

ACOUSTICAL
ACOS
AKG
B.S.R.
CHAPMAN
COLLARO
CONNOISSEUR
DECCA
DERAM
FANE
GARRARD
G.K.D.
GOLDRING
GOODMANS
GRAMPIAN
K.E.F.
LEAK
LENCO
LOWTHER
ORTOFON
PHILIPS
QUAD
RESLO
ROGERS
SHURE
S.M.E.
TELEFUNKEN
THORENS
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'WAL'
W.B.
WHARFEDALE



Catalogue of High Fidelity Equipment and Accessories



A. C. FARNELL LTD

KENYON STREET

SHEFFIELD 1

Telephone: Sheffield 78901 (7 Lines)

and

A. C. FARNELL LTD

(HEAD OFFICE)

**HEREFORD HOUSE, NORTH COURT,
VICAR LANE, LEEDS 2**

Telephone: Leeds 35111 (7 Lines)

(WHOLESALE ONLY)

In line with our usual policy

ALL ITEMS IN THIS CATALOGUE ARE CARRIED IN STOCK

Subject only to normal availability of supplies

JULY 1963

GRAMOPHONE TRANSCRIPTION UNITS

GARRARD

GARRARD MODEL 301 THREE-SPEED TRANSCRIPTION UNITS



Garrard 301

Refinements include suppression of switch clicks, carefully designed turntable mat, perfectly balanced, cast aluminium 12" turntable. "Wow" and "flutter" have been reduced to the minimum and all three speeds are adjustable by approx. plus and minus 2½%.

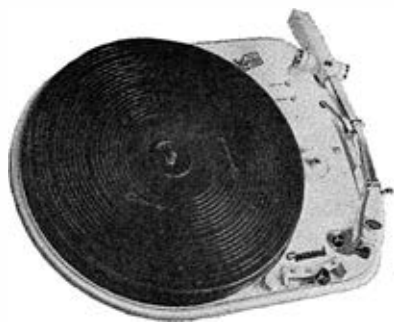
Supplied complete with plastic stroboscope, special grease, fixing screws, springs, washers, template and instruction manual. Minimum cabinet space, excluding provision for pick-up, 13¾" wide × 16" deep with 2½" clearance above and 3½" below top of motor board. For 100/130, and 200/250 volts, A.C. 50 c/s. Finished in broken white enamel with black relief.

Price ... £17 14 6 plus £2 17 8 P. Tax. Total £20 12 2 (A)

As above but with turntable stroboscopically marked on its rim for 33½, 45 and 78 r.p.m.

Price ... £18 19 3 plus £3 1 8 P. Tax. Total £22 0 11 (A)

GARRARD MODEL 4HF FOUR-SPEED SEMI-TRANSCRIPTION UNIT



4HF

Fitted with the latest TPA12 pick-up arm using the M.P.M.4 moulding which will take almost all present day pick-up cartridges.

Size: 17¼" × 13¼" × 3½" above top of motor board, 3½" below top of motor board.

For 100/130 or 200/250 v. A.C. only.

4HF/GC8 Fitted with GC8 cartridge.

Price ... £14 13 3 plus £2 7 8 P. Tax. Total £17 0 11 (A)

4HF/EV26 Fitted with EV26 Stereo cartridge.

Price ... £15 7 3 plus £2 10 0 P. Tax. Total £17 17 3 (A)

4HF Unit mounted on B3 Base (Less plug in pick-up head).

Price ... £15 19 0 plus £2 11 11 P. Tax. Total £18 10 11 (A)

GOLDRING

GOLDRING Lenco HIGH FIDELITY TRANSCRIPTION UNITS GL70



GL70

A.C. mains 200-250 v., 50 c.p.s. 4-pole constant velocity motor (15 watts). Continuously variable speed adjustment. Positive click-in positions for 16, 33½, 45 and 78 r.p.m. Centre spindle of ground and lapped steel in cintered bronze main bearing. Wow and flutter—maximum 0.2%. Rumble and hum—negligible. Less than 1% speed change for 13% mains voltage change. Positive drive and completely accurate speed control through the vertical drive system. Pick-up arm—L.70. Dimensions: 15¾" long × 13¼" wide × 5½" high.

GL70 Unit complete with pick-up arm, but less cartridge.

Price ... £22 10 0 plus £3 13 2 P. Tax. Total £26 3 2 (A)

GL70P As above but mounted on wooden plinth.

Price ... £25 10 0 plus £4 2 11 P. Tax. Total £29 12 11 (A)



GL70P

GRAMOPHONE TRANSCRIPTION UNITS

GOLDRING

GOLDRING Lenco STANDARD TRANSCRIPTION UNITS GL58



GL58

Four-speed model for monaural and stereo reproduction. Speed continuously variable from above 78 r.p.m. to below $33\frac{1}{2}$ r.p.m. "Wow" and "flutter" less than 0.5%. $11\frac{1}{4}$ " turntable. Unit plate size $15" \times 13"$; clearance above board 3", below board $2\frac{3}{8}"$.

Available complete with pick-up arm designed to accommodate almost all the popular cartridges.

Also unit only available —minus pick-up arm.

GL55X Unit only.

Price ... £11 5 0 plus £1 16 7 P. Tax. Total £13 1 7 (A)

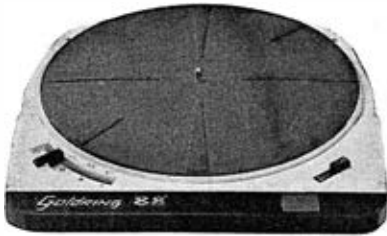
GL58 Unit complete with pick-up arm but less cartridge.

Price ... £13 15 0 plus £2 4 8 P. Tax. Total £15 19 8 (A)

GL58P Unit complete with pick-up arm but less cartridge but mounted on wooden plinth.

Price ... £15 15 0 plus £2 11 2 P. Tax. Total £18 6 2 (A)

GOLDRING 88



Goldring 88

The turntable of the Goldring 88 unit is die-cast from zirc and copper alloy and weighs 8 lbs. It is dynamically balanced and its lapped steel centre spindle runs in a cintered bronze bush with special thrust pad to keep wow and flutter at less than 0.2%.

The unique vertical drive system is used and this method allows the turntable speed to be continuously adjusted from above 80 r.p.m. to below 30 r.p.m. and from 15 to 18 r.p.m. Standard playing speeds 78, 45, $33\frac{1}{2}$ and 16 r.p.m. are located by pre-set click-in positions.

A 4-pole constant velocity motor provides the drive for this unit and is specified to limit changes in turntable velocity to less than 1% for up to 13% changes in line voltage.

The base plate is so designed that any pick-up arm can be used with this unit. A push-button on/off switch is incorporated and this automatically disengages the idler wheel when in the off position. A neon lamp is also incorporated to show when the unit is switched on.

Price ... £15 4 6 plus £2 9 6 P. Tax. Total £17 14 0 (A)

THORENS

MODEL TD124



Model TD124

Considered to be the worlds finest transcription unit. Unique clutch action, Cast aluminium turntable. 4 speed. Variable control $\pm 3\%$ acting on the four speeds. Precision in built stroboscope. Wooden board for tone arm mounting made integral with cast aluminium frame. **Only available less pick-up** though illustration shows pick-up mounted. Size Length $15\frac{1}{2}"$, Width $12\frac{3}{4}"$. Depth below motor board 3", Height above $2\frac{1}{2}"$.

Price Unit only £32 10 0 plus £5 17 4 P. Tax. Total £38 7 4 (C)

MODEL TD135



Model TD135

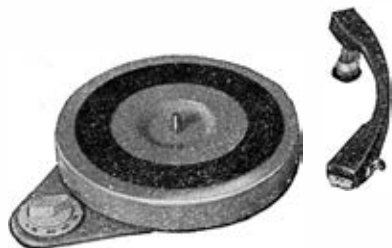
A brand new unit with heavy aluminium cast turntable and incorporating the same drive components as in the TD124. An integral part of the unit is the BTD12S professional pick-up arm. Priced at £30 0 0 plus tax this extremely high quality unit represents top value as the pick-up itself accounts for £13 10 0 plus tax of the price. 4 speed, variable control $\pm 3\%$ on four speeds. Non magnetic turntable $12"$ weighing 8 lbs. Special inbuilt leveling device. Size Length $15"$, Width $13\frac{1}{4}"$, Depth $3\frac{3}{8}"$, Height $3\frac{1}{8}"$.

Price ... £30 0 0 plus £5 8 4 P. Tax. Total £35 8 4 (C)

GRAMOPHONE UNITS (NON AUTO-CHANGE)

B.S.R.

B.S.R. TUI2 UNIT



B.S.R. TUI2

The TUI2 is a robust, 4-speed turntable unit designed to suit the most compact case. The PU30 pick-up arm, available separately, is strong yet light in weight and is particularly suitable for use with the TUI2. It is fitted with the latest B.S.R. range of cartridges. The TUI2 incorporates the following features:— Plays 10", 12" or 7" records. Four speed. 78, 45, 33 and 16 r.p.m. Neutral position on knob to disengage jockey pulley when not in use. Single operating control. Available for all mains voltages—50 or 60 c/s. Available for battery operation. 45 r.p.m. adaptor and clip supplied with each unit. Rubber turntable mat for record protection and positive drive.

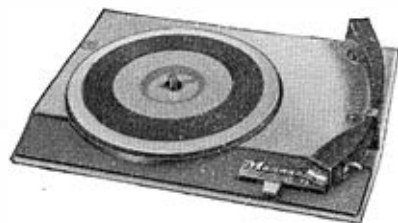
Complete with Pickup and TC8H Cartridge

Price ... **£3 10 0** plus **11 3 P. Tax.** Total **£4 1 3 (A)**

Pick-up only and TC8H Cartridge

Price ... **£1 10 0** plus **4 10 P. Tax.** Total **£1 14 10 (A)**

B.S.R. GU7 UNIT



B.S.R. GU7

A 4-speed Gramophone unit of compact design, the GU7 has clean, modern styling and upholds the B.S.R. standard of reliability and first-class engineering. Plays 10", 12" or 7" records. Four speeds: 78, 45, 33 and 16 r.p.m. Rubber turntable mat for record protection and positive drive. Simple to operate with mains On/Off switch. Automatic cut-off. Jockey Pulley automatically disengaged when not in use. Available for all mains voltages—50 or 60 c/s. Available for battery operation. Built-in monaural or stereo cartridge. 45 r.p.m. adaptor and clip supplied with each unit.

With TC8M or TC8H cartridge.

Price ... **£4 5 0** plus **13 8 P. Tax.** Total **£4 18 8 (A)**

With TC8S cartridge.

Price ... **£4 15 0** plus **15 3 P. Tax.** Total **£5 10 3 (A)**

GARRARD

GARRARD SRP10 UNIT



Garrard SRP10

Model SRP10 is a new Single Record Player, designed to meet the modern trend for compactness and styling, whilst still maintaining the standard of quality and reliability for which Garrard products are world renowned. It possess all the features usually associated with larger units and is economically priced. Although small in size it will play all sizes of records up to 12" diameter at one of four speeds: 16 $\frac{2}{3}$, 33 $\frac{1}{3}$, 45 and 78 r.p.m. The unit is finished in pastel grey enamel. A spring loaded centre bush is incorporated for playing 7" and 45 r.p.m. records having a large centre hole. The motor switches on when the pick-up arm is lifted from its rest and moved inwards—and switches off when the pick-up is placed back on its rest. In addition a sensitive trip switches off the motor automatically at the end of the record. The speed change knob is interlocked with the pick-up arm mechanism and the motor, therefore, must be switched off by placing the pick-up on its rest before selecting speed.

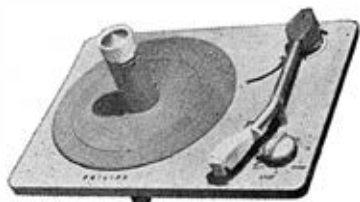
Size: 11" wide \times 8 $\frac{1}{2}$ " deep. 2" above and 1 $\frac{7}{8}$ " below top of motor board. Weight: 3 lbs. 11 ozs.

With GC8 cartridge.

Price ... **£4 14 6** plus **15 5 P. Tax.** Total **£5 9 11 (A)**

GRAMOPHONE UNITS (NON AUTO-CHANGE)

PHILIPS



Philips AG1016

PHILIPS

SEMI-AUTOMATIC No. AG1016 FOUR-SPEED UNIT

For all sizes of record; arranged so that pick-up arm automatically positions stylus in record run-in groove. Special adaptor provides fully automatic changing for ten 7" records. Suitable for stereo or mono. Heavy metal turntable on special bearing. Size 12".

Wow and flutter: 0.2% r.m.s. Output voltage: 120mV/cm./sec. Vertical stylus force 4-6 grammes. Overall size: $14\frac{3}{4}" \times 12\frac{1}{2}" \times 3\frac{1}{4}"$ above board or $5\frac{1}{2}"$ with adaptor.

Complete with pick-up having two sapphire styli.

Price ... **£10 17 1** plus **£1 14 11** P. Tax. Total **£12 12 0** (A)

45 r.p.m. Auto adaptor spindle.

Price **7/6** plus **1/2** P. Tax. Total **8/8** (A)

GRAMOPHONE UNITS (AUTO-CHANGE)

GARRARD

GARRARD LABORATORY SERIES AUTO TURNTABLE Type A

A Transcription Record Player with provision for playing records automatically. It incorporates a sandwich construction heavy turntable which comprises an inner steel shell, a foam polyurethane disc, a die cast non-magnetic outer turntable and a rubber mat.

A scientifically designed precision weight counter-balance pick-up arm is fitted with a built-in stylus pressure adjustment.

Voltage range 100/130 and 200/250 A.C. only. Minimum cabinet space— $16\frac{3}{8}"$ long by $14\frac{1}{8}"$ back to front and 6" clearance above and $2\frac{7}{8}"$ below top of motorboard.

CAN BE SUPPLIED WITH OR WITHOUT BASE

Laboratory Series Auto Turntable Type 'A' (less plug-in pick-up head)

Price ... **£15 18 0** plus **£2 11 9** P. Tax. Total **£18 9 9** (A)

Laboratory Series Auto Turntable Type 'A' (less plug-in pick-up head) on B6 base.

Price ... **£17 19 9** plus **£2 18 6** P. Tax. Total **£20 18 3** (A)

PLUG-IN PICK-UP HEADS

GC8 Turnover—Monophonic L/P and 78 r.p.m.

