Drive units: 1 × 300mm, 2 × 110mm. Crossover frequency: 1.5kHz. FR:

45Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 12-150W. Dimensions: 36 × 30 × 64cms. Finish: walnut. Tweeter control, midrange control. Price per pair: £198.00 (plus VAT).

7

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 165mm, 1 × 110mm. Crossover frequency: 850Hz, 8kHz. FR: 45Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 15-200W. Dimensions: 40 × 36 × 62cms. 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. Impedance: 8 ohms. Recommended amplifier output: 12-250W. Dimensions: 44 × 37 × 36cms. Finish: oak. Tweeter control, midrange control. Price per pair: £498.00 (plus VAT).

San ana II

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 125mm. Crossover frequency: 2.5kHz. FR: 40-20kHz. Impedance: 8 ohms. Recommended amplifier output: 12-150W. Dimensions: 48 × 40 × 65cms. Finish: walnut. Tweeter control, midrange control. Price per pair: £398.00 (plus VAT).

Stonehenge II

Bass reflex speaker. Drive units: 1 × 300mm, 1 × 120mm, 1 × 125mm. Crossover frequency: 500Hz, 5kHz. FR: 35Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 20-250W. Dimensions: 40 × 37 × 94cms. Finish: oak. Column cabinet, tweeter control, midrange control. Price per pair: £590.00 (plus VAT).

15

Bass reflex speaker. Drive units: 1 × 300cms, radial phase plug compression driven mounted to curved radial horn. Crossover frequency: 1.7kHz. FR: 30Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: 12-250W. Dimensions: 55 × 39 × 67cms. Finish: oak. Tweeter control, midrange control. Price per pair: £618.00 (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. Impedance: 8 ohms. Recommended amplifier output: 10-350W. Dimensions: 65 × 45 × 100cms. Finish: oak.



Amstrad Acoustra 2500

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. Impedance: 8 ohms. Recommended amplifier output: 10-350W. Dimensions: 45 × 55 × 98cms. Finish: oak. Tweeter control, midrange control. Price per pair: £950.00 (plus VAT).

■ AMSTRAD

AMS Trading (Amstrad) Ltd, 89 Ridley Road, Dalston. London E8 2NH.
Tel: 01-249 5237/8/9.

2500★

Fully sealed speaker enclosure. 303mm bass unit and 85.7 mid-range/treble. Crossover frequency: 1,200Hz. FR: 35Hz-17kHz. Impedance: 8 ohms. HC: 25W. Dimensions: 25.7 × 24.1 × 48.9cm. Weight: 9.1kg. Finish: teak effect veneered cabinet, black fabric front. Price: approx. £40.00 per pair (excluding VAT).

■ ANDROMEDA

Andromeda Audio Ltd, 17 Tottenham Court Road, London W1.
Tel: 01-580 4117.

AS 1

High linearity, well damped tunnell loaded reflex enclosure 55 litres. Drive units: 110mm Bextrene bass, 55mm soft dome mid, 38mm hard dome low treble, 19mm hard dome high treble. Crossover Frequency: 650Hz, 4kHz, 12kHz. Covered 18dB/oct acoustic responses with driver equalisation. FR: 40Hz-20kHz ± 2dB (axial pink noise) 30Hz-25kHz overall.

★ Indicates entry is illustrated

Impedance: 8 ohms. Rec. amplifier output: 10W for 96dB lin at 1m. Power capacity to 250W 20W minimum. Dimensions: 33 × 32.5 × 66cms. Finish: hardwood, veneers, walnut, teak. Other features: compact, critically damped, low colouration enclosure. Designed for medium/high level monitoring on special stands. Max level 106dB at 1m. Price: on application.

AS 2

Sealed enclosure, 20 litres internal volume. Drive units: 210mm Bextrene cone bass/mid, 35mm low profile dome treble. Crossover frequency: 13kHz damped equalised 18dB/oct. FR: 55Hz-20kHz ± 2dB (axial pink noise) 35Hz-22kHz overall. Impedance: 8 ohms. Rec. amplifier output: 20W for 96dB lin at 1m, power capacity to 125W, 25W minimum. Dimensions: 23 × 25 × 40cms. Finish: satin metallic colours or hardwood veneer. Very compact, critically damped, low colouration enclosure. Designed for stand mounting. May be used for monitoring purposes in confined spaces. Max level 103dB at 1m. Price: on application. This data was provisional at time of going to press.

■ AR

Teledyne Acoustic Research,
High Street, Houghton Regis, Dunstable,
Beds, LU5 5QJ.
Tel: Dunstable 603151.

AR-LST

Acoustic suspension enclosure with units and crossover. One 12in bass driver, four 1½in hemispherical dome mid-range units, four ¾in hemispherical dome tweeters. FR: choice of six energy output characteristics (spectral energy profiles) by means of a switch mounted on front of cabinet. Crossovers: 525Hz, 5kHz. Impedance: 4-16 ohms, depending on switch position. HC: details on request. Size: 68.9 × 50.8 × 24.8cm. Weight: 40.5 kg. Five-year guarantee. No rec. retail price.

AR7X

Infinite Baffle speaker with 203mm acoustic suspension woofer, 32mm high frequency cone. Crossover frequency: 2,000 Hz. FR: Woofer resonance—free air 25 Hz, in enclosure 68 Hz. Impedance: 8 ohms nominal. Amplifier requirements: Up to 100 W per channel. Dimensions: 24.7 × 40 × 14.6 cm. Weight: 5 kg. Teak or Walnut finish. No rec. retail price.



AR11

AR-11 ★

Infinite Baffle speaker with 305mm acoustic suspension woofer, 38mm hemispherical dome midrange, 19mm hemispherical dome high range. Crossover frequency: 525 Hz 5,000 Hz. FR: Woofer 18Hz (free air), midrange 400Hz, high range 2,000Hz. Impedance: 4 ohms nominal. Amplifier requirements: min. 25 W per channel. Dimensions: 35.4 × 63.5 × 27.3 cm Weight: 24.9 kg. Teak or Walnut finish. No rec. retail price.

AR 10 Pi

Infinite Baffle speaker with 305mm acoustic suspension woofer, 38mm hemispherical dome/midrange, 19mm hemispherical dome highrange. Crossover frequency: 525Hz 5000 Hz. FR: Woofer 18 Hz (free air), midrange 400 Hz, Highrange 2,000 Hz. Impedance: 4-16 ohms nominal. Amplifier: 25 W. Dimensions: 35.4 × 63.5 × 27.3cm. Weight: 24.9kg. 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: 700 Hz, 4000 Hz. FR: Woofer 26 Hz (free air), midrange 500 Hz, high range 2000 Hz. Impedance: 8 ohms nominal. Amplifier requirements: Min. 12 W per channel. Dimensions: 35.4 × 63.5 × 27.3 cm. Weight: 15.9 kg. Walnut or teak finish. No rec. retail price.

AR 14

Infinite Baffle speaker with 25.4cm acoustic suspension woofer, 25mm hemispherical dome



AR12

highrange. Crossover frequency: 1,300 Hz. FR: Woofer 26 Hz (free air), highrange 1,000 Hz. Impedance: 8 ohms nominal. Amplifier requirements: Min. 15 W per channel. Dimensions: 35.4 × 63.5 × 27.3 cm. Teak or walnut finish. Price: to be announced.

AR 16

Infinite Baffle speaker with 200mm acoustic suspension woofer, 25mm dome highrange. Crossover frequency: 1,300 Hz. FR: Woofer 25 Hz (free air) high range 1,000 Hz. Impedance: 8 ohms nominal. Amplifier requirements: Min. 15 W per channel. Dimensions: 24.9 × 50 × 21.7cm. Weight: 9.5kg. Teak or walnut finish. No rec. retail price.

AR-17

Infinite baffle speaker. Drive units: 203mm woofer, 32mm tweeter. Crossover frequency: 2000Hz. FR: 40-25kHz (DIN). Impedance: 8 ohms. Recommended amplifier output: minimum 15W. Dimensions: 25.4 × 47.3 × 22.2cms. Finish: teak or walnut grain. Magnetic fluid for power handling injected into tweeter voice coil gap. No rec. retail price.

■ AUDIO KRAFT

Audio Kraft, 320 London Road, South Benfleet, Essex.
Tel: South Benfleet 58500.

Professional Monitor

Type: transmission line. Drive units: four. Crossover frequency: 350Hz/3kHz/13kHz. FR: 20Hz-40kHz. Impedance: 8 ohms nominal. Rec. amplifier output: between 25W and 150W. Dimensions: 37 × 45 × 96cms. Finish: teak/walnut. Price: on application.

Miniature Monitor

Type: transmission line. Drive units: three. Crossover frequency: 3kHz/13kHz. FR: 30Hz-40kHz. Impedance: 8 ohms nominal. Rec. amplifier output: 15W-50W. Dimensions: 30 × 29 × 77cms. Finish: teak/walnut. Price: on application.

■ 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. Impedance: 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).

Image 2

Closed box speaker. Drive units: 200mm bass, 25mm treble. Crossover frequency: 3kHz. FR: 60Hz-20kHz ± 4dB. Impedance: 15 ohms nominal. Recommended amplifier output: 15-50 Watts. Dimensions: 46.3 × 28.7 × 23.1cms. Finish: teak or walnut. Price per pair: £106.60 (plus VAT).

■ BEOVOX

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

Beovox S22

Uniphase pressure chamber with 2.5cm treble and 16.5cm bass units. Crossover frequency: 3 kHz. FR: 50-20,000 Hz. Impedance: 4-8 ohms. Amplifier requirements: 22 Watts maximum. Dimensions: 22 × 14 × 41cm. Weight: 4 kg. White, oak finish to special order. Standard in teak or rosewood. Price per pair: approx. £80.00 (plus VAT).

Beovox S30

Uniphase pressure chamber enclosure with 2.5cm treble and 16.5cm bass drive units. Crossover frequency: 3 kHz. FR: 49-20,000 Hz. Impedance: 4-8 ohms. Amplifier requirements: 30 max. Dimensions: 22 × 14 × 41 cm. Weight: 4 kg. White, oak, teak or rosewood. Price per pair: approx. £105.00 (plus VAT).

Beovox P30

Phase linear pressure chamber with 2.5 cm treble and 16.5 cm bass drive units. Crossover frequency: 3 kHz. FR: 49-20,000 Hz. Impe-



Beovox M100

dance: 4-8 ohms. Amplifier requirements: 30 max. Dimensions: 30 × 9 × 54 cm. Weight: 5 kg. White or oak to special order, but standard finish in teak or rosewood. Price per pair: approx. £120.00 (plus VAT).

Beovox P45

Phase linear pressure chamber with 2.5 cm treble, phase link 9 cm, 2 × 12.5 cm bass. Crossover frequency: 2 kHz. FR: 40-20,000 Hz. Impedance: 4-8 ohms. Amplifier requirements: 45 max. Dimensions: 35 × 14 × 65 cm. Weight: 8 kg. White or oak, teak or rosewood finish. Price per pair: approx. £170.00 (plus VAT).

S45

Phase linear with 2.5 cm treble, phase link 9 cm, 20cm bass drive units. Crossover frequency: 2,000 Hz. FR: 38-20,000 Hz. Impedance: 4-8 ohms. Amplifier requirements: 45 max. Dimensions: 26 × 18 × 48cm. Weight: 7 kg; Standard teak or rosewood finish with white or oak to special order. Price per pair: £160.00 (plus VAT).

S60

Phase linear speaker with 2.5 treble, 5 cm Mid, phase link 12.5 cm, 25 cm bass. Crossover frequency: 700Hz, 4kHz. Impedance: 4-8 ohms. FR: 36Hz-20,000Hz. Amplifier requirements: 60 max. Dimensions: 32 × 20 × 59 cm. Weight: 11 kg. Standard teak or rosewood finish with white or oak to special

order. Price per pair: approx. £225.00 (plus VAT).

Beovox M70

Phase linear pressure chamber with 2.5 cm treble, 6 cm mid, phase link 12.5 cm, 25 cm bass drive units. Crossover frequency: 500-4.5kHz. Impedance: 4-8 ohms. Amplifier requirements: 75 max. Dimensions: 35 × 29 × 65 cm. Weight: 25 kg. Standard finish teak or rosewood with white or oak to special order. Optional stand available. Price per pair: approx. £315.00 (plus VAT).

M 100 ★

Phase linear with bass reflex. Drive units: 1½ins tweeter, ¾ins super tweeter, 2½ins midrange, 4½ins phase-line, 12ins woofer. FR: 27-22,000Hz. Impedance: 4-8 ohms. Recommended amplifier output: 100W, up to 500W RMS with protection circuits. Dimensions: 35 × 29 × 70cms. Finish: teak/rosewood. Adjustable stand included in price. Price per pair: £525.00 (plus VAT).

■ B · I · C VENTURI

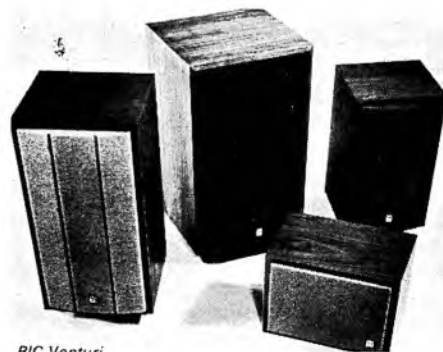
B · I · C Venturi, 24 Godstone Road; Purley, Surrey CR2 2DB.
Tel: 01-668 6474/5.

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 × 50 cm. Weight: 34½lb. Finish: walnut. Price: on application.



BIC Venturi

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 × 66.7 cm. Weight: 64 lb. Finish: walnut. Price: on application.

Formula 5

Reflex speaker. Drive units: bass diameter 250mm, T-slot midrange driver, piezo-electric tweeter. FR: 30Hz-30kHz. Impedance: 6 ohms nominal. Rec. amplifier output: up to 100W RMS per channel. Dimensions: 65 × 36 × 31cms. Finish: walnut. Other features: amplifier clipping indicator, speaker overloading indicators, manual and automatic reset circuit breakers. Midrange/treble level controls. Price: on application.

Formula 7

Reflex speaker. Drive Units: bass diameter 300mm, upper bass diameter 200mm, T-slot midrange driver, piezo-electric tweeter. FR: 20Hz-30kHz. Impedance: 6 ohms nominal. Rec. amplifier output: up to 125W RMS per channel. Dimensions: 102 × 40 × 34cms. Finish: walnut. Other features: as Formula 5 plus sound pressure level indicators. Price: on application.

■ B & N

B & N (Audio Developments) Ltd, Southlands Road, Torquay, Devon.
Tel: 0803 211747.

M 180s ★

IB speaker. Drive units: 3cm dome treble, 6cm dome mid, 30cm bass. Crossover frequency: 600Hz-6kHz. FR: 50-20kHz ± 2.5dB. Impedance: 8 ohms. Recommended amplifier output: 100W. Dimensions: 37.5 × 29 × 80.5cms. Finish: teak or walnut. Omni-directional. Price per pair: £236.00 (plus VAT).

M 90s ★

IB speaker. Drive units: 3cm dome treble, 6cm dome mid, 30cm bass. Crossover frequency: 600Hz, 6kHz. FR: 50-20kHz ± 2.5dB. Impedance: 8 ohms. Recommended amplifier output: 75W. Dimensions: 59.5 × 34 × 26.5cms. Finish: teak and walnut. Price per pair: £290.00 (plus VAT).

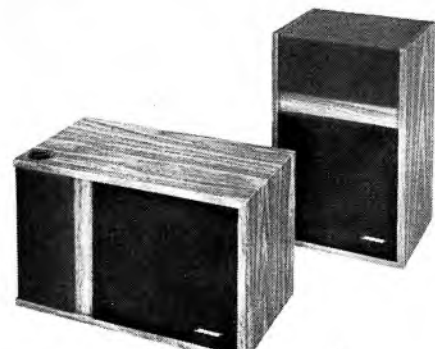
*B&N M180s**B&N M90s***PRO 360**

Labyrinth speaker. Drive units: 4 × 3cm dome treble, 4 × 6cm midrange, 2 × 30cm bass. Crossover frequency: 600, 6kHz. FR: 30-20kHz ± 2dB. Impedance: 8 ohms. Recommended amplifier output: 150W. Dimensions: 45 × 40 × 120cm. Finish: teak/walnut. 360 deg. radiation. Price per pair: £575.00 (plus VAT).

★ Indicates entry is illustrated



Bose 501



Bose 301 direct reflecting bookshelf speaker

■ BOSE

Bose (UK) Ltd, Gas Road, 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. Impedance: 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 matched pairs. Price: £225.00 per pair (excluding 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. Impedance: 8 ohms. Amplifier requirements: 10W. HC: 60W RMS. Dimensions: 17 × 10½ × 9½in. Weight: 17lb each. Finish: walnut effect veneer with foam grille coverings. Asymmetrical



Bose 901 Series III with equaliser on top of cabinet

direct/reflect. Bookshelf speaker. Sold in matched pairs. Price: £143.00 per pair (excluding 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 impedance voice coils connected in series, size: 4½ins dia. FR: 20Hz-20kHz. Impedance: 8 ohms. Recommended amplifier output: min 10 watts, max 70 watts, taking peaks of 250W per channel. Dimensions: 21 × 13 × 12½ins. Walnut veneer finish. Features: Bose 901 III active equaliser, part of L/S system, controls high freq, below 40Hz, controls. Price per pair including equaliser: £560.00 (plus VAT).

■ B & W

B & W Electronics, Meadow Road, Worthing, Sussex BN11 2RX. Tel: Worthing 205611.

DM2A ★

Eighth-wave acoustic line bass enclosure with units and crossover. One 8in bass driver with Bextrene cone, one HF1300 mid-HF unit, one ¾in low mass plastic dome tweeter. Crossover: 3kHz. FR: 30Hz-25kHz (±4dB 60Hz-20kHz). Impedance: 8 ohms at 400Hz. Size: 64.4 × 35.3 × 34.5cm. Finish: teak, rosewood, satin white or walnut. Every model individually pen tested and calibration certificate supplied. Price: teak, satin white or walnut. Price: £101.07 each (plus VAT).

DM4 ★

Three-unit monitor speaker system suitable for

Celestion



the British
loudspeakers
that bring
home the
world of sound



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a British speaker
... an Italian voice!



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The Poms are renowned for their
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"We think your British speakers
are just wonderful".



"Der British haf vays
of making us listen!"

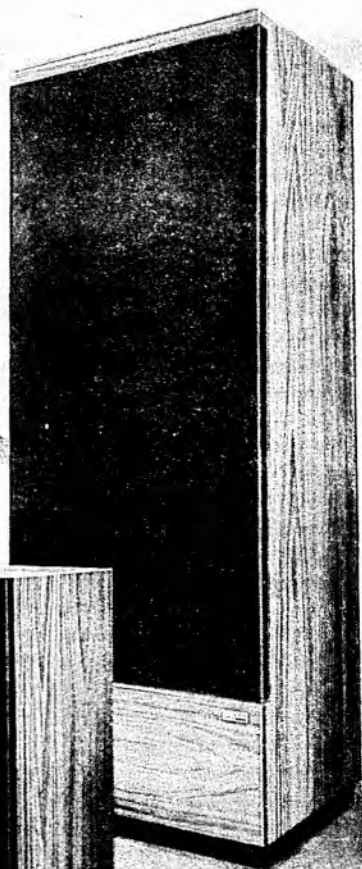
Rola Celestion Ltd., Ditton Works, Foxhall Road,
Ipswich, Suffolk IP3 8JP. Telephone: Ipswich (0473) 73131.
Cables: Voicecoil Ipswich. Telex: 98365.

MISSION

ELECTRONICS



...some are more equal than others



Mission Electronics Ltd, 117 Wandsworth Bridge Road, London SW6 2TF

not all loudspeakers are created equal

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Name _____

Address _____



B&W DM2A

bookshelf or wall mounting. One DW200/4 bass/mid-range driver with Bextrene cone, one Celestion HF1300 upper mid-frequency unit. One $\frac{3}{4}$ in low-mass plastic dome tweeter. FR: 30Hz-25kHz (± 5 dB 80Hz-20kHz). HC: 30W. Impedance: 8 ohms at 400Hz. Size: 53 × 25.5 × 25.6cm. Finish: teak, rosewood, satin white or walnut. Every model individually tested and calibration certificate supplied. Price: teak, satin white or walnut £72.04 each (plus VAT).

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: 7.6 W into nominal impedance (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 350 W RMS under normal domestic conditions. Crossover frequencies: 500Hz, 5kHz. Impedance: 8 ohms. Dimensions: 93.1 × 41 × 38cm. Satin white, teak veneer, walnut or rosewood finish. Price: £193.03 each (plus VAT).

■ CAMBRIDGE AUDIO

Cambridge Audio Ltd, 105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41131.

C40F

Multi-port speaker with bass/midrange 200mm and HF 25mm. Crossover frequency: 3.8kHz.



B & W DM4



Cambridge Audio R50

Imp: 8 ohms. Amplifier output: 50W. Dimensions: 28 × 25 × 49cms. Grey fabric/charcoal grille, mustard fabric/green grille; brown fabric/dark brown grille. Price per pair: £109.90 (plus VAT).

C40W

Similar to C40F but with finish in polished walnut/dark brown grille; polished rosewood/charcoal grille; teak/green grille. Price: £109.90 (plus VAT).

R50 ★

Transmission line with bass 30 × 30cms, mid-range 13 × 7.5, med HF 11 × 2, UHF 3cms dia.

★ Indicates entry is illustrated



Cambridge Audio R40

Crossover frequency: 400Hz, 3kHz, 10kHz. FR: 20Hz-25kHz. Imp: 8 ohms. Rec. amplifier output: 50W nominal. Dimensions: 33.02 × 44.8 × 105.4cms. Teak finish, other finishes to order. Price per pair: £305.00 (plus VAT).

R40 ★

Transmission line with bass 30 × 20cms, mid-range 13 × 7.5, HF 11 × 3cms. Crossover frequency: 400Hz, 3kHz. FR: 25Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 40W. Dimensions: 33.02 × 32.04 × 79.4cms. Teak finish, other finishes to order. Price per pair: £218.00 (plus VAT).

■ CASTLE

Castle Acoustics Ltd, Park Mill, Shortbank Road, Skipton, Yorks. Tel: Skipton 5333.

Conway

Three-speaker, three-way system for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 50W (DIN 45 500). Crossover frequencies: 800Hz and 4kHz. Low frequency cut-off: -3dB at 45Hz. Size: 25 × 14 × 14in. Finish: teak, walnut or mahogany. Price: teak £157.50 per pair (plus VAT); walnut £164.50 per pair (plus VAT); rosewood £191.00 per pair (plus VAT). Period Styling £206.00 upwards.

Howard ★

Five-speaker, three-way system for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 50W (DIN 45 500). Cross-

over frequencies: 800Hz and 4kHz. Low-frequency cut-off: -3dB at 40Hz. Size: 26 × 19 × 15in. Finish: teak, oak, walnut or mahogany. Price: teak £205.00 per pair (plus VAT); walnut, £215.00 per pair (plus VAT); Rosewood £250.00 (plus VAT); period styling £270.00 per pair (plus VAT).

Richmond

Reflex loaded, diaphragm bass and mid-range unit for use with amplifiers requiring 4 to 8 ohms load. Power handling capacity: 25W (DIN 45 500). Crossover frequency: 3.5kHz. Low frequency cut-off: -3dB at 55Hz. Size: 16³/₈ × 9 × 9⁷/₈in. Weight: 18³/₄lb. Finish: teak, rosewood or walnut. Price: £68.00 per pair (plus VAT); Teak £76.50; walnut £78.50; rosewood £88.50 (plus VAT).

Kendal

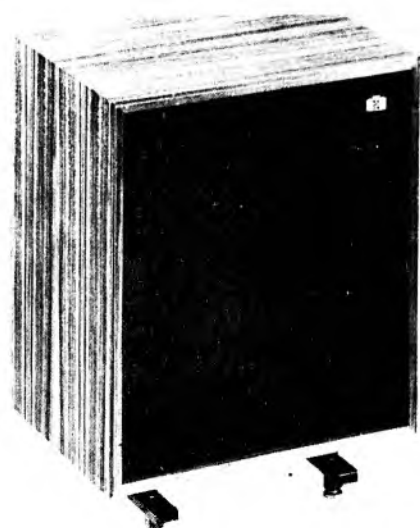
Drive units: 30mm tweeter, 20cm bass/mid range. Crossover frequency: 3.5kHz. FR: 48-20,000Hz. Imp: 4-8 ohms. Amplifier requirements: 10-40W. Dimensions: 29 × 28 × 52.5cm. Weight: 11kg. Teak, walnut, oak, mahogany, rosewood. Veneered baffle back. Hand finished. Price: £106.00 (teak), £110.00 (walnut) £119.00 (rosewood). (all plus VAT).

■ CELEF

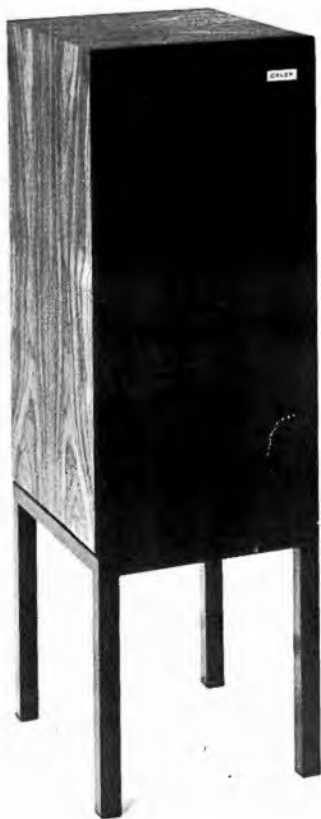
Celef Audio, 130 Thirsk Road, Borehamwood, Herts. Tel: 01-207 1150.

Celef Monitor

Resistively loaded reflex port. FR: 70Hz-20kHz ±2dB. Impedance: 8 ohms. Power



Castle Howard



Celef Mini Professional SM

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. Impedance: 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 × 8ins. Teak and walnut finish. High efficiency. Bookshelf mounting. Price: £78.00 (plus VAT) pair.

Mini Professional SM ★

Totally enclosed, 210mm bass/mid, 20mm



Celef Studio Professional

tweeter. Crossover frequency: 3.5kHz. FR: 38Hz-20kHz. Imp: 8 ohms. Amplifier output: 15-100W per channel. Dimensions: 23 × 11 × 12ins. 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).

■ CELESTION

Rola-Celestion Ltd, Ditton Works,
Foxhall Road, Ipswich, Suffolk IP3 8JP.
Tel: Ipswich 73131.

Ditton 25

FR: 20Hz-40kHz, -6dB at 40Hz. Impedance: 4-8 ohms. Max. continuous input: 60W (DIN). SPL: 7W for 96dB at 1m. Crossover frequencies: 2kHz and 9kHz. THD: (at 96dB) 0.8% 100kHz, 0.7% 400Hz, 0.7% 1kHz, 1.0% 4kHz, 0.8% 10kHz, 0.9% 15kHz. Weight: 19kg. Finish: teak or walnut. Size: 81 × 36 × 28cm. Price: £254.00 per pair (plus VAT).

Ditton 44 ★

Floor-standing enclosure with units. One 12in bass driver, one 6in HF unit and HF2000 tweeter. FR: 25Hz-40kHz, -8dB at 40Hz. Imp: 4-8 ohms. Max. continuous input: 44W (DIN). SPL: 5.5W for 96dB at 1m. Crossover frequencies: 500Hz and 5kHz. THD: (at 96dB) 0.8% 100Hz, 0.8% 400Hz, 0.8% 1kHz, 1.4% 4kHz, 1.1% 10kHz, 0.9% 15kHz. Weight: 20.4kg. Finish: teak or walnut. Size: 76 × 37 × 25cm. Price: £220.00 per pair (plus VAT).

★ Indicates entry is illustrated



Celestion Ditton 44

Ditton 15 ★

Compact ABR enclosure. FR: 30Hz-15kHz, -12dB at 40Hz. Impedance: 4-8 ohms. Maximum continuous input: 30W (DIN). SPL: 3.8W for 96dB at 1m. Crossover frequencies: 2.5kHz. THD: (at 96dB) 1.1% 100Hz, 0.9% 400Hz, 0.7% 1kHz, 0.9% 4kHz, 1.7% 10kHz. Weight: 7.6kg. Finish: teak or walnut. Size: 53 × 24 × 23cm. Price: £120.37 per pair (plus VAT).

Ditton 66

FR: 18Hz-40kHz, -4dB at 40Hz. Imp: 4-8 ohms. Max. continuous input: 80W (DIN). SPL: 10W for 96dB at 1m. Crossover frequencies: 500Hz and 5kHz. THD: (at 96dB) 0.6% 100Hz, 0.6% 400Hz, 0.7% 1kHz, 0.7% 4kHz, 0.9% 10kHz, 1.1% 15kHz. Weight: 30kg. Finish: teak or walnut. Size: 100 × 38 × 29cm. Price: £366.29 per pair (plus VAT).

Ditton 11 ★

Dimensions: 24 × 35 × 25cm. FR: 35Hz-28kHz. Teak or walnut finish, containing 1in HF and 6in LF. Power handling: 25W peak music power. Sensitivity: 90dB at 1m for 6V input. Imp: 4-8 ohms amplifier matching. Crossover dividing frequency: 2.5kHz. Weight: 5.9kg. Price: £75.00 (plus VAT).

Ditton 33 ★

Teak or walnut finish. Weight: 15.3kg. 25-28kHz. Peak music power: 40W. Sensitivity: 96dB at 1m for 10V input. Imp: 4-8 ohms amplifier matching. Drive: 1in HF, 10in LF. Dividing frequencies: 500Hz and 2.5kHz. Size:



Celestion Ditton 15



Celestion Ditton 11

61 × 35.5 × 25.7cm Price: £185.15 per pair (plus VAT).

UL6 ★

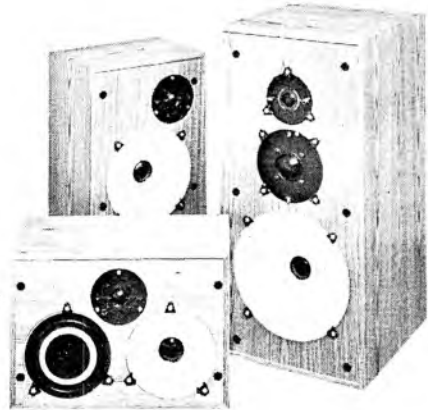
Speaker enclosure with units. One pressure dome tweeter HD1000, one 152mm dia. mid-bass unit, one 152mm dia. ABR: Power handling: 20W continuous RMS sine wave (40W



Celestion Dittan 33



Celestion Dittan 22



Celestion UL6, 8, 10

peak). Sensitivity: 15.4V RMS pink noise input for 96dB at 1m. Crossover frequency: 2.5kHz. Frequency: 35Hz-28kHz. Response: ± 3.5 dB 80Hz-20kHz. Weight: 10.1kg. Size: 292mm high, 412mm wide, 222mm deep. Price: £113.44 per pair (plus VAT).

UL8 ★

Speaker enclosure with units. One pressure-dome tweeter HD1000, one 205mm dia. mid-bass unit, one 205mm dia. ABR. Power handling: 25W continuous RMS sine wave (50W peak). Sensitivity: 12V RMS pink noise input for 96dB at 1m. Crossover frequency: 2kHz. Frequency: 30Hz-28kHz. Response: ± 3 dB 70Hz-20kHz. Weight: 12.5kg. Size: 584mm

high, 280mm wide, 235mm deep. Price: £139.85 per pair (plus VAT).

UL10 ★

Speaker enclosure with units. One HF2000 super tweeter, one MD700 pressure-dome mid-range unit, one 254mm bass drive unit. Power handling: 50W continuous RMS sine wave (100W peak). Sensitivity: 15.2V RMS pink noise input for 96dB at 1m. Crossover frequencies: 700Hz and 5kHz. Frequency: 20Hz-40kHz. Response: ± 2 dB 40Hz-20kHz. Weight: 23.5kg. Size: 673mm high, 317mm wide, 380mm deep. Price: £216.83 per pair (plus VAT).

Dittan 22 ★

IB enclosure with 25mm, 127mm, 203mm drive units. Crossover frequency: 500Hz + 3kHz. FR: 30Hz-28kHz. Imp: 4-8 ohms. Rec amplifier output: 10-80W. Dimensions: 51 x 33 x 27cm. Teak or walnut finish. Voice coil diameter tweeter 1in, midrange 1in, bass 1.5ins. Price: £150.00 (plus VAT).

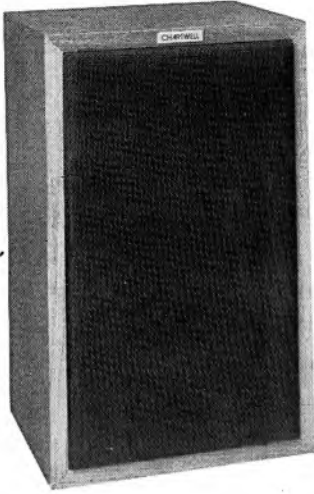
■ CHARTWELL

Chartwell Electro-Acoustics Ltd, 2 Commonside East, Mitcham, Surrey CR4 1HX. Tel: 01-648 4494/5, 01-640 7426/7.

LS3/5A ★

IB speaker with B110 and T27 drive units.

★ indicates entry is illustrated



Chartwell LS3/5A



Chartwell PM100

Crossover frequency: 3kHz. FR: 60Hz-20kHz \pm 4dB. Imp: 15 ohms. Rec. amplifier output: 25W. Dimensions: 19 \times 16 \times 30.5cms. Finish: teak, walnut, rosewood. Price: teak/walnut £150.00 per pair (plus VAT); rosewood £165.00 per pair (plus VAT).

PM 100 ★

Reflex cabinet with CEA165 and 25 drive units. Crossover frequency: 3.5kHz, FR: 50Hz-20kHz \pm 3dB. Imp: 8 ohms. Rec. amplifier output: 40W. Dimensions: 24 \times 20 \times 46cms. Sculptured foam grille. Price:

teak/walnut £140.00 per pair (plus VAT), rosewood £157.00 per pair (plus VAT).

PM 200 ★

Reflex speaker. Chartwell, CEA 205 & 25 drive units. Crossover frequency: 3.5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Amplifier output: 50W. Dimensions: 34.3 \times 26.6 \times 66cms. Sculptured foam grille. Price: teak/walnut £186.00 per pair (plus VAT), rosewood £240.00 (plus VAT).

PM 400 ★

Reflex speaker. Chartwell CEA 305, Chartwell CEA 145, 25 drive units. Crossover frequency: 500Hz, 3.5kHz. FR: 30Hz-30kHz. Imp: 8 ohms. Rec. amplifier output: 100W. Dimensions: 38.1 \times 33 \times 86.4cms. Sculptured foam grille. Price: teak/walnut £314.00 per pair (plus VAT), rosewood £380.00 per pair (plus VAT).

■ CLARK

Clark Speakers, 122 Hull Road, Anlaby, North Humberside HU10 6UV.
Tel: Hull 656706.

A1-21

Critically damped transmission line enclosure. Drive units: bass/mid-range 140mm cone (KEF B110), tweeter 19mm Melinex dome (KEF T27). Undamped line length 2.21m. Continuously variable level control on tweeter. Crossover frequency: 3.3kHz. FR: 28Hz-



Chartwell PM200



Chartwell PM400

20kHz. Imp: 8 ohms. Efficiency: 16W for 96dB. Amplifier requirements: suitable for 10-60W RMS per channel amplifiers. Dimensions: 53 × 28 × 24cm. Weight: 15kg. Finish: medium to dark teak, others to special quotation. Price (per pair): £150.00 (including VAT).

A1-31H

Critically damped transmission line enclosure. Drive units: bass 207mm cone (Richard Allan HP8B), 122mm precisely damped mid-range (Peerless KO40), 19mm Melinex dome tweeter (KEF T27). Crossover frequency: 450Hz and 3.3kHz. FR: 25Hz-20kHz. Imp: 8 ohms. Amplifier requirements: suitable for 15-135W RMS per channel amplifiers. Dimensions: 78 × 45 × 36cm. Weight: 34kg. Finish: medium to dark teak, others to special quotation. Optimum perspective control. Price (per pair): £273.00 (including VAT).

A1-31L

Critically damped transmission line enclosure. Drive units: 222mm cone (KEF B200) bass, 122mm precisely damped mid-range (Peerless KO40), 19mm Melinex dome tweeter (KEF T27). Crossover frequency: 450Hz and 3.3kHz. FR: 20Hz-20kHz. Imp: 8 ohms. Amplifier requirements: suitable for 25-90W RMS per channel amplifiers. Dimensions: 78 × 45 × 35cm. Weight: 31kg. Finish: medium to dark teak, others to special quotation. Optimum perspective control. Price (per pair): £268.00 (inc VAT).

A1-35/11

Critically damped transmission line enclosure. Drive units: 300 × 210 flat polystyrene diaphragm bass (KEF B139), 207mm precisely damped mid-range (R. Allan HP8B) in 7.7 litre isolated enclosure. 19mm Melinex dome tweeter (KEF T27), 18mm hard dome super tweeter (Coles 400IG). Undamped line length: 2.71m. Crossover frequencies: 250Hz, 3.3kHz. FR: 20Hz-20kHz. Imp: 8 ohms. Amplifier requirements: suitable for 25-150W RMS per channel amplifiers. Dimensions: 89 × 45 × 35cm. Weight: 41kg. Finish: mid/dark teak, others to special quotation. Optimum perspective Control. Price (per pair): £317.00 (inc VAT).