Price ... **£1 1 6** plus **3/6** P. Tax. Total **£1 5 0** (A)

EV26 Ceramic Turnover—Stereophonic and Monophonic (inc. 78 r.p.m.)

Price **£1 15 6** plus **5/10** P. Tax. Total **£2 1 4** (A)

GARRARD

GARRARD AUTOSLIM

The Autoslim has been designed to occupy as small a space as possible. Construction is simplified without sacrificing quality. Fitted with finger-tip adjustment for pick-up stylus pressure. Automatic selection of all sizes of records which can be mixed. No setting required. May also be played manually. The Autoslim has a one-piece pick-up arm which is wired for stereophonic reproduction and accommodates a wide range of pick-up cartridges of Garrard and other manufacture.

Voltage Range: 100-130 or 200-250 volts. 50 or 60 c/s. according to motor pulley supplied. Cabinet space required— $14\frac{1}{4}"$ long \times $12\frac{1}{2}"$ wide \times $4\frac{3}{8}"$ above and $2\frac{7}{8}"$ below top of motorboard.

Complete with GC8 Mono Cartridge.

Price **£6 15 0** plus **£1 2 0** P. Tax. Total **£7 17 0** (A)

Complete with EV26 Stereo Cartridge.

Price **£7 9 0** plus **£1 4 4** P. Tax. Total **£8 13 4** (A)



Garrard Type A



Garrard Autoslim

GRAMOPHONE UNITS (AUTO-CHANGE)

GARRARD AUTOSLIM DE-LUXE AT6



Garrard Autoslim De-Luxe

The Autoslim-de-Luxe is based on the stream-lined construction of the Autoslim but incorporating a number of additional features. It is fitted with a heavy turntable and Transcription Pick-up Arm with detachable pick-up head and has the unique Garrard Stylus Pressure Adjustment with no variation from first to last record. This is a high performance unit which is ideal for manual playing yet embodies full automatic selection of all sizes of records when required. Fitted with the Garrard sensitive automatic trip. Voltage Range: 100/130 and 200/250 volts. 50 or 60 c/s. according to motor pulley supplied. Cabinet space required— $15\frac{3}{8}$ " long \times $13\frac{1}{8}$ " wide \times $4\frac{7}{8}$ " above and $2\frac{7}{8}$ " below top of motorboard.

With GC8 Mono Head.

Price £9 17 0 plus £1 12 2 P. Tax. Total £11 9 2 (A)

With EV26 Stereo Head.

Price £10 11 0 plus £1 14 5 P. Tax. Total £12 5 5 (A)

B.S.R.

B.S.R. MONARCH UAI4



B.S.R. Monarch UAI4

4-speed motor. Magidisc selector enabling 7", 10" and 12" records to be selected automatically. Ful-Fi turnover crystal cartridge. Attractively styled in two colours of grey and fawn. Suitable for A.C. mains 100/125 volts and 200/250 volts 50 c/s. Unit plate $13\frac{1}{4}$ " \times $11\frac{1}{4}$ ".

With TC8 Mono Cartridge.

Price £6 15 0 plus £1 1 8 P. Tax. Total £7 16 8 (A)

B.S.R. MONARCH UAI6



B.S.R. Monarch UAI6

Automatically plays ten—12", 10" or 7" records of same speed intermixed in any order. 4-speed, 78, 45, 33 and 16 r.p.m. Simple to operate with manual play facility. Adapted to take any standard stereo cartridge. Transcription quality. Available for all mains voltages—50 or 60 c/s. Automatic cut-off. RMS flutter measured Gaumont-Kalee meter better than .06% r.m.s. RMS wow measured Gaumont-Kalce meter better than .2% r.m.s. Dimensions: Height of unit from top of motor board $5\frac{7}{8}$ " plus $\frac{5}{8}$ " when control arm is fully raised. Depth below top face of motor board $1\frac{7}{8}$ ". Length $13\frac{1}{8}$ ". Width $11\frac{1}{4}$ ".

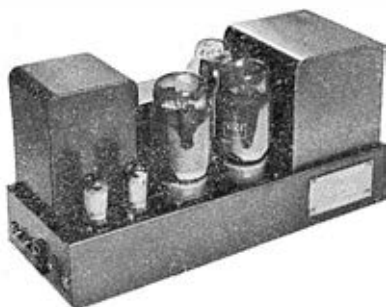
With TC8 Mono Cartridge

Price £7 15 2 plus £1 4 11 P. Tax. Total £9 0 1 (A)

AUDIO AMPLIFIERS

QUAD

ACCOUSTICAL "QUAD II" AMPLIFIER



Quad II Amplifier

Remains completely stable under all signal and load conditions and full performance may be obtained with random valve replacements. The output circuit utilises a cathode coupled arrangement, with resultant low distortion combined with a high efficiency which is reflected in the overall size of the equipment.

Power output 15 watts throughout the range 20-20,000 c/s. Input: Sensitivity 1.4 v. r.m.s. for 15 watt output. Load imposed on input of 1.5 Megohm in parallel with 10 pF. Frequency response: within 0.2 db 20-20,000 c/s. Within 0.5 db 10-50,000 c/s. Valves 2x EF86, 2x KT66, 1x GZ32. Consumption 90 watts. Mains voltages 200/250 v. A.C. single phase (or 95/125 v. A.C.) 40/80 c/s.

Size: 13" x 4 $\frac{3}{4}$ " x 6 $\frac{1}{2}$ ". Weight 18 $\frac{1}{4}$ lbs.

Price £22 10 0 (Free of P. Tax) (C)

ACOUSTICAL "QUAD II" CONTROL UNIT MONO



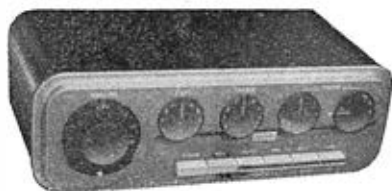
Quad II Control Unit

The monaural counterpart of the Quad 22 and is similar in all the main features except those associated exclusively with stereo.

Frequency response, cancel position: Radio and tape inputs 20-20,000 c/s. to within 0.3 db., microphone input 20-18,000 c/s. within 1 db; Bass and treble controls within 1 db of curves. Filter frequencies 5 Kc/s., 7 Kc/s. 10 Kc/s. ±250 c/s. Input sensitivities for 1.4 v. output: Radio and tape 100 mv. at 100 K.ohms., microphone 1.5 mV. at 100 K. ohms.

Price £19 10 0 (Free of P. Tax) (C)

ACOUSTICAL "QUAD 22" STEREO CONTROL UNIT



Quad 22 Stereo Control Unit

Designed to operate with the Quad II power amplifiers but it may be used with one only for monaural operation if required. Selection of stereo or monaural is by push-buttons, as also are the choice of programme and record equalisation characteristics. The gramophone input may be accurately matched to any pick-up by choice of the correct plug-in adaptor unit, indicated on a chart supplied with the amplifier, while another chart shows the push-button combinations required to provide correct equalisation for different makes of record.

Frequency response cancel position: Radio and tape inputs 20-20,000 c/s. ±0.5 db., microphone 20-20,000 c/s. ±2 db. Filter frequencies 5 Kc/s., 7 Kc/s. and 10 Kc/s. Input sensitivity (at 1 Kc/s. for 1.4 v. r.m.s. output): Radio and tape 70 mv. r.m.s. Load impedance 100,000 ohms.

Microphone: 1.5 mv. r.m.s. Load impedance 100,000 ohms. Distortion: All controls level; Any input: 0.02%.

Output, control unit to amplifier: 1.4v. r.m.s.

The unit takes its power from the main amplifier as follows:

30 v. 4 mA. } Plus current taken by tuner units.
6.3 v. 1.1 amp. }

Maximum power available from tuner sockets 330 v., 35 mA. each tuner.

Rad. 1 and Rad. 2: 6.3 v., 3 amp. total.

Rad. 1 (2nd channel): 6.3 v., 3 amp.

The heater supply is C.T. to chassis.

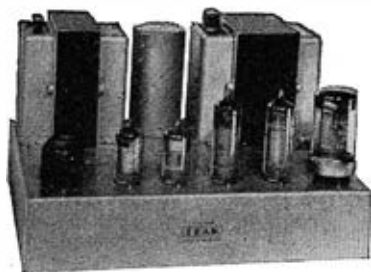
Valves: 2x EF86, 2x ECC83.

Price £25 0 0 (Free of P. Tax) (C)

AUDIO AMPLIFIERS

LEAK

"TL/12 PLUS" POWER AMPLIFIER



"TL/12 Plus"

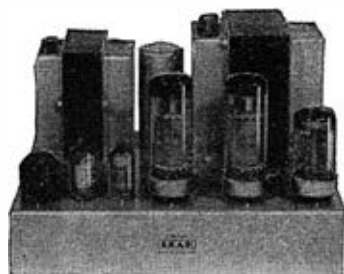
Circuitry: 3-stage triple loop feedback circuit, the main loop applying 26 db. of negative voltage feedback over the complete amplifier from input to output terminals. Low-noise, high-gain pentode feeds into a second-stage double-triode phase-splitter which, in turn, feeds two-push-pull output valves.

Valves: 1 × EF86, 1 × ECC81, 2 × EL84, 1 × GZ34. Power output 14 watts r.m.s. maximum. Harmonic distortion 0.1% at 12 watts output (± 1 db.) at 1,000 c/s. Hum and noise 85 db. ± 3 db., below 12 watts with source impedance of 25,000 ohms. Sensitivity: Input of 125 mv. at 1,000 c/s. gives 12 watts output. Frequency response ± 0.5 db., 20 c/s. to 20 kc/s. Input impedance 1 megohm, plus approximately 5 mmfd. Consumption 75 watts. Speakers of any impedance between 3 and 20 ohms. may be used. Adjustable plug on output transformer selects three tapings, nominally 16, 8 and 4 ohms. Mains voltage 200/250 v. 50/100 c/s., or 100/125 v. 50/100 c/s. Size: 10" × 7 $\frac{7}{8}$ " × 5 $\frac{1}{8}$ " high. Weight 14 $\frac{1}{2}$ lb.

Finished in beige gold paint with visible accessories black.

Price £18 18 0 (Free of P. Tax) (C)

"TL/25 PLUS" POWER AMPLIFIER



"TL/25 Plus"

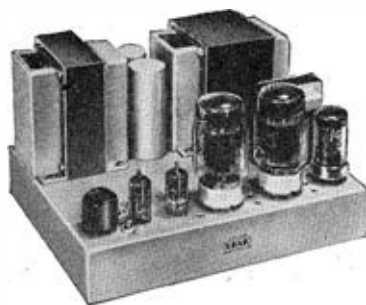
The circuitry on this amplifier is similar to the "TL/12 Plus". Valves: 1 × EF86, 1 × ECC81, 2 × EL34, 1 × GZ34. Power output 32 watts r.m.s. maximum. Harmonic distortion 0.1% for 25 watts output (± 1 db.) at 1,000 c/s. Hum and noise 86 db., ± 3 db., below 25 watts with a source impedance of 25,000 ohms. Sensitivity: An output of 125 mv. at 1,000 c/s. gives 25 watts output. Frequency response ± 0.5 db., 20 c/s. to 20 kc/s. Input impedance 1 megohm, plus approximately 5 mmfd. Consumption 130 watts. Speakers of any impedance between 3 and 20 ohms. may be used. Adjustable plug on top of the output transformer selects three tapings, nominally 16 ohms. 8 ohms. and 4 ohms. Mains voltages 200/250 v. 50/100 c/s. or 100/125 v. 50/100 c/s.

Size: 10" × 7 $\frac{7}{8}$ " × 6 $\frac{1}{4}$ " high. Weight 17 lb. 6 oz.

Finished in beige gold paint with visible accessories black.

Price £25 4 0 (Free of P. Tax) (C)

"TL/50 PLUS" POWER AMPLIFIER



"TL/50 Plus"

The circuitry is identical with the "TL/12 Plus" and TL/25 Plus" amplifiers. The massive output transformer has a core of high grade orientated steel. Valves: 1 × EF86, 1 × ECC81, 2 × KT88, 1 × GZ34. Power output 50 watts r.m.s. maximum (British rating) or 100 watts peak (American rating). Harmonic distortion 0.1% for 50 watts output (± 1 db.) at 1,000 c/s. Hum and noise 83 db., ± 3 db., below 50 watts with a source impedance of 25,000 ohms. Sensitivity: An input of 125 mv. at 1,000 c/s. gives 50 watts output. Frequency response ± 0.5 db., 20 c/s. to 20 kc/s. Input impedance 250 k ohms., plus approximately 5 mmfd., feedback magnitude minus 23 db. at 1 kc/s. Consumption 145 watts. Loudspeakers of any impedance between 3 ohms and 20 ohms. may be used. Adjustable plug on top of the output transformer selects three tapings, nominally 16 ohms., 8 ohms and 4 ohms.

Mains voltages 200/250 v. 50/100 c/s., or 100/125 v. 50/100 c/s.

Size: 11 $\frac{1}{4}$ " × 9" × 6 $\frac{3}{8}$ ". Weight 28 lb. 10 oz.

Finished in beige gold paint with visible accessories black.

Price £33 12 0 (Free of P. Tax) (C)

AUDIO AMPLIFIERS

LEAK

"STEREO 20" POWER AMPLIFIER

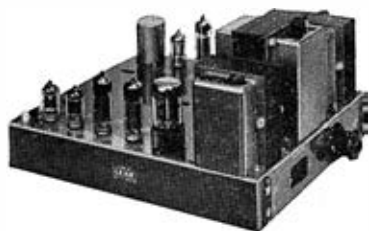
The "Stereo 20" has a total power output of 20 watts, which is adequate not only for the largest room in a dwelling but for small halls seating up to 400 people.