DAHLQUIST

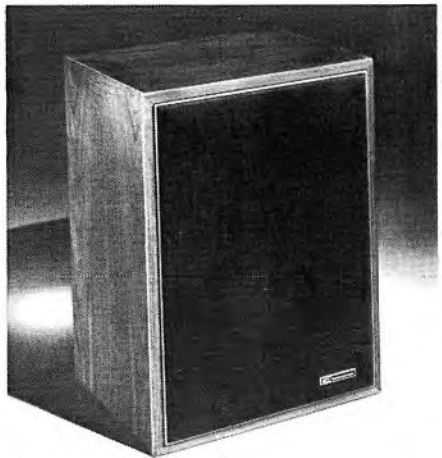
Hayden Laboratories Ltd, Churchfield Road, Chalfont St. Peter, Bucks. SL9 9EW. Tel: Gerrards Cross 88447.

DQ-10 ★

Will handle 200W programme material. Power requirements: 60W. Impedance: 8 ohms. Number of drivers: 5. Crossover points: 400Hz; 1kHz; 6kHz; 12.5kHz. FR: 35Hz-27kHz. Dimensions: 30½ × 31½ × 9ins. Finish: rich black cloth with American walnut side trim and legs. Enclosure rear surfaces black leatherette lamination. Price: £610 per pair (plus VAT).

DQ-1W

High definition add on woofer system. Walnut cabinet with black grill assembly. Price: £226.00 per pair (plus VAT).



Dahlquist DQ10

★ indicates entry is illustrated

■ DANSK

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs.
Tel: Newcastle Staffs 615131.

HT-25

Volume: 10 litres. FR: 50-19,000Hz. Nominal level: 30W. Overload level: 40W. Efficiency 96dB/1kHz: 3.2W. Crossover: 9,000Hz. Design system: pressure chamber. Units: tweeter 38mm, bass 215mm. Dimensions: 18cm deep × 23cm wide × 33cm high. Price: £51.67.

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: £51.67.

A-30

Volume: 30 litres. FR: 30-20,000Hz. Nominal level: 50W. Overload level: 100W. Efficiency 96dB/1kHz: 5W. Crossover: 1,500Hz. Design system: aperiodic valve. Units: dome 38mm, spec bass 254mm. Dimensions: 25cm deep × 32cm wide × 57cm high. Price: £58.74.

■ DAYTON WRIGHT

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

XC-8 Mk 3

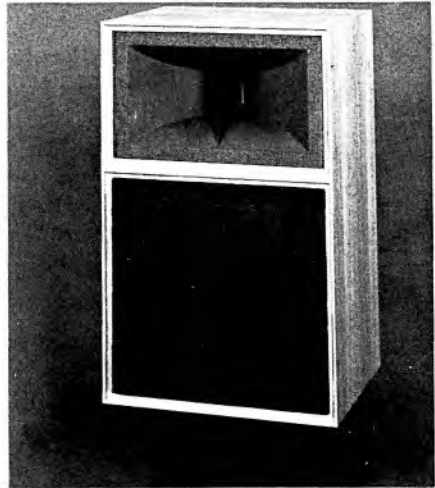
Full-range electrostatic loudspeaker enclosure. Drive units: 10 electrostatic units with piezo-electric ultra sonic tweeters. Roll-off to ultra sonic areas above 16kHz. FR: 32Hz-24kHz ±4dB. Imp: 4 ohms nominal. Amplifier requirements: 200W RMS. Dimensions: 42 × 39 × 9½in. Weight: 80lb. Electrostatic units are placed inside the loudspeaker in heavier than air gas. Price (per pair): £2,050 (plus VAT).

■ 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.



Decca London Enclosure

■ DUAL

Audiodecks Ltd, PO Box 7, Sandbeck Way,
Wetherby, Yorks.
Tel: Wetherby 5477.

CL 380

IB enclosure with 3-way drive units. FR: 25Hz-25kHz. Imp: 4 ohms. Amplifier output: 15Hz-25kHz. Dimensions: 30 × 22 × 50cms. Walnut finish. Level controls at MF & HF. Removable grille, finished baffle. Price: £235.00 per pair (plus VAT).

CL 270

IB enclosure with 3-way drive units. FR: 30Hz-25kHz. Imp: 4 ohms. Rec. amplifier output: 15-60W. Dimensions: 25 × 20 × 48cms. Walnut finish. Price: £168.36 (plus VAT).

CL 240

IB enclosure with 2-way drive units. FR: 35Hz-25kHz. Imp: 4 ohms. Rec. amplifier output: 15-50W. Dimensions 25 × 20 × 42cms. Walnut finish. Price: £100.62 (plus VAT).

■ EAGLE

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

S2002 ★

Infinite baffle enclosure. FR: 50Hz-17.5kHz. Imp: 8 ohms. HC: 10W. One 8in bass unit, one 2in tweeter. Crossover: 5kHz. Size: 11¼ × 8 × 5½in. Finish: teak with hardwood lipping. Price (per pair): £51.50 (plus VAT).

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



A reproduction masterpiece by Goodmans

To match our loudspeaker systems, the highly acclaimed Model 150 receiver takes its place flawlessly at the heart of any high fidelity system with high output (110 Watts per channel) and low distortion (typically 0.02%), and push button FM station selection.

The Model 1—20 with 50 watts per channel shares the same high performance of its larger counterpart.

The SCD 110 Stereo cassette tape deck with Dolby noise reduction system complements both our receivers and

speakers and leads the field in the modern generation of cassette recorders.

Also shown is the MCD 100 Stereo Music Centre with 35 Watts per channel and the OHP 10 Orthodynamic Stereo Headphones.

For details of these products and the full range of Goodmans associated high fidelity equipment write to the Technical Assistance department.

Goodmans Loudspeakers Limited
Downley Road, Havant
Hampshire, PO9 2NL, England

Goodmans High Fidelity



Eagle 2000 Series Speaker Range

S2003 ★

Infinite baffle enclosure. FR: 45Hz-17.5kHz. Imp: 8 ohms. HC: 15W. One 8in bass unit, one 2½in tweeter. Crossover: 5kHz. Size: 15 × 9¼ × 7¼in. Finish: teak with hardwood lipping. Price (per pair): £69.00 (plus VAT).

S2004 ★

Infinite baffle enclosure. FR: 35Hz-19kHz. Imp: 8 ohms. HC: 20W. One 8in bass unit, one 2½in mid-range, one 2in tweeter. Crossover: 1.5kHz and 5kHz. Size: 21¾ × 10½ × 8¼in. Finish: teak with hardwood lipping. Price (per pair): £91.50 (plus VAT).

S2005 ★

Infinite baffle enclosure. FR: 30Hz-20kHz. Imp: 8 ohms. HC: 25W. One 10in bass unit, one 5in mid-range, one 2½in tweeter. Crossover: 1.5kHz and 5kHz. Size: 20½ × 12½ × 10¼in. Finish: teak with hardwood lipping. Price (per pair): £138.00 (plus VAT).

S2006 ★

Bass reflex enclosure. FR: 20Hz-20kHz. Imp: 8 ohms. HC: 35W. One 12in bass unit, one 5in mid-range, one 2½in tweeter. Crossover: 1.5kHz and 5kHz. Size: 25¾ × 14¼ × 11¾. Finish: teak with hardwood lipping. Price (per pair): £185.00 (plus VAT).

■ **EDWARDUS**

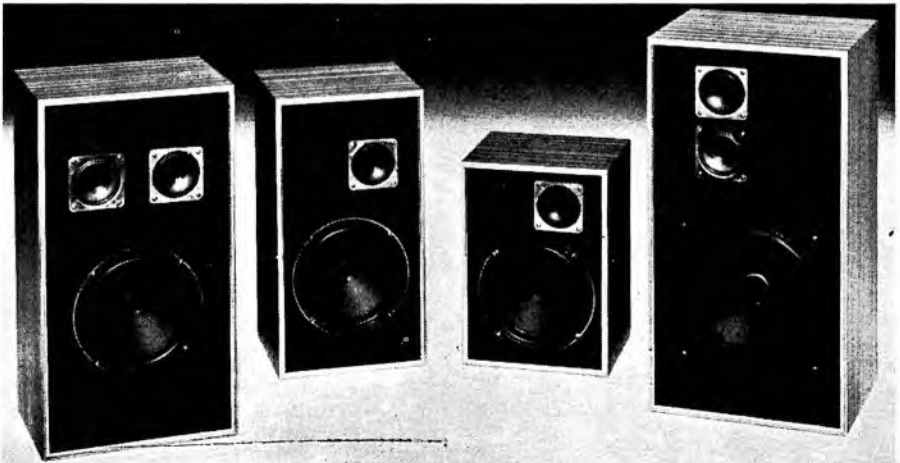
J. R. Edwards Electronics Ltd,
783 Romford Road, Manor Park,
London E12. Tel: 01-553 4349.

LS 250

New version, refining performance still further with an addition of an upper mid-range unit and subtle alterations to the integrating network. Nominal power handling: 25W. FR: 35-20,000Hz. Sensitivity (for 96dB at 1m): 6W. Imp: 8 ohms. Recommended amplifier power (per channel): 10-30W RMS. Principle of system: infinite baffle. Drive units: 8in bass, 3⅞ upper mid-range, 3⅞in treble. Interior volume: 25 litres. Finishes: teak, walnut, white. Size: 22 × 11 × 9½in deep (558 × 280 × 241mm). Net weight (per pair): 37lb (17kg). Price (per pair): £57.60 (plus VAT).

LS 400 ★

New low resonance woofer for improved bass response, together with a new upper mid-range and treble unit. Nominal power handling: 40W. FR: 30-20,000Hz. Sensitivity (for 96dB at 1m): 8W. Imp: 8 ohms. Recommended amplifier power (per channel): 15-50W RMS. Principle of system: infinite baffle. Drive units: 10in bass, 3⅞ upper mid-range, 3⅞in treble.



Edwardus range

★ Indicates entry is illustrated

Interior volume: 35 litres. Finishes: teak, walnut, white. Size: 24 × 12½ × 11in (610 × 320 × 280mm). Net weight (per pair): 55lb (25kg). Price (per pair): £73.60 (plus VAT).

■ EMPEROR

M.M.G. Associates, 19 St Andrews Road, Great Malvern, Worcs WR14 3PR.

Tel: Malvern 63555.

101

Infinite baffle speaker enclosure. 13 × 8in elliptical driver with coaxially mounted high frequency unit. Crossover frequency: 5kHz choke-capacitor network. FR: 50Hz-16kHz. Imp: 8 ohms. Amplifier requirements: 20W. Adjustable high frequency balance. Dimensions: 31 × 17 × 9in. Weight: 39.5lb. Finish: teak effect in Melamine. Price (per pair): £80.00 (plus VAT).

102

Infinite baffle speaker enclosure. 13 × 8in elliptical driver with coaxially mounted high frequency unit. Crossover frequency: 5kHz choke-capacitor network. FR: 50Hz-16kHz. Imp: 16 ohms. Amplifier requirements: 20W. Adjustable high frequency balance. Dimensions: 31 × 17 × 9in. Weight: 39.5lb. Finish: teak effect in Melamine. Price (per pair): £80.00 (plus VAT).

Emperor Mk III

Infinite baffle speaker enclosure. FR: 50Hz-18kHz. Imp: 8 or 16 ohms. High efficiency. Amplifier requirements: 25W. Adjustable high frequency balance. Dimensions: 35 × 17 × 19in. Weight: 42lb. Finish: teak, mahogany or to order. Price (per pair): £160.00 (plus VAT).

Emperor Studio Monitor

Full specifications and prices of the Emperor Studio Monitor systems available on request.

Emperor Custom Series

Full specifications and prices of the Emperor Custom Series systems available on request.

■ 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: 1 × 8in (low), 1 × 4in (mid), 1 × 3in (treble). Crossover frequency: 1,000 and 5,000Hz. FR: 35-20,000Hz. Imp: 8 ohms. Designed to operate with ampli-



Environmental Sound VT15

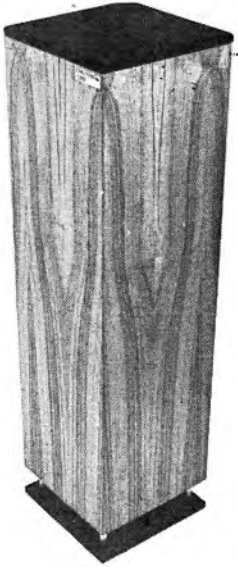
fiers 10-35W RMS. Dimensions: 38 × 48cm. The structure of the table is covered in a variety of shades of beige and the whole object enveloped in a large tablecloth which is acoustically transparent. These are omni directional units designed to blend with the decor of the home while reproducing pure uncoloured sound, giving flexibility of positioning. Price: £139.50 (inc VAT).

Table 24

Infinite baffle disguised as an elegant Victorian table. Drive units: 1 × 10in (bass), 1 × 8in (special cone), 1 × 4in (mid), 1 × 3in (tweeter). Crossover frequency: 1,000 and 5,000Hz. FR: 30-20,000Hz. Imp: 8 ohms. Designed to operate with amplifiers from 15-40W RMS. Dimensions: 69 × 71cm. The structure of the table is covered in a variety of shades of beige and the whole object enveloped in a large tablecloth which is acoustically transparent. These are omni directional units designed to blend with the decor of the home while reproducing pure uncoloured sound, giving flexibility of positioning. Price: £234.00 (inc VAT).

Rondo

Rigid cylinder with acoustical transparent top. Infinite baffle. Drive units: 200mm long throw low resonance, special cone, roll surround bass unit, 56mm cone tweeter. Output: 10-30W. FR: 40-20,000Hz. Imp: 8 ohms. Designed to operate with amplifiers from 10-25W RMS. Dimensions: 25 × 39.5cm. Constructed in ABS shatterproof plastic in white, red, green, yellow, brown and beige. Design Centre Award for construction, design and performance. Sound project in the vertical plane to give maximum number of locations for



Environmental Sound Column

the units in the home. Price (per pair): £76.55 (inc VAT).

Tower

Infinite baffle made in high density veneered chipboard. Drive units: 200mm long throw, low resonance, special cone, roll surround bass unit. 75.2mm dome tweeter. Crossover frequency: 3,000Hz. FR: 35-20,000Hz. Imp: 8 ohms. Dimensions: 27.3 x 27.3 x 47.6cm. Teak, mahogany or walnut finish. Features as Rondo. Price (per pair): £99.60 (inc VAT).

Column ★

Infinite baffle speaker. Drive units: roll surround 200mm special cone bass unit; high flux density magnet 100mm mid range. 56mm treble. Crossover frequency: 1,000 and 5,000Hz. FR: 40Hz-25kHz. Imp: 8 ohms. Amplifier output: 10-40W. Dimensions: 22.2 x 22.2 x 76.2cms. Teak or walnut finish. Omnidirectional characteristics allowing maximum number of locations in the home. Price per pair: £119.12 (plus VAT).

■ EXPOSURE

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

I

Transmission line — 2-way drive units. FR: 30Hz-20kHz. Imp: 8 ohms. Amplifier output:

50W. Dimensions: 12 x 12 x 24ins. Teak finish. Price per pair: £175.00 (plus VAT).

II

As above but with 3-way drive units. Price: £225.00 (plus VAT).

■ GALE

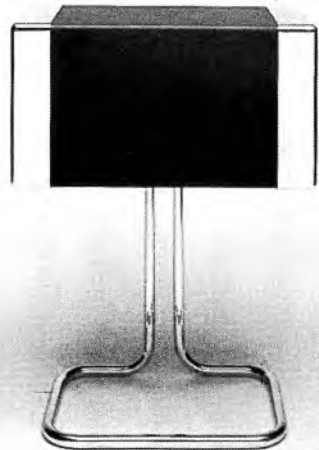
Gale Electronics and Design Ltd, 23 Bruton Place, London W1.
Tel: 01-499 9966.

GS401A ★

Infinite baffle enclosure consisting of 2 bass drivers, midrange & tweeter. Crossovers: 475 & 5000Hz. Impedance: 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. For use with amplifiers of 40-200 watts per channel. Seven year guarantee. Finish: matt black & chrome. Price: £175.00 each (plus VAT).



Gale 401C



Gale GS 401A on stand

★ Indicates entry is illustrated

GS401C ★

Identical specifications to GS401A but with walnut cabinet.

■ GOODMANS

Goodmans Loudspeakers Ltd, Downley Road, Havant, Hampshire PO9 2NL.

Tel: Havant 6344.

Achromat 400 ★

Closed box with 260mm bass, 45 and 25mm domes drive units. Crossover frequency: 900 and 3,500Hz. FR: 40-22,000Hz. Imp: 4-8 ohms. Amplifier requirements: 25-75W. Dimensions: 32.7 × 29.2 × 65.7cm. Weight: 16.5kg. Teak, walnut or white finish. For use with Goodmans CS3 stand. No rec. retail price.

Achromat 250 ★

Closed box with 203mm bass and 25mm dome HF drive units. Crossover frequency: 3,500Hz. FR: 47-22,000Hz. Imp: 4-8 ohms. Amplifier requirements: 25-60W. Dimensions: 27.2 × 27.8 × 54cm. Teak or walnut finish. Packed in pairs. No rec. retail price.

Achromat 100 ★

Closed box with 175mm bass and 38mm dome drive units. Crossover frequency: 3,000Hz. FR: 58-22,000Hz. Imp: 4-8 ohms. Amplifier requirements: 25-50W. Dimensions: 21.2 × 23.3 × 35cm. Weight: 6kg. Teak or walnut finish. Packed in pairs. No rec. retail price.

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 × 62cms. 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: 25 × 25 × 48cms. 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 × 43cms. Teak



Goodmans Achromat 250



Goodmans Achromat 400 on CS3 stand and Achromat 100

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 × 62cms. 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 × 35cms. 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 × 54cms. Teak or walnut veneers. Can be used with Goodmans CS4 stand. 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 or 8 ohms. Amplifier output: 20-100W. Dimensions: 30.3 × 32 × 68.6cms. Teak or walnut veneers. Use with Goodmans CS4 stand. Price: to be announced.

■ GRUNDIG

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

Audiorama 5000 ★

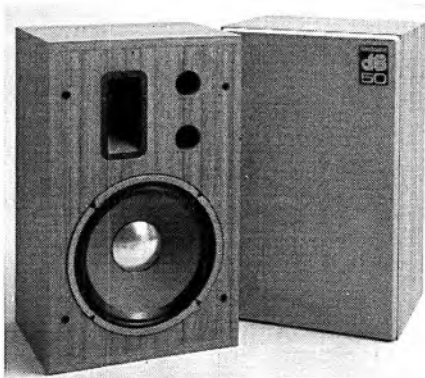
Infinite baffle enclosure with units and crossover. Two bass/mid-range units and two treble. FR: 45Hz-20kHz. Impedance: 4 ohms. HC: 35W. Finish: white globe with satin silver stand. No rec. retail price.

403 Compact

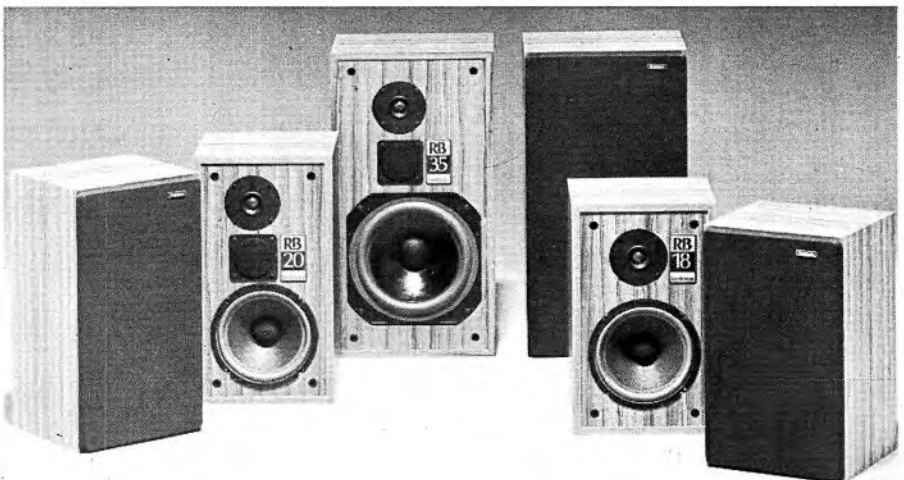
Infinite baffle enclosure with units. Two bass/mid-range units and one tweeter. FR: 45Hz-26kHz. Impedance: 4 ohms. HC: 10W. Dimensions: 33.5 × 51 × 9cm. Finish: light matt wood effect. No rec. retail price.

210a

Infinite baffle enclosure with units and crossover. One bass/mid-range and one tweeter. Crossover frequency: 4.5kHz. FR: 50Hz-20kHz. Impedance: 4 ohms. HC: 15W. Dimensions: 19.25cm diameter. Finish: satin metal with black grille. Optional free standing, wall mounting or ceiling 'suspended'. No rec. retail price.



Goodmans DB50 Discotheque System



Goodmans Speakers



Grundig Auditorama 5000

Box 600

IB enclosure with 2 drive units. Crossover frequency: 900/4000Hz. FR: 40Hz-26kHz. Imp: 4 ohms. Amplifier output: 40W. Dimensions: 23 × 39 × 24cms. Simulated walnut finish. No rec. retail price.

HACKER

Hacker Radio Ltd, Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP. Tel: Maidenhead 22261.

LS550

Infinite baffle enclosure. FR: 85Hz-17kHz ±3dB. Impedance: 8 ohms. HC: 30W DIN. Double drive units. Crossover frequency: 2.5kHz. Res. frequency: 85Hz. Size: 16½ × 10¾ × 8½in. Sold only in matched pairs. Price: on application.

LS 150

Bookshelf speaker finished in teak or rosewood veneers. Drive units: 152 × 102mm. FR: 60Hz-15kHz. Output: 20W. Dimensions: 26 × 17.1 × 18.7cms. Price: on application.

LS 275

Compact speaker in simulated teak veneer. Drive unit: 17.8cms. FR: 60Hz-15kHz. Output: 20W. Dimensions: 37 × 25.5 × 18.2cms. Price: on application.

LS 650

Freestanding or wall fixed in teak or rosewood veneers. Drive units: 20.3cms bass, 6.35cms

treble. FR: 40Hz-18kHz. Output: 30W. Dimensions: 51.4 × 33.5 × 15.5cms. Price: on application.

HARWELL

Harwell Instruments Ltd, 17 Carew Street, London SE5. Tel: 01-737 2066.

Helios M144CT/2

3.0m length pressure driven rear loaded bass horn. Drive units: 4 × 13cm bass/mid, 2 × dome HF units. Crossover frequency: 400Hz for bass/mid, 3.5kHz mid-top, @ 12dB per octave. FR: 40Hz-20kHz. Imp: 8 or 16 ohms. Amplifier output: 200W. Dimensions: 66 × 13.2 × 39cms. Finish: Chinese lacquer, stained pine, mahogany, walnut finished in chrome or brass. This loudspeaker is a coffee table with exceptional bass attack, ultra high efficiency. Price: £350.00 per unit (plus VAT).

Hercules BMT 214

3.0m length pressure cavity driven, rear loaded bass horn, front loading 1m horn. Drive units: 2 × 29cm, 20,000G; 100W units. 1 Vitavox S3 18,000G pressure unit, 4 × 200W HF units. Midrange cut-in 1kHz. Top cut-in 3.5kHz. Piezo-electric. FR: 15Hz-40kHz. Imp: 8 ohms. Amplifier output: 200W. Dimensions: 40 × 100 × 67cms. Heavy duty finish with lockable castors and handles. Price: £1,650 (plus VAT).

Hyperion MT 22DP

2.7m length pressure driven rear loaded bass horn. Drive units: 2 × 13cm bass/mid, 2 × dome HF units. Crossover frequency: bass/mid 400Hz, mid-top 3.5kHz @ 12dB per octave. FR: 45Hz-20kHz. Imp: 8 or 16 ohms. Amplifier output: 100W. Dimensions: 112 × 27 × 29.5cms. Constructed in brown perspex 504. Exceptional bass attack. Price: £500.00 (plus VAT).

Helios MT22CI

3.0m length pressure driven rear loaded bass horn. Drive units: 2 × 13cm bass/mid, 2 × dome HF units. Crossover frequency: bass-mid 400Hz, mid-top 3.5kHz @ 12dB per octave. FR: 40Hz-20kHz. Imp: 8 or 16 ohms. Amplifier output: 100W. Dimensions: 66 × 66 × 39cms. Chinese lacquer, stained pine, mahogany, walnut finished in chrome or brass. This is a coffee table with same qualities as the Hyperion. Price: £405.00 (plus VAT).

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 9³/₁₆in. (25 cm); Mid range: 4³/₁₆in. (12 cm); Tweeter: Titanium Domed 1 in. (2.5 cm); Frequency response: 45-18,000 Hz (-8 dB); 40-20,000 Hz (-15 dB); Crossover frequency: 700 Hz, 3,000 Hz; Impedance: 6Ω; Maximum input power: 50 watts maximum; Output sound pressure level: 91 dB (1W; 1 m); Dimensions (W × H × D): 12¹/₂ × 21¹/₁₆ × 12⁷/₁₆in. (31.5 × 55 × 31.5 cm); Weight: 28.6 lbs. (13 kg); 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 × 60.5cms. Walnut finish. Price: £120.00 each (inc. VAT).

HS 400

IB 50 litres enclosure. Drive units: bass 20cm metal cone, HF 3.5cm dome. Crossover frequency: 1,100Hz. FR: 35Hz-20kHz. Imp: 8 ohms. Amplifier output: 100W. Dimensions: 35.5 × 34 × 63cms. Walnut coloured finish. Price: on application.

■ IMF ELECTRONICS

IMF Electronics Ltd, Westbourne Street, High Wycombe, Bucks. Tel: High Wycombe 35576.

Compact II

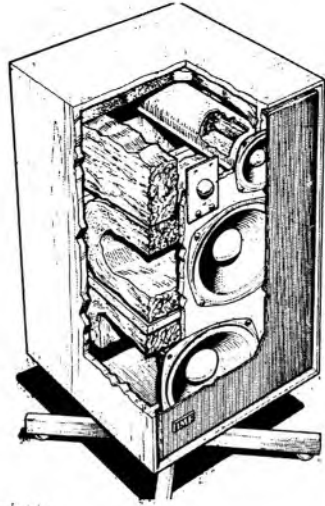
Reflex enclosure with units and crossover, 16.5 bextrene mid-range and bass unit with domed tweeter. Crossover frequency: electrical two way at 4kHz. FR: 35Hz-20kHz. Impedance: 4-8 ohms. Efficiency: 99dB via Pink Noise at 1m on axis for 40W. Amplifier requirements: 15-40W. Dimensions: 38 × 23 × 24cm. Finish: teak or walnut woodgrain. Price: £94.60 per pair (excluding VAT).

Super-Compact

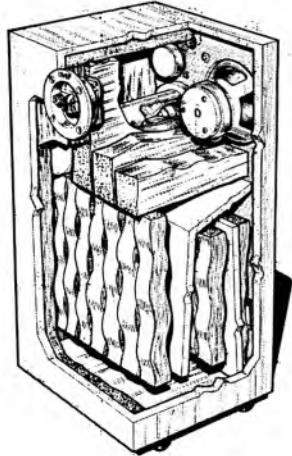
Reflex enclosure with units and crossover. 20.5cm bextrene bass unit and 10cm rolled surround impregnated cone mid-range with domed tweeter. Crossover: electrical three-way at 375Hz and 3kHz. FR: 30Hz-20kHz. Impedance: 4-8 ohms. Efficiency: 100dB via Pink Noise at 1m on axis for 40W. Amplifier requirements: 20-50W. Dimensions: 46 × 28 × 30cm. Finish: teak or walnut woodgrain. Price: £131.56 per pair (plus VAT).

Studio ALS 40 II ★

Active line loudspeaker with units and crossover. 20.5cm bextrene bass unit, 20.5cm bex-



IMF ALS 40II



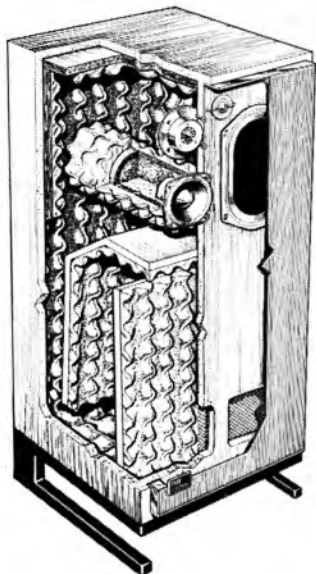
IMF TLS 50II

trene 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. Impedance: 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: £265.44 per pair (excluding 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

rolled surround impregnated cone mid-range with domed tweeter and super tweeter. Crossover: electrical four way at 375Hz, 3kHz. FR: 23Hz to beyond audibility. Impedance: 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: £306.90 per pair (excluding VAT).

Monitor TLS 80II ★

Transmission line lousdspeaker 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. Impedance: 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: £495.89 per pair (plus VA1) inc. stands.

Reference Standard Professional Monitor Mk IV

Transmission line lousdspeakers 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. Impedance 4-8 ohms. Efficiency: 96-98dB dependant 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 £803.68 per pair (excluding VAT).

ISOPHON-WERKE

Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, SL9 9EW. Tel: Gerrards Cross 88447.

SKB 60/8

11 × 8in bass, 1 midrange, 1 dome tweeter. FR: 35-20,000 Hz. Impedance: 8 ohms. Amplifier requirements: 40 W RMS. Dimensions: 48 × 24 × 24cm. Finish: Walnut vinyl. Price: £99.00 per pair (plus VAT).

JBL

C. E. Hammond & Co, Ltd, 105-109 Oyster Lane, Byfleet, Surrey. KT14 7LA. Tel: Byfleet 41131.

JBL Decade L16

Reflex enclosure. 20cm bass driver. 3.6cm HF. Direct radiator. Crossover frequency: 2,500Hz. Impedance: 8 ohms. Minimum 10 W. Size: 27 × 26 × 49cm. Weight: 13kg. Natural Oak finish. Brown grille. No rec. retail price.

JBL Decade L26

Reflex enclosure. 2.5cm low frequency lousdspeaker. 3.6cm high frequency direct radiator. Crossover frequency: 2,000Hz. Impedance: 8 ohms. Minimum 10 Watts. 32 × 34 × 61cm. Weight: 19kg. Natural Oak finish. Grille colour: Orange, Blue or Brown. No rec. retail price.

JBL Decade L36

Reflex enclosure. 25 cm low frequency lousdspeaker. 13 cm midrange unit. 3.6 cm High frequency direct radiator. Crossover frequency: 1,500 and 6,000 Hz. Impedance: 8 ohms. Minimum 10 watts. 34 × 35 × 61cm. Weight: 20kg. Natural Oak finish with grilles in Orange, Blue or Brown. No rec. retail price.

LBL Horizon L166

Reflex enclosure. 20 cm low frequency lousdspeaker. 13cm midrange transducer. 2.5 cm high frequency hemispherical radiator. Crossover frequency: 1,000 and 6,000 Hz.



JBL Century L100

Impedance: 8 ohms. Minimum 10 Watts. 36.2 × 33 × 59.7cm. Weight: 25kg. Oiled Walnut finish. Black grille. No rec. retail price.

JBL Century L100 ★

Reflex Enclosure. 20 cm low frequency loudspeaker. 13 cm midrange transducer. 3.6 cm high frequency direct radiator. Crossover frequency: 1,500 and 6,000 Hz. Impedance: 8 ohms. Minimum 10 watts. 36 × 35 × 60cm. Weight: 25kg. Oiled Walnut finish. Grille colour: Ultra Blue, Chocolate, Brown or Burnt Orange. No rec. retail price.

JBL Aquarius Q L120

Reflex enclosure. 25 cm low frequency loudspeaker. 13 cm midrange transducer. 3.6 cm high frequency direct radiator. Crossover frequency: 1,000 and 8,000 Hz. Impedance: 8 ohms. Minimum 10 watts. Size: 31 × 31 × 112cm. Weight: 31kg. Oiled walnut or Satin white finish. Grille colour: Brown with oiled walnut or Blue with satin white finish. No rec. retail price.

JBL Jubal L65

Reflex enclosure. 30cm low frequency loudspeaker. 13cm midrange transducer, ultra high frequency horn loaded slot radiator. Crossover frequency: 1,000 and 6,500 Hz. Impedance: 8 ohms. Minimum 10 watts. 61 × 33 × 44cm. Weight: 30 kg. Oiled Walnut finish. Grille colour: Midnight Blue, Earth Brown or Rust Red. No rec. retail price.

JBL Studio Master L200B

Reflex Enclosure. 38cm low frequency loudspeaker. High frequency compression driver. Crossover frequency: 800 Hz. Impe-

dance 8 ohms. Minimum 10 watts. Size: 61 × 54 × 83cm. Weight: 59 kg. Oiled Walnut finish. Grille colour: Grey, Black, Blue or Burgundy. No rec. retail price.

JBL Summit L300

Reflex enclosure. 38cm low frequency loudspeaker, high frequency compression driver ultra-high frequency horn loaded slot radiator. Crossover frequency: 800 Hz and 8,500 Hz. Impedance: 8 ohms. Minimum 10 W. Size: 58 × 57 × 80cm. Weight: 66kg. Oiled walnut finish. Grille colour: Blue, Black, Brown or Camel. No rec. retail price.

■ JOHNSON BRODY

Johnson Brody Marketing Company, Parr Road, Stanmore, Middlesex.
Tel: 01-951 0225.

Specialist Cabinet.

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■ 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 in each side cabinet, bass 200mm in common bass enclosure. Crossover: 150Hz. FR: 40Hz-22kHz. Output: 20W. Imp: 8 ohms. Dimensions: side cabinets: 20.3 × 19 × 10.2cms, bass cabinets 61 × 38 × 24cms. Finish in teak veneer with black acoustically transparent grille, set in gold trim. Price: £180.00.

System 1000

Bookshelf system. Drive units: 50mm plus 200mm bass. Crossover: 150Hz. FR: 40Hz-



Jordan System 1000 CB

★ Indicates entry is illustrated

22kHz. Output: 20W. Imp: 8 ohms. Finish in teak veneer with black acoustically transparent grille. Dimensions: 46 × 30.5 × 24cms. Price: £192.00.

System 2500

Floor standing enclosure with spec. as per System 1000. Dimensions: 76 × 38 × 24cms. Price: £221.00.

Co-Planar Suite

Details on request. Price: £360.00.

■ 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. HC: 15W/RMS. Finish: teak. Price: £49.50 each (plus VAT).

Jodrell

Reflex enclosure. Twin Jordan-Watts module. Treble control fitted. FR: 40Hz-22kHz. Size: 76 × 35 × 22cm. HC: 30W/RMS. Finish: teak. Weight: 25kg. Price: £71.25 each (plus VAT).

Jupiter Centurion

Reflex enclosure. Power handling 60W. Forward facing. Incorporates four Jordan-Watts modular units and two HF unit. FR: 30Hz-22kHz. Size: 88 × 38 × 27cm. Weight: 41kg. Price: £115.00 each (plus VAT).

Jupiter TLS/ABR

Transmission line speaker system. HC: 30W. Forward-facing. Incorporates two Jordan-Watts modular units. Treble control incorporated. Enclosure lined with sheet lead. FR: 30Hz-22kHz. Size: 88 × 38 × 27cm. Weight: 80lb. 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 × 9ins bass reinforcement. FR: 40Hz-20kHz. Dimensions: 76 × 34 × 22cm. Price: £87.50 each (plus VAT).

Qubique ★

Cuboid reflex 30cm with massive ceramic decorative panels for overall stiffness. Solid wood frame. Output: 15W RMS. FR: 35Hz-20kHz. Price: £52.00 (plus VAT).



Jordan-Watts Juno

Jumbo

Infinite baffle. Power handling 15W/RMS. Forward facing. Shelf or wall mounting. Incorporates one Jordan-Watts modular unit. FR: 70Hz-20kHz. Size: 40 × 20 × 9cm. Weight: 7kg. Finish: teak. Price: £29.80 each (plus VAT).

Janet

Infinite baffle. One full-range Jordan-Watts module. FR: 70Hz-20kHz. HC: 15W/RMS. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair. Size: 30 × 20 × 15cm. Weight: 7kg. Price: £29.80 each (plus VAT).

Juno ★

Reflex enclosure. HC: 15W/RMS. Forward facing. Incorporates one Jordan-Watts modular unit. FR: 40Hz-20kHz. Size: 61 × 30 × 16cm. Weight: 14kg. Price: £39.80 each (plus VAT).

Juliet

Reflex cabinet. One full-range Jordan-Watts module. FR: 40Hz-20kHz. HC: 15W/RMS. Compact shelf-mounting full range speaker system. Finish: teak with green Vynair. Size: 40 × 25 × 23cm. Weight: 13kg. Price: £39.80 each (plus VAT).

Flagon ★

Ceramic infinite baffle loudspeaker. 65Hz-20kHz. HC: 15W/RMS. Exclusive decorative pottery enclosure. Size: 36cm diameter. Weight: 13kg. Price: £44.00 each (plus VAT).

■ JR

Tape Music Distributors Ltd.
114 Ashley Road, St Albans, Herts. AL1 5JR.
Tel: St Albans 64337/9.

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Loudspeakers

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Address _____

HFVBI/78



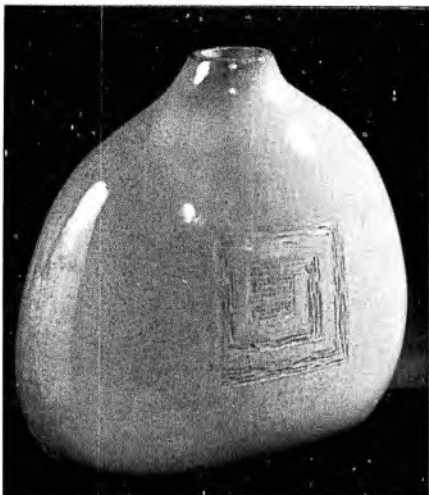
spendor

Spendor loudspeakers continue to be chosen by broadcasting studios in the U.K. and abroad for their accurate reproduction qualities.

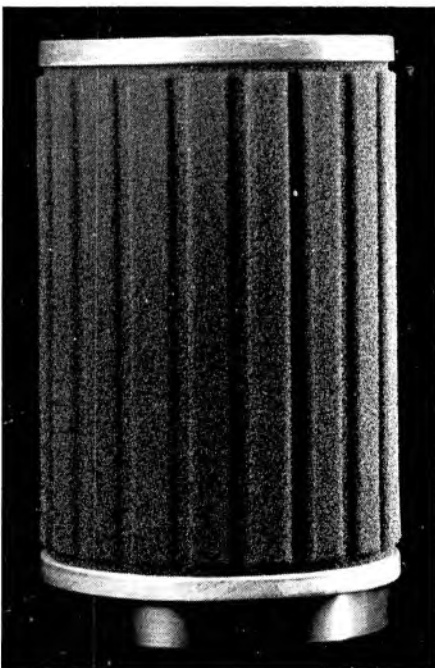
The range now includes the SA1 'Mini Monitor' originally designed for use in outside broadcast vehicles where space is limited, and we have introduced the D40 stereo amplifier, which matches perfectly with the SA1 for quality home listening.

Spendor Audio Systems Limited

Station Road Industrial Estate Hailsham Sussex England
BN27 2ER



Jordan-Watts Flagon



JR 149

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: 75Hz-20kHz ± 3 dB, 55Hz-20kHz ± 4 dB. Impedance: nominally 15 ohms, minimum 8

ohms. Size: 37cm high, 23cm dia. Weight: 5.5kg. Declon foam circular grill capped top and bottom with decorative discs. Enclosure virtually non-resonant. Price per pair: £120.00. Acrylic black £134.00 per pair. Gold Plated £208.00. Wall brackets £10.00. All plus VAT.

■ **KEESONIC**

Keesonic Audio Developments Limited, Halldore Hill, Cookham, Maidenhead, Berks (All customer enquiries to Keesonic Audio Sales Limited). Tel: Bourne End 22726

Keesonic KUBS

Tuned port system: FR: 40-18kHz ± 3 dB: Impedance, 8 ohms. Two drive units. Size 11 x 7 x 8cm. Finish Teak, Olive. Price: £62.50 per pair (inclusive of VAT).

Keesonic KRF

Tuned port system: FR 45-20kHz ± 3 dB: Impedance, 8 ohms: HC 50 W. Three drive units. Size 61 x 28 x 31cm. Finish: Teak, Walnut or White. Price: £223.00 per pair (inclusive of VAT).

KBM

Tuned port speaker with 10in, 2in, 1in drive units. Crossover: 10 elements. 400Hz, 3,500Hz, 9,000Hz. Imp: 8 ohms. FR: 30Hz-20kHz. Output: 80W. Dimensions: 76.2 x 33.3 x 34cms. Finish in teak or walnut. Price: £433.00 per pair (inc. VAT).

■ **KEF**

KEF Electronics Ltd. Tovil, Maidstone, Kent. ME 15 6QP
Tel: Maidstone 57258.

Cantata

Free standing, supplied in mirror image pairs. Elliptical low frequency, 110mm mid frequency, 52mm high frequency. Crossover frequency: 250 and 3000Hz. Impedance: 8 ohms. 15-150 W. Size: 34 x 39 x 81cm. Teak or Walnut finish. Switchable controls for mid and high frequency. Price: £399.00 per pair (plus VAT).

Calinda

Free standing. Mechanical reflex. 200mm low frequency, 27mm high frequency, Elliptical bass radiator. Cross over frequency: 45Hz acoustically coupled and 3,500Hz. Frequency range: 40-30,000Hz. Impedance: 8 ohms. 15-100 W. Size: 28 x 35 x 70cm. Teak or Walnut finish. Computer developed filter section. Price: £220.50 per pair (plus VAT)

★ Indicates entry is illustrated

Corelli

Compact, IB shelf enclosure. 200mm low frequency 27mm high frequency. Crossover frequency: 3,500Hz. Frequency range: 50-30,000Hz. Impedance: 8 ohms. 25-50 W. Size: 28 × 22 × 47cm. Teak or Walnut finish. Supplied in matched pairs. Price: £137.00 per pair (plus VAT).

Reference Series Model 103 ★

Compact, IB shelf enclosure. 200mm low fre-



KEF 103



KEF 104

quency, 52mm high frequency. Crossover frequency: 3,000Hz. Frequency range 30-20,000Hz. Impedance: 8 ohms. 25-100 W. Size: 33 × 22 × 50cm. Weight: 19kg. Teak or Walnut finish. Steel, rotatable baffle provides optimum stereoimage in horizontal or vertical use. Price: £195.00 per pair (plus VAT).

Reference Series Model 104ab ★

Compact, floorstanding mechanical reflex. 200mm low frequency, 27mm high frequency. Elliptical bass radiator. Crossover frequency: 45Hz acoustically coupled and 3,600Hz. Frequency Range: 30-40,000Hz. Impedance: 8 ohms. 15-100 Watts. Size: 33 × 26 × 63cm. Weight: 16kg. Teak, Walnut or White finish. Optional stand available. Price: £279.00 per pair (plus VAT).

Reference Series Model 105

Details to be announced.

■ **KLH**

Webland International Ltd, Mirabel House, 117/121, Wandsworth Bridge Road, London SW6
Tel: 01-736 0989/9410.

KLH 331

Size: 16 × 12 × 8.75in. Weight: 21lb. Impedance: 8 ohms. Minimum 8 W RMS. Max. 90 W short duration. 8in woofer, 2.25in cone tweeter. Frequency: 50-18,000Hz. Price: £97.00 per pair (inclusive of VAT).

KLH 317 ★

Size: 23 × 12 × 9.75in. Weight: 30lbs. Impedance: 8 ohms. Min. 10 W. RMS Max 100 W short duration. 10in woofer, 2.25in cone tweeter. Frequency: 45-18,000Hz. Price: £147.00 per pair (inclusive of VAT).

KLH 363

Size: 24 × 13 × 12.5in. Weight: 42lb. Impe-



KLH 317

dance: 8 ohms. Min. 15 W. 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 (inclusive of VAT).

KLH CL3

Size: 26 × 14 × 11.5in. Weight: 53lb. Impedance: 8 ohms. Min. 20 W. RMS max. 100 W RMS. 10in megaflux woofer, 2.5in cone tweeter, 2in cone tweeter. Frequency: 35-20,000 Hz ± 3.5dB. Price: £275.00 per pair (inclusive of VAT).

CB8

Size: 19.5 × 11 × 7.25in. Weight: 27lb. Impedance: 8 ohms min. 8 W RMS. Max 75 W RMS. 8in megaflux woofer, 2.5in cone tweeter. Frequency: 47-18,000 Hz ± 4dB. Price: £169.00 per pair (inclusive of VAT).

CB10

Size: 19.5 × 14.75 × 7.25in. Weight: 35lb. Impedance: 8 ohms. Min. 10 W RMS. Max. 100 W RMS. 10in megaflux woofer, 2.5in cone tweeter. Frequency: 40-18,000 Hz ± 4dB. Price: £240.00 per pair (inclusive of VAT).

CL4 ★

Size: 27 × 14.25 × 13in. Weight: 59lb. Impedance: 8 ohms. Min. 25 W RMS. Max. 150 W RMS. 10in megaflux woofer, 4.5in cone midrange, 1in dome tweeter. Frequency: 30-22,000Hz ± 3dB. Price: £360.00 per pair (inclusive of VAT).

SCX2

Size: 27 × 14 × 21in. Impedance: 8 ohms. Min. 25 W RMS. Max. 200 W RMS. 2 DVR tweeters. 4.5in cone midrange. 12in megaflux woofer. Frequency: 30-30,000Hz ± 2.5dB. Price: £599.99 per pair (inclusive of VAT).

SCX3 ★

Size: 38 × 13.5 × 15in. Weight: 96lb. Impedance: 8 ohms. Min. 30 W RMS. Max. 400 W RMS. 3 DVR tweeters, 2 × 4.5in cone midranges, 12in megaflux woofer. Frequency: 26-33,000 Hz ± 2dB. Price: £799.00 per pair (inclusive of VAT).

KLH 354

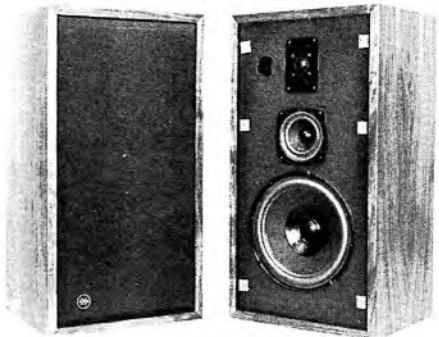
Details on application.

■ LEAK

Rank Audio Visual P.O. Box 70,
Great West Rd,
Brentford, Middx. TW8 9HR.
Tel: 01-568 9222.



KLH SCX3



KLH CL4

3020

Reflex enclosure. Drive units: 1 × 130mm. Crossover frequency: 3kHz. FR: 62Hz-22kHz-3dB. Imp: 8 ohms. Amplifier output: 25W. Dimensions: 21 × 27 × 44cms. Teak or walnut finish. Time delay compensation. Price per pair: £89.95 (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 × 52cms. Teak or walnut finish. Price per pair: £118.95 (plus VAT).

3050

IB enclosure. Drive units: 2 × 170mm. Crossover frequency: 4kHz. FR: 48Hz-22kHz-3dB. Imp: 8 ohms. Rec. amplifier output: 50W. Dimensions: 30 × 34 × 64cms. Teak or walnut finish. Price per pair: £164.95 (plus VAT).

★ Indicates entry is illustrated

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 × 84.5cms. Teak or walnut finish. Price per pair: £236.95 (plus VAT).

■ LECSON

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

LBI

Acoustic resistance enclosure. Drive units: 200mm bass, 30mm HF. Crossover frequency: 2kHz. FR: 40Hz-25kHz ± 3dB. Imp: 8 ohms. Amplifier output: 100W. Dimensions: 30 × 29 × 58cms. Walnut, teak or black oak finish. Asymmetrical cabinet can be mounted in several different ways. Designed with acoustic resistance units to minimise low frequency distortion. Price: £145.00 per pair (plus VAT).

HL1 ★

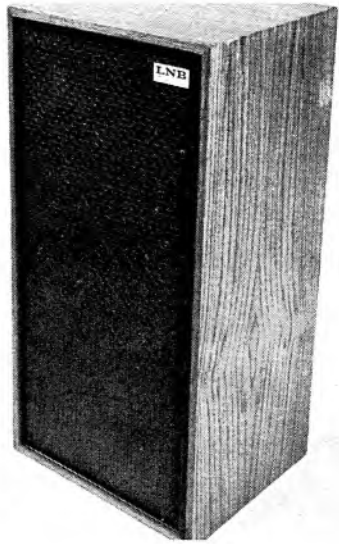
Horn loaded enclosure. Drive units: two 32 × 20cm bass, 125mm mid, 30mm horn HF. Crossover: 840Hz, 4kHz. Imp: 8 ohms. Output: 100W. Dimensions: 37.5 × 44 × 92.5cms. Finish: black fabric with teak veneered panel. Price: £280.00 per pair (plus VAT).

■ LINN-ISOBARIK

Linn Products Ltd, 235 Drakemire Drive, Castlemilk, Glasgow G45 9SZ.
Tel: 041-634 3860.



Lecson HL1



LNB Mini Lab

DMS

Infinite baffle enclosure, available in two models — with passive crossover and with electronic frequency dividing network. Size 15 × 15 × 30in. Suitable for amplifiers delivering over 60W per channel into 4 ohms and up to 100-250W per channel. FR: 20Hz-20kHz ± 1.5dB. Employs new bass generator concept (patent pending). Weight (approx.) 100lb. Price: passive crossover model — £650.00 (plus VAT), electronic crossover model — price on application.

■ 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. Impedance: 8 ohms. Output: 20-50W per channel into 8 ohms. Dimensions: 78.8 × 28 × 28.5cms. Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price: £150.00 (plus VAT).

Mini Lab ★

Aabyrinth system employing 165mm long throw bass unit plus 25mm dome treble unit via 2-way crossover. FR: 50Hz-25kHz. Impedance: 8 ohms. Output: 15-30W per channel into 8 ohms. Dimensions: 47 × 22.8 × 20.3cms.

Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price: £62.00 (plus VA1).

Para Lab Super Series II

Labyrinth system employing 165mm long throw bass unit plus 127/SP1032 treble unit via 2-way crossover. FR: 40Hz-25kHz. Impedance: 8 ohms. Output: 15-30W per channel into 8 ohms. Dimensions: 59.7 × 22.8 × 26cms. Finish: teak or walnut with complementary baffle and trim. Jacobean oak on request. Price: £90.00 (plus VA1).

■ LENTEK MONITOR

Lentek Audio Ltd,
Edison Road Industrial Estate,
St. Ives, Hunts., Camb. PE17 4LF
Tel: St. Ives 62225.

Lentek ★

Transmission line. 1 × 11.82/8.25in bass driver. 1 × 5.5in MR, 2 × 4.25in and 4in dome tweeter. Crossover frequency: 400Hz. 3.5kHz 10kHz. min 30Hz-high 25kHz. 40Hz-20kHz. Impedance: 8 ohms. 25 W per channel. Size: 39.4 × 40.6 × 107.3mm. Weight: 38.2kg. Teak or white finish. Price: £350.00 per pair (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 3/4in tweeter. FR: ± 5dB, 60Hz-15kHz. FR: 40Hz-18kHz. Impedance: 8 ohms. Size: 28.5 × 21.25 × 48.5cm. Weight: 20lb. Teak or walnut finish. Price: £75.08 per pair (plus VAT).

5G

Two-way bookshelf. 1 × 8in woofer, 1 × 3 1/2in tweeter. FR: ± 5dB, 45Hz-16kHz. Frequency range: 35Hz-20kHz. Impedance: 8 ohms. Size: 30.5 × 24 × 58.25cm. Weight: 23.5lb. Teak or walnut finish. 3 position. High frequency level selector switch. Price: £110.82 per pair (plus VAT).

6G

Two-way bookshelf system. 1 × 10in woofer, 1 × 2in tweeter. FR: ± 5dB, 40Hz-18kHz. Impedance: 8 ohms. Frequency range: 35Hz-20kHz. Size: 36 × 29.5 × 65cm. Weight: 40lb. Teak or walnut finish. 3 position. High frequency level selector switch. Price: £190.00 per pair (plus VAT).

7G

Three-way bookshelf system. 1 × 12in woofer, 1 × 3 1/2in mid range, 1 × 1 3/4in tweeter. FR: ± 5dB, 40Hz-20kHz. Frequency range: 30Hz-20kHz. Impedance: 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: £233.52 per pair (plus VAT).

HD44

Infinite baffle speaker with 3 drive units. Crossover frequency: 2K, 8K. FR: 45Hz-18kHz ± 3dB. Imp: 8 ohms. Output: 20-25W. Dimensions: 28.5 × 21.5 × 48cms. Walnut finish. Price: £141.36 (plus VA1).

HD55

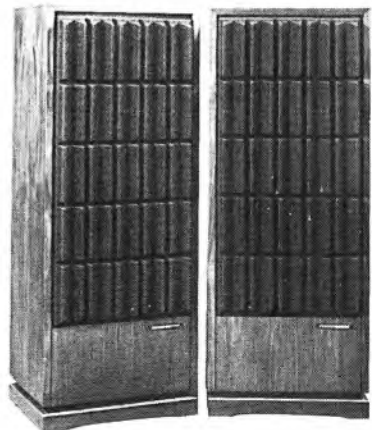
Infinite baffle speaker with 3 drive units. Crossover frequency: 1.2K, 4K. FR: 40Hz-20kHz ± 3dB. Imp: 8 ohms. Output: 35-40W. Dimensions: 30 × 24 × 98cms. Walnut finish. Price: £194.90 (plus VA1).

HD66

Infinite baffle and/or reflex with 3 drive units. Crossover frequency: 1K, 4K. FR: 33Hz-20kHz ± 3dB. Imp. 8 ohms. Output: 50-65W. Dimensions: 37 × 28 × 61cms. Walnut finish. Features: vari-Q pullout 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: £276.84 (plus VAT).

HD77

Infinite baffle and/or reflex with 4 drive units. Crossover frequency: 500Hz, 3kHz, 8kHz.



Marantz HD 88

★ Indicates entry is illustrated

FR: 30Hz-23kHz \pm 3dB. Imp: 8 ohms. Output: 70-90W. Dimensions: 36 \times 32 \times 65cms. Walnut finish. Same features as HD66. Price: £397.72 (plus VAT).

HD88 ★

Infinite baffle or reflex with 5 drive units. Crossover frequency: 500Hz, 3kHz, 8kHz. FR: 25Hz-25kHz \pm 3dB. Imp: 8 ohms. Output: 90W-125W. Dimensions: 38 \times 30 \times 106cms. Walnut finish. Same features as HD66. Price: £572.64 (plus VAT).

MISSION ELECTRONICS

Mission Electronics Ltd, 117-121
Wandsworth Bridge Road, London SW6.
Tel: 01-736 0987.

710

2-way infinite baffle enclosure. Drive Units: 210mm cone woofer, 25mm soft dome tweeter. FR: 40Hz-30kHz. Imp: 8 ohms. Output: 80W programme, 120W peak. Dimensions: 52 \times 29 \times 26cms. Teak walnut or rosewood white finish. Price per pair: £114.00 (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 \times 32 \times 32cms. Wood, walnut or teak finish. Price per pair: £199.00 (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 \times 32 \times 32cms. Walnut or teak finish. Price per pair: £299.00 (plus VAT).

MONITOR AUDIO

347 Cherry Hinton Road,
Cambridge CB1 4DJ. Tel: Cambridge 42898.

MA 1 series II

Reflex enclosure with units and crossover. One 13 \times 9in reinforced polystyrene wedge bass driver, one 7in plastic cone mid-range, one synthetic dome, tin tweeter. Crossover frequencies: 400Hz and 2.9kHz. FR: 45Hz-19kHz \pm 3.5dB. HC: 80W programme. Min. power: 20W. Impedance: 8 ohms. Size: 30 \times



Monitor Audio MA5 Series II

13.5 \times 15in. Weight: 60lb. Stand: 10in high, steel frame with castors. Price: £275.00 per pair (plus VAT). Stand extra.

MA 3 series II ★

Reflex enclosure with units and crossover. One 13.5 \times 9.2in bass driver, one 7in plastic cone mid-range driver, one damped mylar dome tin tweeter. Crossover frequencies: 400Hz and 3.5kHz. FR: 45Hz-18kHz \pm 3dB. HC: 125W programme. Impedance: 8 ohms. Size: 27 $\frac{3}{4}$ \times 13 $\frac{1}{4}$ \times 12 $\frac{1}{2}$ in. Highly damped enclosure with above average translation efficiency. Price: £356.00 per pair (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 tin. Frequency crossover: 3.2kHz. FR: 50Hz-18kHz \pm 3dB. Impedance: 8 ohms (nominal). Sensitivity: 12W for 96dB at 1m. HC: 75W programme. Size: 23.5 \times 12.5 \times 11in. Weight: 32lb. Price: £173.80 per pair (plus VAT). Stand available.

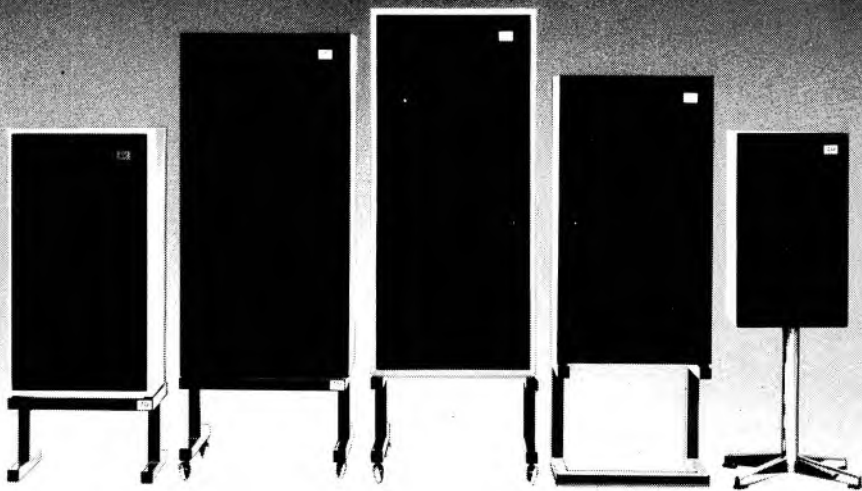
MA 5 series II ★

Infinite baffle enclosure with units and crossover. One plastic cone bass/mid-range driver 8in in diameter, one synthetic dome tweeter tin. Crossover: 2.9kHz. FR: 55Hz-19kHz \pm 3dB. HC: 50W programme. Min. power: 15W. Impedance: 8 ohms. Size: 22 \times 12 \times 10in. Weight: 26lb. Price: £138.50 per pair (plus VAT). Stand available.

MA 7 ★

Compact reflex enclosure with units and

Softspeakers



MA5 Series II

MA3 Series II

MA1 Series II

MA4

MAR (Super 7)

Monitor Audio loudspeakers sound impressive when driven at fairly high sound levels. So, with selected material, can some mediocre loudspeakers. However, normal domestic listening requires a more acceptable sound level.

Do lower levels then mean lower fidelity?

At low volume the Monitor Audio range of loudspeakers have the ability to uncover the intimate detail of softer sounds, like mellow strings and whispering woodwind, lost by so many ordinary loudspeakers.

When that crashing orchestral crescendo has died away, and the mood softened that velvet voice and those tinkling bells really do sound clean and spacial.

Please send me full colour brochures and independent test reports on the full range of Monitor Audio products.

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Address

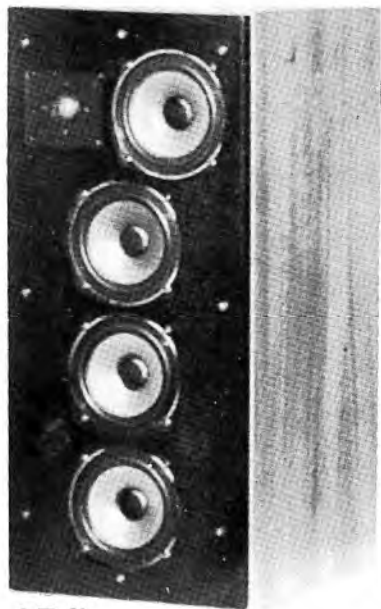
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 **Monitor
Audio Ltd**

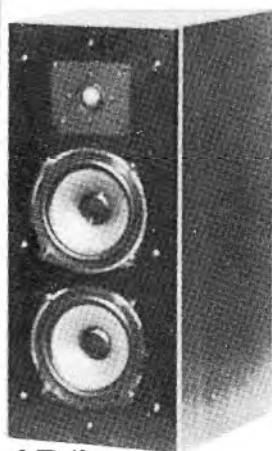
347 Cherry Hinton Road, Cambridge CB1 4DJ
Telephone (0223) 46344 & 42898

Monitor Audio make the right sounds in the right places

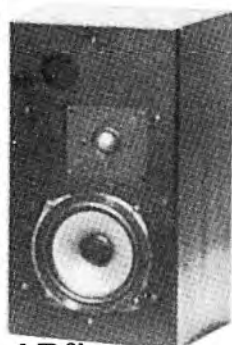
A 'New Generation' of Loudspeakers



MD 61



MD 41



MD 21

**They look different. They sound superb.
They all feature our new 'multi-driver'
technique.**

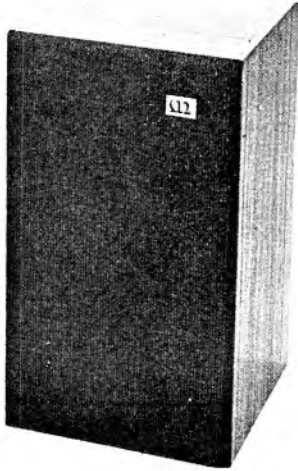
- For
- * Improved transient response
 - * Superior damping characteristics
 - * Low distortion and low colouration
 - * Smooth response

Farnell Acoustics Limited

Ashton Road, Bredbury, Stockport, Cheshire.



Specialist Manufacturers of High Fidelity Loudspeakers



Monitor Audio MA7

crossover. One 6.5in bass driver, one mylar dome tin dome tweeter. Crossover: 3kHz. FR: 70Hz-20kHz ± 4 dB, (overall) 40Hz-22kHz. HC: 30W programme. Min. power: 8W. Impedance: 8 ohms. Size: 16 \times 9 \times 8in. Weight: 15lb. Price: £87.92 per pair (plus VAT).

■ MORDAUNT-SHORT

Mordaunt-Short Ltd, Durford Mill, Petersfield, Hampshire GU31 5AZ. Tel: Rogate 721/2.

Carnival Series 2 ★

Infinite baffle. Bookshelf enclosure. Drive unit 208mm DSB 208 bass/mid frequency unit: 68mm cone high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 45-20,000Hz, 85-17,000Hz ± 3 dB. Impedance: 8 ohms. 10-80W per channel. Size: 24.1 \times 14.5 \times 40cm. Weight: 5.9kg. Teak/walnut veneer. Dual DIN/leads supplied. Price: to be advised.

Festival Series 2 ★

Infinite baffle. Bookshelf enclosure. Drive Units: 208mm DSB 208 mid/bass, 19mm dome high frequency unit. Crossover frequency: 3,500Hz. Frequency range: 35-25,000Hz, 75-20,000Hz ± 3 dB. Impedance: 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 ★

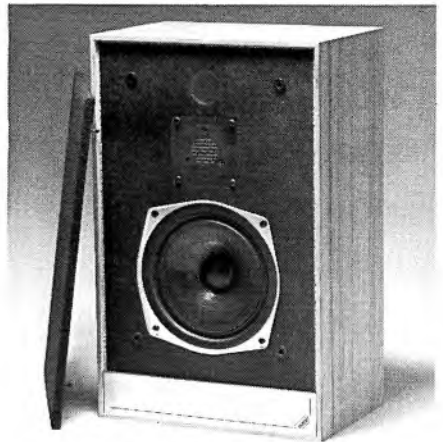
Reflex enclosure. Drive units 208mm DSB 208 bass/mid 25mm dome high frequency unit. Crossover frequency: 3,500Hz. Frequency



Mordaunt Short Carnival Series 2



Mordaunt-Short Festival Series 2



Mordaunt-Short Pageant Series 2

★ Indicates entry is illustrated

range: 25-25,000Hz. 65-20,000Hz \pm 3dB. Impedance: 8 ohms. 15-100W per channel. Size: 33 x 23 x 53.3cm. Weight: 10.1kg. Teak/walnut veneer. Mid and upper frequency ranges controlled by separate switches. Dual DIN/push-lock connectors. Connecting plugs leads supplied. Price: to be advised.

■ NIGHTINGALE

Nightingale Acoustics, 51 Beatty Road, Eastbourne, Sussex.
Tel: Eastbourne 37845.

NMI ★

Labyrinth enclosure with 280 x 204mm bass, 102mm mid and 25.4mm top units. Crossover frequency: 525, 3,550. Imp: 8 ohms. Output: 25-100W. Dimensions: 40.6 x 28.6 x 85.6cms. Finish: teak, walnut, rosewood, white. Price per pair: £280 (plus VAT).

■ 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 x 18 x 33cms. Black finish. Price per pair: £93.33 (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% at W. Crossover frequency: 1.4kHz. Size: 22.9 x 18.4 x 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 frequencies: electronic crossover at 500Hz and passive crossover at 3kHz. Power consumption: 150W max. Size: 28.7 x 22.8 x 38.7cm. Black ash veneer finish. Motional feedback system. Two built-in amplifiers. 20W (treble), 40W (bass) RMS. Price: on application.

RH 545

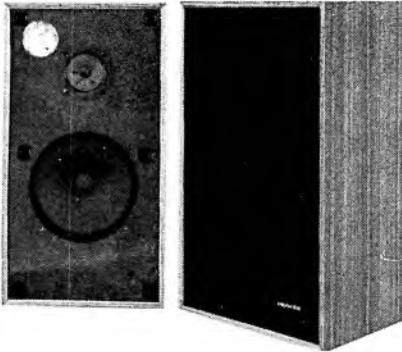
Infinite baffle enclosure with 12ins woofer, 2ins dome squawker, 1in dome tweeter. Crossover frequencies: 500, 3,000Hz. FR: 20Hz-



Nightingale NM1



Philips RH541



Pioneer CS-313

20kHz. Imp: 10K ohms (balanced) 100K ohms (asymmetrical). Integral power amplifiers requiring only pre-amp. Dimensions: 55.5 x 42.2 x 76.2cms. Black ash finish. Motional feedback enclosure with extensive filters. 3 integral power amplifiers totalling 100W. Price: on application.

AH 666

Infinite baffle enclosure with 8ins woofer. 2ins dome squawker. 1in dome tweeter. Crossover frequencies: 580, 3,000Hz. FR: 35Hz-20kHz. Imp: 4 ohms. Dimensions: 32 x 22.5 x 48cms. Black ash finish. Price: on application.

■ **PIONEER**

Shiro (UK) Ltd. Shiro House. The Ridgeway. Iver. Buckinghamshire SL0 9JL. Tel: Iver 652222/7.

HPM 60 F

Bass 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-25kHz. Impedance: 8 ohms. Max. power: 60W. Size: 35 x 32.1 x 61cm. Weight: 17.5kg. Walnut finish. Price: on application.

HPM 40

Bass reflex: Woofer 25cm, tweeter 4.5cm, super tweeter - high polymer type. Crossover frequency: 4,000Hz/10,000Hz. Frequency range: 35Hz-25kHz. Impedance: 8 ohms. Max. input: 40W. Size: 32.5 x 31.7 x 57cm. Weight: 13kg. Walnut finish. Bass and mid range speaker use carbon fibre drive units. Price: on application.

CS-313A ★

Bass reflex enclosure. Bass 20cm, tweeter 7.7cm. FR: 50Hz-20kHz. Sensitivity: 1W for

93dB at 1m. Maximum input power: 20W. Impedance: 8 ohms. Two drive units. Crossover frequency: 5kHz. Size: 27 x 50 x 23cm. Weight: 64kg. Finish: walnut. Price: on application.

HPM 150

Base reflex enclosure with 390mm woofer, 110mm mid, 45mm tweeter and high polymer super tweeter. FR: 20Hz-25kHz. Imp: 8 ohms. Output: 15W. Walnut finish. Price: on application.

HPM 100

Base reflex enclosure with 300mm woofer, 100mm mid, 45mm tweeter and high polymer super tweeter. Crossover frequency: 1,200Hz/4,000Hz/12,000Hz. FR: 30Hz-25kHz. Imp: 8 ohms. Output: 100W. Dimensions: 39 x 39.3 x 67cms. Walnut finish. Price: on application.

CSF 731

Infinite baffle enclosure with 300mm woofer, 65mm mid, 25mm tweeter. Crossover frequency: 650Hz to 5kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Output: 50W rated 100W max. Dimensions: 38 x 30.6 x 66cms. Walnut finish. Price: on application.

CSF 531

Infinite baffle enclosure with 250mm woofer, 65mm mid, 25mm tweeter. Crossover frequency: 900Hz to 5kHz. FR: 35Hz-20kHz. Imp: 8 ohms. Output: 40W rated, 80W max. Dimensions: 33 x 30.6 x 57cms. Walnut finish. Price: on application.

CSF 421

Infinite baffle enclosure with 200mm woofer and 25mm tweeter. Crossover frequency: 5kHz. FR: 35Hz-25kHz. Imp: 8 ohms. Output: 30W rated, 60W max. Dimensions: 26 x 24 x 50cms. Walnut finish. Price: on application.

CSF 321

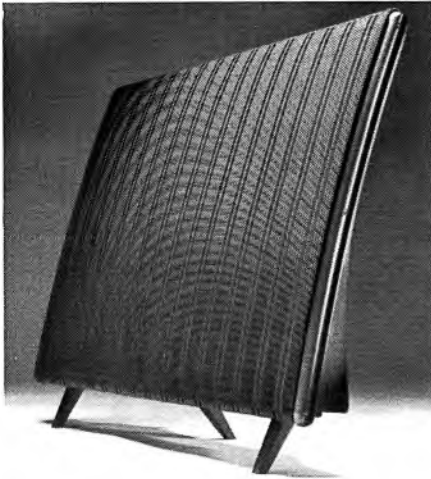
Infinite baffle enclosure with 200mm woofer and 25mm tweeter. Crossover frequency: 4kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Output: 20W rated, 40W max. Dimensions: 24 x 22.2 x 45cms. Walnut finish. Price: on application.

■ **QUAD**

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

Quad Electrostatic ★

Full range electrostatic loudspeaker. FR:



Quad Electrostatic



Realistic Optimus-X

45Hz-18kHz. Impedance: 15 ohms. Amplifier requirements: 15W min, 33 peak volts max. Dimensions: 88 × 27 × 79cm. Weight: 18kg. Finish: black or bronze anodised grille. Price: £320.00 per pair (plus VAT).

■ REALISTIC

Tandy Corporation (Branch UK), Bilston Road, Wednesbury, West Midlands WS10 7JN.
Tel: 021-556 6101.

Optimus-X ★

Bookshelf speaker. Drive units: 203mm woofer, 31mm voice coil, 37mm dome mid, 25mm tweeter. FR: 40Hz-25kHz. Imp: 8 ohms. Output: 50W. Dimensions: 44 × 29 × 23.5cms. Price: £69.50 (plus VAT).

■ REVOX

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

AX2/2

FR: 45Hz-20kHz. 30 watts, 4 ohms. THD: 1% (85Hz-20kHz). Size: 245 × 390 × 214mm. Price £75 each (plus VAT).

AX3/3

FR: 35Hz-20kHz. 40 watts, 4 ohms. THD: 1% (80Hz-20kHz). Size: 264 × 474 × 214mm. Price: £100 each (plus VAT).

AX4/3

FR: 30Hz-20kHz. 60 watts, 4 ohms. THD: 1% (70Hz-20kHz). Size: 315 × 560 × 250mm. Price: £127 each (plus VAT).

AX5/4

FR: 25Hz-20kHz. 100 watts, 4 ohms. THD: 1% (55Hz-20kHz). Size: 390 × 650 × 340mm. Price: £185 each (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. Impedance: 8 ohms. Size: 30 × 30 × 63cms. Height with stand: approx. 93cm. Teak or walnut finish. Power handling: 50W RMS 100W speech and music. Price: £210 per pair (plus VAT).

BBC 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 or walnut. Price: £135 per pair (plus VAT).

Compact Monitor ★

1B 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 × 56cms. Price: £159.50 per pair (plus VAT).



Rogers Export Monitor

■ SANSUI

Vernitron Ltd, Thornhill,
Southampton.
Tel: Southampton 444811.

ES50

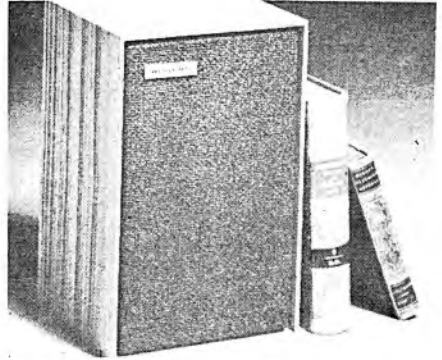
Woofer 20cm, tweeter 1.9cm. Max Power: 35W. Nominal Power: 20W. Impedance 8 ohms. Frequency range: 45-20,000Hz. Crossover frequency: 3,000Hz. Semi-damped bass reflex type. Size: 25 × 48 × 24cm. Weight: 7.8kg. Walnut, Teak and Palisander finish. Price: £36.47 each (inc. VAT).

ES200

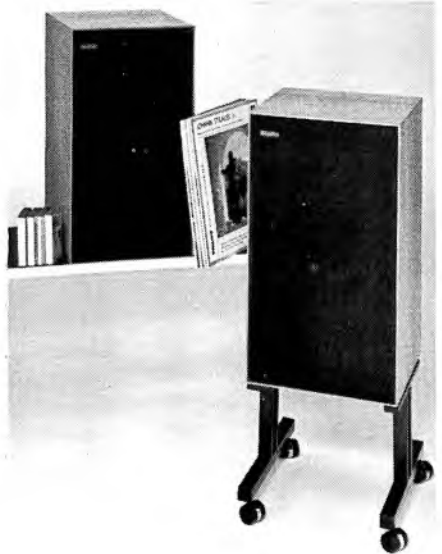
Woofer 25.5cm, Midrange 3.5cm, Tweeter 1.9cm. Max. Power: 50W. Nominal Power: 35W. Impedance: 8 ohms. Frequency range: 30-20,000Hz. Crossover frequency: 1,500Hz, 6,000Hz. Size: 31.4 × 59.6 × 29.3cm. Weight: 20kg. Price: £59.03 each (inc. VAT).