It has two identical circuits, each comprising a 3-stage triple loop feedback amplifier, the main loop applying 26 db. of negative feedback over the complete amplifier from input to output terminals. A low-noise, high gain triode feeds into a second-stage double-triode phase-splitter, which in turn feeds two push-pull output valves arranged in the distributed-load condition. Grain-orientated steel is used for the cores of the two output transformers and the mains transformer. Valves: 3×ECC83, 4×EL84 1×GZ34. Power output 22 watts r.m.s. maximum (11 watts per channel) or 44 watts peak (22 watts per channel). Harmonic distortion 0.1% for 10 watts r.m.s. output per channel (± 1 db) at 1,000 c/s. Hum and noise 80 db. (± 3 db.), below maximum output with a source impedance of 25,000 ohms. Sensitivity: An output of 120 mv. gives maximum output. Frequency response ± 0.5 db., 20 c/s. to 20 Kc/s. Input impedance 1 megohm. plus approximately 5 mmfd. Stability margins: Gain 10 db. ± 3 db., phase $20^\circ \pm 10^\circ$. Loudspeakers of any impedance between 3 ohms. and 20 ohms. may be used. Adjustable plugs on top of each output transformer select three tapings, nominally 16 ohms., 8 ohms. and 4 ohms.

Mains voltages 200/250 v. 50/100 c/s. or 100/125 v. 50/100 c/s. A voltage selector plug is fitted on top of the mains transformer. Consumption 105 watts.

Size: $10\frac{1}{2}'' \times 12\frac{1}{4}'' \times 6\frac{3}{8}''$ high. Weight 22 lb. 6 oz.

Price 29 gns. (Free of P. Tax) (C)

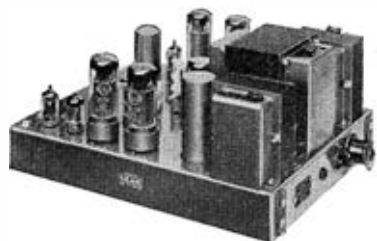


"Stereo 20"

"STEREO 50" POWER AMPLIFIER

Larger and more powerful version of the "Stereo 20". Valves: 3×ECC83, 4×EL34, 1×GZ34. Power output 50 watts r.m.s. maximum (25 watts per channel) or 100 watts peak (50 watts per channel). Harmonic distortion 0.1% for 20 watts r.m.s. output per channel (± 1 db.) at 1,000 c/s. Hum and noise 80 db. (± 3 db.), below maximum output with a source impedance of 25,000 ohms. Sensitivity: Input of 120 mv. gives maximum output. Frequency response ± 0.5 db., 20 c/s. to 20 Kc/s. Input impedance 1 megohm, plus approximately 5 mmfd. Stability margins: Gain 10 db. ± 3 db., phase $20^\circ \pm 10^\circ$. Loudspeakers of any impedance between 3 ohms and 20 ohms may be used. Adjustable plugs on top of each output transformer select three tapings, nominally 16 ohms., 8 ohms. and 4 ohms. Consumption 180 watts. Mains voltages 200/250 v. 50/100 c/s. or 100/125v, 50/100 c/s. A voltage selector plug is fitted on top of the mains transformer. Size: $10\frac{3}{8}'' \times 13\frac{1}{8}'' \times 6\frac{3}{8}''$ high. Weight 27 lb. 6 oz.

Price 40 gns. (Free of P. Tax) (C)



"Stereo 50" Power Amplifier

LEAK "POINT-ONE-PLUS" PRE-AMPLIFIER MONO

Circuitry: A low-noise, low-distortion 2-stage feedback control pre-amplifier. The first stage is used to give record compensation by the use of frequency selective negative feedback. The second stage embodies feedback tone control circuits which give continuously variable control of both bass and treble frequencies, and additionally, a twin-T low-pass filter. The case-work is finished in beige-gold.

Valves: 2×EF86. A six-position switch allows the choice of inputs. Pick-up sensitivity 9.5 mv. Input resistance varies from 70,000 — 100,000 ohms., depending on the position of the pre-set level control. Tuner sensitivity 50 mv. r.m.s. Input resistance varies from 125,000-200,000 ohms., depending on the position of the pre-set level control. Bass control continuously variable ± 16 db. at 30 c/s. Treble control continuously variable ± 18 db. at 20 Kc/s. Harmonic distortion less than 0.01% for 125 mv. output. Hum and noise approximately 66 db. below full power output on radio and tape positions and approximately 60 db. below on other outputs.

Size, chassis $10\frac{1}{2}'' \times 3\frac{3}{4}'' \times 5''$ deep. Weight 4 lb. 12 oz.

Price 12 gns. (Free of P. Tax) (C)



"Point-One-Plus"

AUDIO AMPLIFIERS

LEAK

LEAK "VARISLOPE III" PRE-AMPLIFIER MONO



"Varislope III"

A low-noise, low-distortion 2-stage feedback control pre-amplifier. The first stage is used to give record compensation by the use of frequency selective negative feedback. The second stage embodies feedback tone control circuits which give continuously variable control of both bass and treble frequencies.

Valves: 2 x EF86. A 2-way switch on the front panel allows the choice of any two pick-ups available in the world. Six-position input selector switch. Bass control continuously variable, plus or minus 16 db. at 30 c/s. Treble control continuously variable, ± 18 db. at 20 Kc/s. Harmonic distortion less than 0.01% for 125 mv. output. Hum and noise approximately 66 db. below full power output on radio and tape positions, and 60 db. below on the other inputs.

Size, chassis: $10\frac{1}{4}'' \times 3\frac{3}{4}'' \times 5''$ deep. Weight 5 lb.

Price 15 gns. (Free of P. Tax) (C)

"POINT ONE STEREO" PRE-AMPLIFIER



"Point One Stereo"

Two identical monaural pre-amplifiers, forming a complete stereo amplifying system when connected to a Leak power amplifier type "Stereo 20" or "Stereo 50". The case is finished in light bronze, the front panel is engraved on the rear face in deep maroon, cream and gold. Each of the two identical circuits consists of a low-noise, low-distortion 2-stage feedback tone control pre-amplifier. The first stage is used to give record and tape compensation by the use of frequency selective negative feedback. The second stage embodies feedback tone control circuits which give continuously variable control of both bass and treble frequencies. All controls are of the single knob, dual-ganged, close-tolerance type.

Valves: 4 x EF86. Five-position input selector switch. Bass control continuously variable, plus or minus 16 db at 30c/s. Treble control continuously variable ± 14 db. at 20,000 c/s. Harmonic distortion less than 0.01% for 125 mv. output.

Size, chassis: $10\frac{1}{2}'' \times 3\frac{3}{4}'' \times 5''$ deep. Weight $5\frac{1}{2}$ lb.

Price 20 gns. (Free of P. Tax) (C)

LEAK "VARISLOPE STEREO"



Leak "Varislope Stereo"

CIRCUITRY. The two identical circuits are designated "L" (for the left-hand input signal) and "R" (for the right-hand input signal). Each circuit consists of a low-noise, low-distortion 2-stage feedback tone control pre-amplifier. The first stage is used to give record and tape compensation by the use of the frequency selective negative feedback. The second stage embodies feedback tone control circuits which give continuously variable control of both bass and treble frequencies, and additionally, the famous LEAK "Varislope" filter circuitry. Valves 4 XEF86. An eight position switch allows the choice of inputs. Pick-up sensitivity 3.5 mV. at 50 K. ohm.

FUNCTION. When used with any combination of two Leak monaural power amplifiers or with a 'Stereo 20' or 'Stereo 50' power amplifier this pre-amplifier reproduces stereophonically and monaurally from records, tape, radio and microphone, using any pick-up, any tape head, any tuner and any microphone available in the world. This comprehensiveness gives two important advantages. First, you can use the finest pick-ups and microphones available in the world: this is not the case with cheaper low-gain pre-amplifiers. Second, when reproducing from tape you can do so directly from the tape head, thus saving the cost of amplifiers built into the tape mechanism. Note that the high sensitivity allows for the playback of the new quarter track tapes.

Price £25 0 0 (Free of P. Tax) (C)

AUDIO AMPLIFIERS

ROGERS

HG88 Mk. II INTEGRATED STEREO AMPLIFIER



HG88 Mk.II Stereo Amplifier

Control Unit Section

Input facilities: Disc (4 and 120 m/v.) (RIAA and Flat). Suitable for all magnetic and crystal pick-ups. Radio (120 m/v.) Tape replay (4 m/v.) (CCIR) from Replay heads or (20/120 m/v. Flat) with a complete Tape Recorder. Tape record (100-125 m/v.) Control facilities: 5-position input Selector. 4-position Function Selector. Ganged Bass, Treble and Filter Controls. Balance Control. Close tolerance Volume Control. Separate On/Off Toggle Switch. Built-in-Hi-Pass Filter.

Main Amplifier Section

Power Output: 12+12 watts (14+14 watts peak) (p.p. ECL86's). Harmonic Distortion: .25% for 12 watts. Intermodulation Distortion: 1.5% 50 c.p.s. and 6000 c.p.s. 4:1. Frequency response: ± 1 dB. 30-20,000 c.p.s. N.F.B.: 16 dB. Hum and noise: -80 dB. below 12 watts. Speaker Matching: 4, 8 and 16 ohms. Valves 4x ECL86, 2x EF86 2x ECC83, GZ34. Operating voltage: 200. 230. 250v. 50 c.p.s. and 110. 115. 125 v. 50/60 c.p.s. Consumption: 95 watts. Dimensions: (Case) 15 $\frac{3}{8}$ " x 10 $\frac{3}{4}$ " x 7" (Chassis) 14" x 10 $\frac{3}{4}$ " x 5 $\frac{1}{4}$ ". Weight (Case) 27 $\frac{1}{2}$ lbs. (Chassis) 23 $\frac{1}{2}$ lbs. Styling: Case: (Optional) Figured Teak. Front Panel: Brushed Brass. Control Knobs: Ivory with ground Brass inserts.

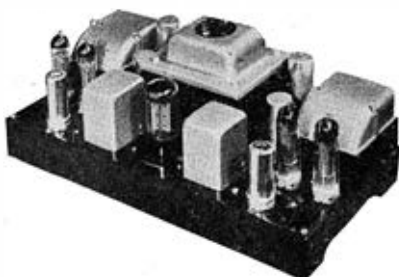
Chassis Model only

Price £40 0 0 (Free of P. Tax) (C)

Teak Case Model

Price £43 10 0 (Free of P. Tax) (C)

JUNIOR STEREO AMPLIFIER



Junior Stereo Amplifier

Developed from the extremely successful RD Junior Mono Amplifier, the Stereo version retains all the features of the original design, plus a number of valuable detail improvements. Suitable for use with either the Junior III or Master Stereo Control Units.

Power Output: 12+12 watts (15+15 watts peak). Harmonic Distortion: .2% 12 watts 1000 c.p.s. Hum and Noise: -85dB Below 12 watts. (dual choke filter). Speaker Matching: 4, 8 and 16 ohms. Spare Power: 300 v. 40 m/a. 6.3 v. 2.5 A. Consumption: 125 watts. Operating voltage: 200. 230. 250 v. 50 c.p.s. or 110. 115. 125 v. 50/60 c.p.s. Valves: 4x EL84, 2x ECC83. GZ34. Dimensions: 14" x 8" x 5 $\frac{3}{8}$ ". Weight: 22 lbs.

Price £27 5 0 (Free of P. Tax) (C)

REMOTE BALANCE/VOLUME CONTROL UNIT



Remote Balance/Volume Control Unit

For use with current models of the HG88 II, JUNIOR III and MASTER II Stereo Control Units. Dual Concentric Control provides independent control on both channels and hence complete control of stereo balance. Unit fitted in Ivory case and supplied with 10ft. Ivory lead terminated in Continental plug.

Price £3 0 0 (C)

AUDIO AMPLIFIERS

ROGERS



Junior Stereo Control Unit Mk.III

JUNIOR STEREO CONTROL UNIT Mk.III

Input Facilities: Disc (4 or 80 m/v.) (RIAA or Flat) Suitable for magnetic or crystal pick-up. Provision for second Mono pick-up. Tape Replay* (4 m/v. CCR) Heads. (25 m/v. Flat) Recorders. Aux. (2.5 or 30 m/v.) Radio (100 m/v.) Tape Record* High or Low Level Outputs. *via Panel Socket. Control Facilities: 4-position push-button Input Selector. Bass, Treble and Filter Ganged Controls. 3-position Function Selector. Hi-Pass Filter. Disc Mono/Stereo Switch. Balance Control. Separate On/Off Switch. Valves: 2 × EF86. 2 × ECC83. Dimensions: $11\frac{1}{2}'' \times 7\frac{1}{2}'' \times 5\frac{1}{2}''$. Weight: 8 lbs. Styling: Front Panel: Brushed Brass/Matt Black. Control Knobs: Ivory with ground Brass inserts.

Price £22 10 0 (Free of P. Tax) (C)



CADET Mk. II STEREO AMPLIFIER AND CONTROL UNIT

Control Unit

Input Facilities: Disc (75 m/v.) suitable for crystal and ceramic pick-ups. Decca Deram etc. Radio (75 m/v.) Tape Relay* (75 m/v.) Tape Record* (250 m/v.) *via Panel Socket. Control Facilities: Volume, close tolerance ganged. Bass and Treble Ganged. Balance ± 4 dB. Function Slide Switch. Disc Slide Switch (caters for compatible stereo pick-ups). Separate On/Off Switch. Pre-set Rumble Filter. Valves: 2 × ECC83. Dimensions: $9\frac{1}{4}'' \times 5\frac{1}{2}'' \times 5\frac{3}{4}''$. Weight: 4½ lbs. Styling: Front Panel: Brushed Brass/Matt Black. Knobs: Ivory with ground brass inserts.

Amplifier

Power Output: 6+6 watts (7+7 watts peak) (p.p. ECL86's). Harmonic Distortion: .25% at 6 watts. Speaker Matching: 3/5 ohms. and 10/16 ohms. Valves: 4 × ECL86. Operating Voltage: 200. 230. 250 v. 50 c.p.s. Dimensions: $12'' \times 6'' \times 4\frac{1}{2}''$. Weight: 10½ lbs.

NOTE:—Amplifier and Control Unit **NOT** available separately. Cadet Mk. II Stereo Amplifier and Control unit complete.

Price £26 15 0 (Free of P. Tax) (C)



Cadet Mk.II Stereo Amplifier and Control Unit

BOOSTER UNIT FOR CADET II STEREO CONTROL UNIT

Enables low output magnetic pick-up to be used. Input: 4 m/v., 68K, R.I.A.A. Compensated. Output: 75 m/v. Valves: 2 × EF86. Dimensions: $4\frac{1}{2}'' \times 4'' \times 2\frac{1}{8}''$.

Price £4 15 0 (C)



Master Stereo Control Unit

MASTER STEREO CONTROL UNIT

For use with Junior Stereo Amplifier. Input Facilities: Disc (3 or 30 m/v.) Magnetic pick-ups. (4 or 40 m/v.) Crystal pick-ups. Provision for second Mono pick-up. Aux. (30 m/v.) Radio (30 m/v.) Tape Replay Heads (8 or 30 m/v.) Recorders* (250 m/v.) Tape Record* (250 m/v.) Mic.* (3-30 m/v.) provision for built-in matching transformers. *via Panel Sockets. Pre-set level controls fitted to Disc, Aux., Radio and Tape Inputs. Control Facilities: 6-position push-button Input Selector (includes provision for instantaneous Mono Tape Monitoring). Function selector. Ganged Bass and Treble. 3-position Low-Pass Filter+Slope control. 3-position Hi-Pass Filter. 3-position Equalisation Switch—(Disc—LP,RIAA. Flat, SP,RIAA) (Tape—CCR. Flat. NARTB) Mono/Stereo Disc Button. Balance. Separate On/Off. High-precision ganged Volume Control. Valves: 2 × EF86, 4 × ECC83. Dimensions: $14'' \times 6\frac{1}{2}'' \times 5\frac{1}{8}''$. Weight: 10 lbs. Styling: Front Panel: Brushed Brass/Matt Black. Control Knobs: Ivory with ground brass inserts.

Price £35 0 0 (Free of P. Tax) (C)

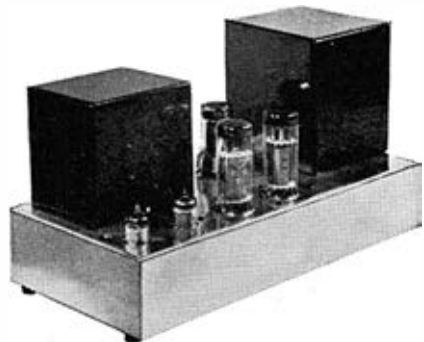
AUDIO AMPLIFIERS

CHAPMAN

205 AMPLIFIER

Power output: 30 watts from 20 c/s. to 20,000 c/s. Power response: Within 0.5 dB. of 1 Kc/s. level at 20 watts from 20 c/s.-20 Kc. Frequency response: (1 watt level) within 1 dB. of 1 Kc/s. level 2 c/s.-100 Kc/s. Harmonic distortion: 0.05% at 20 watts, 0.1% at 30 watts. Intermodulation distortion: 0.7% at 20 watts, 1% at 30 watts. Hum and noise: Down 90 dB relative to 20 watts. Sensitivity: 220 m/v. for 20 watts output. Damping Factor: 50. Output matching: 15 ohms. and 3 ohms. Spare power available: 220 v. 30 m/a. HT and 6.3 v. 2A LT. Valves: EF86, ECC83, 2 x EL34, GZ34. Mains voltage: Fully tapped from 100-250 volts 40/60 c/s. Dimensions: 14" x 7 1/8" x 8 3/8" deep. Weight: 40 lbs. (18.14 kilos). Finish: Gold chassis and black transformer covers.

Price £34 0 0 (C)

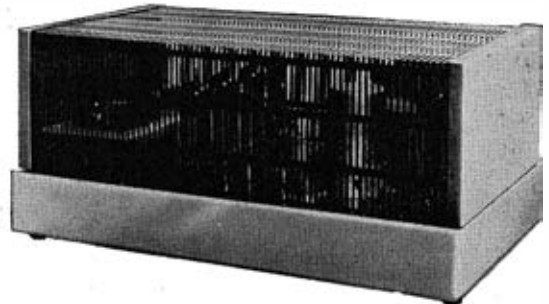


205 Amplifier

305 STEREO MAIN AMPLIFIER

Input sensitivity: 350 m/v. RMS for 8 watts output. Frequency response: Within 0.2 dB 30-20,000 c/s. Power output: 8 watts over the range 30-20,000 c/s. Distortion: Harmonic at 8 watts, less than 0.1% at 1 Kc/s. Intermodulation at 8 watts less than 1% with mixed frequencies. Hum and noise: Down 80 dB referred to 8 watts. Output matching 15 ohms. and 3 ohms. Mains voltage: 200 to 250 v. 50/60 c/s. or 100/120 v. 50/60 c/s. Consumption: 10 watts excluding spare supplies. Spare power available: 250 v. 30 m/a. HT and 6.3 v. 2 A LT. Valves: 2 x ECC83, 4 x EL84, EZ81. Dimensions: 12" x 7" x 5" deep. Weight: 15 lbs. (16.71 kilos). Finish: Steel chassis sprayed matt gold with black ventilated cover. The Chapman Stereo control unit is designed for direct connection.

Price £22 1 0 (C)



305 Stereo Main Amplifier

305 Mk. II STEREO CONTROL UNIT

Input: Pick-up 4.0 m/v. at 100K ohms. RIAA curve, gram 40 m/v. at 100K ohms. flat, tape 100 m/v. at 100K ohms Radio and aux. Tape Outlet: 75 m/v. Low pass filter: 5 Kc/s., 10 Kc/s., 20 Kc/s. and out, at approx. 12 dB. octave. Treble and Bass Controls: Fully variable. Output per channel: 400 m/v. Controls: Selector: for Tape, Radio, Gram, Aux. Function: for Stereo reverse, Channel A, Channel B, Off. Volume: Ganged. Balance: To off, on each channel. Bass: Fully variable. Treble: Fully variable. Filter: Four positions 5 Kc/s., 10 Kc/s., 20Kc/s. out. Valves: 2 x EF56, 2 x ECC83. Frequency Response: Within 0.2 dB. 30-20,000 c/s., without filters. Distortion: Less than 0.1% total. High Pass Filter: Fixed roll off at 30 c/s. to reduce motor rumble. Hum and noise: Down 50 dB on all channels. Consumption: 10 m/a. at 250 v. and 1.5A at 6.3v. Dimensions: 14 1/2" x 5 1/2" x 4 1/2" deep. Weight: 5 lbs. (2.27 kilos). Finish: Cast escutcheon with knobs in ivory and gold. Cabinet semi-matt black, fully tropicalised throughout.

Price £19 17 0 (C)



305 Mk. II Stereo Control Unit

306 INTEGRATED STEREO AMPLIFIER

Input: 4.0 m/v. at 1000K ohms. RIAA curve, Gram: 40 m/v. at 100K ohms. flat, Tape: 100 m/v. at 1000K ohms. Radio and Aux. Tape outlet: 75 m/v. Low pass filter: 5 Kc/s. 10 Kc/s., 20 Kc/s. and out, at approx. 12 dB. octave. Treble and Bass Controls: Fully variable. Power Output: 8 watts ± 0.5 dB. 36 c/s.—20 Kc/s. including roll off filters. Frequency range: ± 0.5 dB. 36 c/s.—20 Kc/s. including filters at 1 watt level (25 c/s.—25 Kc/s. without filters). Distortion: Harmonic at 8 watts less than 0.1% at 1 Kc/s., intermodulation less than 1% with mixed frequencies. Hum and noise: Main Amp—75 dB., Radio tape and aux.—60 dB., gram—50 dB. Output Matching: 3 ohms. and 15 ohms. Mains voltage: 200-250 v., 50 c/s. Consumption: 120 watts average. Spare power available, 250 v. at 30 m/a., 6.3 v. 2 1/2 a. Valves: 2 x EF86, 2 x ECC83, 4 x ECL86: 1 x EZ81. Dimensions: 14 1/2" x 5 1/2" x 9 1/2" deep. Weight: 21 lbs. (9.526 kilos). Finish: Cast escutcheons finished with knobs in ivory and gold. Cabinet semi-matt black, fully tropicalised throughout.

Price £37 0 0 (C)



306 Integrated Stereo Amplifier

TUNER UNITS AND RECEIVERS

CHAPMAN

FM1000 V.H.F. F.M. TUNER

Sensitivity: Better than 2 micro volts for 20 dB quieting. Output: Almost constant at 250 m.v. Low impedance emitter follower. Consumption: 3 watts approx. Connections: 2 core mains cable, output sockets and aerial socket. Mains Voltage: 100—125 v. or 200—250 v., 50/60 c/s. To be specified at time of ordering. Controls: Tuning, on/off/function. Dimensions: $14\frac{1}{2}'' \times 3\frac{1}{2}'' \times 7\frac{1}{2}''$ deep. Weight: 7 lbs. (3.175 kilos). Semi-conductors: AF102-1, AF115-1, AF116-3, OA79-4, OA81-2, OC71-2, Z105-1. Finish: Cast escutcheon finished with knobs in ivory and gold. Cabinet semi-matt black, fully tropicalised throughout. Range: 87.5—108 mc/s.

Note: Full provision has been made to enable Multiplex Adaptor to be internally fitted when available.

Price £21 6 0 plus £3 14 9 P. Tax. Total £25 0 9 (B)



FM1000 V.H.F. F.M. Tuner

FM90 SWITCHED V.H.F. F.M. FEEDER

Sensitivity: Better than 2 micro volts for 20 dB quieting and 75 Kc/s. deviation. Output: 1 v. Cathode Follower. Consumption: 2 A at 6.3 v., 40 m/a. at 250 v. Connections: 3 core coloured cable for Heaters and HT+ and HT— with 2-pin socket for Aerial input and separate cable for tuner output. Controls: Station Selector: Light. Third, Home and Aux. Dimensions: $5'' \times 4\frac{1}{2}'' \times 6\frac{1}{2}''$ deep. Escutcheon: Attractive finish in Gold and Black (not illustrated). Weight: $2\frac{1}{2}$ lbs. (1.13 kilos). Finish: Chassis cadmium plated, escutcheon Gold and Black. Valves used: 2× ECF80, EF85, EB91, EF80.

Price £15 3 6 plus £2 13 3 P. Tax. Total £17 16 9 (B)



FM90 Switched V.H.F. F.M. Feeder

S6BS/FM Mk. II TUNER SIX STAGE A.M. BANDSPREAD AND HIGH GAIN F.M.

(The finest tuner in our range)

Output: 500 m/v. approximately into 100,000/500,000 ohms
Sensitivity: AM 2 microvolts for 20 dB signal/noise ratio. FM 2 microvolts for 20 dB. quieting. Wave Range: AM 11 m. 13 m. 16 m., 19 m., 25 m. and 31 m. in six bandspread ranges. 13-43 m., 43-140 m., 175-570 m., FM 88-108 mc/s. Controls: Variable sensitivity/FM, Tuning, Volume/Off, wave change and AM sensitivity. AM Rejection: FM only—3 microvolts input 32 dB. 300 microvolts 40 dB. Connections: 2 pin socket for AM aerial, 3 pin socket for FM aerial, 2 co-axial sockets for normal output and multiplex output on VHF only Consumption 65 watts at 110 v. and 200-250 v. 40-60 c/s. A.C. Dimensions: $13\frac{3}{4}'' \times 8\frac{1}{4}'' \times 13\frac{1}{2}''$ deep. Weight: 18 lbs net (8.165 kilos). Finish: Chassis and brackets cadmium plated, escutcheons plated and lacquered in gold with knob operation silk screened. Valves: 3× EF89, ECH81, EBF80, EM84, EZ80, EF85, ECF80, 2× EF80, EB91.

Price £54 6 9 plus £9 8 3 P. Tax. Total £63 15 0 (B)



S6BS/FM Mk. II Tuner

FM1005 AM/FM TUNER

Sensitivity: FM better than 2 microvolts for 20 dB quieting. AM better than 4 microvolts for 20 dB signal/noise ratio. Output: FM and AM 250m.v. approx. Low impedance emitter follower. Consumption 3 watts approx. Mains Voltage: 100—125 v. or 200—250 v., 50/60 c/s. To be specified at time of ordering. Connections: 2 core mains cable, output sockets and aerial sockets. Controls: Wave change, volume, on/off/AM/FM. Dimensions: $14\frac{1}{2}'' \times 5\frac{1}{2}'' \times 7\frac{1}{2}''$ deep. Weight: 8 lbs. (3.629 kilos). Semi-conductors AF102-1, AF115-1, AF116-3, OA79-4 (2), OA81-2, OC71-2, Z105-1, AF114-1, AF115-2, AF117-2. Finish: Cast escutcheons and knobs finished in black and gold. Cabinet semi-matt black, fully tropicalised throughout. Range: AM—16-50 m.; 50-195 m.; 195-550 m.; 800-2000 m. FM—87.5-108 Mc/s.

Note: Full provision has been made to enable Multiplex Adaptor to be internally fitted when available.

Price £31 3 0 plus £5 9 0 P. Tax. Total £36 12 0 (B)



FM1005 AM/FM Tuner

TUNER UNITS AND RECEIVERS

CHAPMAN



S6 BS Mk. II Tuner

S6 BS Mk. II TUNER SIX STAGE A.M. BANDSPREAD

Output: 500m/v. approximately in 100,000/500,000 ohms. Sensitivity: 2 microvolts for 20 dB. signal/noise ratio. Wave Range: 11 m., 13 m., 16 m., 19 m., 25 m. and 31 m. bands in six bandspread ranges 13 m.-43m., 43 m.-140 m., 175 m.-570 m., displayed on a large scale. Consumption: 1½ amps. at 6·3 v. 30/40 m/a. at 250 v. D.C. or 50 watts at 110 v. and 200/250 v. when self powered. Connections: 2 pin sockets for aerial/earth and gramophone inputs, miniature co-axial socket for tuner output, and either 2 core red/black mains cable, or 4 core coloured cable for heaters, HT and earth. Controls: Tuning, wave range/Gram. Volume /Off, variable selectivity and A.M. sensitivity. Dimensions: 13¾" × 8¼" × 11" deep. Weight: Unpowered 13½ lbs. (6·57 kilos) powered 18 lbs. (8·16 kilos). Finish Chassis cadmium plated, escutcheons plated and lacquered in gold with knob operation silk screened. Valves: 3 × EF89, ECH81, EBF80, EM84, EZ80.

Price ... £38 14 6 plus £6 14 3 P. Tax. Total £45 8 9 (B)

QUAD

ACOUSTICAL "QUAD" A.M.II TUNER

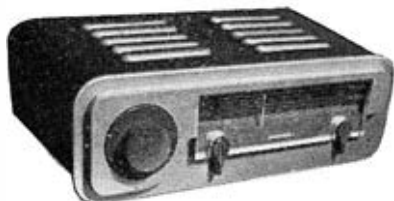
Designed for the Quad II or Quad 22 control units.