LM330

Woofer 25.5cm, Tweeter 6.5cm. Power rating: 60W. Impedance: 8 ohms. Frequency range: 31 to 20,000Hz. Crossover frequency: 1,500Hz. Size: 31 × 71 × 30.4cm. Weight: 20.7kg. Walnut grain finish. Price: £82.47 each (inc. VAT).



Rogers BBC Monitor LS35A



Rogers Compact Monitor

LM220

Woofer 20.5cm, tweeter 6.5cm. Power rating: 45 Watts. Impedance: 8 ohms. Frequency range: 32-20,000Hz. Crossover frequency: 2,000Hz. Size: 27.8 × 62 × 25cm. Weight: 13.6kg. Walnut grain finish. Price: £61.87 each (inc. VAT).

LM110

Woofer 16.5cm, tweeter 6.5cm. Power rating: 35W. Impedance: 8 ohms. Crossover frequency: 2,000Hz. Frequency range: 38-20,000Hz. Size: 24.8 × 53.4 × 19.4cm. Weight: 18.2kg. Walnut grain finish. Price: £49.92 each (inc. VAT).

★ Indicates entry is illustrated

■ 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. Price: teak £55.76, walnut/lacquered £58.94, rosewood £68.41 (all plus VAT).

■ 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 \pm 3dB. Imp: 8 ohms. Output: 12W. Dimensions: 25 \times 24 \times 46cms. Teak finish. 9 element crossover. Price per pair: £97.62 (plus VAT).

AL12

Acoustic Labyrinth enclosure with 210mm and 25mm drive units. Crossover frequency: 3.5kHz. FR: 40Hz-25kHz DIN, 50Hz-20kHz \pm 3dB. Imp: 8 ohms. Output: 20W. Dimensions: 29 \times 30 \times 60cms. Teak finish, walnut to order. 10 element crossover. Trolley available. Price per pair: £145.21 (teak), £150.57 (walnut) plus VAT.



Sony SS5050

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 \pm 3dB. Imp: 8 ohms. Output: 20W. Dimensions: 32 \times 36 \times 64cms. Teak or walnut finish. Price per pair: £194.67 (plus VAT).

AL50

Acoustic Labyrinth with drive units: 300 \times 210mm low, 120mm mid and 19mm high. Crossover frequency: 500Hz, 3.5kHz. FR: 25Hz-40kHz (DIN), 35Hz-25kHz \pm 3dB. Imp: 8 ohms. Output: 15-100W. Dimensions: 38 \times 43 \times 73cms. Price per pair: £422.22 (plus VAT).

■ SONY

Sony (UK) Ltd, Consumer Information, Sony Showroom, 134, Regent St, London W1R 6DJ
Tel: 01-439 3879

SS3050

Infinite baffle. Woofer 25cm, tweeter 6cm, super tweeter. Crossover frequency: 2.5kHz, 12kHz. FR: 40-20,000Hz. 8 ohms. Output sound pressure 91dB/W/m. Handling power: 70 W max DIN. Size: 31.5 \times 29 \times 5.8cm. Price: £127.92.

SS5050 ★

Infinite baffle. Woofer 30cm, mid-range 3.5cm, Tweeter 2.5cm. Crossover frequency: 800Hz (-12dB/octave) 9kHz (-12dB/octave). FR: 40-20,000Hz DIN. Impedance: 8 ohms.

Handling Power: 80 W RMS. Size: 36.5 × 31.8 × 63cm. Weight: 20kg. Walnut finish. Price: £199.92 (plus VAT).

SS 1030

IB enclosure with 160mm bass and 50mm treble. FR: 80Hz-20kHz. Imp: 8 ohms. Dimensions: 26 × 18 × 41cms. Teak finish. No rec. retail price.

SS 1050

IB enclosure with 160mm bass and 50mm treble. Crossover frequency: 5kHz. FR: 50Hz-20kHz. Imp: 8 ohms. Dimensions: 25 × 13 × 44cms. 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 × 50cms. Teak or walnut finish. Removable front. No rec. retail price.

SS 2050

Dimensions: 29 × 23 × 54cms. Other details as SS 2030.

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 × 54cms. Teak or walnut finish. Removable front. 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 8in plastic cone bass driver, one Celestion HF1300 mid-range unit, one STC 4001G tweeter. Crossover: 3kHz and 13kHz. FR: 45Hz-25kHz (±3dB 60Hz-14kHz). HC: 40W peak programme. Impedance: 8 ohms. Main driver based on BBC design with resin-bonded voice coil. Size: 25 × 11³/₄ × 12in. Finish: teak standard (rosewood, walnut or white to order). Price: on application. Trolley optional extra.

BCII

Reflex enclosure with units and crossover. One 8in plastic cone bass driver, one Celestion HF1300 mid-range unit, one STC 4001G twee-



Spendor BCIII

ter. Crossover: 3kHz, 13kHz. FR: 45Hz-25kHz (60Hz-14kHz ±3dB). HC: 50W peak programme. Impedance: 8 ohms. Bass driver developed by Spendor with 1¹/₂in diameter resin-bonded voice coil. Size: 25 × 11³/₄ × 12in. Finish: teak standard (rosewood, walnut or white to order). Price: on application. Trolley optional extra.

BCIII ★

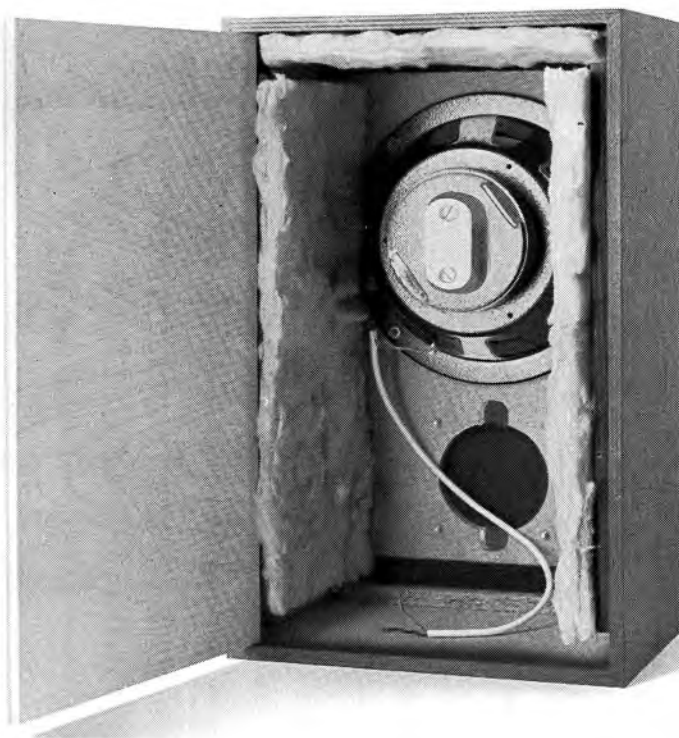
Reflex enclosure with units and crossover. One Spendor 12in bass driver, one 8in mid-frequency unit, one Celestion HF1300 HF unit, one Celestion HF2000 tweeter. Crossover: 700Hz, 3kHz and 13kHz. FR: 30Hz-20kHz (50Hz, 14kHz ±2¹/₂dB). HC: 70W peak programme. Impedance: 8 ohms nominal. Size: 31¹/₂ × 15¹/₂ × 15¹/₂in. Weight: 75lb. Finish: teak (white, walnut, rosewood to order). Price: on application. Trolley optional extra.

SA1

Mini monitor IB enclosure with Spendor plastic 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 × 30.4cms. Finish: teak, walnut, rosewood, black oak. Price: on application.

■ STRATHEARN

Strathearn Audio Ltd, Kennedy Way Industrial Estate, Belfast BT11 9BL. Tel: Belfast 623231/611100.



Where other people give you flannel,

For many years, speakers have been made to the same traditional design. This imposes a lot of restrictions on the size and performance of the speaker.

Philips have used modern electronics to overcome these restrictions.

We've started a revolution in speaker design that will become the basis for a complete hi-fi system.

We have used our experience and our exceptional research facilities to design the cleverest, most faithful speakers you have ever heard.

They work on a brilliant new principle called Motional Feedback.

An MFB speaker gives you amazingly lifelike sound without colouration from a very

small enclosure. Too good to be true? Here's how it works.

THE SELF-CORRECTING SPEAKER.

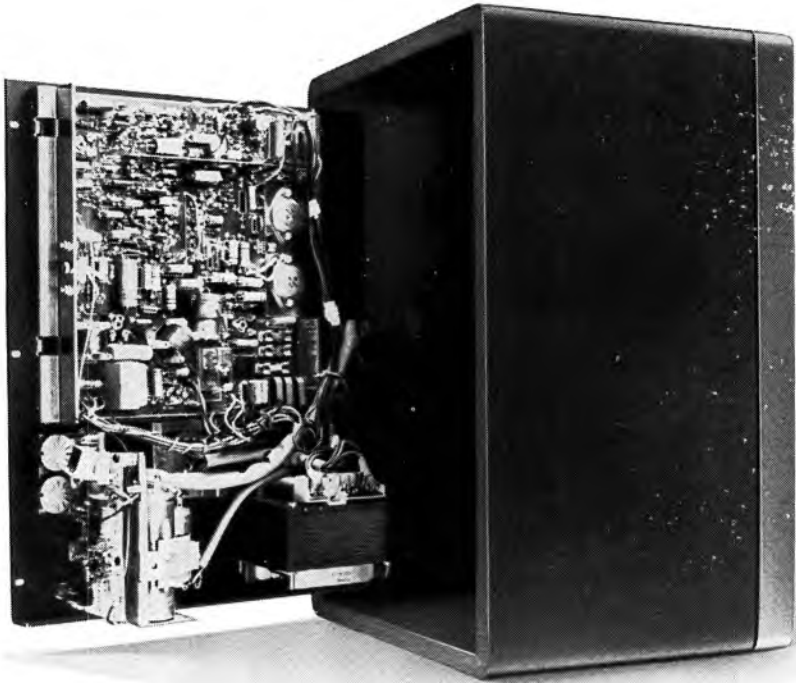
It is the low notes that cause the trouble in speaker design. The speaker has to handle vast amounts of power so it can easily go wrong.

The only way out was to build cumbersome enclosures with drive units large enough to translate the immense volume of air.

Until Philips had a very bright idea.

Why not build a speaker that can correct itself? That's the key to Motional Feedback. It's a system that corrects the notes before they leave the cabinet.

PHILIPS



Philips give you power.

Our ingenious plan was to mount a small sensing device at the base of the drive unit. This 'transducer' assumes that the output signal is wrong and feeds it back to a 'comparator.'

This signal is measured and compared to the original input signal from your disc or tape. If there is any difference, it immediately corrects it.

THE SPEAKER WITH THE BUILT-IN AMPLIFIER.

Every MFB speaker contains its own power amplifiers. Instead of a lot of air in a big box, we have fitted the elaborate electronic circuitry of the self-correcting system inside the speaker.

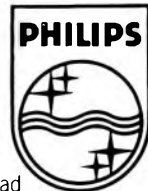
These built-in amplifiers will, of course,

increase the wattage of your present equipment to 30, 60 or 100 watts per channel depending on the MFB speakers you are using.

They will, also, allow the very brave to string 100 watt MFB speakers together to produce a record breaking 2000 watts per channel.

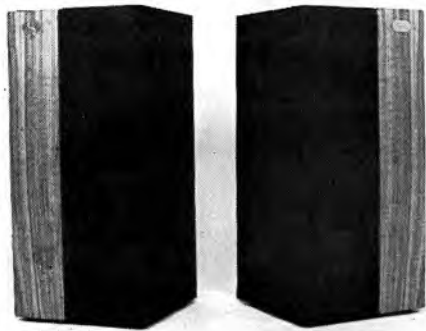
(And that's enough power for anyone!)

If you would like to know more about the Motional Feedback system, write for our brochure to Philips Electrical Limited, Dept SP, P.O. Box 3, Horley, Surrey.



Simply years ahead

★ Indicates entry is illustrated



Strathearn SLA2

SLA2 ★

Infinite baffle for low frequencies using L.F driver with planar composite diaphragm. Mid and high frequencies generated by unique design and distributed motor principle. Drive units: 1 × 230mm, 1 × 590 × 125mm. Crossover frequency: 550Hz. FR: 45Hz-30kHz. Imp: 4-8 ohms. Output: 30-100W per channel. Dimensions: 33 × 33 × 71.5cms. Finish: American walnut, Canadian white elm. Speaker stands recommended and available. Price per pair: £237.33 (plus VAT). Stands extra.

■ STUДИOCRAFT

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

Model 110

Ported reflex enclosure with two drive units. Impedance: 4 ohms. Amplifier requirements: 5W. Dimensions: 9 × 7½ × 14in. Weight: 13lb each. HC: 40W RMS. Sold in matched pairs. Finish: walnut grained effect veneer. Price: £79.00 per pair (plus VAT).

Model 220

Ported reflex enclosure with two drive units. One 8in bass and one 1¼in tweeter. Impedance: 8 ohms. Amplifier requirements: 8-10W. Dimensions: 12 × 8 × 20in. Weight: 16lb each. Finish: walnut grained effect veneer. HC: 50W RMS. Sold in matched pairs. Price: £104.50 per pair (plus VAT).

Model 330

Ported reflex enclosure with three drive units. One 8in bass and two 1¼in tweeter in convex array. Impedance: 8 ohms. Amplifier requirements: 10W. Dimensions: 13½ × 9 × 21½in.

Weight: 20lb each. Finish: walnut grained effect veneer. HC: 60W RMS. Sold in matched pairs. Price: £139.00 (plus VAT).

Model 440

Infinite baffle enclosure with three units. One 10in bass and two 3in tweeters in convex array. Impedance: 4 ohms. Amplifier requirements: 15W. Dimensions: 15½ × 11½ × 25½in. Weight: 24lb each. Finish: walnut grained effect veneer. HC: 100W RMS. Sold in matched pairs. Price: £194.50 (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. Impedance 8 ohms. Max Power: 50 W. Size: 35 × 20 × 50.5cm. Teak and Rosewood finish. Price: Teak £192.00 Rosewood £209.71 per pair (plus VAT).

TL2520

Closed cabinet. Drive Units: 8, 3¾, 2in. FR: 45-20,000Hz. Impedance: 8 ohms. Max Power: 40 W. Size: 26 × 18 × 46.2cm. Teak and Rosewood finish. Price: Teak £153.00 Rosewood £172.00 (plus VAT).

Studio Monitors ★

Closed cabinet. 12in, 2in dome, tweeter 2 × 1in dome. Crossover frequency: 600, 35,000Hz. FR: 25-20,000Hz. Impedance: 8 ohms. Max Driving Power: 100 W. Black or Teak finish.



Tandberg Studio Monitor

Price: £496.00 per pair (plus VAT). Rosewood £528.90 (plus VAT).

TL5020

Closed cabinet. 12in, 5in, 2 × 1in, drive units. FR: 35-20,000Hz. Impedance: 8 ohms. Max Driving Power: 60 W. Size: 31 × 22.2 × 58cm. Teak and Rosewood finish. Price: Teak £2256.00 Rosewood £282.68 per pair (plus VAT).

Fasett

Closed cabinet. 5in woofer 2 1/4in tweeter. FR: 50-20,000Hz. Impedance 4 ohms. Max driving power: 25 W. Size: 22 × 18 × 24cm. Orange, Black or White finish. Price: £76.44 per pair (plus VAT).

TL1520

Closed cabinet. 7in woofer, 2in tweeter. FR: 50-20,000Hz. Impedance: 4 ohms. Max Driving Power: 30 W. Size: 22 × 18 × 35cm. Teak and Rosewood finish. Price: Teak £97.78 Rosewood £106.68 per pair (plus VAT).

■ TANNOY

Tannoy Products Ltd,
St Johns Road, Tylers Green,
High Wycombe, Bucks. HP10 8HR.
Tel: Pen. 5221.

Arden ★

Power handling: 85 W. Impedance: 8 ohms. FR: 30-20,000Hz ±4dB. Sensitivity: 3W input at 400Hz for 96dB at 1 metre. Crossover frequency: 1000Hz at 12dB per octave. Size: 99 × 66 × 37cm. Weight: 56kg. Walnut, Ash/teak with Brown Sand or Blue grille finish. Price: to be announced.

Berkeley

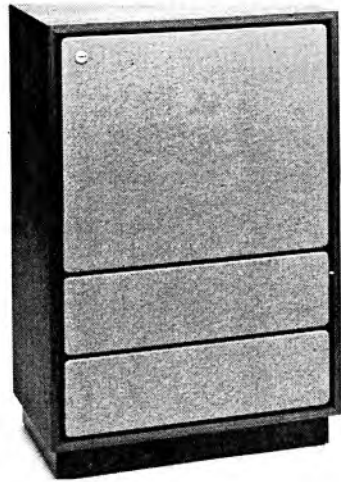
Power handling: 85 W. Impedance: 8 ohms. FR: 35-20,000Hz ±4dB. Sensitivity: 3W input at 400Hz for 96dB at 1m. Crossover frequency: 1000Hz. Size: 84 × 54 × 31cm. Weight: 41kg. Walnut, Ash/Teak with Brown Sand or blue grille finish. Price: to be announced.

Cheviot

Power Handling: 60 W. Impedance: 8 ohms. FR: 40-20,000Hz ±4dB. Sensitivity 5W at 400Hz for 96dB at 1m. Crossover frequency: 1000Hz 12dB per octave. Size: 85 × 45 × 26cm. Weight: 30kg. Walnut, Ash/Teak with Brown Sand or blue grille finish. Price: To be announced.

Devon

Power Handling: 60 W. Impedance: 8 ohms.



Tannoy Arden

FR: 45-20,000Hz ±4dB. Sensitivity: 5W at 400Hz for 96dB at 1m. Crossover frequency: 1000Hz 12dB per octave. Size: 62.5 × 45.2 × 26cm. Weight: 21kg. Walnut, Ash/Teak with Brown grille finish. Optional extra Sand or Blue grille. Price: To be announced.

Eaton

Power Handling: 50 W. Impedance: 8 ohms. FR: 50-20,000Hz ±4dB. Sensitivity: 7 W at 400Hz for 96dB at 1m. Crossover frequency 1000Hz at 12dB per octave. Size: 52 × 35 × 25cm. Weight: 18kg. Walnut, Ash/Teak with Brown grille finish. Optional extra Sand or Blue grille. Price: to be announced.

■ TECHNICS

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

SB-4500 ★

Two speaker bass reflex addition to the Technics "flat-phase" range. Two speaker units are placed as close together as possible to produce even sound distribution. 25cm, 6cm drive units. Crossover frequency: 2kHz. Peak input up to 75W. Dimensions: 35 × 63.1 × 32.5cms. Imp: 8 ohms. FR: 350Hz-28kHz. Teak finish with black cloth grille. No rec. retail price.

SB-7000

Linear phase 3-way speaker system. Large 35cm woofer using TC triple layer with blended aramid fibre. 12cm cone midrange, 3.2cm low distortion tweeter. Impedance: 6

★ Indicates entry is illustrated



Technics SB-4500

ohms. Output: 150W. Black finish. Dimensions: 48 × 84.5 × 41cms. No rec. retail price.

SB-6000

Linear phase 2-way speaker system. 30cm woofer using aramid fibre blended cone for low

distortion. 3.2cm low distortion dome tweeter mounted on diffraction equaliser bracket. Impedance: 6 ohms. Output: 100W. Dimensions: 42.5 × 84.6 × 34cms. Black finish. No rec. retail price.

SB-5000

Linear phase 2-way speaker system. 25cm cone woofer, 6cm cone tweeter. Impedance: 8 ohms. Dimensions: 35 × 71.7 × 32.3cms. Other details as SB-4500. No rec. retail price.

SB-501

Acoustic suspension 3-way 3-speaker system. 30cm linear core woofer, 6.5cm dome mid-range, 2.5cm dome tweeter. Impedance: 8 ohms. FR: 20Hz-30kHz. Crossover frequency: 600Hz 4kHz. Output: 60W. Dimensions: 38 × 66 × 32.3cms. Finish: walnut with black cloth grille. No rec. retail price.

SB-402

Acoustic suspension 3-way 3-speaker system. 25cm linear core woofer, 3.2cm dome mid-range, 2.5cm dome tweeter. Impedance: 8 ohms. FR: 38Hz-20kHz. Crossover frequency: 1.5kHz, 7kHz. FR: 38Hz-20kHz. Output: 55W. Dimensions: 34 × 60 × 31.8cms. Finish: walnut with black cloth grille. No rec. retail price.

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 116dB_A at 1 metre.

Ask for details of both the Electronic and the Passive versions quoting Ref. No. HFYB/5/78



**CHARTWELL
ELECTRO-ACOUSTICS
LIMITED**

2 Commonsides East,
Mitcham, Surrey, CR4 1HX,
England.
Tel: 01-648 4494/5
01-640 7426/7

A name worth listening to



SB-302

Acoustic suspension 3-way, 3-speaker system. 25cm linear core woofer, 12cm cone midrange, 2.5cm titanium dome tweeter. Impedance: 8 ohms. FR: 40Hz-20kHz. Crossover frequency: 1.25kHz, 7kHz. Output: 50W. Dimensions: 30.2 × 55 × 28.2cms. Finish: walnut with black cloth grille. No rec. retail price.

SB-102

Two speaker acoustic suspension. Drive units: 20cm woofer, 2.5cm dome tweeter. Crossover frequency: 4kHz. FR: 45Hz-20kHz. Imp: 8 ohms. Rec. amplifier output: 36W max. Dimensions: 25.4 × 45.5 × 21.3cms. Finish: walnut, black cloth front grille. No rec. retail price.

SB-202

Acoustic suspension 2-way 2-speaker system. 20cm linear core woofer, 2.5cm titanium dome tweeter. FR: 45Hz-20kHz. Impedance: 8 ohms. Crossover frequency: 4kHz. Output: 36W. Dimensions: 28 × 49 × 25.7cms. Finish: walnut, black cloth front grille. No rec. retail price.

■ TELEFUNKEN

AEG-Telefunken (UK) Ltd, Bath Road, Slough. Tel: Slough 33311.

TL800

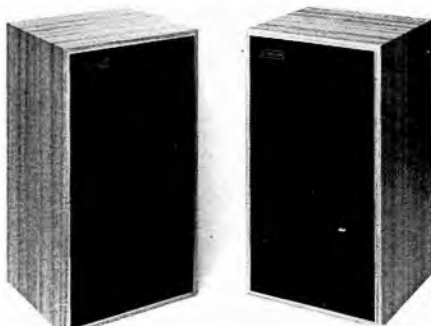
4-way performance standard speaker with 4 loudspeaker systems including 2 spherical loudspeakers. Rated capacity: 60W. Max capacity: 100W. FR: 25Hz-20kHz. Crossover frequencies: 500Hz, 900Hz and 6kHz. One 9½in woofer, one 5in medium-level loudspeaker, one 1¾in diameter medium-level loudspeaker, one 1¼in diameter spherical tweeter. Size: 42 × 30.7 × 58cm. Finish: light matt walnut with genuine veneer or pearl-white finish. Stand included. Price: £165.00 (plus VAT).

■ TELETON

Teleton Electro (UK) Ltd, Teleton House, Waterhouse Lane, Chelmsford, Essex. CMI 3DW. Tel: Chelmsford 62442.

ND40B

Infinite baffle. FR: 45Hz-25kHz. Power Handling Capacity: 25 W RMS-40 W music. Impedance: 8 ohms. Drive Units: 6¼in bass and mid-range, 3½in upper range. Size: 35 × 21.5 × 11cm. Price: on application.



Teleton LS203

LS203 ★

Infinite baffle. FR: 40Hz-22kHz. Rec Amp Music Power rating: 10-40 W. Sensitivity: 4.4 W 96dB at 1m. Impedance: 4-8 ohms. Drive Units: 8in Bass and mid range, 3¾in upper range. 2 pin DIN plug. Size: 48 × 26 × 25cm. Price: on application.

■ TOSHIBA

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

SS-200

Two-way infinite baffle system. 2 drive units. FR: 50Hz-20kHz. HC: 15W. Impedance: 8 ohms. Size: 250 × 495 × 195mm. Price: £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. Impedance: 8 ohms. Size: 30 × 29 × 59.5cm. Weight: 11kg. Woodgrain finish. Removeable 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. Impedance: 8 ohms. Size: 30.8 × 29.4 × 54.8cm. Weight: 15kg. Woodgrain finish. Removeable grill, 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-20dB. Imp: 6 ohms. Dimensions: 34 × 33 × 55cms. 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 -20dB. 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

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 × 42cms. Simulated walnut finish. Price per pair: £79.55 (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 × 60cms. Matt hammer finish. Variable mid and tweeter controls. Price: to be announced.

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 × 68cms. Matt hammer finish. Variable mid and tweeter controls. Price: to be announced.



Trio LS202A

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-20kHz. Impedance: 8 ohms. Amplifier requirements: up to 50 W. Dimensions: 15 × 22 × 26cm. Weight: 4.3kg. Finish: teak, walnut. Output: 10-40W Price: £50.00 per pair (plus VAT).

Saphir 1 (DP202E)

Infinite baffle loudspeaker enclosure. Drive units: one 200mm woofer, one 100mm tweeter. Crossover frequency: 3.2kHz. FR: 45Hz-20kHz. Impedance: 8 ohms. Amplifier requirements: 6-40W. Dimensions: 23.5 × 22.5 × 39.5cm. Weight: 5.7kg. Finish: teak or walnut, black or brown. Price: £60.00 per pair (plus VAT).

Supermax (D402F)

Infinite baffle loudspeaker enclosure. Drive units: two 250mm woofers, two 100mm mid-range units, two 25mm tweeters. Crossover frequency: 1.9kHz. FR: 30Hz-20kHz. Impedance: 8 ohms. Amplifier requirements: 6-60W. Dimensions: 36 × 26 × 67cm. Weight: 21.5kg. Finish: teak with brown grille. Price: £120.00 per pair (plus VAT).

WHARFEDALE

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

WORDEN

Worden Audio Developments Ltd, 54 Chepstow Road, London, W2 5RE. Tel: 01-229 4996.

Panasona Reproducer

Double horn with diffusing chamber. Corner reproducer, designed for near plane-wave distribution from single speaker unit. Available in three versions: Model A size 60.9 × 35.8 × 137cm. FR with Lowther PM6 Mk1 or PM7 20Hz to over 18kHz. Model B size 54.6 × 31.8 × 121.8cm. FR with Lowther PM6 or PM6 Mk1 30Hz to over 18kHz. Model C size 60.9 × 33 × 68.5cm. FR: with Lowther PM6 or PM6 Mk1 40Hz to over 18kHz. Prices: Model A (speaker enclosure only) £125.00; Model B (enclosure only) £100.00; Model C (enclosure only) £75.00.

Panosona Bookshelf Speaker

Designed in accordance with the principles of the Panosona Corner Reproducers. Size: 22.9 × 24.2 × 40.6cm. Standard finish: teak. Other finishes to order. Contrasting Tygan or Vynair front covering. Price: £90.00 complete, including full range drive unit.

■ **WYE**

Wye Electronics Ltd, 27 Station Road, Brimington, Chesterfield, Derbyshire S43 2JJ. Tel: Chesterfield 70297.

801

Infinite baffle speaker enclosure. Two drive units. Crossover frequency: 3kHz. FR: 40Hz-18kHz. Impedance: 8 ohms. Amplifier requirements: 15W. Dimensions: 33 × 20 × 55.6cm. Finish: teak. Price: £54.96 (per pair) (plus VAT).

■ **YAMAHA**

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

NS 1000

Speaker enclosure with units. Drive units: 300 × 88 × 30mm. Crossover frequencies: 500Hz and 6kHz. FR: 40Hz-20kHz. Impedance: 8 ohms. Amplifier requirements: 70-200W. Dimensions: 395 × 326 × 710mm. Weight: 39kg. Finish: ebony. Two level controls. Price: £710.00 (per pair) (plus VAT).

NS 1000M

Speaker enclosure with units. Drive units: 300 × 88 × 30mm. Crossover frequencies: 500Hz

and 6kHz. FR: 40Hz-20kHz. Impedance: 8 ohms. Amplifier requirements: 70-200W. Dimensions: 375 × 326 × 675mm. Weight: 31kg. Finish: black. Two level controls. Price: £577.30 (per pair) (plus VAT).

NS 645

Speaker enclosure with units. Drive units: 250 and 45mm. FR: 40Hz-20kHz. Impedance: 4 ohms. Amplifier requirements: 20-60W. Dimensions: 300 × 259 × 540mm. Weight: 14.6kg. Finish: American walnut. Tweeter level control. Price: £159.84 (per pair) (plus VAT).

NS 625

Speaker enclosure with units. Drive units: 200 and 45mm. FR: 45Hz-20kHz. Amplifier requirements: 20-50W. Dimensions: 280 × 249 × 500mm. Weight: 11.6kg. Finish: American walnut. Tweeter level control. Price: £124.32 (per pair) (plus VAT).

NS 430

Bass reflex enclosure with units. Drive units: 250 and 40mm. FR: 50Hz-20kHz. Impedance: 8 ohms. Amplifier requirements: 10-25W. Finish: American walnut with black front. Price: £102.12 (per pair) (plus VAT).

NS 410

Infinite baffle enclosure with units. Drive units (mm): 200 and 30. FR: 60Hz-18kHz. Impedance: 8 ohms. Amplifier requirements: 5-15W. Finish: American walnut with white front. Price: £65.00 (per pair) (plus VAT).

Lentek

Lentek Audio Ltd.,
Edison Road, Industrial Estate,
St. Ives, Huntingdon, Cambs.
Telephone: St. Ives (0480) 62225
Telex: 32303



Surround Sound

(Four channel and synthesisers intended for use with four speakers)

★ Indicates entry is illustrated
Abbreviations used in this section are given on page 43.

■ 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 × 1.9 × 4.3in. 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 × 4¾ × 5¼in. Weight: 7 lb. 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

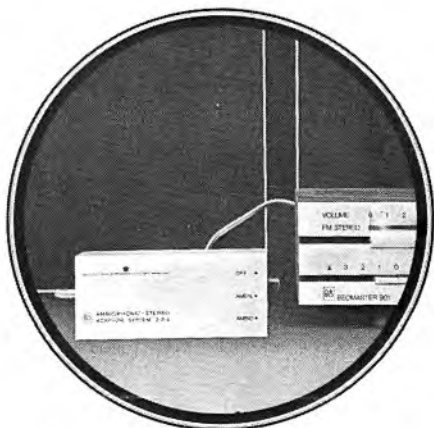
touch sensor pre-set stations on VHF. AFC SQ matrix and stereo decoder fitted. CD4 possible with optional plug-in module. Slide controls for balance (stereo and quadro), bass, treble and volume. Tuning meter for AM and FM. Rotary waveband selection. Output: 2 × 27W sine (4Ω) or 4 × 15W sine.

■ HACKER

Hacker Radio Ltd, Norreys Drive, Cox Green, Maidenhead, Berks SL6 4BP.
Tel: Maidenhead 22261.

Ambiophonic Unit Model QC1

The QC1 is designed to re-create all-round sound reality as far as possible from two-channel programme material. As the input to the unit is taken from the existing loudspeaker outlets on the amplifier, no additional amplification is required. Power handling: 12W RMS. Sensitivity : (rear channel) -8dB max. FR: (quad) 20Hz-20kHz ±1dB. (stereo) 20Hz-5kHz. ±1dB, -3dB at 7kHz. Size: 81mm high, 190mm wide, 60mm deep. Weight: 510gm. No rec. retail price.



Bang and Olufsen Ambi Control Unit



Neal 4-Channel Resolver

★ Indicates entry is illustrated

■ NEAI.

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

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: $5\frac{1}{2} \times 5\frac{1}{4} \times 1\frac{1}{2}$ in high. Price: £18.50 (plus VAT).

■ PLUSTRON

Plustronics Ltd, Hempstalls Lane,
Newcastle, Staffs S5 0SW.
Tel: Newcastle 615131.

QA10

Four-channel adaptor. Boosts stereo into 4-channel sound using two pairs of speakers. Special effect switch for surround and "hall" reproduction. Mode control for two or four channels. Sound level control. Price: £11.03 (plus VAT).

■ SANSUI

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

QRX 777

No details available at time of passing for press.

■ SONY (UK) LTD.

London Showroom, Consumer Information
Service, 134 Regent Street, London W1R 6DJ.

SQA 2030 ★

SQ decoder amplifier. Rated output power: 18W RMS per channel into 8 ohms between 20Hz-20kHz, both channels operating 22W per channel, both channels operating, 1kHz into 8 ohm load. Power bandwidth: (IHF) 10Hz-25kHz. FR: 20Hz-20kHz ± 3 dB SQ. RM, TX, 20Hz-20kHz +0, -3dB others. HD: 0.8% at rated output. Inputs: 2-channel (SQ, RM, 2-4) low 75mV 75K, normal 250mV 90K, high 500mV 100K. (2-channel tape) low 250mV 50K, normal 750mV 80K, discrete (4-channel) 250mV 100K, DIN 250mV 80K. Tone controls: bass ± 10 dB at 100Hz, treble ± 10 dB at 10kHz. Loudness control: 50Hz +10dB, 10kHz +4dB (att -30dB). S/N ratio: 85dB. Circuit system:



Sony SQD 2010



Sony SQA 2030

full logic IC SQ decoder, hybrid power amplifier (rear channel) tone, loudness controls (rear channel). 27 transistors, 5 ICs, 14 diodes. Mains: 110, 127, 220, 240V AC 50/60Hz. Size: 226 x 156 x 307mm including projecting parts. Weight: 6.9kg. No rec. retail price.

SQD 2010 Decoder ★

Circuit system: Full logic controlled, SQ. R-M decoder. SQ separation: Lf-Rf 35dB, Lb-Rb 13dB, Lf-Lb 17dB, R-Rb 17dB, Lf-R 13dB, RF-Lb 17dB, Cf-Cb 20dB. Frequency response: SQ, RM, 2-4: 20Hz to 20kHz ± 3 dB. 2-4. Discrete, 4 channel tape, 2 channel 110Hz to 100kHz ± 3 dB SQ R-MTX 2-4, 80dB. Discrete 4 channel tape, 2 channel 10Hz to 100kHz ± 3 dB. S/N ratio: Harmonic distortion: 0.1% (input signal) 250mV at 2kHz. Inputs: (from record out), 1one controls (rear ch.) 3: bass ± 10 dB 100Hz, treble ± 10 dB 10kHz. Semi-conductors: 41 transistors, 2 FE1's, 4 ICs, 35

diodes. Power requirements: AC 110, 127, 220 and 240V (factory set 240V, 50/60Hz). Dimensions (approx.): $15\frac{3}{4}(W) \times 5\frac{7}{8}(H) \times 12\frac{7}{8}(D)$ in ($400 \times 149 \times 327$ mm. Weight (approx.): 13lb (5.9kg). Supplied accessories: 2 \times RK-74 connecting cord, AC mains lead. No rec. retail price.

■ **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: £99.00 (inc. VAT).

This advertisement is unsuitable for those of a mean or heartless disposition

An electrical worker's child needs a kidney machine. A Shift Engineer cannot pay his bills through a prolonged illness. A widow of an Electrical Engineer develops cancer, but her biggest worry is over the future of her child.

These are the sort of cases where EEIBA helps. Every year we deal with around 800 different such cases, filling in the gaps left, inevitably, by the Welfare State.

We exist to help people like you, and we need your help in two ways.

To tell us of any cases you might know where help is required.

And to help us with regular donations.

We're not asking for a fortune, we're simply asking you to appreciate how lucky you are and to send what you can spare.



With your help we can help

The Electrical and Electronics Industries Benevolent Association,
8 Station Parade, Balham High Road, London SW12 9BH.

Telephone: 01-673 0131.

45 branches throughout the country.

Tape Accessories

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ADASTRA

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

Tape Editing Kit

See entry under Synchronotape.

R101 Cassette Carrying Case

30 cassette version of above with double opening front and individual moulded tray holders. Size: 14½ × 3½ × 9in. Price: £3.46 (plus VAT).

R51

Tape splicer. Self-contained with instant cut and trim action. Spring-loaded arms secure tape to padded cutting block. Price: £1.50 (plus VAT).

R100 Cassette Carrying Case Mk II

Designed to hold 15 compact cassettes in rigid drop-front case. Finished in padded simulated leathercloth. Snap-fast closing. Slotted compartments and moulded handle. Finish: red, tan or black. Size: 14½ × 4¾ × 3¼in. Price: £2.25 (plus VAT).

R.54

De-luxe tape head demagnetizer. Operates from AC mains 220-240V. Removes residual magnetism from recording heads, etc. Features extra long probe for access to difficult parts. Complete with 1m lead. Heavy duty 'Torpedo' shaped body. Overall length: 6½in. Price: £3.00 (plus VAT).

R.110/R.111 Stako-Tape

Vertical and horizontal interlocking storage system in two versions: (R.110) holding 10 cassettes; (R.111) containing 8 8-track cartridges.

Moulded cabinets in orange, white or black. Can be wall-mounted or used free-standing. Price: 80p (plus VAT).

R.120/R.121

Two wood storage cabinets designed to take 32 compact cassettes (R.120), or 24 8-track cartridges (R.121). Both models feature lift-off/hinged smoked cover, moulded compartment tray and rubber protective feet. Finish: (R.120) rosewood, teak or white; (R.121) teak. Price: £8.00 (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: on application.

R45 Cassette Tape Tension Winders (M.1111)

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: 40p (plus VAT).

■ AGFA-GEVAERT

Agfa-Gevaert Ltd, Great West Road,
Brentford, Greater London.
Tel: 01-560 2131.

Editing Accessory Kit

Price: £4.72 (including VAT).

Splicing Tape Outfit ★

Price: 81p (including VAT).

Splicing Tape

33ft ¼in wide. Price: 52½p (including VAT).

Leader Tape

80ft ¼in tape in red, green, white. Price: £1.11 (including VAT).

Silver Stop Foil

33ft ¼in. Price: £1.09 (including VAT).

Plastic library boxes

No. 13 (5in) 74p; No. 15 (5¾in) £1.00; No. 17 (7in) £1.24. All prices include VAT.



Agfa Cutter-Set

Plastic spools

No. 13 (5in) 49p; No. 15 (5³/₄in) 58¹/₂p; No. 18 (7in) 61¹/₂p; No. 26 (10¹/₂in) £2.89. Prices include VAT.

Metal spools

No. 13 (5in) £2.72; No. 15 £2.52. (Plus VAT).

Cassette head cleaner

Price: 82¹/₂p. (including VAT).

Publications

Tape Recording Technique. Price: 75p.

Tape Recorder 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.

AK700 Accessory Kit

Includes leader tape, chlorothane, cleaning
tape, tape splicer and splicing tape. Price:
£4.91 (plus VAT).

Head Cleaning Kits

HC500: includes head cleaning fluid, leading
tape and brush. Price: £1.88 (plus VAT).

CHC600: includes cleaning fluid and pen.
Price: £1.58 (plus VAT).

Head Demagnetiser

AH9B. Price: £12.42 (plus VAT).

Remote Control Unit

RC-17. Price: £22.86 (plus VAT).

Tape Splicer

AS-3. For secure and instantaneous tape spli-
cing. Price: £2.65 (plus VAT).

Splicing Tape

ST-2A. Designed for sufficient adherence.
Price: 34p (plus VAT).

Metal Reels

R-7M. 7in reel, 1800ft. LP tape. Long lasting,
made of aluminium. Price: £3.50 (plus VAT).

Dust Covers

DC44 for 4000DS Mk. II and 4000DB. Price:
£6.50. DC34 for CS34D. Price: £6.86. DC39 for
GXC39D. Price: £7.33. DC310 for GXC310D.
Price: £9.30. All plus VAT. (Other dust covers
are retained for some past models).

■ AUDIO MAGNETICS

AMSA Magnetics Ltd, Loverock Road, Read-
ing, Berks. RG3 1JZ.

Tel: Reading 598036.

Head Cleaners

Cassette — 48p; cartridge — £1.08.

Storage

Elite library rack type 1 — £1.38; storage racks
type 2 — £1.84; library cases (3 per bag) — 35p
per bag.

■ AVEL-LINDBERG

Avel-Lindberg Ltd, Arisdale Avenue,
South Ockendon, Essex RM15 5TD.

Tel: South Ockendon 3444.

MP3 DC/AC inverters

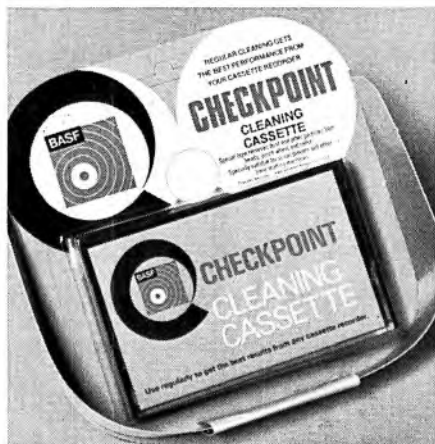
A range of four DC to AC electronic inverters.
Suitable for operating tape recorders and other
similar equipment from DC supplies. Input
voltages: 20-30V DC, 41-60V DC, 100-125V
DC, 200-250V DC. Output: 217-227V 50Hz for
first two models, 215-225V 50Hz AC for sec-
ond two models. Efficiency: greater than 70%.
Output frequency 50Hz sinewave $\pm 1\%$. No
moving parts. Electrically and mechanically
robust. Protected against overload, short cir-
cuit and incorrect polarity. Full details and
prices on request

■ BASF

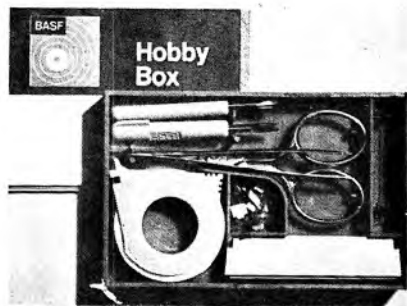
BASF United Kingdom Ltd, Audio/Video
Tapes Division, PO Box 473,
Knightsbridge House, 197 Knightsbridge,
London SW7 1SA. Tel: 01-584 5080.



BASF Checkpoint Audio Accessories



BASF Checkpoint Cleaning Cassette



BASF Cassette Hobby Box

Plastic Spools

Standard sizes: 8-26.5ins. Prices: 34p-£2.78 (plus VAT).

Metal Spools

18cms £3.44; 22cms £4.96; 26.5cms £5.94 (all plus VAT).

Hinged lid plastic Boxes

5³/₄in 90p and 7in reels. £1.18 (plus VAT).

Hinged Lid Plastic Boxes for LH Super Tape

5in — 82p; 5³/₄in — 94p; 7in reels £1.18.

Other Accessories ★

Cassette library box — 58p; empty C box — 58p; C box carrying handle — 74p; C box mounting bracket — 74p; BR reel to reel cleaning tape — £2.34; CR cleaning cassette — £2.34; Profi-nab adaptor — £5.12; hobby box (reel to reel) — £4.88; hobby box (cassette) — £5.12; leader tape 300m/984ft — £4.26; leader tape 25m/80ft — £1.30; splicing tape 6.25mm × 25m (1/4in × 80ft) — £2.00; splicing tape 12.50mm × 25m (1/2in × 80ft) — £3.14; splicing tape 17.80mm × 10m (1/4in × 32ft) — £2.06; splicing set — 90p; metalised foil 6.25mm × 25m (1/4in × 80ft) — £3.94; leader tape set — £1.90; plastic tape clips (box of 10) — 62p; head alignment tape — £3.70; 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; chinograph 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; enthusiasts' guide — 40p. (All plus VAT)

■ **BIB**

Bib Hi-Fi Accessories Ltd,
Kelsey House, Wood Lane End,

Hemel Hempstead, Herts HP2 4 RQ.
Tel: Hemel Hempstead 61291.

Ref. J. Compact tape and cleaning kit

Price: 90p (including VAT).

Ref: 65. Cassette storage rack

Holds 30 cassettes in their library cases. Finished in simulated teak. Price: £5.18 (including VAT).

Ref: 78. Cassette fast hand winder

Very simple and easy to use, it winds a C90 cassette in 60 seconds. Saves batteries. Price: £1.98 (including VAT).

Ref: 86. Cassette cabinet

Holds 30 cassettes in their containers. Fitted with a smoked coloured hinged acrylic lid. Finish: simulated teak. Fitted with protective rubber feet. Price: £7.13 (including VAT).

Ref: 51A. Cassette care kit ★

Contains: head cleaner, salvage cassette and re-record kit, editing and joining kit. Price: £4.00 (including VAT).

Ref: 31. Cassette head cleaner

Price: 75p (including VAT).

Ref: 73. Cassette rotarack

Holds 40 cassettes in their containers. Price: £3.97 (including VAT).

26A Cassette Tape Recorder Care Kit

Contains: 1/8in splicer, splicing tape, tape



Bib Cassette Editor and Winder



Bib Tape Head Demagnetiser



Bib Cassette Care Kit

piercer, 9 cassette labels, 3 tape winders, 2 tape cutters, polishing cloth and cassette head cleaner. Price: £2.93 (plus VAT).

53 Stereo Test Cassette

Devised by BIB and recorded by Decca the cassette contains: channel identification, balance control, speaker phasing, adjusting record volume controls, reducing tape hiss and eliminating hum, wow and flutter. Also includes music, brass band, Grand Organ, etc. Price: £2.85 (plus VAT).

34 Cassette Case

High quality black padded PVC case, with carrying handle. For 12 cassettes. Price: £1.99 (plus VAT).

D/2 Flex Tidies

Shortens without cutting inter-unit cables, speaker leads and mains flex. Price: (pack of 5) 48p (plus 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: £1.62 (plus VAT).

Ref: 83. Cassette title and container labels

Contains 20 cassette body labels and 10 library container edge labels. Price: 43p per pack (including 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: £2.25 (inc VAT).

Ref: 30A. Cassette Tape Splicer

For use with $\frac{1}{4}$ in (3.2mm) tape. With full instructions. Price: £1.30 (including VAT).



Bib Combined Cassette Head Cleaner/Demagnetiser

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: £4.00 (including 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 (including 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: £4.97 (including 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: £4.50 (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).



Bib Cassette Editing and Splicing



Bib Tape Head Maintenance Kit

Kit also includes cleaning and polishing pads, anti-static cleaning liquid, cleaning brush, cleaning cloth and inspection mirror. Price: £1.98 (including VAT).

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: £2.81 (including 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 (including VAT).



Bib Popular Cassette Care Kit

Ref: 93. Combined Cassette Head Cleaner/Demagnetizer ★

Cleans and demagnetizes tape heads in one simple operation. Price: £2.70 (including 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: £1.99 (including 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.

■ **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.

■ **CONTEK MAGNETICS LTD**

32 Eveline Road, Mitcham, Surrey. Tel: 01-648 5156.

Contek head cleaner. Price: 75p (plus VAT).

■ **CROWN MERTON**

Hancock, Corfield & Waller Ltd, Station Road, Merton Abbey, London SW19 2NJ. Tel: 01-542 1012.

Cassbar Ref. 5066 ★

Modern plastic, revolving cassette storage unit. Holds 21 cassettes designed for multiple stacking. Price: £4.99 (including VAT).

Keyboard Cassette 5067 ★

Modern plastic cassette storage unit. Holds 10 cassettes, special add and stack feature to form library system. Price: £2.95 (including VAT).

Cassette 24 5056 ★

Compact brass or chrome wire cassette holder. Holds 24 cassettes. Also available for 36 cassettes. Price: £2.66 and £3.94 respectively.

Cassnette. Ref: 5084

Compact cassette storage unit. Add & stack feature to form library system. Holds 10 cassettes. Price: £1.50.

Cassette 4Z. Ref: 5086

Elegant plastic cassette storage case holding 42 cassettes with slide away handle with unique locking feature for easy carrying. Price: £6.50.

■ **EAGLE**

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

TD79 Tape Head Demagnetiser

250V AC mains operation. Price: £2.80 (plus VAT).

TD 83★

Cassette head demagnetiser. 240V AC operation, suitable for compact cassette recorders and players. Price: £3.50 (plus VAT).

■ **FERROGRAPH**

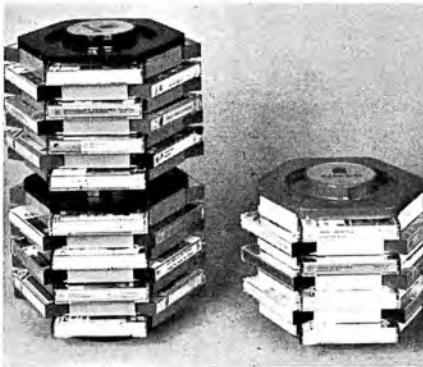
Wilmot Breeden Electronics Ltd, Auriema House, 442 Bath Road, Cippenham, Slough SL1 6BB. Tel: Burnham 62511.

Defluxer

For depolarising heads, capstans and guides. Ensures maximum signal/noise ratio. Prevents hiss and protects tapes from cumulative background noise. Price: £5.00 (plus VAT).

Carrying case for Logic 7 recorders

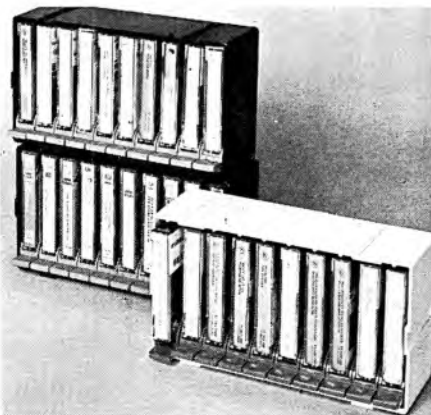
Waterproof canvas case with zip fastener. Price: £40.00 (plus VAT).



Crown Merton Cassbar 5066



Crown Merton Cassette 24 5056 brass plated wire cassette holder



Crown Merton Keyboard Cassette 5067



Eagle TD83 Tape Head Demagnetiser

★ Indicates entry is illustrated

Plugs

JPS-401 screened plug with aluminium body, and cable clamp. Price: 60p (plus VAT).

Endless loop cassette

Permits Ferrograph to be operated continuously on an endless loop of 8 min duration at 7 1/2 i/s. Price: £10.00 (plus VAT).

Ferrotape spools

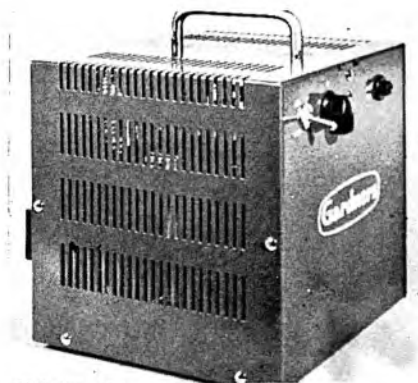
Aluminium, anodised grey. Prices: 7in £1.20 (plus VAT); 8 1/4in £1.35 (plus VAT).

■ GARDNERS TRANSFORMERS LTD

Christchurch, Dorset BH23 3PN.
Tel: Christchurch 2284.

DC/AC Inverters 107 (A, B and D) ★

Provide 240V AC squarewave output from DC input. Output: 300VA and 400VA (107D) at 220-240V nominal. Frequency: 50Hz \pm 1Hz. Efficiency: >80% at full load. Input: (107A) 11-15V DC; (107B) 22-30V DC; (107D) 22-30V DC. Size: 9 1/2 \times 8 1/4 \times 8 1/2 in. Weight: 28 1/4 lb. Full specification sheet on request. **Sine Wave Modes 107S.** All prices on application.



Gardners 107 Inverter



Grampian G7 Matching Unit

■ GRAMPYAN REPRODUCERS LTD

Cowleaze Road, Kingston-upon-Thames, Surrey KT2 6DZ.
Tel: 01-928 8929.

Grampian G.7 ★

Matching units, consisting of double-wound transformer in a Mu-metal case with jack socket on the primary and a screened lead on the secondary. Dimensions: 3 3/8 \times 1 1/4 in diameter. Versions available for matching 15/30 ohms, 600 ohms and 50,000 ohms or greater. Price: on application.

Type G16

As G.7 but with balanced input.

Grampian Parabolic Reflector

Diameter 24in, depth 5in. Gain: 14dB over range of 500Hz-5kHz. To take Grampian DP4 and DP6 mics. Weight: 4 3/4 lb. Price: on application.

Grampian Reverberation Unit

Self-contained portable unit, transistorised and operated from internal dry batteries. Independent input channels, low level and high level. Output: 1V, 600 ohms. Size (including detachable lid): 17 1/2 \times 5 1/4 \times 6 1/4 in. Weight: 12lb. Price: on application. Mains unit available.

■ LYRICHORDS

N. Miers & Co Ltd, 28 Piercing Hill, Theydon Bois, near Epping, Essex CM16 7LE. Tel: 037-881 2611.

Tape Accessories

8-track cartridge demonstration and test tape £2.48 (plus VAT); 8-track cartridge tape head cleaner £1.10 (plus VAT); tape head cleaning kit for reel-to-reel and cassette recorders 90p (plus VAT); 1/8 in cassette splicing and editing kit £1.99 (plus VAT); cassette salvage kit 48p (plus VAT); universal modification kit £1.50 (plus VAT).

■ MEMOREX

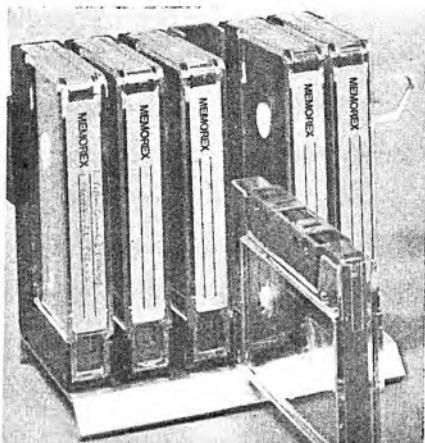
Memorex (UK) Ltd, Hoechst House, 50 Salisbury Road, Hounslow West, Greater London. Tel: 01-570 7716.

Accessories ★

Cass. H.C. kit — £1.16; cass. C. kit — £1.88; 8-T head cleaner — £1.24; 8-T hd/cpst. clnr — £3.34; record care kit — £4.20; record cleaner — £2.20; storage library — £1.82; library w/6 alb. — £2.66; empty 7in reel alb. — £1.22. (All plus VAT).

■ METRO SOUND

Metrosound Audio Products Ltd, Audio Works, Cartersfield Road, Waltham Abbey, Essex EN9 1JF. Tel: Lea Valley 712712.



Memorex Library Box Holder

M.19 Stop foil

Metallic tape for actuating electronic auto stop mechanisms for tape recorders. Approximately 15ft on mini-spool. Price: 48p (plus VAT).

M.20 Jointing tape

1/4in wide, approximately 12ft on mini-spool. Price: 48p (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: £1.80 (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 velvet polisher, cassette head cleaning fluid, multi-purpose duster and spare spatula velvets. Price: £2.00 (plus VAT).

M32 Head Cleaner Cassette

Complete cassette conforming to international specification; loaded with silicone impregnated, non-abrasive, fibrous tape; contained in plastic library case. Price: 66p (plus VAT).

M39 Cartridge Head and Capstan Cleaner

8-track cartridge moulding containing fluid tank with soft felt pad activated by sprung lever in rear cavity. Bottle of specially formulated cleaning fluid and nylon tuft brush for cleaning pad. Price: £1.50 (plus VAT).

M62 Cassette Salvage Kit ★

Kit contains one complete compact cassette, splicing block, editabs, hub key and cutter to facilitate easy and economical repair of damaged cassettes. Price: 72p (plus VAT).



Metrosound Cassette Salvage Kit

M.4 Klentzape kit

Patented head cleaner. Kit comprises ribbed cleaning tape, two special spools and bottle of Klentzape 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: 48p (plus VAT).

M70 Tape (1/4in) Edit Kit

Professional machined splicing block, with leader tape, splicing tape and cutters in a storage case. Price: £1.80 (plus VAT).

M91 Compact Kit

Cassette and disc cleaners combined in a storage unit. For owners of complete music systems. Price: £2.94 (plus VAT).

M86 Tape Head Cleaner Kit

A bottle of tape head cleaning fluid and two special cleaning spatulas with brush and polishing pads are provided. Price: 66p (plus VAT).

★ Indicates entry is illustrated



Caseset (MT8)



Cassette Library (MT11)



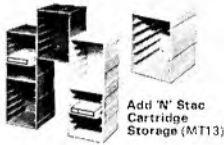
Cartridge Library (MT17)



Cartridge Carousel (MT15)



Cassette Library Box (MT15)



Add 'N' Stac Cartridge Storage (MT13)

Musonic Accessories

M92 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: £4.98 (plus VAT).

■ MUSONIC

Musonic Ltd, 34-38 Verulam Road,
St Albans, Herts AL3 4DF.
Tel: St Albans 50611.

MT5

Cassette cleaner in library box.

MT9 Cartabout

Case for 15 cartridges.

MT10

Cassette library for 30 cassettes.

MT11 ★

Cassette library for 15 cassettes.

MT12

Add 'n' stac for 8 cassettes.

MT13 ★

Add 'n' stac for 6 cartridges.

MT14

Cassette carousel for 32 cassettes.

MT15 ★

Cartridge carousel for 24 cartridges.

MT16 ★

Empty cassette library box.

MT17 ★

Cartridge library for 24 cartridges.

MT18

Cassette cleaner without library box.

MT20

Pack of 10 spare cassette index cards.

MT25

Cassette library case for 48 cassettes.
No rec. retail prices.

■ 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. Weight: 18oz. Price: £3.75 (plus VAT).

■ QAS

Quality Audio Supplies, Wollaton Road,
Beeston, Nottingham NG9 2PB.
Te: Nottingham 252222.

Wide range of audio accessories including phono plugs, DIN plugs and sockets, 4mm and wander plugs, couplers, screw terminals, slider switches, connecting leads with all types of terminations, audio switching units and remote control stations. New additions to the range are screw fixing blank cassettes, cassette head cleaners and dynamic microphones. All items individually blister-packed for over the counter or self-service sales.

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-

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.

■ REVOX

F. W. O. Bauch Ltd, 49 Theobald Street, Boreham Wood, 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 G36 start-stop only. Price: £9.66 (plus VAT). A77 control with three position thumb-switch for play/stop/repeat. Price: £109.20 (plus VAT).

Empty Reels

7ins dia. with slotted driving hole as per cine spec, made of anodised aluminium. 10.5ins. 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.

Endless Loop Adapter

Consists of chassis and interchangeable cassettes. Special mounting studs supplied for installation of the chassis. Rigid construction and large capacity make it ideal for continuous service. Price: £56.70 (plus VAT).

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: £3.78 (plus VAT).

Cleaning Kit

Special liquid and tools for keeping recorder and tape heads in perfect condition. Price: £1.31 (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: £4.99 (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

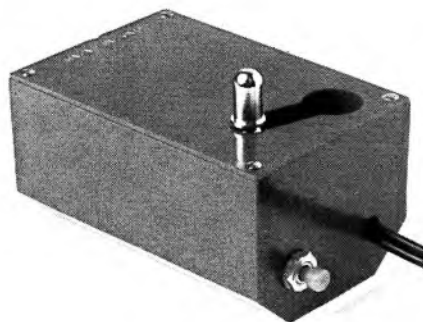
Removes gradual build-up of residual magnetism from tape heads by briefly applying tip to heads in cassette and reel-to-reel recorders. Operates from mains supply. Totally enclosed and insulated. Price: £2.76 (plus VAT).

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).

RE-537K ★

Bulk tape eraser for cassettes, 8-track cartridges and open reel tape up to 7ins diameter. Totally enclosed in a tough plastic case with foldaway reel spindle. For 230/250 volts AC operation. Price: £10.20 (plus VAT).



Ross Electronics RE-537K



Ross Electronics RE-634

RE-632

Cassette head care kit. Comprises: special cleaning and polishing tool to safely remove stubborn oxide deposits from record and erase heads, cleaning fluid, and a cassette head cleaner to prevent build-up of cassette head deposits. Price: 96p (plus VAT).

RE-634 ★

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).

■ SCOTCH

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

Empty Hi-Fi Boxes

5in £1.40; 5³/₄in £1.52; 7in £2.00 (plus VAT).

Empty Hi-Fi Spool

5in £1.40; 5³/₄in £1.52; 7in £2.00 (plus VAT).

41 Splicing Tape

1/2in × 150in 62p; 1/2in × 66ft £1.20; 1/2in × 66ft £1.26. (plus VAT).

Miscellaneous

Audio Index Book in 7in box £2.40 (plus VAT).

Empty Metal Nab Spool 10¹/₂in £4.72 (plus VAT).

Cassette Head Cleaner £1.60 (plus VAT).

Cassette Head Cleaner 72p (plus VAT).

No. 51 Stop Foil £1.48 (plus VAT).

■ SONY

Sony (UK) Ltd, London Showroom, Consumer Information Service, 134 Regent Street, London W1R 6DJ.

Tel: 01-439 3874.

Tape Spools

R7A empty spool 7in; R11A empty 10¹/₂in NAB spool.

Recorder, Cassette Accessories

RAD 1 10¹/₂in NAB reel adaptor; RE3 endless cassette, size 90m. RE4 endless cassette, size 46m. BE7 cassette eraser. DP2A dust cover for TC280. DP11 dust cover for CF610/620. DP15 dustcover for TC134SD. DP16 dust cover for TC377. DP19 dust cover for TC131SD. DP20 dust cover for TC755/756-2. DP21 dust cover for TC458. DP24 dust cover for TC138SD. DP25 dust cover for TC177SD. DP27 dust cover for TC645. DP28 dust cover for TC135/136SD. FS6 foot switch. FS7 foot switch for TC96L. HE3 tape head demagnetiser. LC29 carry case for TC1535D. ME26 8 ohms stethoscope headset stereo £2.80. RM15 remote control switch £2.27.

Misc.

SB 200E — switch box (S.O.S. & Echo) for 3-head tape recorders. SB 300 — switch box — interconnect/monitor 3 tape recorders. TP 5 — telephone pickup (standard jack). TP 5S — telephone pickup (mini jack).

■ TANDBERG

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

Spools

Empty metal spool boxed. 7ins — £4.00; 10¹/₂ins — £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: £77.00 (inc. VAT).

Head Cleaning Kit

Price: £2.00 (inc. VAT).

■ **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.

Transvertor C12/30S ★

Input 12V DC. Output 50Hz $\pm 1/4$ Hz sine wave at 30W. Suitable for positive or negative earthed input. Built-in switch and socket. Supplied complete with input lead. Size: 8 x 6 x 6in. Weight: 8lb. Price: approximately £66.00.

Transvertor D12/120S

Input 12V DC. Output: 115-230V 50Hz $\pm 1/4$ Hz sine wave at 120W. Price: approximately £113.00.

Transvertor D12/200S

Input 12V DC. Output: 115-230V 50Hz $\pm 1/4$ Hz sine wave at 200W. Price: approximately £153.00.

Transvertor D12/400S

Input 12V DC nominal. Output 115-230V 50Hz $\pm 1/4$ Hz sine wave at 400W. Price: approximately £299.99.

Frequency changer

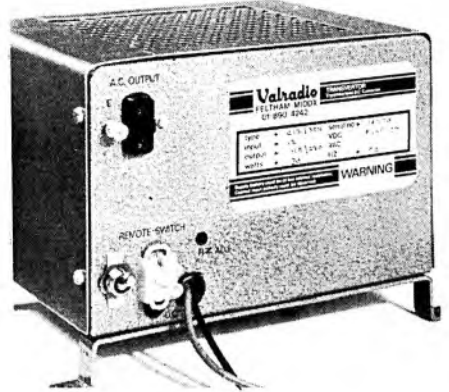
AC-DC. Suitable for records, films, television programme special effects. Price: (200W) from about £214.00.

■ **WAI.**

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



Valradio Transvertor



Weircliffe Bulk Eraser

function was not always satisfactory. Also for compact cassettes, competer 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 2ins video on any type of reel up to 14 1/2ins. dia. to a level of better than -80dB in 10-14 seconds. Price on application.

■ **ZEFPA**

Zepa Instruments Ltd, 15 Richmond Grove, Surbiton, Surrey.
Tel: 01-399 0966.

Accessories

Magnetic tape head and stylus cleaner. Aerosol spray for cleaning tape heads and styli. Prices on application.

BY POPULAR REQUEST

Demand for reprints of Wireless World constructional projects for audio equipment is so high that we have gathered 25 of the best of them together in High Fidelity Designs. These are the 'most requested' articles which **you** have asked for and all have been fully updated. Hurry for your copy — it's likely to sell out fast!

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To: General Sales Department, Room 11, Dorset House
Stamford Street, London SE1 9LU

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(cheques payable to IPC Business Press Ltd.)

NAME
(please print)

ADDRESS
.
.

Company registered in England No. 677128
Regd office Dorset House, Stamford Street, London SE1 9LU

Tape Amplifiers and Mixer Units

★ Indicates entry is illustrated

Abbreviations used in this section are given on page 43.

■ ADASTRA

Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU.
Tel: 01-452 6288/9.

M103/B2004

Transistorised stereo/mono microphone mixer. Power supply: 9V. Two stereo channels (with independent gain controls) or four mono channels. Input jack sockets, output phono sockets. Mono/stereo mode switch. On/off switch. Input impedance: 100K. Max input signal: 1V. Gain: 3dB. Free-standing case. Price £13.50 (plus VAT).

M101/B2005

Transistorised mono microphone mixer. Power supply: 9V. Four channels with individual gain controls. Input jack sockets, output phono sockets. Input impedance: 100K. Max input signal: 1V. Gain: 3dB. Free-standing case. Price: £8.60 (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 transistorised circuit. Special RIAA 50K socket. Power supply: internal battery. Weight: 3³/₄lb. Price: £40.00 (plus VAT).

■ EAGLE

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

MP12 ★

Six-channel stereo/mono mixer and pre-amplifier. Studio type slider controls. Mic

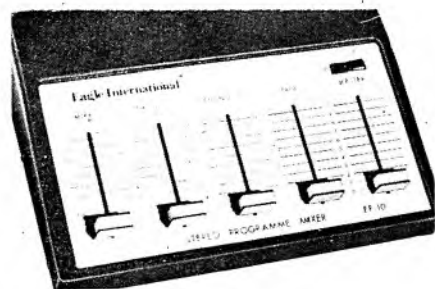
inputs can be individually switched between high and low impedance. Inputs: four microphone 1mV 600 ohms or 2mV 50K, two pickup 3.5mV at 47K RIAA. S/N: better than 50dB. Output: (switched stereo/mono) two 250mV. Low profile desk console. Size: 10 × 7 × 1⁷/₈in. Price: £39.95 (plus VAT).

FF1

Transistorised five-channel mono mixer. Slider type controls. Microphone inputs: 0.5mV at 600 ohms, switchable for 4mV 50K. Aux input: 180mV 100K. Two outputs: (low) 200mV 50K-500K, (high) 2V 50K-500K. Controls: on/off switch, slider control for each input, overall master gain control. Power: two PP3 batteries. Size: 10 × 7 × 1⁷/₈in. Monitoring facilities included. Price: £34.70 (plus VAT).

FF10 ★

Stereo seven-channel mixer/preamplifier. Inputs: mic 3mV 50K, stereo PU (1) 3mV 47K, stereo PU (2) 3mV 47K, stereo tape 100mV 100K. Output: two 250mV 50K (switchable stereo/mono). Controls: master gain, mic gain, PU (1) gain, PU (2) gain, tape gain, on/off, stereo/mono mode switch. Power supply: internal 9V battery. Size: 9⁷/₈ × 7 × 1⁷/₈in (sloping down to 1¹/₈in). Finish: black and silver trim. Price: £39.95 (plus VAT).



Eagle FF10



Eagle MP12

★ Indicates entry is illustrated

FF 32

Tape mixer unit. Inputs: phono, stereo 3mV47K (× 2), mic 3mV 50K, stereo tape 100mV 100K. Outputs: 2 stereo outputs 250mV 50K. Pre-fade headphone monitor. Controls: master volume, tape level, phono 1 level, phono 2 level, mic level, prefade monitor switch, stereo/mono switch, on/off switch. Power: 9V DC (2 × PP3). Size: 9⁷/₈ × 7¹/₈ × 1⁷/₈ (sloping to 1¹/₂in). Price: £42.50 (plus VAT).

PRE 38

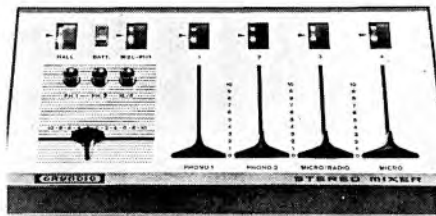
Tape or microphone booster pre-amplifier for increasing record/playback signals from/to amplifier. Inputs and outputs are phono sockets. Variable output. Price: £8.50 (plus VAT).

■ 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



Grundig 422 Mixer



Allen and Heath Minimixer

separation: mic 50dB, PU 35dB. Response: 40Hz-20kHz ±2dB. Powered by two 9V batteries. Dimensions: 34 × 9 × 9.5cm. No rec. retail price.

■ 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 × 29.8 × 3.8cms. Inputs sensitivity: continuously variable from better than -50dB at 100K ohms 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 ohms. Bass and treble control as per input channels. FR: 30Hz-15kHz. Distortion: less than 0.2%. Price: miniature mixer £163.00, MPS 2 500MA £28.00. 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.

PLAY-FAIR

Record Accessories.

Stylus Timers, Stylus Cleaners, Antistatic Cleaning Pads, Antistatic Fluid, Discodas, Discodusters (Record Changer and Single Player models), Record Care Kits, Record Cleaners, Record Cleaning Arms. **Tape Accessories.** 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 MICRO-SAPPHIRE

Replacement Styli. Most comprehensive range, best quality, reliable service, keen prices; also MICRO-DIAMOND retipping service.

DRY-SPLICE and TAPE ACCESSORIES

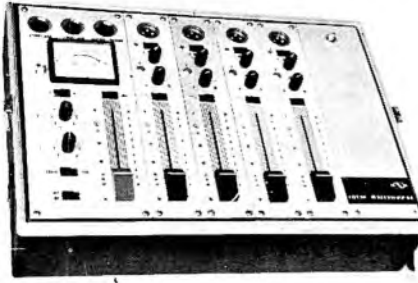
(Tapes, Spools and Plastic Tape Boxes).

TAPE HEADS

Wolke Magnetbandtechnik (Germany)
Cassette Heads, 1/4" Studio Heads, 1/2"-2" Studio Heads,
Film Heads.

Manufacturers and Distributors:

LENNARD DEVELOPMENTS LTD
206, CHASE SIDE,
ENFIELD, Middx. EN2 0XJ
Tel. (01) 363 8238



Sennheiser M101

■ **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. Pre-fade listening using ML101 mixer monitoring unit. PPM. Slider-type faders. Separate bass and treble controls switchable to channel four or mixed output. Treble control: ±12dB at 15kHz, bass control +10dB - 14dB at 40 Hz. Power supply: two 9V Ever-Ready cells type 276 or equivalent, or 18V from other equipment. Price: on application.

■ **SHURE ELECTRONICS LTD**
Eccleston Road, Maidstone
Kent ME15 6AU.
Tel: Maidstone 59881

M64-2E
Stereo Pre-amplifier to provide 7½ i/s NAB equalization for tape decks containing no electronics. 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 micro-

phone level and high level auxiliary output. Mains or external battery powered: 2¾ × 11¾ × 5¼in. Price: £73.20 (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 ohm. Sensitivity: -5dB (435mV). Output Impedance: Line 280 ohm. Output level: -60dB (0.775mV). General Dimensions (approx.): 9¾(W) × 3(H) × 5⅞(D) in. (238 × 76 × 148mm) including projecting parts. Weight (approx.): 3lb 2oz (1.4kg). Supplied accessories: 2 × PCI plug adaptor.

MX510 ★
Battery operated five-channel stereo mixer with mic, line and phono inputs; one pan-pot and twin VU meters. Inputs: five-channel inputs. Impedance: Mic low. Sensitivity:

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ROBUST, reliable and thoroughly professional for all whose work and reputation depend on the use of good equipment, the **SOUNDEX** range of mixers gets to the heart of microphone amplification.

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for the professional engineer - equally versatile in the studio and on location

(M 1400 Range
6 into 2)

★★★★UNIMIXER 45 (M 1300 Range) 4 into 2.

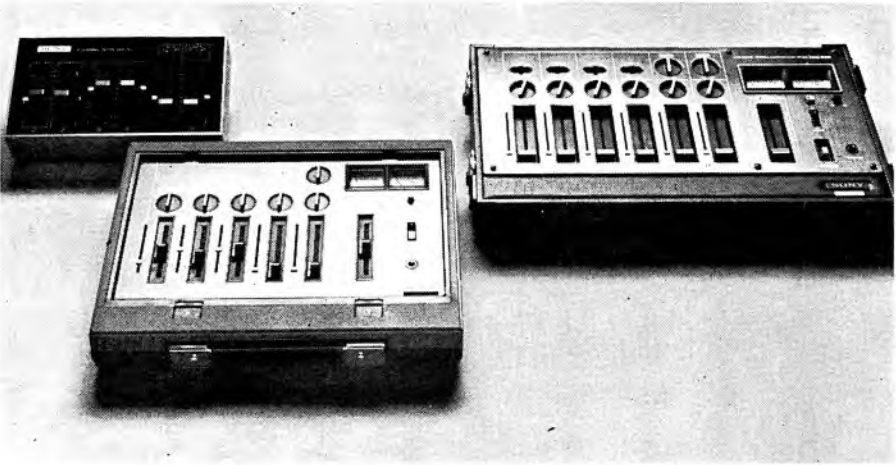
a portable 4-channel recording mixer for the tape enthusiast



Made in England by

SOUNDEX LIMITED - AUDIO MIXERS
728 HIGH ROAD, LEYTONSTONE, LONDON E11 3AS
Telephone: 01-539 4347/8

★ Indicates entry is illustrated



Sony MX8/MX510/MX650

-72dB (0.2mV). Impedance: Line 100k ohm. Sensitivity: -22dB (60mV). Impedance: Phono 50k ohm. Sensitivity: -51dB (2.2mV). Outputs: two-channel outputs. Impedance: Line 10k ohm. Output level: -5dB (435mV). Impedance: Headphone 8 ohm. Output level: -24dB (47mV). Frequency response: 30-25,000Hz. S/N ratio: 60dB. General. Power requirements: DC12V, 8 x HP11 batteries. Dimensions (approx.): 13³/₄(W) x 3(H) x 9¹/₂(D) in, 348 x 75 x 240mm including projecting parts. Weight (approx.): 6lb 10oz (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 ohm. Sensitivity: -22dB (60mV). Impedance: Phono 50k ohm. Sensitivity: -51dB (2.2mV). Impedance: Cascade 50k ohm. Sensitivity: -5dB (435mV). Outputs: two-channel outputs. Impedance: Line 10k ohm. Output level: -5dB (435mV). Impedance: 600 ohm. Output level: -60dB (0.775mV). Impedance: Headphone 8 ohm. Output level: -24dB (49mV). Frequency response: 30-25,000Hz. S/N ratio: 60dB. General. Power requirements: DC12V, 8x HP11 batteries. Dimensions (approx.): 17⁷/₈(W) x 3³/₈(H) x 10(D) in., (452 x 83 x 252mm) including projecting parts. Weight (approx.): 9lb 8oz (4.3kg). Semi-conductors: 27 transistors, 7 diodes. Supplied accessories: RK74 connecting cord. No rec. retail prices.