Output 100 mv. at 5,000 ohms. impedance via screened cable. Selectivity 2 position switched to give audio bandwidths of 5 and 12 kc/s. Consumption 6·3 v. 1·2 amp.

Valves: EF89, ECH81, EBF89, EM84.

Size: 10½" × 3½" × 6". Weight 6 lb.

Price ... £24 0 0 plus £4 10 0 P. Tax. Total £28 10 0 (C)



"Quad" A.M. Tuner

ACOUSTICAL "QUAD" F.M. TUNER

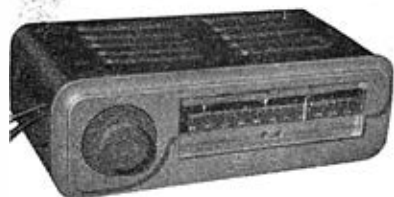
To be used with the Quad II amplifier. Tuning range: 87·5-108 mc/s. Output 100 mv. at 100 K ohms. impedance (to be terminated by 100 K ohms. across amplifier input).

Consumption: 6·3 v. 1·85 A., 330 v. 27 mA.

Valves: 6BJ6, 12AT7/ECC81, 6BH6, 6AU6, 6AL5/EB91, 12AX7/ECC83, neons Hivac CC11L, Lamp 6·5 v. 0·3 A. Front panel: Die-cast, stove finished silvered fawn, aluminium knob. Dial ¾" perspex.

Size: 10½" × 3½" × 6". Weight 6 lb.

Price ... £21 0 0 plus £3 18 9 P. Tax. Total £24 18 9 (C)



"Quad" F.M. Tuner

LEAK

LEAK TROUGH-LINE F.M. TUNER Mk. II (Self Powered)

The oscillator of this tuner employs a trough-line as a tuning inductor. Foster-Seeley discriminator employing germanium diodes is used, and the preceding stage has a limiter which eliminates amplitude-modulated signals, rendering the receiver insensitive to ignition and other forms of impulse interference. Frequency range: 88-108 mc/s.

Sensitivity: 2 mv. at aerial terminals for full limiting.

Valves: 2 × ECF80, ECC84, ECC85, EF80, EM34, EZ80, 2 × OA79.

Front panel: 11½" × 4¾"

Price ... £25 0 0 plus £4 6 8 P. Tax. Total £29 6 8 (B)



Leak Trough-Line F.M. Tuner

TUNER UNITS AND RECEIVERS



R.D. Junior Variable FM Receiver

R.D. JUNIOR VARIABLE FM RECEIVER Mk.II

A seven-valve receiver of advanced design, with a comprehensive specification, ensuring optimum results from the B.B.C. VHF transmissions. Matching is greatly facilitated by the inclusion of a built-in power supply and low impedance cathode follower output, extending the units application as a high quality programme source.

BRIEF SPECIFICATION

Features Automatic Frequency Control. Grounded-grid twin-triode RF stage. Foster-Seeley Discriminator. Low Impedance Cathode Follower Output. Built-in Power supply. High quality tuning mechanisms entirely free from back-lash. Frequency Coverage 87—107.5 mcs. Valves 2× ECC85, ECF80. 2× EF80. EB91. EC90. Overall Dimensions 8 $\frac{3}{8}$ " wide× 5 $\frac{3}{8}$ " high× 9" deep. Weight 5 $\frac{1}{2}$ lbs. Styling Front Panel—brushed brass; Control Knobs—ivory with ground brass inserts. Available in Figured Teak Case to match HG88 II Stereo Amplifier.

Price ... £21 0 0 plus £3 11 8 P. Tax. Total £24 11 8 (B)

Complete in Teak case

Price ... £24 7 6 plus £4 3 2 P. Tax. Total £28 10 8 (B)



R.D. Junior Switched FM Receiver

R.D. JUNIOR SWITCHED FM RECEIVER

Provides FM reception in its simplest and most economical form. A single control affords selection of the three B.B.C. FM transmissions, a fourth position muting the receiver, but at the same time leaving it available for immediate use. Designed to draw HT and LT current from the main amplifier.

BRIEF SPECIFICATION

Features Automatic Frequency Control. Cascode RF Stage. Variable Inductance Incremental Tuning. Foster-Seeley Discriminator. Low Impedance Cathode Follower Output. Pre-set output level control Muting position on Selector Switch. Pre-set Tuning Control. Frequency Coverage 87-96 mcs. Sensibility 10 uv. for 20 DB quietening (25 kcs. deviation). Audio Output .25 v. R.M.S. (average). Aerial Impedance 70-90 ohms. Consumption 35 m/a. 250v. 1.7 a. 6.3 v. Control 4-position Rotary Switch. 3 Stations. 1 Muting. Valves ECC84. 3× ECF80. 2× OA79. Overall Dimensions 9" deep× 5 $\frac{3}{8}$ " wide× 5 $\frac{3}{8}$ " high. Weight 2 $\frac{3}{4}$ lbs. Styling Front Panel—brushed brass; Control Knob—ivory with ground brass insert.

Price ... £12 10 0 plus £2 2 8 P. Tax. Total £14 12 8 (B)

MODEL "C" POWER PACK

BRIEF SPECIFICATION

Designed to provide H.T. and L.T. current for the Switched FM Receiver in cases where it is not possible to draw these supplies from the main amplifier. Output 250v. 40 m/a. 6.3v. 2.5a. Operating Voltage 200—230—250v. 50 cps. or 110—115—125v. 50/60 cps. Consumption 40 watts. Contact-Cooled Rectifier. Overall Dimensions 7 $\frac{3}{4}$ "× 3 $\frac{1}{4}$ "× 4 $\frac{3}{4}$ ". Weight 3 $\frac{1}{2}$ lbs.

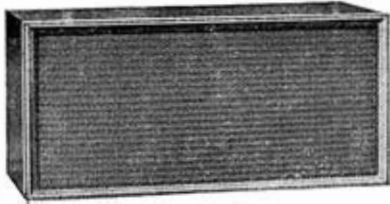


Model "C" Power Pack

Price £4 10 0 (Free of P. Tax) (C)

LOUDSPEAKER SYSTEMS & ENCLOSURES

WHARFEDALE SPEAKER SYSTEMS



WHARFEDALE PST/8

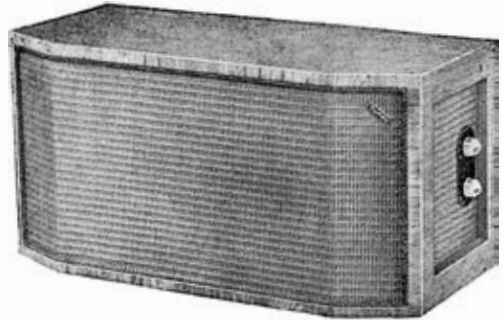
To take a single 8" unit. Size: 24" x 12" x 12". Weight 17 lbs. cabinet only.

In Whitewood

Price £7 10 0 (Free of P. Tax) (B)

Finished in walnut, oak or mahogany veneers.

Price £10 10 0 (Free of P. Tax) (B)



WHARFEDALE W3 COMPACT 3-SPEAKER SYSTEM

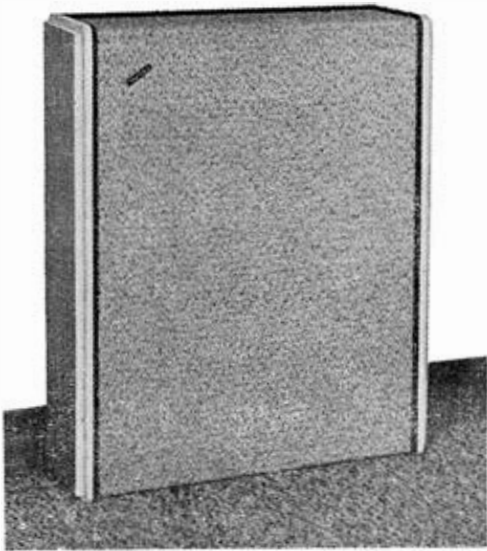
Size: 28" x 14" x 12". Weight: 48 lbs. complete. Impedance 12/15 ohms. only.

In whitewood.

Price £36 10 0 (Free of P. Tax) (B)

Finished in walnut, oak or mahogany veneers.

Price £39 10 0 (Free of P. Tax) (B)



WHARFEDALE SLIMLINE 2

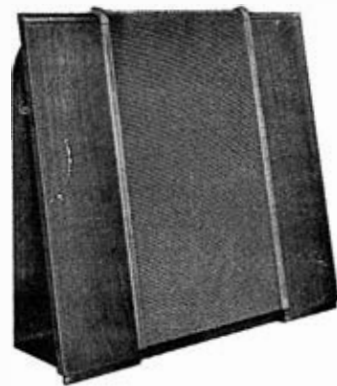
For floor, wall or table mounting. Size: 25" x 20" x 7". Weight 32 lbs. complete. Impedance 10/15 ohms.

Unpolished.

Price £22 0 0 (Free of P. Tax) (B)

Finished in walnut, oak or mahogany veneers.

Price £22 10 0 (Free of P. Tax) (B)



WHARFEDALE SFB/3 3-SPEAKER BAFFLE SYSTEM

Size 34" x 31" x 12". Weight 64 lbs. complete. Impedance 8/15 ohms. only.

Finished in walnut, oak, maple or mahogany veneers.

Price £39 10 0 (Free of P. Tax) (B)

LOUDSPEAKER SYSTEMS & ENCLOSURES

WHARFEDALE SPEAKER SYSTEMS

AIREDALE

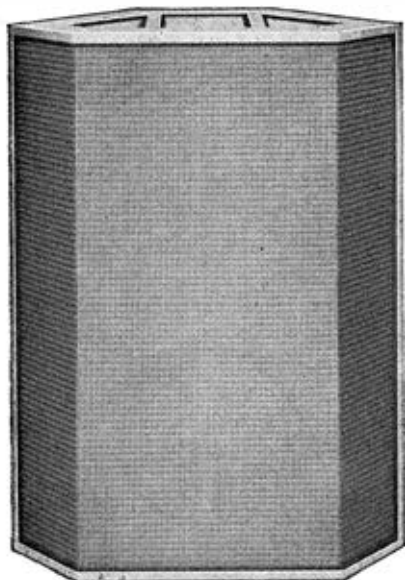
FREE-STANDING 3-SPEAKER SYSTEM

Size 39" x 28½" x 14". Weight 91 lbs. complete. Impedance 12/15 ohms. only. In whitewood.

Price £62 10 0 (Free of P. Tax) (B)

Walnut, oak or mahogany veneers.

Price £65 0 0 (Free of P. Tax) (B)



Airedale

WHARFEDALE FREE-STANDING W4 4-SPEAKER SYSTEM

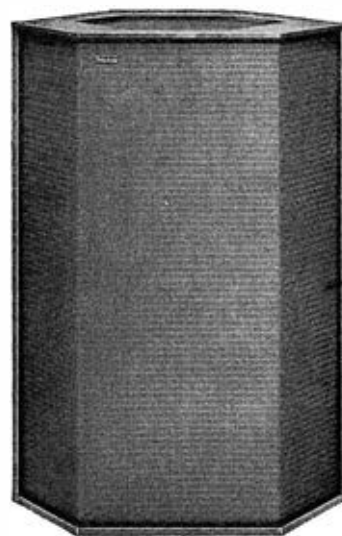
Size 35" x 24" x 12". Weight 65 lbs. complete. Impedance 12/15 ohms. only.

In whitewood.

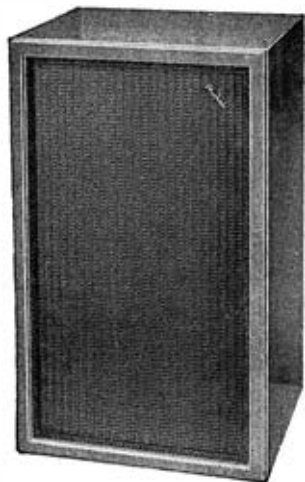
Price £47 5 0 (Free of P. Tax) (B)

Finished in walnut, oak or mahogany veneers.

Price £49 10 0 (Free of P. Tax) (B)



Free-Standing W4



Wharfedale W2

WHARFEDALE W2 COMPACT 2-SPEAKER SYSTEM

Size: 23½" x 14" x 12". Weight 37 lbs. complete. Impedance 12/15 ohms. only.

In whitewood.

Price £27 10 0 (Free of P. Tax) (B)

Finished in walnut, oak or mahogany veneers.

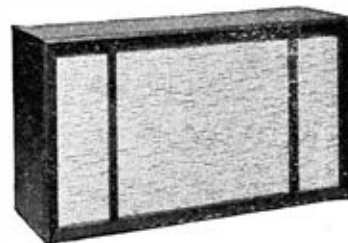
Price £29 10 0 (Free of P. Tax) (B)

"BOOKSHELF 2"

An ultra-compact two-speaker system with wide frequency response, suitable for mono and stereo installations.

Size: 19" x 11" x 6½" deep. Weight: 18 lbs. Impedance: 8-16 ohms. Max. Input: 10 watts. Treble V.C. fitted to back of cabinet. UNITS: Specially designed 10" and 5" speakers each fitted with Wharfedale silver magnets, 12,500 lines flux density. All cabinets are fully tropicalised and are available in Walnut, Mahogany or Oak veneers, wax polished by hand. Also available unpolished at 15/- less. The performance of the "BOOKSHELF 2" is outstanding for its small size and moderate price. This is due mainly to the efficiency of its modern 10" unit which has the very low resonance of 25/30 c/s., and is fitted with flexible roll surround and a polystyrene diaphragm to improve the bass and act as an acoustic filter. (Patent application No. 46738/61.)

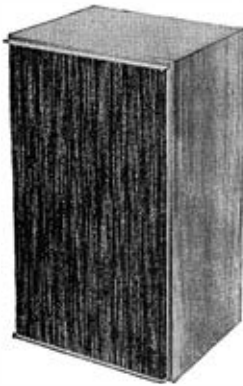
Price £16 10 0 (B)



"Bookshelf 2"

LOUDSPEAKER SYSTEMS & ENCLOSURES

LEAK



Leak "Sandwich"

LEAK "SANDWICH" FULL RANGE LOUDSPEAKER

The cabinet, which measures only 26" x 15" x 12", is of unique construction which damps panel resonances and permits the loud speaker motor to reproduce full clean bass without the "boxy" colouration of conventional cabinets. A 3" and a 13" loudspeaker motor of novel design and a half-section cross-over network complete the system which gives the highest quality of reproduction over the whole frequency range of the input signal from records, radio, tape or microphone. The 13" unit employs a new cone whose stiffness to weight ratio is two hundred times better than the best cones which are currently available. This invention is the greatest advance in moving-coil loudspeaker design since Rice-Kellogg invented the moving coil loudspeaker in 1925. The low stiffness of conventional cones results in the flexing of the cone at large amplitudes and break-up resonances. The new LEAK cone which has immense stiffness for no greater weight than a conventional cone has given us, for the first time, a loudspeaker which behaves as the theoretical idea of a rigid piston, thus there is no flexing of the cone at large amplitudes and there is no break-up distortion within the frequency range handled by the loudspeaker. It is this freedom from colouration, produced in conventional systems by break-up distortion of the cone and cabinet resonances, which distinguishes the superior quality of reproduction of the LEAK "SANDWICH" LOUDSPEAKER SYSTEM from that of the best currently available moving-coil loudspeaker systems.

Price £39 18 0 (C)



Quad Electrostatic

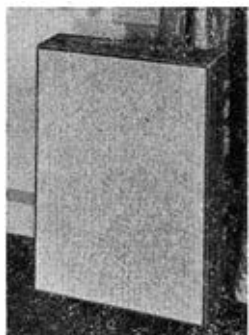
QUAD ELECTROSTATIC LOUDSPEAKER

Supplied complete with built-in networks for operation direct from a low impedance amplifier source. Intended to be used with a Standard Quad II amplifier. Should be capable of delivering at least 15 watts at low distortion when a resistive load is varied between 30 ohms. and 7 ohms. The source impedance should be not more than 2 ohms. in the frequency range 100-5,000 c/s. and not more than 6 ohms. in the range 40-20,000 c/s. Dimensions: 13" high x 34½" long x 10½" deep.

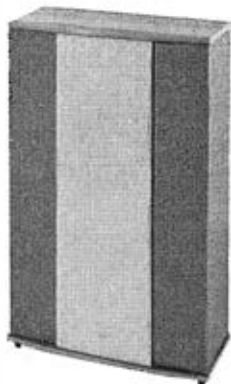
Price £52 0 0 (C)

LOUDSPEAKER SYSTEMS & ENCLOSURES

GOODMANS



Eleganzia



Cadet II

GOODMANS ELEGANZIA

Range 35-15,000 c/s. Power handling 15 watts. Impedance 15/16 ohms. Bass Loudspeaker 12" with Suprfoam diaphragm. Mid-range and high frequencies. Back loaded sealed direct radiator. Crossover L/C Network at 900 c/s. Enclosure Acoustically sealed so that bass diaphragm operates on 'air cushion'. Dimensions: 27" high x 20" wide x 6 1/4" deep. Finish Satin walnut, scratch and heat resistant.

Price £25 4 0 (Free of P. Tax)(B)

CADET II HORN LOADED SPEAKER SYSTEM

Pressure horn loaded system: horn length 5', exponential flare. Bass Unit: 8 3/4" x 5 3/4" Elliptical. High-flux ring magnet 13,000 Gauss. Plasticized cone surround. Treble Unit: 3", high-flux ring magnet 13,000 Gauss. Plastic cone surround. Cross-Over Frequency: 4 Kc./s. Power Handling Capacity: 6-8 watts. Impedance: 15 ohms. Output Connections: Recessed panel with brass terminals, polarized for stereo. Frequency Response: 45-18,000 cps. Overall Dimensions: Height 33 3/4". Width 20 1/4". Depth 8 1/4". Construction: Chipboard covered with 'VYNAIR' with contrasting centre panel; top panel Teak finish plastic laminate-scratch and stain resistant.

Price £22 10 0 (C)



"Trio"



"Quartet"

FANE "TRIO" REPRODUCER

Three speaker reproducer. Incorporates a 12" bass unit with a 10,000 line magnet and a heavy 4-layer voice coil. The intermediate unit is an 8" deep chassis design with a curved cone.

Matching Impedance: 8-15 ohms. Power handling: 15 watts R.M.S. Frequency Range: 70-15,000 c/s. Horizontal dispersion 90° to front. Size: 24 1/2" x 24" x 8 1/2". Weight 13 lbs.

Finished walnut, sapele mahogany or light oak.

Price £17 10 0 (Free of P. Tax) (A)

FANE "QUARTET" REPRODUCER

Consists of four specially developed loudspeaker units and a crossover network mounted in a novel type of cabinet-baffle. Free standing and readily portable.

Matching impedance: 15 ohms. Power handling: 20 watts R.M.S. Frequency range: 25-17,000 c/s. Horizontal dispersion 180° to front of speaker.

Size: 25 1/2" x max. width 25 1/2" x frontal width 14 1/4" x 8 3/4" deep.

Weight: 22 lbs.

Finished in figured walnut, sapele mahogany or oak.

Price £35 0 0 (Free of P. Tax) (A)

LOUDSPEAKER SYSTEMS & ENCLOSURES



KEF

KI SLIMLINE

A special acoustic filter in the back panel applies pure resistance loading to the rear of the diaphragm and virtually eliminates low frequency resonance. The sudden rise in impedance associated with totally enclosed and reflex cabinets is avoided.

Size 27" x 17" x 7". Weight 39 lbs. Finish Semi-matt catalysed lacquer finish. This gives a very hard wearing surface which is extremely difficult to scratch. Impedance: Due to unusually smooth impedance curve the K! will operate with any amplifier impedance in the range 8-16 ohms. Max. Power 25 watts r.m.s. 50 watts peak.

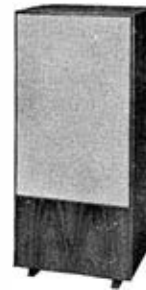
Price **£39 0 0** (Free of P. Tax) (B)

KI MONITOR

An elegant 4 cu. ft. enclosure in solid Iroko capable of developing the full capabilities of the KEF rectangular LF radiator. Pure resistance loading is again employed to eliminate response peaks and ensure proper matching with the amplifier at all frequencies.

Size 39½" x 17" x 14". Weight 70 lbs. Finish Semi-matt catalysed lacquer finish. Impedance suitable for amplifiers 8-16 ohms. Max Power 25 watts r.m.s. 50 watts peak.

Price **£52 0 0** (Free of P. Tax) (B)



KI BAFFLE

One of the important special features of the KI series is the availability of the panel mounted system wired, complete and ready to play. Conversions of existing cabinets can be undertaken with the minimum of effort and success is guaranteed. Details of suitable cabinets for home construction are also available.

Size 27" x 17" x 5". Weight 22 lbs. Impedance suitable for amplifiers 8-16 ohms. Max. Power 25 watts r.m.s. 50 watts peak.

Price **£28 0 0** (Free of P. Tax) (B)

K2 CELESTE

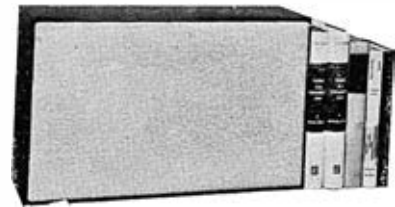
This is an entirely new two-speaker system, employing a small rectangular bass unit with a flat Tri-ply diaphragm in conjunction with the tweeter recently developed for the KI system.

The K2 has been built down to a size but it is not a cheap speaker. The gross weight of 24 lbs. gives some idea of the solidity of construction.

The enclosure is constructed in solid Iroko and fitted with a pleasing off-white grille fabric.

Size 18" x 10¾" x 6¾" (46 c.m. x 27 c.m. x 17 c.m.). Weight 24 lbs (10.9 kg.). Impedance 15 ohms. P.H.C. 15 watts r.m.s. 30 watts peak.

Price **£22 0 0** (Free of P. Tax) (B)



DUETTE

Compact two-speaker system incorporating the most up-to-date design features in both drive units and cabinet.

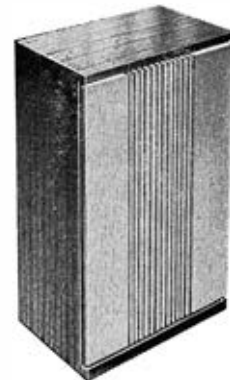
Exceptional transient response and freedom from colouration achieved by latest type B139 rectangular bass diaphragm. The T15 hemispherical tweeter reproduces frequencies above 1 Kc/s. with smoothness usually associated with ribbon and electrostatic units.

Robert Heritage has designed a magnificent cabinet to complement the technical achievement of this fine system. Cabinet finished in nigerian walnut with contrasting wooden front panel.

SPECIFICATION

Size: 25½" x 15¾" x 10". (65 cm. x 40 cm. x 25 cm.) Weight: 40 lbs. (18 Kg.). Impedance: 15 ohms. Max. power: 15 watts. Fundamental Resonance of System: 48 c/s.

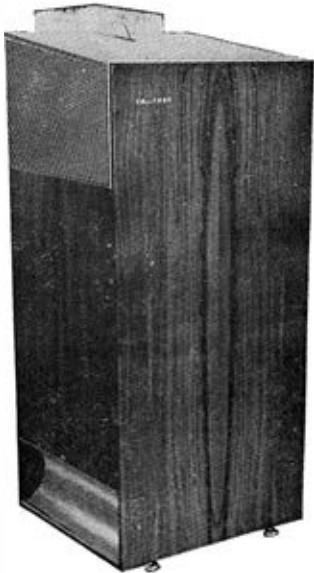
Price **£32 0 0** (B)



LOUDSPEAKER SYSTEMS & ENCLOSURES

LOWTHER

LOWTHER ACOUSTA TWIN ENCLOSURE



Acousta Twin Enclosure

The Lowther Acousta Twin is the only design of its kind in the world. It is designed to reverse the accepted Blumlein principle for stereophonic recordings, namely when two microphones are placed at a central point and angled to collect sound from a given area. The sound pattern from the Lowther Acousta twin will be of the same order, with the concentration of sound in the central area, giving the feeling of the original. The listener has complete freedom of listening whether in the centre, left or right of the speaker. Reproduced orchestration gives a wonderful feeling of envelopment with crescendo, whilst a solo voice remains its normal size and retains position.

The Lowther Acousta Twin will not give the listener 'divided' music or reproduction with a hole-in-the-middle in any circumstances. The blending of sound and distribution through the four special apertures is a most important feature, providing presence, balance of sound, naturalness, and complete lack of gimmick or listening fatigue.

The Lowther Acousta Twin reproducing monaural sound (single or double amplifying channels) behaves in the same way as the stereoscope, whereby two nearly identical pictures or prints placed at a critical lateral distance apart, when viewed, will give the illusion of three dimensions. The placement of the Lowther P.M. Drive Units, together with the acoustic distribution of the Acousta Twin enclosure, gives a panoramic effect which is very comparable with the visual, and most satisfying.

Absences of point source gives complete freedom of listening position and no listening fatigue. Complete audio balance is maintained at all listening levels, a most important feature; and like the Acousta has the ability to faithfully reproduce attack and timbre. Due to the high efficiency of the double bass exponential horn drive feature, it is usually necessary to retard the bass control on monaural listening. Side deflector wings may be fitted if the Twin is mainly used for monaural reproduction and set at an angle of 45° to the body.

Price, Enclosure only £35 0 0 (C)

LOWTHER ACOUSTA ENCLOSURE



Acousta Enclosure

The Acousta P.M.6 Drive Unit combination has now established itself beyond all doubt, for an enclosure of its size, now reduced to 14½" deep, 18" wide and 33" high, has no equals for its high degree of definition and balance of sound throughout the entire audio frequency range.

It is indeed very pleasant to be able to readily distinguish between the close sounding wood wind instruments as well as the stopped and unstopped strings of bass and double bass sections of the orchestra. The volume level at which this combination is played is completely immaterial, and so enables volume level required for monitoring purposes to be readily set without fear of altering balance. The efficiency is of the order of 25%.

The enclosures are free standing, offering optimum performance at all times on single channel working or complete freedom of placement when used double channel mono or as reproducers of stereophonic programme material. Wide dispersion of sound is attained due to the stabilizer fitted to the P.M.6 Drive Unit, which also prevents high directional effect which causes listening fatigue.

We can add nothing to the reports as published by the various magazines on this outstanding combination of which we are naturally proud.

Price, Enclosure only £19 19 0 (C)

LOWTHER CORNER ACOUSTA ENCLOSURE



Corner Acousta Enclosure

The Corner Acousta Enclosure is a further development of our P.M.6 Acousta folded horn technique, and of no mean overall performance and achievement. Designed to stand facing into a corner of the room or a right angled structure, the distribution of middle and high frequencies being indirect gives a spacious sound, but not lacking in definition due to the remarkable performance of the Lowther P.M.6 Drive Unit.

The folded exponential bass horn, 7' 6" in length, is close coupled to the drive unit and terminates in two vertical orifices, which couple to the side walls of the room, and so form the final horn flare in conjunction with the sides of the enclosure. This final flare feature enables a low frequency performance to be attained as would otherwise be impossible with such a small enclosure 9½" wide.

The enclosure as illustrated is 32" high, 18" deep and 9½" wide, and is available in our usual range of veneers and finishes. The enclosure can be fitted with 6" shelves mounted one on either side to assist in decor, being used as bookshelves, etc., without impeding performance. The performance single channel is very well balanced, easy to listen to due to its indirect distribution, whilst two units for stereophonic reproduction gives a very broad sound, high degree of separation without the hole in the middle effect.

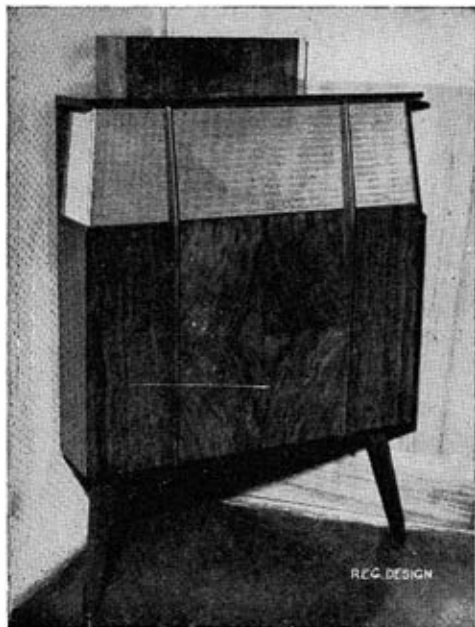
Price, Enclosure only £19 19 0 (C)

See Page 24 for Lowther Drive Units.