TEAC

Teledyne, High Street, Houghton Regis, Beds.
Tel: Houghton Regis 603151.

Model 2

Mixer with 6 inputs and 4 outputs. Imp: 30K ohms unbalanced. FR: 30Hz-20kHz ± 2dB. Dimensions: 8.3 x 33.2 x 26cm. No rec. retail price.



DBX 117 Dynamic Range Enhancer



DBX 122



DBX 124

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 ohms. Dimensions: 9.5 × 14.6 × 22.9cms. 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 ohms. Will feed tape recorder inputs 5K ohms or greater. Max output level: 7V at 1kHz in 5K ohms load. Compression/expansion scope: 2:1. FR: 30Hz-20kHz. Price on application.

124 ★

4-channel system. Details on application.

■ **UHER**

Uher Ltd, 28 Spencer Street, St. Albans, Herts.
Tel: St Albans 30736.

A124

Portable mixer unit for five channels: two stereo plus one mono or five mono channels. Inputs available for 200 ohms microphone, radio or pickup. Outputs: one 40mV nominal, one 500mV nominal. FR: 20Hz-20kHz. Slider faders with directional control, muting switches and 1kHz generator. Powered by PP3 battery or Z131 mains unit. Price: £97.59 (plus VAT).

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Ferrograph Logic 7

An all-British quality recorder with push-button control and logic circuits for fast, safe tape handling.

- **Spool capacity up to 10½ inches**
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- **Mic/Line mixing**
- **Tape motion sensing**
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- **Choice of eight models.**

Specially-appointed Ferrograph dealers will give you a demonstration of Logic 7. For the name and address of your nearest stockist and more information about any Ferrograph product, write to the address below.



Ferrograph Wilmot Breeden Electronics Limited

442 Bath Road Slough SL1 6BB Telephone: Burnham (06286) 62511 Telex: 847297

Tape Decks and Recorders

★ Indicates entry is illustrated.

Abbreviations used in this section are given on page 43.

■ AKAI

Rank Audio Visual, Rank Hi-Fi,
Great West Road, Brentford, TW8 9HB.
Tel: 01-508 9222.

4000DB

Stereo tape deck. Tape speeds: $7\frac{1}{2}$ and $3\frac{3}{4}$ ips. W and F: less than 0.15% at $7\frac{1}{2}$ ips, less than 0.2% at $3\frac{3}{4}$ ips. FR: 30Hz-23kHz \pm 3dB at $7\frac{1}{2}$ ips, 30Hz-16kHz at $3\frac{3}{4}$ ips. Distortion: less than 1.0%. S/N ratio: better than 55dB (with Dolby process 60dB at 5kHz). Erase ratio: better than 70dB. Crosstalk: better than 40dB (stereo). Bias frequency: 105kHz. Heads: one micron gap recording head, one micron gap playback head, erase head. Motor: 4-pole induction motor. Fast forward/rewind time: 120/150 sec using a 1200ft tape at 60/50Hz. Mains: 100-240V AC 50/60Hz. Size: 406 \times 325 \times 196mm. Weight: 12.0kg. Price: on application.

4000 DS Mk 11

Four track, 2 channel stereo/monaural with one micron gap head. Featuring 2-lever control system. Tape speed: $7\frac{1}{2}$, $3\frac{3}{4}$ ips. W and F: <0.12% at $7\frac{1}{2}$, <0.15% at $3\frac{3}{4}$. FR: 30-23,000Hz at $7\frac{1}{2}$, 30-16,000Hz at $3\frac{3}{4}$. Distortion: <1%. Output power: 0.775 V (line 2). S/N: better than 56dB. Crosstalk: better than 50dB (stereo). Bias frequency: 100kHz. 4-pole induction motor. Playback, record and erase heads. Max tape capacity: 1,800 ft. Dimensions: 41 \times 20 \times 31cm. Price: £138.00 (plus VAT).

GXC 265 D

Four track 2 channel stereo/monaural. Tape speed: $7\frac{1}{2}$, $3\frac{3}{4}$ ips. W and F: <0.06% at $7\frac{1}{2}$, <0.09% at $3\frac{3}{4}$. FR: 30-25,000Hz at $7\frac{1}{2}$, 30-19,000 at $3\frac{3}{4}$. Distortion: <0.5%. Output power: line(2); 0.775 V, (phono 1) 30 mV. S/N: better than 56dB. Crosstalk: better than 40dB (stereo). Bias frequency: 100kHz. Motors: one

AC servo motor for capstan drive and two eddy current motors for reel drive. No. of Heads: 6 forward and reverse playback record and erase. Max tape capacity: 1,800 feet. Dimensions: 44 \times 21 \times 40cm. Price: £318.00 (plus VAT).

GX 630 DB

Four track 2 channel stereo/monaural system. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$ ips. W and F: <0.06Hz 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), 30 mV (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: £439.60 (plus VAT).

GX 265D ★

Stereo tape recorder. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$ ips. W and F: less than 0.06% at $7\frac{1}{2}$, less than 0.09% at $3\frac{3}{4}$. FR: 30Hz-25kHz at $7\frac{1}{2}$, 30Hz-19kHz at $3\frac{3}{4}$ ips. Variable output. S/N ratio: better than 56dB. Bias frequency: 100kHz. One AC servo motor for capstan, two eddy current motors for reel drive. Six heads. Max spool cap: up to 7ins. Dimensions: 44.1 \times 20.7 \times 40.4cms. Price: £420.13 (plus VAT).

■ AMCRON

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

800 Series ★

Stereo tape deck, $\frac{1}{4}$ - or $\frac{1}{2}$ -track. Three-speed

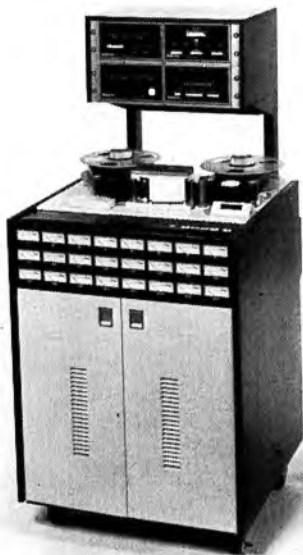


Akai GX265D

★ Indicates entry is illustrated



Ampcron 800 series



Ampex MM-1200

15i/s or 17 $\frac{1}{2}$ i/s optional. Max reel 10 $\frac{1}{2}$ in. W and F: 15i/s 0.06%; 7 $\frac{1}{2}$ i/s 0.09%; 3 $\frac{3}{4}$ i/s 0.18% (RMS). H and N: 15i/s -60dB; 7 $\frac{1}{2}$ i/s -60dB; 3 $\frac{3}{4}$ i/s -55dB (below peak level). FR (± 2 dB): 15i/s 30Hz-30kHz; 7 $\frac{1}{2}$ i/s 30Hz-25kHz; 3 $\frac{3}{4}$ i/s 30Hz-15kHz. Replay char: CCIR. VU meter. Rewind time: 58 seconds for 2400ft. 38 seconds for 1200ft. Inputs: 2 mixable inputs per channel, mic or line. Sensitivity: 45mV for 0 level line), 0.4mV for 0VU level (mic); impedance 100K, balanced or unbalanced 600 ohms, or 50/200 ohms. Output: 600 ohms. Three motors, magnetic brakes, logic circuitry for tape handling, all tape commands can be remote. A-B monitoring, source and tape mixing, echo, individual bias adjustment and metering. Size: 17 $\frac{1}{2}$ x 19 x 8in. Price: £700 to £2,300.



Ampex ATR-100

■ AMPEX

Ampex GB Ltd, Acre Road, Reading, Berks RG2 0QR. Tel: Reading 85200.

MM-1200 ★

Full specifications and prices on request.

ATR-100 ★

Full specifications and prices on request.

■ FERROGRAPH

Wilmot Breedon Electronics Ltd, Auriema House, 442 Bath Road, Cippenham, Slough SL1 6BB. Tel: Burnham 62511.

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 $\frac{1}{2}$. Max spool size: 10 $\frac{1}{2}$ in. W and F: 0.08% (38), 0.10% (19), 0.15% (9 $\frac{1}{2}$). S/N ratio: better than 60dB (CCIF weighted). FR: 30Hz-20Hz ± 2 dB (38), 30Hz-17kHz ± 2 dB (19), 40Hz-14kHz ± 3 dB (9 $\frac{1}{2}$). Motors: one synchronous and two

constant torque. Mains: 200-250V AC or 117 (suffix A). Three heads, PB multiplay, AB comparison, adjustable tape tensioning. Size: 20¼ × 17½ × 10in. Price: £450.00 (inclusive of VAT).

7602DH

Same specification as 7602H, but includes Dolby 'B'. Price: £630.00 (inclusive of VAT).

7622H

Same specifications as 7602H but with power amps. Speaker output up to 10W per channel into 8-16 ohms. Speaker size: 7 × 4in. Price: £596.00 (inclusive of VAT).

7622DH

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 × 4in. Price: £691.00 (inclusive of VAT).

7604H

¼-track, high speed stereo tape unit with preamps only. Same specifications as 7602H. Price: £534.38 (inclusive of VAT).



Grundig TK745



Grundig TK545

7604DH

¼-track, high speed stereo tape unit with Dolby 'B' and preamps. Same specifications as 7602H. Price: £630.00 (inclusive of VAT).

7624H

¼-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 × 4in. Price: £596.25 (inclusive of VAT).

7624DH

¼-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 × 4in. Price: £691.00 (inclusive of VAT).

■ **GRUNDIG**

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

TK745/747 ★

¼-track stereo tape recorder. Speeds (cm/sec): 19, 9½, 4¾. Max spool size: 7in. W and F: 0.07% (19), 0.12% (9½), 0.2% (4¾), S/N ratio: <54dB (19), <52dB (9½), <45dB (4¾). FR: 40Hz-18kHz (19), 40Hz-15Hz (9½), 40Hz-8kHz (4¾). Level indication: VU. Inputs: mic 1mV 100K, radio diode 3mV 30K, phono 100mV/1M ohms. Outputs: line 800mV 20K, speakers 7W/4 ohms, phones 2V/100 ohms. Facilities for 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.

TK545/547 ★

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. All facilities of TK545/747 plus variable speed, cueing, electric motor control, A/B monitoring (stereo), headphone amplifier. Dimensions: 54 × 50 × 20cms. No rec. retail price.

■ **KLARK-TEKNIK**

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

★ Indicates entry is illustrated

SM2

Full servo controlled professional stereo recording console. All professional track configurations used at this time are available. Features dual variable speed capstans independent from mains frequency. Specifications: S/N Ratio 65dB. Two fixed speeds: 19cm/sec and 38cm/sec or 38 and 76cm/sec. Varispeed covers 12cm/sec-90cm/sec. W and F: <0.05%. Start time: 0.3sec. NAB and DIN equalisation. FR: 30-18KHz \pm 1.5dB both speeds. 4 D.C. servo controlled motors. Mains: 110/120-220/240 AC. Price and further details on request.

■ 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

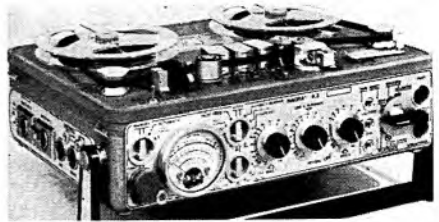
Full-track mono version with pilotone. Inputs from two mics and line. Line output: 4.4V 600 ohms. S/N ratio: -67 to -70dB depending on speed and tape. Visual pilotone indicator. Pilotone input level 0.5-25V. Price: on application.

Model 4.2LSP

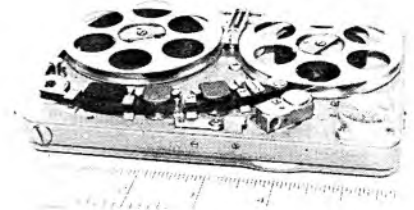
As Model 4.2L but excluding pilotone facility. Price: on application.

Model IV-SL

½-track model with pilotone. Preamplifiers switchable to suit all types of microphone. Output: 1V 600 ohms. Special NagraMaster



Nagra 4.2



Nagra Miniature SN

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 2V. Price: on application.

Miniature Nagra SN ★

Full-track battery-operated professional stereo recorder. Speeds: (model SNN-2) 3¾, 1¾i/s; (model SNS-2) 1¾, 1½i/s. Spool capacity: 154m standard tape, 308m 12.5 micron tape. W and F: 3¾i/s \pm 0.1%, 1¾i/s \pm 0.15% (both to DIN 45 507). S/N ratio: 3¾i/s 60dB (ASA 'A' with tape); 1¾i/s 55dB (ASA 'A' with tape); 1½i/s 55dB (ASA 'A' with tape). FR: 80Hz-15kHz \pm 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: 5¼ × 4 × 1¼in. 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: 7½ips. W and F: 0.15%. FR: 50-15,000Hz. Output power: 4.4 V into 600 ohms. SN: 68dB ASA weighted ref

320nWb/mm. Bias frequency: 120kHz. DC brush type motor. Three heads. Maximum spool capacity: 5in. Dimensions: 10 $\frac{3}{4}$ × 8 × 3 $\frac{1}{2}$ in. Price: on application.

IS-DE

Identical to IS-D version but with universal microphone preamplifier (for dynamic and 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, 7 $\frac{1}{2}$ and 3 $\frac{3}{4}$ ins. 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'

Professional portable tape recorder. Power supply: 12 HP2 batteries or external mains units. Details on request.

M15A

Studio Master recorder, stereo/mono 2-track. NAB or CCIR equalisation. All functions selected by solid state switches. Full logic control. Fail safe operation of all functions. Variable spooling both directions; tape timer with LED readout. True time indication at both speeds. All functions fully remotely controllable. Variable speed unit available with LED. Nine tape positions and shuttle facility. Speeds: 7.5 and 15 ips. Spool cap: 10 $\frac{1}{2}$ ins. Dimensions: 64.5 × 52.5 × 30.8cms. Details and price on application.

■ **PHILIPS**

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

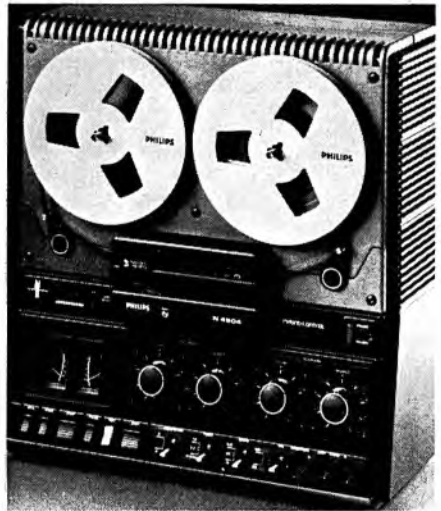
N4504 ★

Mains operated $\frac{1}{4}$ -track tape deck. Speed: 7 $\frac{1}{2}$ 3 $\frac{3}{4}$ 1 $\frac{7}{8}$ ips. Max spool 7in. W and F: 7 $\frac{1}{2}$ ips. <0.15%, 3 $\frac{3}{4}$ ips. <0.2%, 1 $\frac{7}{8}$ ips. <0.2%. (DIN 45,500) 7 $\frac{1}{2}$ 0.15% 3 $\frac{3}{4}$ 2% 1 $\frac{7}{8}$ ips <2%. FR: 7 $\frac{1}{2}$ i/s 35-20,000Hz, 3 $\frac{3}{4}$ i/s 35Hz-18kHz 1 $\frac{7}{8}$ i/s 35-11,000 Hz. Rewind time \leq 180 sec for 7in LP tape. 3 heads. Long life. A-B monitoring suitable DNL with light, electronically controlled capstan motor. Solenoid operation 2 DC winding motors. Two meters 4 digit counter. Sockets tape in /out monitor output. Mic input left or stereo. Mic input right. Headphones socket.

Remote control socket. Size: 58 × 53.5 × 34cm. Price: on application.

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: 7 $\frac{1}{2}$, 3 $\frac{3}{4}$, 1 $\frac{7}{8}$ ips. W and F: 7 $\frac{1}{2}$ <0.1%. 3 $\frac{3}{4}$ <0.15%. 1 $\frac{7}{8}$ <0.3%. DIN or 7 $\frac{1}{2}$ <0.05%. 3 $\frac{3}{4}$ 0.07%. 1 $\frac{7}{8}$ <0.2%. FR: 7 $\frac{1}{2}$ 35Hz-25kHz. 3 $\frac{3}{4}$ 35Hz-19kHz. 1 $\frac{7}{8}$ 35Hz-11kHz. Output: 1V line, 1V for MFB enclosures; S/N: 7 $\frac{1}{2}$ >60dB, 3 $\frac{3}{4}$ >60dB. 1 $\frac{7}{8}$ 58dB. Three heads. Dimensions: 55.7 × 21 × 43.7cms. No rec. retail price.



Philips 4504



Philips M4506

★ Indicates entry is illustrated



Pioneer RT 2044 transport unit



Revax 77 Series



Pioneer RT 2022 transport unit

■ PIONEER

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

RT701

Rack mountable 7ins open reel front loading four track, 2 channel. Tape speeds: 19cm/s, 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 to 20kHz at 9.5cm/s. Output: line 450mV/50K headphones 60mV-8 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 by FG system AC servo direct drive for capstan, 2 by 6 pole inner rotor induction for reel drive. Three heads. Max spool cap: 7ins. Price: on application.

RT 2022 ★

Transport unit and amplifier. Details on application.

RT2044 ★

Transport unit and amplifier × 2 plus four channel four track head. Details on application.

■ REVOX

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

Series 77 ★

Stereo tape recorder. Tape speed: 3³/₄i/s and 7¹/₂i/s max deviation from nominal ±0.2%. W and F: total RMS, weighted 0.04% at 7¹/₂i/s and 0.05% at 3³/₄i/s. Weighted peak to peak flutter as per DIN 0.08% at 7¹/₂i/s and 0.1% at 3³/₄i/s. Tape slip: not exceeding 0.2%. Max spool size: up to 10¹/₂in (minimum hub diameter 2³/₄in). Operating position: horizontal, vertical or inclined. S/N ratio: weighted as per ASA-A, readings via tape; 7¹/₂i/s better than 66dB (4 track 59dB). Crossstalk (at 1kHz); mono better

than 60dB, stereo better than 45dB. Inputs (per channel): mic, low impedance 50-600 ohms. 0.15mV, high impedance up to 100K, 2.5mV, radio 2.5mV; aux 35mV. All inputs have an overload margin of 40dB (1:100). Outputs (per channel): amplifier max 2.5V; Internal impedance: 600 ohms: radio max 1.2V; internal impedance 2.5K; headphones, volume adjustable, load impedance 200 ohms or more. Power amplifier: optional plug-in amplifiers, 2 x 8W continuous RMS power, 2 x 10W music power as per IHFM. Power requirements: voltage selector for 110-250V, 50-60Hz operation without need for conversion, consumption 70-100W. Various versions as follows:

Model 1102 or 1104

Chassis in teak surround, no output amplifiers, 1/2 or 1/4-track. Price: £497.00 (plus VAT).

Model 1122 or 1124

Chassis in teak surround with output amplifiers, 1/2 on 1/4-track. Price: £546.00 (plus VAT).

Model 1302 or 1304

Chassis in metal encasement for rack mounting, no output amplifiers, 1/4 or 1/2-track. Price: £486.00 (plus VAT).

Model 1322 or 1324

As 1302/4, but with 10W output amplifiers, 1/2 or 1/4-track. Price: £536.00 (plus VAT).

Model 1222 or 1224

Complete recorder in suitcase with amplifiers and four speakers, 1/2 or 1/4-track. Price: £573.00 (plus VAT).



Sony TC 645

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 1/2/15i/s).

A700 ★

Stereo tape recorder. Tape speed: 15i/s, 7 1/2i/s and 3 3/4i/s. Weighted peak flutter: at 15i/s less than 0.08%, at 3 3/4i/s less than ±0.06%, at 7 1/2i/s less than ±0.1%. FR (via tape); 15i/s 50Hz-18Hz ±1.5dB; 7 1/2i/s 50Hz-15kHz ±1.5dB; 3 3/4i/s 50Hz-10kHz ±1.5dB. Equalisation: S/N: (ASA-A) referred to peak recording level (+6 VU), 15i/s better than 65dB, 7 1/2i/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 x 40mV 100K. All inputs have an overload margin of 40dB (1:100). Outputs: output level from a peak-level recording at +6VU. Lines A and B 1.55V 5K. 1 x radio (DIN): 0.775V, 10K; 2 x headphone: max 4.9V 100 ohms; 1 x power amplifier: max 3.1V 100 ohms, including remote mains switching for A722. Price: £1056.00 (plus VAT).

■ SONY

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

TC 645 ★

Stereo tape recorder. Recording system. AC



Revox A700

★ Indicates entry is illustrated



Sony TC 377



Sony TC 880-2

bias, 160kHz. Track system: 4-track, 2-channel. Tape speeds, $7\frac{1}{2}$ i/s, $3\frac{3}{4}$ i/s. W and F: DIN $\pm 0.09\%$ at $7\frac{1}{2}$ i/s; $\pm 0.12\%$ at $3\frac{3}{4}$ i/s. S/N ratio: 53dB normal, 56dB special SLH. Heads: F & F record head, PB head, erase head. FR: normal, $7\frac{1}{2}$ i/s 30Hz-20kHz ± 3 dB, 30Hz-20kHz DIN, SLH tape 30Hz-25kHz ± 3 dB, 30Hz-24kHz DIN, normal $3\frac{3}{4}$ i/s 20Hz-17kHz -15dB, 40Hz-13kHz DIN, SLH tape $3\frac{3}{4}$ i/s 20Hz-20kHz -15dB, 40Hz-16kHz DIN. THD: 1.2%. Inputs: mic low 0.2mV (-72dB), line 60mV (-22dB) 100K, DIN 10K. Size: 370 x 378 x 224mm. No rec. retail price.

TC 377 ★

Stereo tape recorder. Recording system: 4-track, 2-channel, stereo and 4-track monaural. Speeds: $7\frac{1}{2}$ i/s, $3\frac{3}{4}$ i/s, $1\frac{7}{8}$ i/s. Heads: F & F head, F & F PB head, erase head. Bias frequency: 160kHz approx. S/N ratio; normal

tape 52dB, with SLH tape 55dB. FR: normal $7\frac{1}{2}$ i/s 30Hz-20kHz ± 3 dB, 30Hz-20kHz DIN, with SLH tape $7\frac{1}{2}$ i/s 30Hz-25kHz ± 3 dB, 30Hz-24kHz DIN, normal $3\frac{3}{4}$ i/s 40Hz-13kHz DIN, SLH tape $3\frac{3}{4}$ i/s 40Hz-16kHz DIN. THD: less than 1.2%. W and F: $7\frac{1}{2}$ i/s $\pm 0.09\%$ DIN, $3\frac{3}{4}$ i/s $\pm 0.12\%$ DIN. Inputs: mic low -72dB (0.2mV), line -22dB (0.06V) 100K, Rec/PB -33dB 3.8K. Size: 418 x 210 x 392mm. Mains: 110, 127, 220 and 240V AC 50/60Hz. 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: $7\frac{1}{2}$ i/s, 15i/s. W and F: $7\frac{1}{2}$ i/s $\pm 0.04\%$ DIN, 15i/s ± 0.03 DIN. S/N ratio: 60dB SLH tape. FR: normal $7\frac{1}{2}$ i/s 25Hz-20kHz ± 2 dB. FeCr tape 25Hz-30kHz ± 2 dB, normal 15i/s 25Hz-30kHz ± 2 dB, FeCr tape 20Hz-40kHz ± 2 dB. 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 765

Details and price on application.

TC 765-2

Details and price on application.

TC 510-2

Compact stereo deck with monitor speaker for professional field recording. Details and price on application.

■ TANDBERG (UK) LTD

Farnell House, 81 Kirkstall Road,
Leeds LS3 1HR.

Tel: Leeds 35111.

10 X

Professional stereo deck combining the Crossfield recording technique with Dolby "B" noise reduction system. Features include facilities for echo, sound-on-sound, editing, A and B tape, tests, etc, peak level meter, remote control facility. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$, 15i/s. W and F: 0.07% using 15i/s tape, 0.09% for $7\frac{1}{2}$, 0.15% for $3\frac{3}{4}$. FR: 30-30,000Hz at 15i/s, 20-26,000Hz at $7\frac{1}{2}$, 20-20,000Hz at $3\frac{3}{4}$. Distortion from amplifier at 0dB: 0.2%. Crosstalk at 1,000Hz min: mono 60dB, stereo 50dB. Four heads. Max. spool capacity: 10in. Dimensions: 43.5 x 45 x 18.5cm. Price: £680.00 (plus VAT).

3500 X ★

Middle priced recorder with the Crossfield

recording technique and featuring peak level meters, sound on sound, echo, source and tape tests for recording, photo-electric stop and front output for stereo headphones. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$, $1\frac{7}{8}$ in/s. W and F: $7\frac{1}{2}$ 0.1%, $3\frac{3}{4}$ 0.18%, $1\frac{7}{8}$ 0.35%. FR: $7\frac{1}{2}$ 30-26,000Hz, $3\frac{3}{4}$ 30-20,000Hz, $1\frac{7}{8}$ 30-11,000Hz. Distortion: 0.3%. S/N: 57dB. Crosstalk: mono 60dB, stereo 50dB. Four heads. Max. spool capacity: 7in. Dimensions: $40 \times 18 \times 41$ cm. Price: £224.00 (plus VAT).

■ TEAC

Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds. Tel: Dunstable 603151.

A 2300 SD

$\frac{1}{4}$ -track 2 channel stereo with Dolby system. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$ in/s. W and F: 0.08% at $7\frac{1}{2}$, 0.10% at $3\frac{3}{4}$. FR-40-24,000 at $7\frac{1}{2}$, 40-16,000Hz at $3\frac{3}{4}$. Distortion: 1% at 1kHz. Output power: 0.3V. S/N: 58dB (65dB wtd) at 3% THD, 65dB (74dB wtd) at 3%. THD with Dolby. One dual speed hysteresis synchronous motor, two eddy current induction motors. Three heads, 7in spool. Dimensions: $44 \times 39 \times 21$ cm. No rec. retail price.

A 3300SX

Stereo tape deck. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$ in/s. W and F: 0.06% $7\frac{1}{2}$, 0.09% $3\frac{3}{4}$ in/s. FR: 30-28,000Hz at $7\frac{1}{2}$, 30-20,000Hz at $3\frac{3}{4}$. Distortion: 1% at normal operating level. S/N: 58dB. Erase, record and playback heads. Maximum spool capacity: $10\frac{1}{2}$ in. Dimensions: $44 \times 44 \times 21$ cm. No rec. retail price.

A3340S

Four channel stereo tape deck. Tape speeds: 15, $7\frac{1}{2}$ in/s. W and F: 0.04% at 15, 0.06% at $7\frac{1}{2}$ in/s. FR: 25-24,000 at 15, 25-22,000 at $7\frac{1}{2}$. Distortion: 1% at normal operating level. S/N: 55dB at 3% THD level, weighted overall. Three heads. Max. spool capacity: $10\frac{1}{2}$ in. Dimensions: $44 \times 52 \times 22$ cm. No rec. retail price.

A 7300

$\frac{1}{4}$ -track reel-to-reel, 2 channel stereo or mono. Tape speeds: $7\frac{1}{2}$, $3\frac{3}{4}$ in/s. W and F: 0.05% at $7\frac{1}{2}$, 0.08% at $3\frac{3}{4}$ in/s. FR: 25-28,000Hz at $7\frac{1}{2}$, 25-20,000Hz at $3\frac{3}{4}$. Distortion: overall 0.8% at 1000Hz normal operating level. S/N: 58dB. Erase, record, playback. Max. spool capacity: $10\frac{1}{2}$ in. Dimensions: $54.8 \times 44 \times 24.6$ cm. No rec. retail price.

A 7300/2T

Reel to reel, 2 track recorder, stereo or mono. Tape speeds: 15, $7\frac{1}{2}$ in/s. 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 1,000Hz normal operating level. S/N: 60dB. Erase, record and playback heads. Max. spool capacity: $10\frac{1}{2}$ in. Dimensions: $54.8 \times 44 \times 24.6$ cm. No rec. retail price.

A-7300 RX

Professional stereo tape deck with DBX system. Tape speeds: 15, $7\frac{1}{2}$ in/s. W and F: 0.04% at 15, 0.05% at $7\frac{1}{2}$. FR: 25-30,000 at 15, 25-28,000 at $7\frac{1}{2}$. S/N: 60dB, 100dB at DBX in. One direct drive DC servo capstan motor. Erase, record and playback heads. Max. spool capacity: $10\frac{1}{2}$ in. Price and further details: on application.

A-6100

Two track. Tape speed: 15, $7\frac{1}{2}$ ips. W and F: 0.04% at 15, 0.06% at $7\frac{1}{2}$. FR: 25Hz-28kHz at 17 ips, 25Hz-28kHz at $7\frac{1}{2}$ ips. S/N: 60dB. Two position switching for Eq. and Bias. 3 motors, 3 heads. Max spool cap: $10\frac{1}{2}$ ins. Dimensions: $44 \times 21 \times 52$ cms. No rec. retail price.

2340SX

Four channel multitrack deck with speeds: $7\frac{1}{2}$ and $3\frac{3}{4}$ ips. W and F: 0.08% $7\frac{1}{2}$ or 0.10% at $3\frac{3}{4}$ ips. FR: 30Hz-22kHz at $7\frac{1}{2}$, 30Hz-16kHz at $3\frac{3}{4}$. S/N: 55dB. 3 motors, 3 heads. Max spool cap: 7ins. Dimensions: $44 \times 22 \times 47.5$ cms. No rec. retail price.

A3300 SX 2T

Half track high speed open reel recorder. Tape speed: $7\frac{1}{2}$, 15 ips. W and F: 0.04% at 15 ips, 0.06% at $7\frac{1}{2}$ ips. FR: 30Hz-28kHz at 15 ips,



Tandberg 3500X

★ Indicates entry is illustrated

30Hz-28kHz at 7 ips. S/N: 60dB. 2 position bias controls, 2 position eq. switch. 3 motors. 3 heads. Max spool cap: 10½ins. Dimensions: 44 × 21 × 44cms. No rec. retail price.

■ 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. ½-track. Speeds: 7½, 3¾, 1⅞, 1⅝i/s. Max spool 5in. W and F: 7½i/s 0.2%, 3¾i/s 0.25%, 1⅞i/s 0.35%, 1⅝i/s 0.56%. H and N: 7½i/s -57dB; 3¾i/s -55dB; 1⅞i/s -53dB. FR: 7½i/s 35Hz-20kHz; 3¾i/s 35Hz-16kHz; 1⅞i/s 35Hz-8kHz; 1⅝i/s 35Hz-5kHz (all to DIN 45-500). Replay char: NARTB. Level indicator: two meters. One motor. Pause. Digital position indicator. Monitoring. Parallel track replay. Size: 11 × 3 × 8in. Price: £348.84 (plus VAT).

4400 Report Stereo IC

¼-track version of 4200. Specification almost identical. Price: £348.84 (plus VAT).

Uher 5000 Universal

Mains ½-track mono recorder. Speeds: 3¾, 1⅞, 1⅝i/s. FR: 40Hz-15kHz ±3dB at 3¾i/s. Max spool: 5¾in. W and F: 3¾i/s ±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).

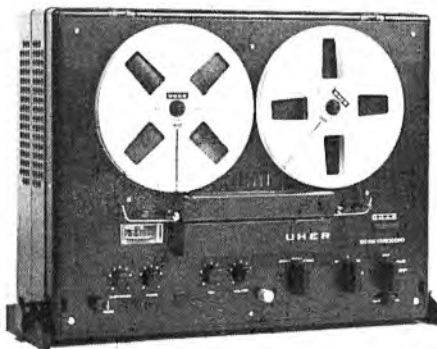
SG520 ★

Stereo mains operated reel to reel tape recorder with internal speakers and interchangeable head assemblies (½-track and ¼-track). Speeds: 7½, 3¾, 1⅞i/s. Max. spool size: 7in. W and F: 7½i/s 0.05%, 3¾i/s 0.10%. Hum and noise: 7½i/s -57dB/2-tracks (-55dB/4-tracks), 3¾i/s -55dB/2-tracks (-53dB/4-tracks), 1⅞i/s -55dB/2-tracks (-53dB/4-tracks). FR: 7½i/s 30Hz-20kHz, 3¾i/s 30Hz-15kHz, 1⅞i/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 × 800mV across 15K, line (4 track) 2 × 600mV across 15K. Speaker: 2 × 6W (sine) across 4 ohms. Features: Input mixing, vertical and horizontal operation,

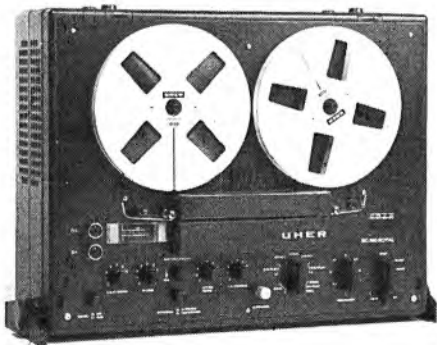
interchangeable plug-in head assemblies, add-on automatic level control module (optional accessory), matt black finish and tinted perspex cover. Price: £309.00 (plus VAT).

SG560 ★

Semi-professional mains operated reel to reel tape recorder with Dia-pilot slide synchroniser mono/stereo ¼-track or ½-track (interchangeable assemblies). Speeds: 7½, 3¾, 1⅞, 1⅝i/s. Max spool size: 7in. W and F: 7½i/s ±0.04%, 3¾i/s ±0.10%, 1⅞i/s ±0.20%. Hum and noise: 7½i/s -58dB/2-track (-56dB/4-track), 3¾i/s -57dB/2-track (-55dB/4-track), 1⅞i/s -56dB/2-track (-55dB/4-track). FR: 7½i/s 20Hz-20kHz, 3¾i/s 20Hz-15kHz, 1⅞i/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-18V. Outputs: monitor 2 × 0.65V across 15K, line 2 × 600mV across 15K, speaker 2 × 10W (sine) across 4 ohms. Audio



Uher SG 520



Uher SG 560



Uher 4000 Report

45mV-20V across 2M ohms. Output: line 1 V across 15K, speaker 0.8W across 4 ohms. Features: die-cast metal case, 5in spool size, operation from dry batteries, rechargeable accumulator, 110-240V AC mains/charger unit, 6V, 12V and 24V car battery, power supply for condenser mic, internal speaker, switchable (speech, music and off) automatic level control. Price: £290.00 (plus VAT).

SG 630 Logic ★

Professional standard with OMEGA drive — a non pinch roller drive system. Speeds: 19, 9.5 and 4.7cm/s. W and F: 19cm/s = 0.04%, 9.5cm/s = 0.1%, 4.7cm/s = 0.20%. FR: 20Hz-25kHz at 19, 20Hz-16kHz at 9.5, 20Hz-10kHz at 4.75%. Output: DIN 750mV 15K ohms, monitor 750mV 15K ohms, headphone 1.7V 200 ohms. Switching for Fe tapes. Four motors, 2 heads. Max spool cap: 10½ins. Dimensions: 51 × 40 × 14.6cms. Price: £589.50 (plus VAT).



Uher SG 630 Logic

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 ½-track. Speeds: 7½, 3¾, 1⅞, 1⅝/16i/s. W and F: 7½i/s 0.20%, 3¾i/s 0.25%, 1⅞i/s 0.35%. Hum and noise: 7½i/s -57dB, 3¾i/s -55dB, 1⅞i/s -53dB. FR: 7½i/s 35Hz-20kHz, 3¾i/s 35Hz-16kHz, 1⅞i/s 35Hz-8kHz, 1⅝/16i/s 35 Hz-5kHz. All figures to DIN specification 45 500. Inputs: mic 0.12mV-40mV across 200 ohms, radio 2.4mV-700mV across 47K, phono

It's the cat's whiskers!

A fascinating excursion into the past. The author has unearthed some 400 trade names from the crystal set days, along with nearly 200 manufacturers—giving the name of the set, technical description and original price. He also reviews the first days of broadcasting and looks at the difficulties experienced by crystal set users. Concise information and over 40 illustrations make this book a valuable work of reference as well as a rare piece of nostalgia for collectors.

VINTAGE CRYSTAL SETS 1922-1927

£2.50 from bookshops or £2.80 inclusive direct from Wireless World, Room 11, General Sales Dept., IPC Business Press Ltd., Dorset House, Stamford Street, London SE1 9LU.



A
book
from

wireless
world

Test Tapes and Discs

(See also Music Centres section)

*Indicates entry is illustrated.

Abbreviations used in this section are given on page 43.

■ AGFA-GEVAERT

Agfa-Gevaert Ltd, Great West Road, Brentford, Greater London.
Tel: 01-560 2131.

Calibration Test Tape 38-25

Full-track recording. Speed: 15i/s. NARTB core. Magnetic coating out. 1in tape. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalisation: 35 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. Equalisation: 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. Equalisation. 70 μ s. Gliding tone: 31.5kHz-18kHz. 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. Magne-

tic coating in. Reference frequency: 1kHz. Gap adjustment frequency: 1kHz and 10kHz. Equalisation: 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.

■ 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: £117.69 (inc. VAT).

■ AMPEX

Amplex Great Britain Ltd, Acre Road, Reading, Berks RG1 6HZ.
Tel: Reading 55341.

For all pro audio tapes, including CCIR and NAB test tapes 1/4in to 2in. Prices and details of specifications on request.

■ BANG AND OLUFSEN (UK) LTD.

Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester 2159.

Beocenter 1600

Radio Section: Band coverage: 87.5-108MHz plus 4 pre-sets. Sensitivity: <1.8 μ V/75 ohms IEC <2.5 μ V/75 ohms IHF. S/N: >65dB DIN 45 500. Selectivity: >55dB IHF. FR: 20-15,000Hz \pm 1.5dB DIN 54 500 HD: <0.5% DIN 45 500. Amplifier Section: Power output: 2 \times 22W RMS, 2 \times 40W music power. HD: <0.1% at 50mW/1kHz. <0.5% at full output/1kHz. FR: 20-30,000Hz \pm 1.5dB DIN 45 500. Inputs: Phono: 2.5mV/47 k Ohms, Tape: 140mV/700 k Ohms, FM aerial: 75 and 240 Ohms. Dimensions: 8.5 \times 26 \times 10.2cms. Price: on application.

HCD 1000

For recording and playback of cassettes in conjunction with Hi-Fi audio equipment. Fitted with Dolby noise reduction unit. Will accept

★ Indicates entry is illustrated

standard and Chromium Dioxide tape. Tape speed: 1 $\frac{1}{2}$ ips. Price: £158.40 (plus VAT).

■ 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: £2.86 (inc. VAT).

■ EMI SERVICE DIVISION

EMI Sound and Vision Equipment Ltd,
252 Blyth Road, Hayes UB3 1HW.
Tel: 01-573 3888.

SRT19

Test tape at 3 $\frac{3}{4}$ i/s with 90 + 3180 μ s characteristic. Full-track recording. Spoken announcements followed by 30Hz-14kHz in bands. Section of 3kHz tone for checking wow and flutter, also strobe markings for checking speed.

SRT18

Test tape at 7 $\frac{1}{2}$ i/s with 70 μ s characteristic. Full-track recording. Spoken announcement followed by 30Hz-16kHz in bands. Section of 3kHz tone for checking wow and flutter, also strobe markings for checking speed.

SRT17

Test tape at 15i/s with 35 μ s characteristic. Full-track recording. Spoken announcement followed by 30Hz-20kHz in bands. Section of 3kHz tone for wow and flutter check also strobe markings for checking speed.

SRT18C

Test tape at 7 $\frac{1}{2}$ i/s with 70 μ s characteristic. Full-track recording. Spoken announcement followed by 30Hz-16kHz in bands. Wound into broadcast type cartridge.

Prices and further details of EMI test tapes available on request.

■ ITT

ITT Consumer Products (UK) Ltd,
Maidstone Road, Sidcup, Kent DA14 54T.
Tel: 01-300 7733.

Stereo 85 Recorder System

Complete with LS48 speakers, cassette deck with amplifier output of 7W per channel. Auto

record level control. Manual over-ride. Tape selector switch, plus control, digital tape counter. Accepts stereo headphones. Tape-end indicator light, on/off indicator light. Slide controls. Price: £115.00 (inc. VAT).

■ LYRICHORD

N. Miers & Co Ltd, 28 Piercing Hill,
Theydon Bois, near Epping,
Essex CM16 7LE.
Tel: 037-881 2611.

8-track cartridge demonstration and test tape £2.48 (plus VAT).

■ METROSOUND AUDIO PRODUCTS LTD

Audio Works, Cartersfield Road,
Waltham Abbey, Essex EN9 1JF.
Tel: Lea Valley 712712.

MT63 Cassette Azimuth Alignment Tape

For accurate alignment of cassette deck playback heads. Price: £2.50 (plus VAT).

MT73 Cassette Frequency Response Test Tape

Required for the precise checking of accuracy 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 incorporating Dolby Noise reduction systems. Price: £3.50 (plus VAT).

MT76 Reel to Reel Frequency Response Test Tape

Essential for the precise checking of accuracy of tones produced from open reel recorders. 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.

■ MICRO ACOUSTICS

Webland Electronics Ltd, Mirabel House,
117-121 Wandsworth Bridge Road, London SW6 2NA.
Tel: 01-736 0987/8/9/0.

TT2002-e

Transient and tracking ability test record to determine how well a cartridge reproduces music. Using sounds and selections, it places demands on cartridge tracking and transient abilities as well as frequency response, channel balance, and stereo separation. Full details from above address. Price: £3.50 (plus 30p packing and postage).

■ PHILIPS

Combined Electronic Services Ltd,
604 Purley Way, Waddon,
Croydon CR9 4DR.
Tel: 01-686 0505.

Testcassette 397 37001 ★

Speed: 17 1/2 i/s. Test cassette designed for checking and adjusting tape speed and the azimuth setting of the record/playback head. Range: 6.3kHz \pm 1 per cent tone with 800Hz pulses. Equalisation: 120 μ s + 1,500 μ s. Price: £8.48 (plus VAT).

Head Cleaning Cassette 811/CCT ★

It is inevitable that the slight friction between tape and tape-heads/guides should grind small amounts of material off the tape and certain low quality types are more prone to this problem than others. Particles adhere to heads reducing tape contact degrading both recording and playback. Normally the Head



Philips Head Cleaning Cassette

Cleaning Cassette can cope but where build-up becomes excessive, cleaning with alcohol is necessary. Price: 89p (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).

Mirror Cassette 814/SMC ★

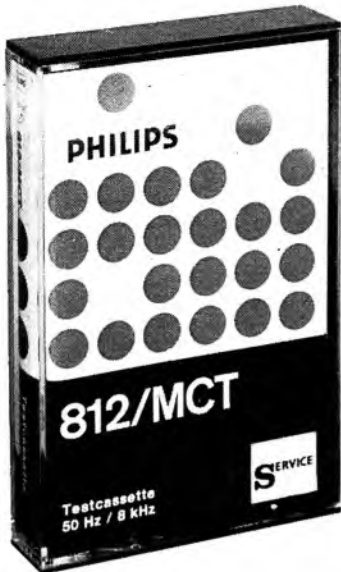
Device which enables visual check to be made on state of tape guide and pressure roller as well as providing check on recording/playback and erase heads for wear and/or contamination. Adjustments can then be made as necessary to ensure tape runs in straight path past the heads and capstan with a minimum of twisting and bending. Price: £18.00 (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



Philips Testcassette 397.37001



Philips 812/MCT



Philips Service Mirror Cassette



Philips Cassette Torque Meter

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 winding torque is indicated by the dial on the take-up spool of the meter, the other spool indicating the counter torque. Price: £18.70 (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: £19.80 (plus VAT).

■ REDIFFUSION RECORDS

Rediffusion Ltd, King's Court,
9 Dean Street, London W1.
Tel: 01-437 4153.

Popular Guide to Stereo PHF 1000

12in demonstration disc created by Popular Hi-Fi and Rediffusion Records narrated by James Burke. It presents contrasts in stereo, large orchestra, small groups, voices, soloists accurately recorded and precisely projected. James Burke uses twelve music tracks to show

stereo quality, ambience, balance, projection, channel identification and special effects. Price: £1.75 (including VAT).

■ 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 trackability, 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 $\frac{1}{2}$ 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: £8.40 (plus VAT).

TTR 103 Phono Cartridge Trackability Test Record — Professional Equipment required

This 45rpm 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: £8.40 (plus VAT).

TTR 109 Level and Crosstalk Test Record Professional Equipment required

This 33 $\frac{1}{2}$ rpm 12in record provides 12 bands of 1kHz Left and Right reference levels at 5cm/sec recorded velocity. May be used as a cross talk test. Designed for professional use. Instructions are included. Price: £5.70 (plus VAT).

TTR 110 "An Audio Obstacle Course — Era III" — Listening Test Record

This 33 $\frac{1}{2}$ rpm test record provides the most demanding and definitive audio tests for high fidelity cartridges. The total level range is the same as the TTR 101, but the increments of increased velocity are refined (6dB from first to second level; 2dB for the remaining three

levels). The TTR 110 includes recordings of difficult-to-track instruments, with complete orchestral and vocal ensembles from commercial recordings plus level, balance and phasing checks. Complete instructions are included. Price: £3.60 (plus VAT).

Star billing

Radio cassettes, unit audio, music centres, hi-fi equipment, colour and monochrome televisions – if they're ALBA you can be certain of precision workmanship and quality, combined with real value for money. This is ALBA policy – always has been. No wonder ALBA have established over sixty years an enviable reputation as producers of the very best in home entertainment.

ALBA

-worth coming home to!

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



Unit Audio: Record Systems

(see also Music Centres section)

★ Indicates entry is illustrated

Abbreviations used in this Section are given on page 43.

■ **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 channel greater than 40dB. VHF aerial: 75 ohm co-ax. Audio power output: 10W x 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, 78rpm. 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 x 36.9 x 15.2cm. Loudspeaker dimensions: 26 x 16.5 x 36cm. Matching black and teak finished cabinets. Price: on application.

■ ALPHA

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

GF3500

Stereo combination unit with FM radio 2x 18W RMS. Power output: 2 x 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: on application.

■ BEOCENTER

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

Beocenter 3500 ★

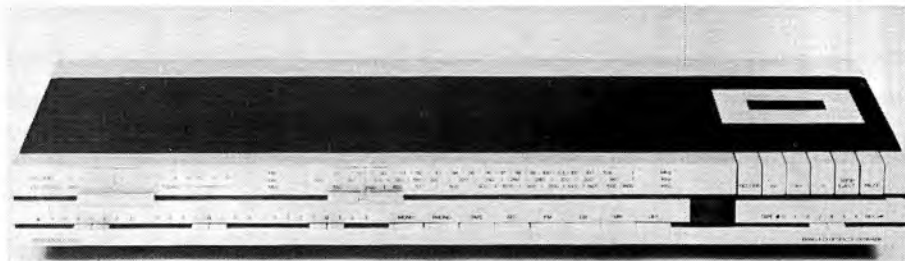
FM stereo receiver in cabinet with record deck. Motor unit: B & O. Two speeds. 12in grooved aluminium alloy platter. Belt drive. High compliance pickup arm. Cartridge: B & O SP10A, 0.6 thou diamond stylus. Range: FM 87.5-104MHz. Variable tuning plus six presets. AFC. Ratio detector. 'Balanced light' tuning system. Usable sensitivity: 2µV. Aerial input: 75-ohm coaxial. Stereo decoder fitted. Inputs: PU (1) 3mV 47K, PU (2) 200mV-3V 1M, tape 200mV-3V 1M. Output: 40W RMS per channel. Output impedance: 4 ohms. Tone controls: bass ±17dB at 50Hz, treble ±14dB at 10kHz. Rumble filter: 12dB/octave below 80Hz, scratch filter -12dB/octave above 4kHz. HD: 0.3% at 1kHz at rated output (both channels driven). FR: 30Hz-30kHz ±1.5dB. Mains: 110, 130, 220, 240V AC. Sizes: 22⁷/₈ x 13⁷/₈ x 5³/₄in. Finish: black or brushed aluminium fascia, teak, rosewood or white side panels, hinged dust cover. Price: £380.00 (plus VAT).

Beocenter 1800

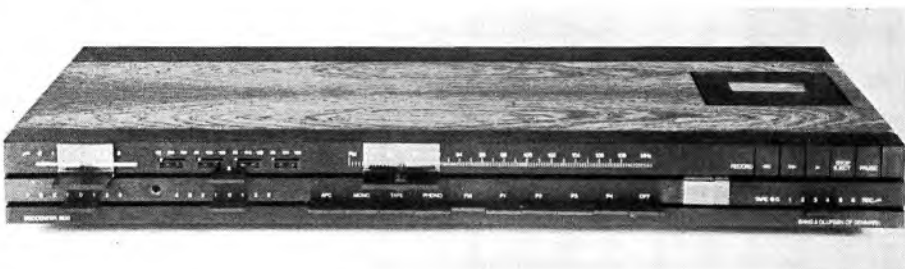
FM stereo receiver with built-in record deck. Tuning range 87.5-108MHz. Variable tuning. Sensitivity: <2.5µV/75 ohms IHF. HD: <0.5% at full output. Output: 22W per channel. Speakers: 4 ohms. Headphones: max. 10V 200 ohms. FR: 20Hz-20kHz ±1.5dB. Motor unit: 33¹/₂ and 45rpm. Radial pick-up arm with MMC 3000 cartridge. Fully automatic. Rum-



Beocenter 3500



Beocenter 1500



Beocenter 1600

ble: $> \pm 60.12\%$ DIN. Wow and flutter: $< \pm 0.12\%$ DIN. A synchronous motor. Idler wheel and belt drive. 12in grooved aluminium alloy platter. Hinged translucent dust cover. Finish: brushed aluminium deck, black anodised fascia. Size: $19\frac{3}{4} \times 4\frac{3}{4} \times 14\frac{1}{2}$ in. Price: £245.00 (plus VAT).

Beocenter 3600

Combining $2 \times 22\text{W}$ amplifier, integrated record player, Dolby cassette recorder. Tuner FR: 20Hz-15kHz $\pm 1.5\text{dB}$ DIN. Amplifier FR: 20Hz-30kHz $\pm 1.5\text{dB}$ DIN. Inputs: External tape. Outputs: speakers, headphones, tape. Bass and treble controls. Record play with speeds of $33\frac{1}{2}$ and 45 rpm with W and F $< \pm 0.12\%$ DIN $< \pm 0.06\%$. Recorder FR: 20Hz-12,500Hz DIN. W and F: $< \pm 0.3\%$ DIN. Price £400.00 (plus VAT).

Beocentre 1500 ★

Dimensions: $8.5 \times 66 \times 26\text{cm}$. Power supply: 110, 130, 220, 240V AC/50Hz. Power consumption: 20-170 watts. FM radio section: tuning range 87.5-104MHz. Sensitivity: $< 1.8\mu\text{V}/75\Omega$ IEC. $< 2.5\mu\text{V}/75\Omega$ IHF. Limiting: $< 1.5\mu\text{V}/75\Omega/-3\text{dB} \pm 40\text{kHz}$. Signal/noise: $> 65\text{dB}$ DIN 45 500. Selectivity $> 55\text{dB}$ IHF. Frequency response: 20-15,000Hz $\pm 1.5\text{dB}$ DIN 45 500. Harmonic distortion $< 0.6\%$ DIN 45 500. Channel separation: $> 30\text{dB}$ DIN 45

500. Pilot suppression: $> 35\text{dB}/19\text{kHz}$ and 38kHz. AM radio section: tuning range: LW: 147-350kHz. MW: 520-1610kHz. Sensitivity: LW: $90\mu\text{V}/200\text{kHz}/20\text{dB}$ S/N ratio. MW: $90\mu\text{V}/1\text{MHz}/20\text{dB}$ S/N ratio. Bandwidth: 4.5kHz/3dB. Amplifier section: power output: $2 \times 20\text{W RMS}/4\Omega$. $2 \times 40\text{W}$ music power/4 Ω . Harmonic distortion: $< 0.1\%$ at 50mW/1000Hz. $< 0.5\%$ at full output/1000Hz. Frequency response: 20-30,000Hz $\pm 1.5\text{dB}$ DIN 45 500. Intermodulation 1% DIN 45 500. Power bandwidth (-3dB). 10-35,000Hz DIN 45 500. Damping factor: $> 12/1000\text{Hz}$ DIN 45 500. Inputs: phone: 2.5mV/47K Ω . Tape: 3000mV/80K Ω . FM aerial: 75 and 240 Ω . Outputs: Speakers: 2 stereo pairs DIN/4 Ω . Headphones: Maximum 8V/100 Ω . Tape: 25mV/40K Ω . Signal/noise: phono: $> 50\text{dB}/50\text{mW}$ (B weighted). Tape: $> 55\text{dB}/50\text{mW}$ (B weighted). Tone controls: Bass: $\pm 17\text{dB}$ at 40Hz. Treble: $\pm 14\text{dB}$ at 12.5kHz. Cassette section: system compact cassette/C60-C90. Wow/flutter: $< \pm 0.3\%$ DIN. $< \pm 0.15\%$ WRMS. Speed deviation: $< \pm 1.5\%$. Fast forward/rewind: 90 sec (C60). Frequency response: 40-12,500Hz DIN 45 511. Signal/noise: $> 52\text{dB}$ (CrO₂) DIN 45 405. Erasure: $> 65\text{dB}$. Tape head: super permalloy. Tape types: CrO₂/Fe₂O₃ switchable. Special features; Electronic stop at end of tape, diadic light recording level meter. Accessory: Telescopic FM aerial type 8902010. Price: £245.00 (plus VAT).

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: $1.8\mu\text{V}/75\Omega\text{ IEC}$ $2.5\mu\text{V}/75\Omega\text{ IHF}$. Limiting: <math><1.5\mu\text{V}/75\Omega / -3\text{dB} \pm 40\text{kHz}</math>. Signal/noise >65dB DIN 45 500. Selectivity: >55dB IHF. Frequency response 20-15,000Hz $\pm 1.5\text{dB}$ DIN 54 500. Harmonic distortion <math><0.5\%</math> DIN 45 500. Channel separation >30dB DIN 45 500. Pilot suppression: >35dB/19kHz and 38kHz. Amplifier section: power output: 2 × 22W RMS/4 Ω . 2 × 40W music power/4 Ω . Harmonic distortion: <math><0.1\%</math> at 50mW/1kHz. <math><0.5\%</math> at full output/1kHz. Frequency response: 20-30,000Hz $\pm 1.5\text{dB}$ DIN 45 500. Inputs: Phono: 2.5mV/47K Ω . Tape: 140mV/700K Ω . FM aerial: 75 and 240 Ω . Outputs: speakers: 2 stereo pairs DIN/4 Ω . Headphones: Maximum 8V/200 Ω . Tape: 100mV/100K Ω . Signal/noise: phono: >50dB/50mW. Tape: >60dB/50mW. Tone controls: Bass: $\pm 17\text{dB}$ at 40Hz. Treble: $\pm 14\text{dB}$ at 12.5kHz. Cassette section: system compact cassette/C60-C90. Wow/flutter: <math>< \pm 0.3\%</math> DIN. $> \pm 0.15\%$ WRMS. Speed deviation $> \pm 1.5\%$. Fast forward/rewind 90 secs. (C60). Frequency response: 40-12,500Hz. DIN 45 500. Signal/noise: >52dB (CrO₂). DIN 45 405. Erasure: >65dB. Outputs: radio: 800mV/22K Ω . Aux: 50mV/22K Ω . Tape head: super permalloy record/playback. Tape types: chromium dioxide/iron oxide switchable. Special features: electronic stop at end of tape. Diadic light recording level indicator. Accessory: Telescopic FM aerial type 8902010. Price: £245.00 (plus VAT).

■ DANKS

Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs.
Tel: Newcastle Staffs 615131.

Club 2200

Combination turntable and radio receiver in single compact housing. Turntable: Speeds: 45 and 33 RPM. Rumble: measured according to DIN 45.500. Weighted: better than 55dB. Unweighted: better than 35dB. W and F: less $\pm 0.2\%$. Cartridges: type ADC K7E. Frequency range: 15-18,000Hz $\pm 4\text{dB}$. Channel separation: better than 20dB/1kHz. Amplifier section. Power output: 2 × 22W sinus/4 ohm. Distortion: less than 0.5% max. output/1kHz. Frequency response: 20-25,000Hz. Signal to

noise ratio: better than 70dB/max. output. Channel separation: better than 50dB/1kHz. Inputs: Phono/Tape. FM Section. Tuning range: 87-104MHz. Pre-select stations: Diode tuned. Sensitivity: 1.8 $\mu\text{V}/26\text{dB S/N} \pm 75\text{kHz}$. Signal to noise ratio: 60dB/1mV/100% mod. Channel separation: better than 40dB 1kHz. Frequency response: 50-15,000Hz $\pm 1.5\text{dB}$. AM Section. Tuning range MW: 510-1660kHz. Sensitivity: 1 $\mu\text{V}/3\text{dB}$ signal to noise. Signal to noise ratio: 53dB/1mV. Control range. Tuning: variable AM and FM tuning, 5 pre-select station. Bass: rotary knob $\pm 15\text{dB}$. Treble: rotary knob $\pm 15\text{dB}$. Balance: rotary knob 0-100%. Mono: Push button. AFC: Push button. Connections. FM antenna: 75 ohm. Phono: 2mV/47k ohm. Tape: 200mV/100k ohm. Speakers: 2 × stereo (4-16 ohm). Price: £236.01 (plus VAT).

■ DECCA RADIO AND TELEVISION LTD

Neachells Lane, Willenhall, West Midlands, WV13 3RW.
Tel: Willenhall 67367.

DS5328 (Audio 12)

Power output: 2 × 12W RMS. Distortion: 0.2% max. at 1kHz. Frequency response: 20Hz-30kHz. Signal/Noise ratio: 70dB. Turntable: Garrard 6200CP single play with cue facility. Cartridge: Acos GP104 Ceramic Diamond. Tuner. LW: 150-275kHz, MW: 510-1620kHz, FM: 87.5-107.5MHz. Sockets. Input: FM aerial 75 ohm, FM aerial 300 ohm, AM aerial/earth, tape playback, DIN 300mV/100K. Output: Headphones 8 ohms, tape record, DIN 50mV/5K, front and rear speakers 8 ohms. Dimensions. Main unit: 48.4 × 39.5 × 19cm. Weight: 9Kg. Speakers: 23.9 × 14.3 × 34.3cm. Weight: 3.3Kg. Price: on application.

■ FERGUSON

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

3495

Audio compact stereo/tuner/amplifier and record deck with two matched speakers. Record deck: BSR C173, 3-speed, ceramic cartridge, automatic. Amplifier. Output: 10W RMS, PC into 8 ohms. THD: <math><0.5\%</math>. Frequency response: 25Hz-30kHz $\pm 3\text{dB}$. Loudness compensation. Tuner. Band coverage: FM, MW, LW, SW. Switchable AFC: FM stereo beacon. Switched tape and aux. sockets. FM: 87.5-104MHz. MW: 184-571 metres. LW: 1110-2000 metres. SW: 47-51.2 metres.

★ Indicates entry is illustrated

Speakers (2). Finish: black and silver with teak surround. Price Excluding VAT: on application.

■ FIDELITY RADIO LTD

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

UA9

Player and AM/FM radio in a smoothly elegant new unit combining black and teak finish. There are push button controls for selection of long, medium and FM wavebands as well as phono, auxiliary, and automatic frequency correction. A stereo broadcast indicator light is provided. The record player unit has a single play autodeck, cueing device and stereo ceramic cartridge with turnover stylus. Sockets are provided for speakers, AM and FM aerials and auxiliary tape recorder playback, and record. Unit Audio 9 is supplied complete with tinted, removable, hinged, transparent lid, and FM indoor aerial 300 ohms. Record player unit: BSR multispeed single play deck with stereo ceramic cartridge, turnover sapphire stylus, and cueing device. Power consumption 60 watts. Performance: MW 525-1625kHz, 572-184 metres. Sensitivity 400 μ V/metre at 1MHz for 20dB signal to noise ratio. LW 150-250kHz, 2000-1200 metres. Sensitivity 1mV/metre at 200kHz for 20dB signal to noise ratio. FM 87.5-108MHz. Sensitivity better than 14 μ V for 3dB from limiting. FM stereo channel separation 25dB at 1kHz. Output power: 8 watts per channel RMS into 4 ohms. With thermal and current overload protection. S/N ratio: 55dB with tone controls flat. Frequency response: 40Hz to 15kHz \pm 3dB 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 ohms. Output sensitivity 100mV at low impedance. Speakers: Two units each with 203mm \times 128mm (8 \times 5ins). Loudspeaker impedance 4 ohms. Lead length approx. 3.6 metres (12ft) terminated with a 2 pin DIN plug. Dimensions: unit with lid 166mm high \times 540mm wide \times 380mm deep (6 $\frac{1}{2}$ \times 21 $\frac{1}{4}$ \times 14 $\frac{3}{4}$ ins). Speakers 310mm \times 205mm \times 125mm (12 $\frac{1}{4}$ \times 8 $\frac{1}{8}$ \times 5). Price: £95.56 (plus VAT).

■ HACKER RADIO LTD

Norreys Drive, Cox Green,
Maidenhead, Berks. SL6 4BP.
Tel: Maidenhead 22261.

GAR600 ★

Record playback: DIN on front panel. Record, 140mV from 10K ohm source: playback,



Hacker GAR 600

150mV into 180K ohm impedance. Loudspeakers: DIN for front (main) speakers and rear (ambiophonic) speakers. 4-16 ohms impedance. Ambiophonic output is fixed at -10dB on main front output. Aerials: standard co-axial for VHF/FM. Co-axial car type for AM. Stereo headphones: (8-200 ohms impedance). Standard 6mm jack. Insertion of headphones plug automatically cuts out the loudspeakers. Radio Section. Wavebands: VHF, long and medium. FM: (VHF). Coverage: 87.5-104.5MHz. Inter-station muting and automatic frequency correction operated by push-button switch. IHF sensitivity: 2 μ V. Input for 50dB signal-to-noise: 10 μ V. Ultimate signal-to-noise: 65dB. Image: 44dB. Repeat spot: 48dB. AM rejection: 45dB. Total harmonic distortion: better than 0.5%. Stereo radio decoder: phase locked loop. Separation: 32dB at 80Hz, 33dB at 1kHz, 30dB at 5kHz. Pilot tone rejection: 50dB. AM: (LW and MW). Coverage. LW: 150-276kHz. MW: 518-1622kHz. Sensitivity (L and MW): 3-7 μ V for 10dB signal-to-noise ratio. Audio Section. Power output: 14W + 14W RMS into 8 ohms; both channels driven. Bandwidth: 25Hz-40kHz. Total harmonic distortion: 0.075% at 1kHz typical for +15dB on nominal input. 0.15% from 70Hz-10kHz. Tone controls. Bass: \pm 12dB at 100Hz \pm 2dB. Treble: \pm 12dB at 10kHz \pm 2dB. Balance control: complete fade of either channel. Separation: greater than 40dB at 70Hz-10kHz. Overload factor: 28dB (approx. thirty times the recommended input). Scratch filter: sharply rejects frequencies of 7kHz and above. 3dB at 7kHz, 12dB/octave. Rumble filter: sharply rejects frequencies of

below 60Hz. 3dB at 60Hz; 12dB/octave ultimate. Contour: equalises frequency response at low acoustic levels. Effective on all modes; disc, radio, tape and playback. At -30dB on full power: +10dB at 100Hz; +5dB at 10kHz. Record playing deck: Garrard 35SB two-speed (33 $\frac{1}{3}$ rpm and 45rpm) single play with Veritron V100 magnetic pick-up and diamond stylus. Teak Cabinet. Designed to operate with any quality 8 ohm speakers. Price: on application.

■ NYTECH

Nytech Ltd, 4 High Street, Nailsea, Bristol BS19 1BW.
Tel: Nailsea 5267.

1252 ★

Compact stereo receiver and record deck comprising Nytech C1A 252 receiver and Garrard 125SB belt drive deck fitted with Shure M75EJ cartridge. Output 25W + 25W RMS into 4 ohms both channels driven bass, middle and treble controls. Distortion < 0.1% at -3dB full power. Push button preset VHF/FM tuner. Phase lock loop stereo decoder, low filter, high filter, AFC, mono, contour (loudness) controls, tape monitor, 2 sets L/S outputs



Nytech 1252



Omex AU10

(switched) + 1 set rear speakers (ambiophonic). Finishes: teak, walnut, rosewood, white and black. Price: £214.94 (plus VA1).

■ OMEX

Omex Products Ltd, Wandle Mills, Beddington, Croydon, Surrey CR0 4SB.
Tel: 01-686 9022.

AU10 ★

Compact unit giving L/M and FM stereo radio plus amplifier giving 20W total power and BSR multispeed record playing deck. Finished in simulated teak complete with perspex dust cover and matching speakers. Amplifier section: output: 2 x 10W. Four rotary controls. Record deck: autochanger BSR C123 R1. Price: on application.

Discomex

Complete stereo disco system with fully integrated amplifier producing 60W total power, full facilities including pre-fade, headphone monitor circuit, individual slide faders for each deck, separate cue lights, and illuminated VU meters. Price: on application.

■ PHILIPS

City House, 420/430 London Road, Croydon CR9 3QR. Tel: 01-689 2166.

RH852

Stereo tuner/amplifier/record player combination. Range: FM 87.5-104MHz, SW 5.95-9.78MHz, MW 520-1605kHz, LW 150-345kHz. Output: 6W RMS per channel \pm 1dB into 4 ohms. HD: \leq 1%. FR: 20Hz-20kHz +1dB, -3dB. S/N ratio: better than +50dB at rated output. Tone controls: bass \pm 10dB at 50Hz, treble \pm 10dB at 10kHz. DIN socket for recorder. Philips GCO27 record player. Speeds: 33 $\frac{1}{3}$ and 45rpm. Pick-up cartridge: GP 400. Mains: 110, 127, 220 and 240V AC. Power consumption: 47W max. Cabinet: polystyrene, silver finished. Size: 545 x 400 x 176mm. Price (complete system): £200 (plus VA1).

RH837 ★

FM tuner/amplifier in cabinet with record deck and two separate speakers. 46 transistors, 23 diodes and one IC. Range: 87.5-104MHz. Four preset stations. Switchable AFC. Stereo decoder fitted. Slider controls for volume, balance, bass, treble, presence, contour/rumble/scratch, silent tuning, speaker selection, input selectors, AFC, headphones,

★ Indicates entry is illustrated



Philips RH 837

stereo-4. Output: 20W RMS per channel ± 1 dB. Output impedance: 4 ohms. FR: 25Hz-25kHz ± 1.5 dB. HD: < 1%. Motor unit: Philips GC008. Finish: polystyrene case with tinted transparent plastic cover. Speakers: Philips RH431 enclosures. Price (complete system): £280 (plus VAT).

■ 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 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 30W each with 20cm bass and 2.5cm dome tweeter. Acrylic dust cover. Available in teak, walnut. Price: £224.87 (plus VAT).

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 2.5 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



Skantic 3935



Skantic 2064

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: Teak £256.39, walnut/lacquer £261.99, rosewood £268.40 (all plus VAT).

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.

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: teak £359.84, walnut/lacquer £364.34, rosewood £368.83 (all plus VAT).

TELEFUNKEN

Aeg-Telefunken (UK) Ltd,
217 Bath Road, Slough, Berks. SL1 4AW.
Tel: Slough 872101.

Electronic Centre 6001

Telefunken deck with speeds of 33½ 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).

TOSHIBA (UK) LTD

Toshiba House, Great South West Road,
Feltham, Middlesex. Tel: 01-751 1281.



Skantic 2541



Skantic 4051

SM-2200

4 waveband stereo compact. FM/MW/LW/SW. Audio output: 15 × 2 RMS 1kHz 8 ohms. 1% distortion. Magnetic cartridge. Semi-automatic turntable, 4 pole motor, 30cm platter, S-shaped arm, belt drive. L.E.D. tuning indicator. A/B speakers. Complete with speakers. Dimensions: 51 × 38 × 20cm. Silver/wood finish. Price: £204.00 (plus VAT).

SM 2100

3 waveband. Stereo compact. Auto return rim drive record player. Ceramic cartridge. Static balance. Pipe arm. 25cm platter. Audio power 8W × 2 RMS at 1kHz 8 ohms. 1% distortion. L.E.D. for power, tuning, stereo beacon. Complete with 2 way speaker system in wood finish. Price: £132.89 (plus VAT).

HIGH-SENSITIVITY INFORMATION PICK-UP

The Hi-Fi Year Book is more than just a handy reference. It is a sensitive instrument enabling you to pinpoint and track down the finest Hi-Fi items on the market. There are pages of products, photos and expert articles to help you in your choice. Separate illustrated sections cover every major category of equipment—telling you what each item does, what it costs, who makes it and where to buy it. What's more, there are authoritative articles on the latest developments and how to apply them. Order your copy today, before it sells out... and you'll be tuned in to the finest in Hi-Fi.

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Registered in England No. 677128
Regd. Office: Dorset House, Stamford
Street, London SE1 9LU.

Unit Audio: Tape Systems

(See also Music Centres section)

*Indicates entry is illustrated.

Abbreviations used in this section are given on page 43.

■ 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: £117.69 (inc. VAT).

■ BANG AND OLUFSEN (UK) LTD.

Eastbrook Road, Gloucester GL4 7DE.
Tel: Gloucester 2159.

Beocenter 1600

Radio Section: Band coverage: 87.5-108mHz plus 4 pre-sets. Sensitivity: $<1.8\mu\text{V}/75$ ohms IEC $<2.5\mu\text{V}/75$ ohms IHF. S/N: $>65\text{dB}$ DIN 45 500. Selectivity: $>55\text{dB}$ IHF. FR: 20-15,000Hz $\pm 1.5\text{dB}$ DIN 54 500 HD: $<0.5\%$ DIN 45 500. Amplifier Section: Power output: $2 \times 22\text{W RMS}$, $2 \times 40\text{W}$ music power. HD: $<0.1\%$ at 50mW/1kHz. $<0.5\%$ at full output/1kHz. FR: 20-30,000Hz $\pm 1.5\text{dB}$ DIN 45 500. Inputs: Phono: 2.5mV/47 k Ohms, Tape: 140mV/700 k ohms, FM aerial: 75 and 240 ohms. Dimensions: 8.5 \times 26 \times 10.2cms. Price: on application.

HCD 1000

For recording and playback of cassettes in conjunction with Hi-Fi audio equipment. Fitted with Dolby noise reduction unit. Will accept standard and Chromium Dioxide tape. Tape speed: 1 $\frac{7}{8}$ ips. Price: £158.40 (plus VAT).

■ ITT

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

Stereo 85 Recorder System ★

Complete with LS18 speakers, cassette deck with amplifier output of 7W per channel. Auto record level control. Manual over-ride. Tape selector switch, plus control, digital tape counter. Accepts stereo headphones. Tape-end indicator light. on/off indicator light. Slide controls. Price: £115.00 (inc. VAT).

■ 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, 1 $\frac{7}{8}$ 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. Track system: 4-track, 2-channel. Tape speed: 1 $\frac{7}{8}$ 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,



Aiko ATP-711



ITT Stereo 85



Sony TC 520 CS



Sony TC-144 CS

record P/B, DIN. Outputs: line, Rec/PB; DIN; Headphone. Power output: 1 watt \times 2. Speaker: 4in (100mm) diameter. Motor: DC. Heads: 1 \times rec/PB head, 1 \times erase head. Power requirements: AC 240V, 50Hz. Power consumption 14 watts. Dimensions (approx.): 11 $\frac{1}{8}$ (W) \times 3 $\frac{3}{8}$ (H) \times 9 $\frac{3}{4}$ (D) inches, 280 \times 90 \times 245mm incl. projecting parts. Weight (approx.): 7lb 8oz (3.4kg). Supplied accessories: 1 \times AC mains lead, 1 \times RK50H connecting cord, 1 \times F99B microphone, 1 \times demonstration tape, 1 \times carrying case, 1 \times shoulder strap, 1 \times cleaning kit. No rec. retail price.

Stop Press

The following information was received after the main body of the book was passed for press.

Amplifiers and control units

■ **MARANTZ** — Audio UK Ltd, Debarc 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: £496.24 (plus VAT).

510M

Professional stereo power amplifier. Output: 256W RMS per channel, both channels driven at 8 ohms from 20Hz-20kHz. Power bandwidth: 20Hz-20kHz. THD: less than 0.1%. Load impedance: 8 ohms. FR: (high level input) 20Hz-20kHz ± 1 dB. Input sensitivity and impedance: 2.0V 25K. Damping factor: 100. Price: £947.53 (plus VAT).

510

Stereo power amplifier. Output: 256W RMS per channel, both channels driven at 8 ohms from 20Hz-20kHz. Power bandwidth: 20Hz-20kHz. THD: less than 0.1%. Load impedance: 8 ohms. FR: (high level input) 20Hz-20kHz ± 1 dB. Input sensitivity and impedance: 2.0V 25K. Damping factor: 100. Price: on application.