LOUDSPEAKER SYSTEMS & ENCLOSURES

LOWTHER

LOWTHER CORNER REPRODUCER T.P.I.



Corner Reproducer T.P.I.

The Lowther Corner Reproducer, type T.P.I., has established itself over the years as being second to none, and is still one of the most outstanding electro-acoustic developments.

The Lowther high flux drive unit-horn combination as a principle for sound reproduction is no longer challenged but accepted, and the T.P.I. Reproducer is our finest example. The unique design of the P.M.3 Drive Units rear chamber orifice couples to the 8' 6" folded exponential bass horn, reproducing bass register frequencies free of resonance, restoring the true meaning of the word "timbre".

The middle and high frequencies being actuated by the same speech coil as low frequencies are segregated by compliances throughout the twin diaphragm structure, ensuring that fundamental to harmonic relationship over the audio range is preserved. The higher order of harmonic content is further assisted by the function of the Lowther full stabilizer, which not only prevents interference and cross talk within the inner cone, but its contour together with that of the inner cone is also designed as to form a short horn. This feature extends the useful band pass by raising the efficiency of frequencies emitted by the speech coil direct, and furthermore prevents inner cone breakup under transient conditions.

All these and many other features combine to make the T.P.I. so outstanding. It should be treated, therefore as a musical instrument rather than just a "loudspeaker". Very much care and detail has gone into the design and manufacture in order to achieve such definition and overall quality of reproduction. Workmanship throughout is executed by skilled craftsmen, thus ensuring that both performance and appearance are of the highest order.

Dimensions: Height in corner 47", Height front edge 42", Corner to front edge 23", Corner along side of wall 23", Width of front 32", Leg height 12", Side wall to front edge 7", Nett weight 90 lbs.

Price T.P.I. Reproducer £98 0 0 (C)

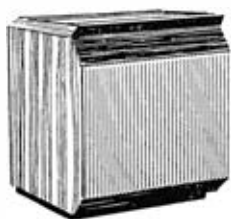
LOWTHER AUDIOVECTOR ENCLOSURE

Lowthers audiovector enclosure is yet another compound horn enclosure for reproduction of speech and music. The enclosure is a free standing or wall type cabinet contemporary in appearance and designed to be used in conjunction with either of the famous Lowther Drive Units. Details of performance of this combination will increase with increase of gap flux but the general presentation of spacious sound will be common with all Units.

Once again Lowther engineers have mastered full range dynamic attack with their wonderful drive unit-horn combination. In studio application, stereo reproduction with two 'Audiovectors' fitted with drive unit type P.M.4 is utterly astounding. The upwards facing horn of special hard plaster cast construction for medium and high frequencies prevents unwanted resonance arising, and adds a clarity which is customary to "Lowther Sound". Efficiency is of course, very high, and will finally depend upon which drive unit is fitted. Only a few milliwatts are necessary for small studio monitoring with full details at all levels. Whilst for full dynamic range the units may be connected to any power amplifier of tens of watts output, 20 watts of peak power integrated programme material would be considered a maximum requirement.

Performance: High frequency cut-off depending upon unit fitted; low frequency horn cut-off 35 c/s. Overall efficiency 25% P.M.6s. 45% P.M.4. Recommended drive unit, P.M.4, with full stabilizer. Size 26½" wide, 19" deep, 34" high. Finishes Rosewood/sapele. Contrasting walnut. Contrasting oak. Castors fitted with plinth base.

Price, Enclosure only £48 0 0 (C)



Audiovector Enclosure

STENTORIAN

STENTORIAN 'CLUMBER' LOUDSPEAKER SYSTEM TYPE 912C

SPECIFICATION

Unit: Cone diameter 9", Pole diameter 1", Flux density 12,000 gauss, Total flux 47,400 maxwells, Impedance 15 ohms., Die cast chassis.

Cabinet dimensions: Width 25", Height 11", Depth 11½", Weight, complete 20 lbs.

Price ... £11 0 2 plus £1 17 1 P. Tax. Total £12 17 3 (B)



Clumber 912C

See Page 24 for Lowther Drive Units.

LOUDSPEAKER DRIVE UNITS

WHARFEDALE



Super 3

SUPER 3 3" TWEETER

14,500 gauss. Aluminium voice coil, cloth surround. Impedance 2/3 or 10/15 ohms.

Price £5 0 0 plus 16/8 P. Tax. Total £5 16 8 (B)

PST/4

11,500 gauss. Cloth surround and Polystyrene diaphragm. Impedance 10/15 ohms.

Price £2 15 0 plus 9/2 P. Tax. Total £3 4 2 (B)

SUPER 5 5" TWEETER

14,500 gauss. Aluminium voice coil and centre dome, cloth surround. Impedance 2/3 or 10/15 ohms.

Price £5 2 6 plus 17/1 P. Tax. Total £5 19 7 (B)

8" BRONZE/RS

10,500 gauss. Roll surround. Resonance 50/55 c/s. Impedance 10/15 ohms.

Price £3 5 0 plus 10/10 P. Tax. Total £3 15 10 (B)

8" BRONZE FS/AL

10,500 gauss. Aluminium voice coil, foam surround. Impedance 2/3 or 12/15 ohms. Resonance 50/55 c/s.

Price £3 5 0 plus 10/10 P. Tax. Total £3 15 10 (B)

SUPER 8 RS/DD

14,500 gauss. Fitted roll surround and double diaphragm. Resonance 50/55 c/s. Impedance 10/15 ohms.

Price £5 15 0 plus 19/2 P. Tax. Total £6 14 2 (B)

SUPER 10/RS/DD

16,000 gauss. Fitted roll surround and double diaphragm. Impedance: 10/15 ohms. only. Resonance 38/43 c/s.

Price £9 7 6 plus £1 11 2 P. Tax. Total £10 18 8 (B)

GOLDEN 10/RS/DD

14,500 gauss. Fitted roll surround and double diaphragm. Impedance 10/15 ohms. only. Resonance 38/43 c/s.

Price £6 15 0 plus £1 2 5 P. Tax. Total £7 17 5 (B)

10" BRONZE/RS

10,500 gauss. Roll surround. Resonance 35/40 c/s. Impedance 10/15 ohms. only.

Price £3 19 6 plus 13 3 P. Tax. Total £4 12 9 (B)

10" BRONZE/FSB

10,500 gauss. Foam surround. Impedance 2/3 or 12/15 ohms. Resonance 38/43 c/s.

Price £3 19 6 plus 13 3 P. Tax. Total £4 12 9 (B)

W12/RS/PST

This new bass unit is fitted with a Polystyrene diaphragm and roll surround. The low resonance frequency of 25 c/s. and large linear excursion ensure superb low frequency reproduction with reduced distortion. 12/15 ohms. only. Flux density 14,000 gauss. 1 3/4" dia. centre pole. Maximum input 15 watts r.m.s. or 30 watts peak.

Price £10 15 0 (Free of P. Tax) (B)

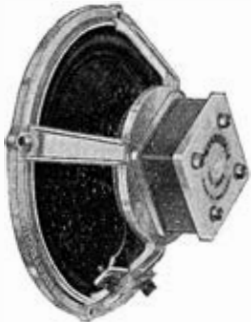
RS/12/DD

Fitted with roll surround and a new type of double diaphragm assembly, this unit will give really wide response in enclosures as small as 2 cu. ft. and yet may be used with advantage in corner cabinets of 9 cu. ft. 12/15 ohms. only. Flux density 14,000 gauss. 1 3/4" centre pole. Aluminium voice coil. Maximum input 15 watts r.m.s. or 30 watts peak. Resonance 25/30 c/s.

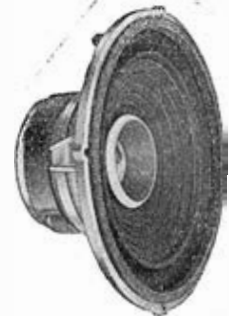
Price £11 10 0 (Free of P. Tax) (B)



PST/4



8" Bronze/RS



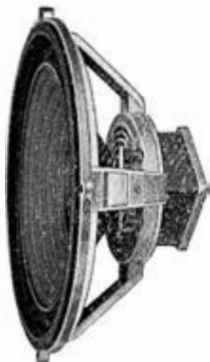
Super 8 RS/DD



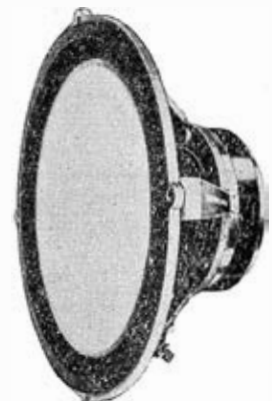
Super 10/RS/DD



Golden 10/RS/DD



10" Bronze/RS



W12/RS/PST

LOUDSPEAKER DRIVE UNITS

WHARFEDALE

SUPER 12/RS/DD

Now fitted with roll surround and patented double diaphragm for extended frequency range. 17,000 gauss. Aluminium voice coil. Impedance 12/15 ohms. only. Resonance 25/30 c/s.

Price £17 10 0 (Free of P. Tax) (B)

COAXIAL 12

A true dual-concentric speaker, employing separate bass and treble radiators mounted coaxially in a patented magnetic system. Main cone now fitted with roll surround for use in enclosure down to 2 cu. ft. Impedance: 12/15 ohms. only. Resonance 25/30 c/s.

Complete with tweeter volume control.

Price £25 0 0 (Free of P. Tax) (B)

W15/RS

The ideal bass unit for high quality. 13,500 gauss. Roll surround. Impedance 12/15 ohms only. Resonance 25/30 c/s.

Price £17 10 0 (Free of P. Tax) (B)

CROSSOVER NETWORKS

2 way 1/2 section types giving crossover at 1,000 c/s. or 3,000 c/s. Size 7" x 4" x 3 1/4". Maximum input 30 watts.

Type	c/s.	Ohms.	Connections	Price £ s. d.
A	1,000	7/16	Terminals	3 17 6 (B)
B	1,000	7/16	Tags	3 5 0 (B)
C	1,000	2/6	Terminals	4 17 6 (B)
D	1,000	2/6	Tags	4 5 0 (B)
E	3,000	7/16	Terminals	3 3 6 (B)
F	3,000	7/16	Tags	2 11 0 (B)
G	3,000	2/6	Terminals	3 18 6 (B)
H	3,000	2/6	Tags	3 6 0 (B)

2 or 3 way 1/2 section types giving crossover at 800 c/s. and 5,000 c/s. or 400 c/s. and 5,000 c/s. Size 9" x 6" x 5". Maximum input 30 watts. Fitted with two volume controls for adjustment of middle and treble speakers.

Type	Ohms.	Main Crossover	Price £ s. d.
HS/CR3/2	7/16	800 c/s.	8 10 0 (B)
400/CR3/2	7/16	400 c/s.	10 0 0 (B)
HS/CR3/2	2/6	800 c/s.	11 0 0 (B)

TRUQUAL VOLUME CONTROL (CONSTANT IMPEDANCE)

Enables volume to be controlled at the loudspeaker without causing distortion. Type 32 2/6 ohms. or Type 98 7/16 ohms.

Price 15/- (Free of P. Tax) (B)

STEREO TRUQUAL

A double ganged version is available for controlling twin speakers in a stereo installation. The specification of each section is similar to that of the ordinary "Truqual" volume control and when used with identical speakers in each channel, the two outputs are maintained within 0.5 dB. 2/6 or 7/16 ohms. Complete with knob and plastic recessed escutcheon.

Price £1 10 0 (Free of P. Tax) (B)

WHARFEDALE SPEAKER SWITCH

A very useful fitting for any set operating a low impedance extension speaker. The switch may be mounted on the side or the back of the receiver, and gives the following connections by turning the knob.

(1) Set speaker only. (2) Extension speaker only. (3) Both speakers.

Price 17/6 (B)

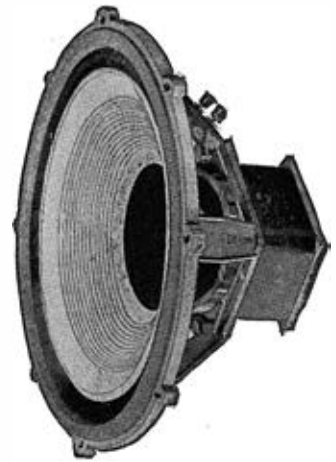
WMTI MATCHING TRANSFORMER

An auto transformer for matching speakers of 10/16 ohms. or 7/9 ohms. impedance to sets with 2/5 ohms. output or vice versa. Maximum input 15 watts. Frequency response 1dB. 20—15,000 c/s.

Price 13/6 (Free of P. Tax) (B)

ACCESSORIES

Aluminium Diffuser Cone (for 8" speaker).	...	Price	7/6 (B)
Aluminium Diffuser Cone (for 10" speaker).	...	Price	10/6 (B)
Kit of fixtures for 8" pipe.	...	Price	£3 15 0 (B)
Kit of fixtures for 10" pipe.	...	Price	£4 18 0 (B)



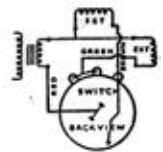
W15/RS



Crossover Networks



WMTI



Wharfedale Speaker Switch

LOUDSPEAKER DRIVE UNITS



Trebax 5K/20XL



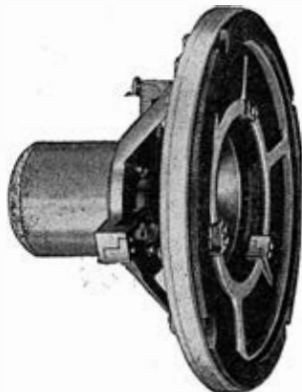
Midax 650



Axiette 8



Axiom 10



Axiom 80 9 1/2"



Trebax 100

GOODMANS

TREBAX PRESSURE UNIT 100

A pressure driven horn unit covering from 2,500 to 16,000 c/s. Intended to be used only as a treble unit. Very low distortion at high frequencies. 15 ohms.

Price £6 4 0 (Free of P. Tax) (A)

TREBAX 5K/20XL

Frequency Range 2,500—20,000 c/s.
Crossover Frequency 5,000 c/s.
Power Handling Capacity 20 watts in Systems
Fitted L-pad attenuator and L.C. Crossover network.