Model 1030

Integrated stereo amplifier. 22 transistors and 14 diodes. Inputs: mag PU 2.1mV 47K, mic 2.1mV 47K, aux 150mV 100K. Noise level: (PU input) -93dB. Overload capability: (PU input) 100mV. Output: 15W RMS per channel, both channels driven. Load impedance: 8 ohms. Tone controls: bass ± 12 dB at 50Hz,

treble ± 12 dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz. HD: 0.5% from 40Hz-20kHz. FR: 20Hz-20kHz ± 1 dB at 1W. Output circuits automatically protected. Mic input on front panel. Main and remote speakers and headphones. Size: 14 $\frac{1}{2}$ \times 4 $\frac{3}{4}$ \times 12in. Finish: gold anodised front panel. Price: £85.75 (plus VAT).

Model 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 impedance: 8 ohms. Tone controls: bass ± 15 dB at 50Hz, treble ± 12 dB at 15kHz, high filter 16dB/octave from 5kHz, low filter 16dB/octave from 100Hz, middle control ± 6 dB at 700Hz. HD: 0.5% 20Hz-20kHz. FR: 20Hz-20kHz ± 0.5 dB at 1W. Automatic protection of output circuits. Three-zone tone controls. Front panel sockets for mic and aux. Size: 14 $\frac{1}{4}$ \times 4 $\frac{3}{4}$ \times 14in. Finish: gold anodised front panel. Price: £134.15 (plus VAT).

Model 4140

Integrated stereo amplifier with power mode switch for quadraphonic sound. Facilities for two 4-channel tape recorders with dubbing back and forth, a CD-4 adaptor, matrixdecoders, 4-channel scope and separate pre-out/main-in jacks. Ratio to input overload voltage to equivalent noise (phono): 96dB. Equivalent noise input: 1.9 μ V. Sensitivity and impedance: 1.8mV 47K. Input sensitivity and impedance (high level): 180mV 100K. Tone controls: bass 50Hz ± 10 dB, mid 700Hz, treble 15kHz ± 10 dB. Output level and impedance: 1V 900 Ω . Power output: 70W RMS per channel, both channels driven at 20Hz-20kHz into 8 ohms or 4 \times 25W RMS per channel, all channels driven at 20Hz-20kHz into 8 ohms. THD: 0.3%. IM distortion: 0.3%. FR: 20Hz-20kHz ± 5 dB. Power bandwidth: 7Hz-70kHz (IHF). Damping factor: 40 at 8 ohms. Price: £365 (plus VAT).

4000

Four channel pre-amplifier adaptor. High level input sensitivity and impedance: 180mV 100K. Tone controls: Bass at 50Hz ± 10 dB, treble at 15kHz ± 10 dB. Output level and impedance: (front) 180mV (rear) 2.1V. FR: 20Hz-20kHz ± 5 dB. Finish: metal chassis with optional walnut cabinet (model WC2). Price (without cabinet): £177 (plus VAT).

★ Indicates entry is illustrated



Marantz 1040 Stereo console amplifier

Model 4070

Integrated four-channel amplifier. Inputs: mag PU 1.8mV 47K, high level 180mV, radio, aux. Overload capability: 100mV. Output: 2 × 35W RMS total into 8 ohms (4 × 15W RMS all channels). Controls: five-position mode switch, slider vari-matrix control, slider for balance (left, right, front, rear), separate sliders for bass and treble (front and rear). Pushbuttons for main/remote speakers and headphones, tape monitor, remote control, loudness. HD: 0.25u08 20Hz-20kHz. Load impedance: 8 ohms. FR: 20Hz-20kHz ± 1dB at 1W. Size: 14¼ × 4¾ × 12in. Finish: simulated walnut metal chassis with gold-anodised front panel. Pocket in base for plug-in SQ decoder. Price: £226 (plus VAT).

3200

Pre-amplifier. THD: 0.05%. FR: phono 30-15,000Hz, aux 20-20,000Hz. S/N: phono inputs 75dB, high level inputs 86dB. Dimensions: 36 × 28 × 12cm. Price: £171.58 (plus VAT).

1040 ★

Integrated console amplifier with output of 20W. THD: 0.3%. FR: 20-20,000Hz. Dimensions: 36 × 28 × 12cm. Price: £155.00 (plus VAT).

1070

Integrated console amplifier similar to 1040 but with 35W output. Price: £193.99 (plus VAT).

■ SETTON

Setton Products Division-LAM Ltd, Clarke Road, Mount Farm, Milton Keynes, Bucks. Tel: Milton Keynes 75764.

AS 3000

2 × 55W. FR: 20Hz-20kHz. Imp: 8 ohms. THD: 0.1%. Output terminals for three sets of speakers. Two large meters. Price: £293.71 (inc. VAT).

AS 1100

2 × 40W. FR: 20Hz-20kHz. Imp: 8 ohms. THD: 0.1%. Output terminals for two sets of speakers. Two large meters. Price: £209.35 (inc. VAT).

Cassette decks

■ GARRARD

Garrard Engineering Ltd, Newcastle Street, Swindon, Wilts, SN1 1DA. Tel: Swindon 5381.

GC 350 ★

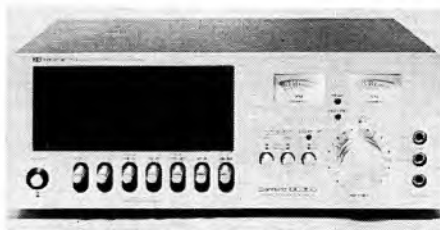
Front loading stereo cassette deck. W and F: 0.2%. Inputs: mic 300µV, line 40mV, DIN 0.1mV/k. Dimensions: 36.6 × 14 × 27.4cm. Operated by push-buttons and lever controls. Dolby noise reduction system. Controls: tape selection, on/off, tape ejection, record, play, stop, pause, auto stop, auto re-wind, cue and review facility. Price: on application.

GC 300 ★

Stereo tape deck with lever and slider controls and Dolby noise reduction circuit. W and F: 0.17%. Inputs: mic 160µV, line 56mV, DIN 0.3mV/k. Dimensions: 48 × 10 × 24.5cm. Two stereo jack sockets for mics. Finish: black casing with wood finish base. Price: on application.

■ MARANTZ

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



Garrard GC 350 Stereo cassette deck



Garrard GC 300 Stereo cassette deck



Marantz 5120 Stereo Cassette Deck



Marantz 5420 Stereo Cassette Deck



Marantz 5220 Stereo Cassette Deck

5120 ★

Stereo cassette deck. W and F: 0.09%. Dolby noise reduction system. FR: 35Hz-16kHz (FeCr), 35Hz-14kHz (CrO₂) 45Hz-13kHz (L.H) VU meters, LED peak. Inputs: Line 70mV 70K, mics 0.23mV/10K. Outputs: Line variable 775mV 6K, headphones 0.75mV 8 ohms. DC servo motor. Mains: 110-240. Dimensions: 44 × 27.7 × 14.2cm. Price: £193.20 (plus VAT).

5420 ★

Stereo cassette deck. W and F: 0.07%. Dolby noise reduction. FR: 30Hz-17kHz (FeCr), 30Hz-16kHz (CrO₂), 45Hz-14kHz (L.H). 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: £261.24 (plus VAT).

5220 ★

Stereo cassette deck. W and F: 0.08%. Dolby noise reduction. FR: 35Hz-15kHz (FeCr) 35Hz-14kHz (CrO₂) 45Hz-13kHz (L.H). VU meters, LED peak. Inputs: line 70mV 70K mic 0.23mV 10K. Outputs: line variable 775mV 6K. Headphones 0.75mV 8 ohms. DC servo motor. Mains: 110-240. Dimensions: 44 × 29.3 × 13.7cm. Price: £203.93 (plus VAT).

TECHNICS

National Panasonic UK Ltd, Bath Road, Slough, Berks.
Tel: Slough 34522.

RS 630

Front-loading stereo cassette deck with Dolby noise reduction system. W and F: 0.09%. FR: Normal: 20Hz-14kHz, 30Hz-13kHz DIN. With CrO₂ 20Hz-16kHz, 30Hz-14kHz DIN. Separate bias and equalisation selectors. Two large peak check VU meters. Inputs: mic 0.25mV 600 ohms, 20K ohms. Line: 60mV/47K ohms. Outputs: line: 0.42V 50K ohms. Phones: 0.42V, 50K ohms. Dimensions: 41 × 14.2 × 32.1cm. Price: on application.

Construction kits**SEAS**

Radio Components Ltd, 12 High Oakes, St. Albans, Herts.
Tel: St. Albans 51108.

Mini Kit Speaker

Two drive units 6½ins and 2ins. tweeter; Crossover frequency: 5,000Hz. FR: 60Hz-20,000Hz. Suitable for amplifiers 6-25W per channel. Price: £9.40 (plus VAT).

Kit 203 Speaker ★

Three drive units: 8ins high compliance, 4ins midrange 2ins tweeter. Crossover frequency: 1,500Hz and 4,000Hz. FR: 50Hz-20,000Hz. Suitable with amps of 10-70W per channel. Price: £22.40 (plus VAT).

Kit 302 Speaker

Two drive units: 10ins with Neoprene surround and lin dome. Crossover frequency:



SEAS 203 Kit from Radio Components



SEAS 303 Kit from Radio Components

1,500Hz. FR: 35Hz-20,000Hz. Suitable with amps of 10-70W per channel. Price: £22.40 (plus VAT).

Kit 303 Speaker ★

Three drive units: 10ins high flux, 4ins mid, 1in dome. Crossover frequency: 800Hz, 4,500Hz. FR: 35Hz-20,000Hz. Suitable for use with amps of 8-80W per channel. Price: £38.20 (plus VAT).

Kit 503 Speaker

Three Drive Units: 13ins high flux, 5ins mid, 1in dome. Crossover frequency: 700Hz and 3,500Hz. FR: 25Hz-20,000Hz. Suitable for use with amps of 6-120W per channel. Price: £58.00 (plus VAT).

Cabinet Kits

Mini £11.20, 203 £16.45, 302 £16.45, 303 £19.65, 503 £23.30 (plus VAT).

All kits complete with wiring diagrams and detailed cabinet plans. Cabinet kits can also be obtained complete with flux damping material and grille cloth.

Hi-Fi cabinets

■ MARANTZ

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

WC 2

Walnut sleeve for Marantz models 3600 pre amp. 240 power amp. 250 power amp. 4000 pre amp four channel adaptor. Price: £30.44

WC 10/20

Walnut sleeve for Marantz models 112 tuner. 1030 amp. 1040 amp. 1070 amp. 2015 receiver, 4070 four channel amp. 4220 four channel receiver. Price: £20.60

SC 22/42

Walnut sleeve for Marantz receivers: 2220, 2230, 2240, 2245, 2275, 4220, 4230, 4240, 4270. Price: £25.27.

WC 43

Walnut sleeve for Marantz 4300 and 4400 four channel receivers. Price: £35.46.

Music centre

■ GARRARD

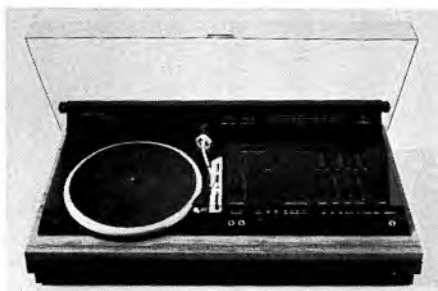
Garrard Engineering Ltd, Newcastle Street, Swindon, Wilts. SN1 1DA.
Tel: Swindon 5381.

GA 150 ★

Slim line unit incorporating 3 waveband tuner, Garrard record deck, 2 × 20W stereo amplifier, cassette recorder and twin speakers. Walnut type finish with hinged transparent tinted lid. Optional free standing movable audio table with simulated wood table top available. Low-mass arm fitted with Garrard magnetic cartridge. AM/FM internal aerials



Garrard GA 150 Music Centre



Garrard GA 155 music centre

plus external socket. Signal strength meter, VHF stereo beacon, manual tuning, push button wave change. Cassette player takes both standard and chromium dioxide with auto switching. Tape counter, tape stop. DIN sockets for mic and headphones. Price: £239.95 (plus VAT).

GA 155 ★

Mid-range music-centre having cassette player with Dolby B noise reduction system. Belt-driven deck with low-mass 'S' shape tubular arm. Radio tuner: VHF, LW, MW. Amplifier output: 25W per channel. Separate bass, tre-



Garrard GA 200 music centre

ble, balance controls. Price incl. speakers: on application.

GA 200 ★

British designed and built. Belt-drive record player, cassette recorder with Dolby noise reduction system. Radio tuner: VHF, LW, MW. High power stereo amplifier and pair of matched three-way loudspeakers. Price: on application.

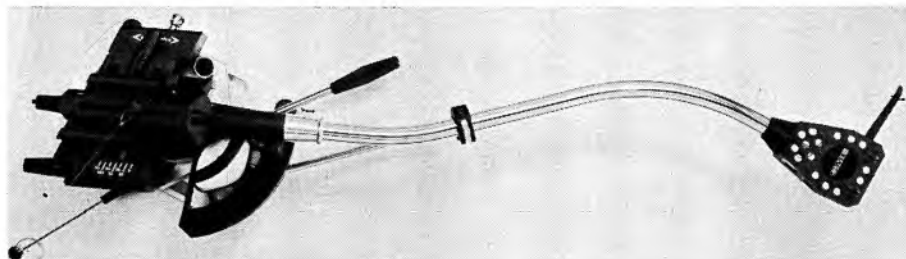
Pickup arms

■ SME

SME Ltd, Steyning, Sussex BN4 3GY.
Tel: Steyning 814321.

Series III ★

Balance system enables cartridges weighing 0-12 grams to be operated under conditions of minimum inertia. Integral carrying arm replaces conventional tone-arm and shell and is interchangeable for multi-cartridge use. Viscous damping in both planes. Damping rate can be changed to suit cartridge compliances above and below 25. Precise tracking adjustment with spanner operated capstan. Bias: graduated 0-2.5g with fine adjustment. Tracking force: 2.5g. 0-1½g. fine adjustment + 1g. coarse adjustment. Longitudinal and lateral balance with fine adjustment. Fluid damped lowering and raising control. Output: twin gold-plated phono sockets plus separate ground. Price: to be announced.



SME Series III precision pickup arm

Receivers

■ MARANTZ

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

2275

Amplifier section

Output: 75W per channel. FR: 20Hz-70kHz \pm 2dB. Inputs: tape + 2, phono, aux. Controls: treble, mid, bass, balance, Hi and lo filters, SW selector. Damping factor: 50.

Tuner

Sensitivity: 1-6 μ V. Wavebands: VHF, MW. Variable tuning. Price: £577.86 (plus VAT).

2325

Amplifier section

Output: 125W per channel. FR: 20Hz-20kHz \pm 0.2dB. Damping Factor: 100. Inputs: tape + 2, phono, aux. Dolby function for external use. Controls: treble, mid, bass, balance, Hi and lo filter.

Tuner

Sensitivity: 1.5 μ V. Wavebands: VHF/MW. Variable tuning. Price: £666.76 (plus VAT).

2235

Amplifier section

Power output: 35. FR: 20Hz-20kHz. Damping factor: 45. Inputs: 2 \times tape, phono, aux. Controls: volume, treble, bass, mid, tape, balance, Hi filter, selector SW.

Tuner

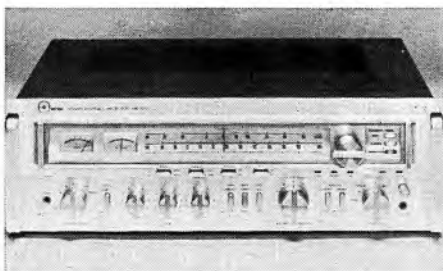
Sensitivity: 1.6 μ V. Wavebands: VHF/MW. Variable tuning. Price: £357.06 (plus VAT).



Marantz 2216 AM/FM Stereo Receiver



Marantz 2226 AM/FM Stereo Receiver



Seton 440 Stereo Receiver

2250

Amplifier

Output: 50W. FR: 20Hz-20kHz \pm 2dB. Damping Factor: 50. Inputs: 2 \times tape, phono, aux. Controls: volume, treble, mid, bass, balance, 2 \times tape, Hi and Lo filters.

Tuners

Sensitivity: 1.6 μ V. Waveband coverage: VHF/MW. Variable tuning. Price: £465.46 (plus VAT).

2216 ★

AM/FM Stereo receiver.

Amplifier

Output: 16W, FR: 20Hz-20kHz. Damping factor: 45. Inputs: phono, aux, tape. Controls: volume, treble, bass, balance, selector SW, Hi filters.

Tuner

Sensitivity: 1.9 μ V. Waveband coverage: VHF/MW. Variable tuning. Price: £163.80 (plus VAT).

2226 ★

AM/FM Stereo receiver.

Amplifier

Output: 26W per channel. FR: 20Hz-20kHz. Damping factor: 45. Inputs: phono, aux, 2 \times tape. Controls: volume, treble, mid, bass, porch, balance, Hi-filter, selector SW.

Tuner

Sensitivity: 1.7 μ V. Waveband coverage: VHF/MW/LW. Variable tuning. Price: £241.30 (plus VAT).

■ SETON

Seton Products Division-LAM Ltd, Clarke Road, Mount Farm, Milton Keynes, Bucks.
Tel: Milton Keynes 75764.

RS 660

Stereo receiver

2 \times 100W. FR: 20Hz-20kHz. THD: 0.07%.
Output terminals for three sets of speakers.

Two large meters. Dolby N.R. adaptor switch. Full details on request. Price: £507.36 (inc. VAT).

RS 440 ★

Stereo receiver

2 × 55W. FR: 20Hz-20kHz. THD: 0.1%. Output terminals for three sets of speakers. Two large meters. Full details on request. Price: £373.60 (inc. VAT).

RS 220

Stereo receiver

2 × 40W. FR: 20Hz-20kHz. THD: 0.1%. Output terminals for two sets of speakers. Two large meters. Full details on request. Price: £315.00 (inc. VAT).

Record decks

■ CEC

Uher Ltd, 28 Spencer Street, St. Albans, Herts. AL3 5EG.
Tel: St. Albans 30236/7.

BD 2200

Manual turntable with hydraulic tone arm lift, fitted with Ortofon 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 ± 5 per cent pitch adjustment. Ortofon F15C cartridge. Price: £129.93 (inc. VAT).

Speaker accessories

■ VOGELS

Solus Products, Market Harborough, Leicestershire.

VE 2521 Loudspeaker Stands ★

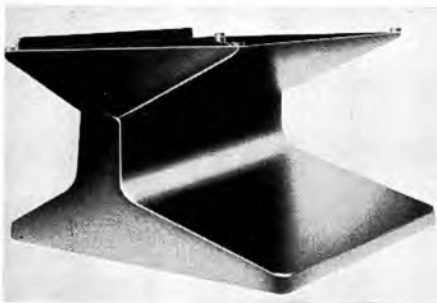
Designed to put speakers approximately 6ins above floor level and to give adjustment facility so that sound is not absorbed by carpets, giving choice of the right angle for listening. Height: 15cm, platform: 26cm × 21cm. Colour: matt black.

BEK 100 Universal Bracket for Speaker Boxes ★

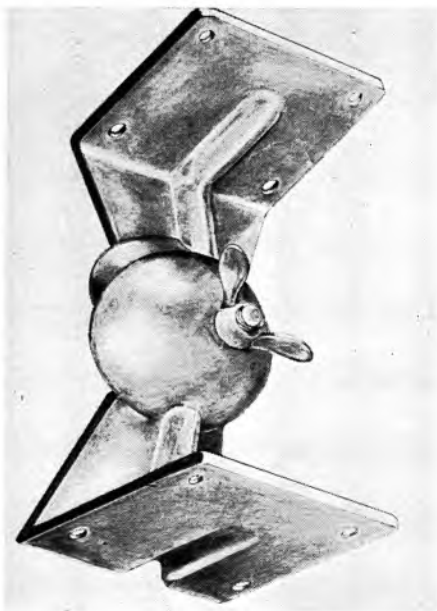
A means of fitting speakers to the wall in a simple and reliable manner. The box will adjust to any direction both horizontally and vertically. Dimensions: 16 × 11 × 12cm.

Minor 5 ★

Wall fixing bracket for speakers of 5kg max. Dimensions: 5 × 5 × 10cm.



Vogels VE 2521 Speaker stand



Vogels Minor 5 Bracket

Speaker drive units

■ ATC

Acoustic Transducer Co. Ltd,
Pier House Laundry, Strand-on-the-Green,
Chiswick, London W4.
Tel: 01-995 3654.

PA75-234 Studio Bass

Paper plasticised pvc cone. Aluminium voice coil former, ribbon wire (copper) voice coil. Nom. Imp. 8 ohms. Total flux — 205,000 Maxwells, Gap flux — 12,000 Gauss. Power handling — 150 watts. Usable freq. resp. — up to 7kH_z. Resonant freq. — 25Hz (nominal Free Air). Price: on application.

5D75

Midrange dome. 7.5cm nominal diameter. Damped soft formed cone material. Dual suspension fabric surround. Voice coil diameter: 7.5cm. Voice coil material: Aluminium/nomex former copper ribbon wire coil. Impedance: 8 ohms. Total flux: 255,000 maxwells. Gap flux: 12,500 gauss. Nominal capacity: 150 watts. R up to 5kHz. Cross-over frequency 300(+)Hz. Resonant frequency: 240Hz. Price: on application.

PA75-314 Studio bass drive

28cm nominal diameter. Plasticized PVC damped material. Rubber roll surround. Voice coil diameter 7.5cm. Voice coil material: Aluminium/Nomex former copper ribbon wire coil. Nominal Impedance: 8ohms. Total flux: 233,000 maxwells. Gap flux: 11,000 gauss. Nominal capacity 150watts. R up to 3kHz. Cross-over frequency 300Hz-1kHz. resonant frequency 18Hz. Price £77.50 (plus VAT).

PA75-314 Long coil Bass

28cm nominal diameter. Paper cone. Fabric surround. 7.5cm coil diameter. Voice coil material: Aluminium former copper ribbon wire. Nominal Impedance 8 or 12 ohms. Total flux: 242,000 maxwells. Gap flux: 11,500 gauss. Nominal Capacity: 75watts. FR: up to 3kz. Cross-over frequency: 300Hz to 3kHz. Resonant frequency: 35Hz. Price: £67.50 (plus VAT).

PA75-314 Bass

28cm nominal diameter. Paper cone. Fabric surround. Voice coil diameter: 7.5cm. 4, 8 or 15 ohms. Total flux: 242,000 maxwells. Gap flux: 11,500 gauss. Capacity: 75 watts. R: up to

5kHz. Cross-over for frequency: 300Hz-5kHz. Resonant frequency: 40Hz. Price: £67.50 (plus VAT).

PA75-314 Linen surround

28cm nominal diameter. Paper cone. Fabric surround. Voice coil diameter: 7.5cm. Voice coil material: Nomex former copper ribbon wire. Nominal Impedance: 4, 8 or 15 ohms. Total flux: 255,000 maxwells. Gap Flux: 12,000 gauss. Capacity: 75 watts. R. up to 60kHz. Cross-over frequency: 2kHz-6kHz. Resonant frequency: 55Hz. Price: £72.50 (plus VAT).

PA75-314 Standard

28cm nominal diameter. Paper cone. Paper surround. Voice coil diameter 7.5cm. Voice coil material: Nomex former copper ribbon wire. Nominal Impedance: 4, 8 or 15 ohms. Total flux: 255,000 maxwells. Gap flux. 12,000 gauss. Capacity: 75 watts. up to 6kHz. Cross-over frequency: 2kHz-6kHz. Resonant frequency: 65Hz. Price £72.50 (plus VAT).

■ EXECUTIVE AUDIO

Executive Audio Ltd, Pier House Laundry,
Strand-on-the-Green, Chiswick, London W4.
Tel: 01-995 7110.

Hi-Bal 750

Spherical infinite baffle enclosure. One drive unit. 4⁷/₈in diameter. FR: 50Hz-16kHz. Impedance: 8 ohms. HC: 35W. Dimensions: 7¹/₂in sphere. Weight: 5kg per pair. Finish: red, black, purple, white, dark brown or orange. Price: £67.50 per pair (plus VAT).

Boxer

Standard high power speakers. Price: £400 per pair (inc. VAT).

Speaker enclosures

■ MONITOR

Monitor Audio Ltd, 347 Cherry Hinton Road,
Cambridge CB1 4DJ.
Tel: Cambridge 42898.

MA 8 (Super MA 7)

FR: 45Hz-20kHz ± 3dB. Impedance: 8 ohms. Crossover: 18dB/octave at 3.4kHz. Rec. 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 and rosewood finish.



Ram Bookshelf Speaker

■ RAM

Ram Audio Marketing Ltd, Clarke Road, Mount Farm, Milton Keynes, Bucks.
Tel: Milton Keynes 75764.

Ram 1

Drive units: 1 × 200mm plastic cone, plastiflex-doped, high loss PVA surround; 1 × 25mm dome HF radiator. Suggested amplified matching: 15-20W per channel. Nominal Imp: 4-8 ohms. FR: 55Hz-22kHz ± 2dB. Dimensions: 23 × 13 × 12in. Price: £160.15 per pair (inc. VAT).

Ram Bookshelf ★

Drive Units: 1 × 200mm plastic cone, plastiflex-doped, high loss PVA surround; 1 × 25mm dome HF radiator. Suggested amplified matching: 12-50W per channel. Imp: 4-8 ohms. FR: 70Hz-22kHz ± 2dB. Dimensions: 16 × 9 × 10in. Price: £101.38 per pair (inc. VAT).

Ram STL4

Drive Units: 2 × 200mm Bextrene LF units; high power voice coil, former and magnet assemblies. 1 × 200mm Bextrene LF/MR unit. High power voice coil, former and magnet assembly (FL and MR time delay compensated); 1 × 25mm dome HF unit fabric domed, chemically treated. Crossover: 250Hz, 3.5kHz. Imp: 4-8 ohms. FR: 40Hz-22kHz ± 2dB. Suggested amplifier matching: 30-125W per channel. Dimensions: 48 × 24 × 21in. Price:

Ram 200

Drive units: 1 × 25mm cambric dome HF unit; 1 × 200mm Bextrene MR/IF driver 1 × 250mm Bextrene passive radiator. Suggested amplifier matching: 15-75W per channel. Imp: 8 ohms.

FR: 45Hz-22kHz ± 2dB. Dimensions: 26 × 10½ × 12½in. Price: £208.17 per pair (inc. VAT).

Speaker enclosures

■ VISONIK

Uher Ltd, 28 Spencer Street, St. Albans, Herts. AL3 5EG.
Tel: St. Albans 30236/7.

David

As this book went to press it was announced that Uher is distributing the range of Visonik David ultra-compact speakers. Prices (all inc. VAT): Model 30 £92.81, Model 50 £114.75, Model 60 £143.43, Model 80 £253.23, Model 100 £334.12.

VL

VL conventional range comprises VL300 £57.37, VL400 £82.68, VL500 £112.50, VL700 £138.37.

Tape accessories

■ 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 knock down 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 three attractive colours: orange, white, black. Many other cases and cabinets to hold both records and cassettes. Details on request.

Last minute arrivals . . .

New 24 page catalogue from QED Audio Products Ltd, 112 Windmill Road, Sunbury-on-Thames, Middlesex TW16 7HD (Tel: Sunbury 87344/5). Products include a Quadraphonic Synthesiser, Storage racks and cabinets for records, tapes and Hi-Fi equipment, and comparators.

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. Belmont A/V Ltd, Fircroft Way, Edenbridge, Kent TN8 6HA. Tel: Edenbridge 4116.
Acos. Cosmocord Ltd, Eleanor Cross Road, Waltham Cross, Herts EN8 7NX. Tel: Waltham Cross 27331.
ADC Accutrac. BRS Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH. Tel: Cradley Heath 65191.
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.
Amstrad. AMS Trading (Amstrad) Ltd, 89 Ridley Road, London E8. Tel: 01-249 5237.

Appolo Stands. Grabern Audio, 13 Farnet Avenue, Purley, Surrey CR2 2DN. Tel: 01-660 4780.

AR. Teledyne Acoustic Research, High Street, Houghton Regis, Dunstable, Beds. LU5 5QL. Tel: 0582 603 151.

A & R. Amplification and Recording (Cambridge) Ltd, French's Hill, French's Road, Cambridge CB4 3NP. Tel: Cambridge 54507.

Audio Packs. Tape Recorder Spares Ltd, 206-210 Ilderton Road, London SE15 1NS. Tel: 01-639 7844.

Audio Technica. Shiro (UK) Ltd, Shriro House, The Ridgway, Iver, Bucks SL0 9JL. Tel: Iver 652222.

B

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

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

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

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

BRS McDonald. BRS Ltd, Powke Lane, Cradley Heath, Warley, West Midlands B64 5QH. Tel: Cradley Heath 65191.

C

Carlton. C. F. Fraser Ltd, 21 Princess Road, London NW1 8JR. Tel: 01-722 6633.

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.

Colton. Musonic Ltd, 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 2142.

Crown Merton. Hancock, Corfield & Waller 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. (Gerrards Cross 88447).

Dansk. Plustronics Ltd, Hempstalls Lane, Newcastle, Staffs ST5 0SW. Tel: Newcastle 615131.

Dayton Wright. Exposure Electronics, Richardson Road, Hove, Sussex BN3 5RB. Tel: Brighton 77912.

Disc-A-Vac. Janorhurst Ltd, Century House, Shortmead Street, Biggleswade, Beds. Tel: Biggleswade 314252.

Dual. Audiodecks Ltd, PO Box 7, Sandbeck Way, Wetherby, W. York LS22 4YS. Tel: Wetherby 5477.

Dunlap-Clarke. Exposure Electronics, Richardson Road, Hove, Sussex BN3 5RB. Tel: Brighton 77912.

E

Echo. Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU. Tel: 01-452 6288/9.

Edwards, J. R. Leartone Ltd, 783 Romford Road, Manor Park, London E12. Tel: 01-478 4570.

Emperor. MMG Associates, 19 St Andrews Road, Malvern, Worcs. Tel: Malvern 22222.

Empire. Hayden Laboratories Ltd, Hayden House, Churchfield Road, Chalfont St. Peter, Bucks SL9 9EW. Tel: Gerrards Cross 88447.

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

F

Fantavox. Adastra Electronics Ltd, Unit N22, Cricklewood Trading Estate, Claremont Road, London NW2 1TU. Tel: 01-452 6288/9.

Ferguson. Thorn Consumer Electronics, 284 Southbury Road, Enfield EN1 1TJ. Tel: 01-366 1155.

Ferrograph. Wilmot Breeden Electronics Ltd, Auriema House, 442 Bath Road, Cippenham, Slough SL1 6BB. Tel: Burnham 62511.

Fidelity Research. Wilcox 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.
Foster. Adastra Electronics Ltd,
Unit N22, Cricklewood Trading Estate,
Claremont Road, London N22 1TU.
Tel: 01-452 6288/9.
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.

G

Groovac. R. I. Audio,
Kernick Road, Penryn, Cornwall
TR10 9DQ. Tel: Penryn 72753.

H

Harmon-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.

I

Isophon-Werke. Hayden Laboratories
Ltd, Hayden House, Churchfield Road,
Chalfont St. Peter SL9 9EW.
Tel: Gerrards Cross 88447.

J

JBL. C. E. Hammond & Co Ltd,
Chertsey Road, Byfleet, Surrey
KT14 7LA. Tel: Byfleet 41131.
JR. Tape Music Loudspeakers Ltd,
114 Ashley Road, St. Albans, Herts
AL1 5JR. Tel: St. Albans 64337/9.

K

KLH. Webland International Ltd,
Mirabel House, 117-121 Wandsworth
Bridge Road, London SW6.
Tel: 01-736 0989.
Koss. Tape Music Distributors Ltd,
114 Ashley Road, St. Albans, Herts
AL1 5JR. Tel: St. Albans 64337.

L

Larsholt. Doram Electronics Ltd,
PO Box TR8, Wellington Road
Industrial Estate, Wellington Bridge,
Leeds LS12 2UF. Tel: Leeds 34222.

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 41131.
Linn-Sondeck. Linn Products Ltd,
235 Drakemire Drive, Castlemillk,
Glasgow G45 9SZ. Tel: 041-634 3860.
Lyrichord. N. Miers & Co Ltd,
28 Piercing Hill, Theydon Bois, near
Epping, Essex CM16 7LE.
Tel: 037-881 2611.

M

Marantz. Audio UK Ltd,
Debmarc House, 203 London Road,
Staines, Middx.
Tel: Staines 50732.
Melodium. Audio Ltd,
26-30 Reading Road, South Fleet, near
Aldershot, Hants. Tel: Fleet 7316
and 3566.
Metrocare. Metrosound Audio Ltd,
Audio Works, Cartersfield Road,
Waltham Abbey, Essex EN9 1JF.
Tel: Lea Valley 712712.
Micro-Acoustics. Webland International
Ltd, Mirabel House, 117-121
Wandsworth Bridge Road, London
SW6. Tel: 01-736 0989/9410.
Micro-Seiki. Tannoy,
St. Johns Road, Tylers Green, High
Wycombe, Bucks. Tel: Penn 5221.
Mini-Mix. Allen & Heath Ltd,
Pembroke House, Campsbourne Road,
London W8. Tel: 01-340 3291.
Motorola. Piezo Electric Tweeters.
Sourout Productions Ltd, 91 Ewell
Road, Surbiton, Surrey.
Tel: 01-399 3392/3.

N

NAD. Pyser Ltd,
Fircroft Way, Edenbridge, Kent
TN8 6HA. Tel: Edenbridge 4111.
Nagra. Hayden Laboratories Ltd,
Hayden House, Churchfield Road,
Chalfont St. Peter, Bucks SL9 9EW.
Tel: Gerrards Cross 88447.
Nakamichi. Natural Sound Systems Ltd,
Strathcona Road, North Wembley HA9
8QL. Tel: 01-904 0141.
NEAL. North East Audio Ltd,
5 Charlotte Square,
Newcastle-upon-Tyne NE1 4XF.
Tel: Newcastle-upon-Tyne 26660.
Neumann GMBH. F. W. O. Bauch Ltd,
49 Theobald Street, Borehamwood,
Herts WD6 4RZ. Tel: 01-953 0091.
Normende. Vessco Vision & Radio Ltd,
Unit 4, Blackwater Way, Ash Road,
Aldershot, Hants GU12 4DL.
Tel: Aldershot 321661.

O

Omex Products Ltd.
Hereford House, Wandle Mills,
Beddington, Croydon, Surrey CR0 4SB.
Tel: 01-686 9022/5.

Orpheus. SGM Electronics,
4a Lenter Street, Alton, Hants
GU34 1HG. Tel: Alton 82882.
Ortofon. Tannoy,
St. Johns Road, Tylers Green, High
Wycombe, Bucks. Tel: Penn 5221.

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 41131.
Phillips. 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. Shiro (UK) Ltd,
Shiro House, The Ridgeway, Iver,
Bucks SL0 9JL. Tel: Iver 652222.
Plustron. Plustronics Ltd,
Hempstalls Lane, Newcastle, Staffs
ST5 0SW. Tel: Newcastle 615131.

Q

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

R

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, Borehamwood,
Herts WD6 4RZ. Tel: 01-953 0091.
Rogers. Swisstone Electronics Ltd,
4-14 Barmston Road, SE6 3BN.
Tel: 01-697 8511.
Rotel. Rank Audio Visual Ltd,
Great West Road, Brentford TW8 9HR.
Tel: 01-568 9222.

S

Sansul. Vernitron Ltd,
Thornhill, Southampton SO9 5QF.
Tel: Southampton 444811.
Scotch. 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
Sonus. C. E. Hammond & Co Ltd,
105-109 Oyster Lane, Byfleet, Surrey.
Tel: Byfleet 41121.
Stanton. Wilmax Ltd,
Compton House, New Malden
KT3 4DE. Tel: 01-949 2545.

Stax. Wilmex Ltd,
Import Division, Compton House, New
Malden, Surrey KT3 4DE. Tel: 01-949
2454.
Studiocraft. Bose (UK) Ltd,
Milton Regis, Sittingbourne, Kent.
Tel: Sittingbourne 7534/5.
Synchrotape. Aadastra Electronics Ltd,
Unit 22, Cricklewood Trading Estate,
Claremont Road, London NW2 1TU.
Tel: 01-452 6288.

T

TDK. Tape Distributor (UK) Ltd,
341 Brighton Road, South Croydon,
Surrey CR2 6EQ. Tel: 01-688 7372.
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.
Teknik. Klark-Teknik Ltd,
Summerfield, Kidderminster
DY11 7RE. Tel: Kidderminster 64027.

Telefunken. AEG-Telefunken (UK) Ltd,
Bath Road, Slough, Bucks.
Tel: Slough 33311.

Thorens. Metrosound Audio Products
Ltd, Cartersfield Road, Waltham
Abbey, Essex EN9 1JF.
Tel: Lea Valley 712712.

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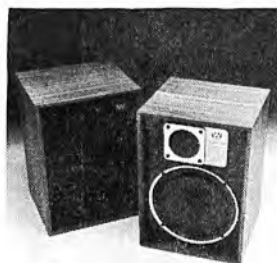
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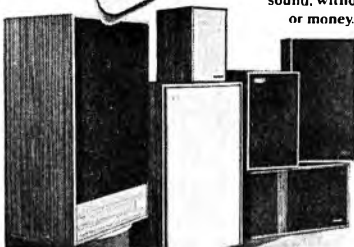
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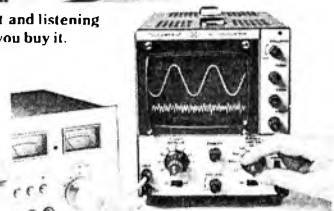
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