Price £7 0 0 (Free of P. Tax) (A)

MIDAX PRESSURE UNIT 650

Frequency range 650 c/s. to 8,000 c/s. 15 ohms. impedance. Power handling capacity 25 watts. Baffle cutout 5 1/8" x 2 1/16" with 5/16" radii corners. Overall length 9 1/8".

Price £9 10 0 (Free of P. Tax). (A)

AXIETTE 8

SPECIFICATION

Frequency range 40-15,000 c/s. For amplifiers up to 6 watts (12 watts U.S.A.). Fundamental resonance 65 c/s. Flux Density 13,500 Gauss. Total Flux 53,000 Maxwells. Voice Coil 1" diameter aluminium. Impedance 15/16 ohms. Chassis Diecast. Fixing holes 4 holes 3/32" dia. equally spaced on 7 5/8" dia. (PCD). Overall Diameter 8 3/2" (21 c.m.)

Price £4 11 0 plus 14/7 P. Tax. Total £5 5 7 (A)

AXIOM 10

SPECIFICATION

Frequency range 40-15,000 c/s. For amplifiers up to 10 watts (20 watts U.S.A.). Fundamental Resonance 45 c/s. Flux Density 13,500 Gauss. Total Flux 53,000 Maxwells. Voice Coil 1" diameter aluminium. Impedance 15/16 ohms. Chassis Diecast. Fixing holes 4 holes 1/4" dia. equally spaced on 9 5/8" dia. (PCD). Overall Diameter 10 1/2" (26.6 c.m.)

Price £5 8 6 plus 17/5 P. Tax. Total £6 5 11 (A)

AXIOM 80 9 1/2" (6 watts)

The extended frequency coverage from 20/20,000 c/s. in free air has been achieved by the duplex cantilever (free suspension) cone assembly.

Frequency coverage 20/20,000 c/s. Fundamental resonance 20 c/s. Flux density 17,000 gauss. Net weight 9 lb. 6 oz. Impedance 15 ohms.

Price £17 10 0 plus £2 16 3 P. Tax Total £20 6 3 (A)

LOUDSPEAKER DRIVE UNITS

GOODMANS



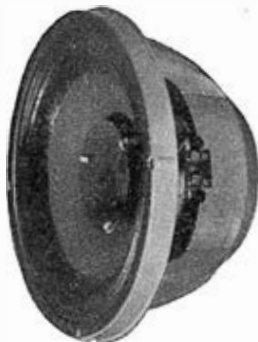
Axiom 201

AXIOM 201

SPECIFICATION

Frequency range 30—16,000 c.p.s. For Amplifiers up to 15 watts (30 watts U.S.A.). Fundamental resonance 35 c/s. Flux density 13,000 Gauss. Total Flux 87,500 Maxwells. Voice Coil $1\frac{3}{4}$ " diameter aluminium. Impedance 15/16 ohms. Chassis Diecast. Baffle hole diameter 11" (28 c.m.) Fixing holes 4 holes 0.312" diameter equally spaced on $11\frac{3}{4}$ " (29.8 c.m.) diameter (PCD). Overall diameter $12\frac{5}{8}$ " (32.1 c.m.) Overall depth $5\frac{3}{16}$ " (13.2 c.m.) A.R.U. 172 enclosure 7,800 cubic inches. volume (internal).

Price £10 7 0 (Free of P. Tax) (A)



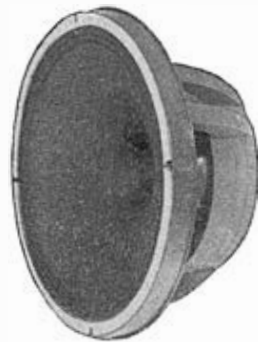
Axiom 301

AXIOM 301

SPECIFICATION

Frequency range 30—16,000 c.p.s. For Amplifiers up to 20 watts (40 watts U.S.A.). Fundamental resonance 35 c/s. Flux density 16,500 Gauss. Total Flux 185,000 Maxwells. Voice Coil $1\frac{3}{4}$ " diameter (4.4 c.m.) aluminium. Impedance 15/16 ohms. Chassis Diecast. Baffle hole diameter 11" (28 c.m.) Fixing holes 4 holes 0.312" diameter equally spaced on $11\frac{3}{4}$ " (29.8 c.m.) diameter (PCD). Overall diameter $12\frac{5}{8}$ " (32.1 c.m.) Overall depth $6\frac{3}{32}$ " (15.6 c.m.) ARU 172 enclosure 7.800 cubic inches volume (internal).

Price £14 10 0 (Free of P. Tax) (A)



Audiom 51

AUDIOM 51

SPECIFICATION

Maximum Power handling Capacity 15 watts (30 watts U.S.A.). Fundamental resonance 35 c/s. OR 75 c/s. Flux density 13,000 Gauss. Total Flux 87,500 Maxwells. Voice Coil $1\frac{3}{4}$ " diameter (4.4 c.m.) Impedance 15/16 ohms. Chassis Diecast. Baffle hole diameter 11" (28 c.m.) Fixing holes 4 holes 0.312" diameter equally spaced on $11\frac{3}{4}$ " (29.8 c.m.) diameter (PCD). Overall diameter $12\frac{5}{8}$ " (32.1 c.m.) Overall depth $5\frac{3}{16}$ " (13.2 c.m.) A.R.U. 172 enclosed volume (internal) 7,800 cubic inches.

Price £8 14 0 (Free of P. Tax) (A)



Audiom 61

AUDIOM 61

SPECIFICATION

Maximum Power handling capacity 20 watts (40 watts U.S.A.). Fundamental resonance 35 c/s. OR 75 c/s. Flux density 16,500 Gauss. Total Flux 185,000 Maxwells. Voice Coil $1\frac{3}{4}$ " diameter (4.4 cm.) Impedance 15/16 ohms. Chassis Diecast. Baffle hole diameter 11" (28 cm.) Fixing holes 4 holes 0.312" diameter equally spaced on $11\frac{3}{4}$ " (29.8 cm.) diameter (PCD). Overall diameter $12\frac{5}{8}$ " (32.1 cm.) Overall depth $6\frac{3}{32}$ " (15.6 cm.) A.R.U. 172 enclosure volume (internal) 7,800 cubic inches.

Price £13 14 0 (Free of P. Tax) (A)

For quality and Hi-Fi applications Audiom 51 and 61 with 35 c/s. fundamental resonance is recommended. For Public Address work 75 c/s fundamental resonance should be used. This resonance is also a wise choice for many electric guitars and similar instruments, especially when these are being used at full power and with loudspeaker enclosures which, because of the requirements of portability are smaller than the optimum size and therefore do not provide full acoustic loading for the diaphragm. Under these conditions the Audiom 61 (75 c/s.) is the preferable choice.

LOUDSPEAKER DRIVE UNITS

GOODMANS

AUDIOM 81 BASS

(15 inch—25 watt—15 ohm.)

The AUDIOM 81 BASS is a rugged 15" single diaphragm Bass unit of new heavy duty construction and handling up to 25 watts. It is fitted with a massive FERROBA II magnet system and 3" voice coil this combining a shallower assembly and up-to-the-minute styling with exceptional ruggedness in use and the ability to handle high power. The rigid diecast chassis is of exceptional strength. The cone edge is plastic treated to give correct termination. Binding posts are fitted for rapid and secure connection.

SPECIFICATION

Maximum power handling capacity	25 watts (50 watts U.S.A.)
Fundamental resonance	... .. 25 c/s.
Flux density	... .. 14,000 gauss
Total flux	... .. 269,000 maxwells
Voice coil	... .. 3" (7.6 cm.) diameter
Impedance	... .. 15/16 ohms.
Chassis	... .. Diecast
Overall diameter	... .. 15 ¹ / ₁₆ " (38.2 cm.)
Overall depth	... .. 6 ³ / ₃₂ " (16.0 cm.)
ARU 280 enclosure volume (Internal)	... .. 9,600 cu. ins.
Baffle hole diameter	... .. 13 ¹ / ₄ " (33.8 cm.)
Fixing holes	8 slots ⁵ / ₈ " x ⁵ / ₁₆ " (0.95 cm x 0.8 cm) on 14 ¹ / ₃₂ " (36.9 cm) P.C.D.
Nett weight	... .. 20 lbs. (9.075 Kg.)
Price	... .. £25 0 0 (A)



XO/5,000

AUDIOM 90 BASS. 18" 50 WATT SINGLE CONE LOUDSPEAKER

This heavy-duty Loudspeaker is eminently suitable for very high power public address systems. Massively built so as to be able to withstand continuous handling of heavy inputs.

Bass Resonance	... .. 35 c/s.
V. Coil imp.	... .. 15 Ω or 6 Ω
Flux Density	... .. 14,500 gauss
Weight	... .. 29 ¹ / ₂ lbs.
Baffle Hole dia.	... .. 16 ¹ / ₄ "
Rating	... .. 50 Watts
Depth	... .. 10 ³ / ₁₆ "

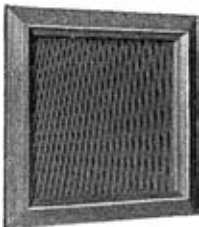
Public Address version also available—bass resonance 50 c/s.

Price £29 15 0 (Free of P. Tax) (A)

ATTENUATOR AND CROSSOVERS

	Price (Free of P. Tax)
Attenuator (12 db.) 8-step variable	£2 8 9
Chokes 1005 (4.5 mH), per pair	£1 17 0
Crossover Type XO/5,000 c/s.	£1 19 0
Type XO/950	£5 5 8
Type XO/950/5000	£7 0 6

(A)



172ARU

GOODMANS' ACOUSTICAL RESISTANCE UNITS

The acoustical resistance unit is a rectangular panel having specific acoustic properties, and it is fitted into an aperture cut in one wall of the enclosure. This system reduces the cone resonance both in amplitude and frequency and eliminates all serious resonances above this frequency. As a consequence, transient characteristics are improved and harmonic and inter-modulation distortion levels are reduced.

Cat No.	Loudspeaker Type:	Price £ s. d.
180ARU	One Axiom 80...	3 5 6
280ARU	Two Axiom 80's or Audiom 80B	2 19 6
480ARU	Four Axiom 80's or Audiom 90B	4 4 0
172ARU	For use with 12" range	3 5 6

(All prices free of P. Tax) (A)

LOUDSPEAKER DRIVE UNITS

W.B.

S510 TWEETER UNIT

Recommended for use with Stentoreo loudspeaker system.

Price £1 11 6 plus 5/3 P. Tax. Total £1 16 9 (B)

MODEL T359 CONE TWEETER UNIT

High standard of reproduction when used with Stentorian 10" or 12" units. 9,000 gauss magnet. Frequency response 3,000-15,000 c/s. Voice coil impedance 15 ohms. or 5 ohms. Power handling capacity 15 watts when used with a 3,000 c/s. crossover.

Price £1 6 1 plus 4/5 P. Tax. Total £1 10 6 (B)

MODEL T.10 TWEETER UNIT

Moving coil pressure type. Gives a very high standard of reproduction when used with the HF1012, 1016 or 1214 speakers. Speech coil impedance 15 ohms. Flux density 14,000 gauss. Power handling capacity 5 watts. Dispersion angle 90°. Response 2000/15,000 c/s.

Price £4 8 3 (Free of P. Tax) (B)

HF610 6" DIE CAST UNIT

10,000 gauss magnet. Handling capacity 3 watts. Frequency response 60-10,000 c/s. Bass resonance 70 c/s.

Price £2 0 1 plus 6/9 P. Tax. Total £2 6 9 (B)

HF810 8" STEEL UNIT

Handling capacity 5 watts. Frequency response 50-12,000 c/s. Bass resonance 65 c/s. 10,000 gauss magnet.

Price £2 6 6 plus 7/9 P. Tax. Total £2 14 3 (B)

HF812 8" DIE CAST UNIT

12,000 gauss magnet. Handling capacity 5 watts. Frequency response 50-12,000 c/s. Bass resonance 65 c/s.

Price £3 2 4 plus 10/5 P. Tax. Total £3 12 9 (B)

HF816 8" PERMANENT MAGNET UNIT

16,000 gauss magnet. Fitted with cambric cone, die-cast chassis and universal speech coil providing instantaneous matching at 3, 7.5 and 15 ohms. Handling capacity 6 watts. Frequency response 50-15,000 c/s. Bass resonance 63 c/s.

Price £5 2 8 plus 17/4 P. Tax. Total £6 0 0 (B)

HF1012 10" DIE CAST UNIT

12,000 gauss magnet. Handling capacity 10 watts. Frequency response 30-14,000 c/s. Bass resonance 35 c/s. Universal impedance coil for 3, 7.5, 15 ohms.

Price £3 14 10 plus 12/8 P. Tax. Total £4 7 6 (B)

HF1016 10" PERMANENT MAGNET UNIT

16,000 gauss magnet. Fitted with cambric cone, die-cast chassis and universal speech coil providing instantaneous matching at 3, 7.5 and 15 ohms. Handling capacity 10 watts. Frequency response 30-15,000 c/s. Bass resonance 35 c/s.

Price £5 19 9 plus £1 0 3 P. Tax. Total £7 0 0 (B)

Price HF1016 New Type £7 13 7 plus £1 5 11 P. Tax. Total £8 19 6 (B)

HF1216 12" PERMANENT MAGNET UNIT

16,000 gauss magnet. Fitted with cambric cone, die-cast chassis and aluminium voice coil. Handling capacity 15 watts. Frequency response 20-16,000 c/s. Bass resonance 37 c/s.

Price £15 15 0 (Free of P. Tax) (B)

HF1214 12" UNIT

Incorporating 14,000 gauss magnet. Handling capacity, 15 watts. Frequency response 25 c/s.—14,000 c/s. Bass resonance, 39 c/s. Die cast chassis.

Price £10 5 6 (Free of P. Tax) (B)

CROSSOVER NETWORKS

Type CX3000 For use with Models T10 and T12, 3,000 c/s. £1 11 6 (Free of P. Tax) (B)

Type CX1500 For use with No. T816, 1,500 c/s. £2 0 0 (Free of P. Tax)(B)

Type CX500 For use with 3-speaker systems, 500 c/s. £1 7 3 (Free of P. Tax)(B)

CONSTANT IMPEDANCE VOLUME CONTROL

For installations where the impedance presented by the load must be constant whilst the volume level fed into it is varied. T-pad type attenuator having 10 steps of attenuation. 3, 8 or 15 ohms.

Price £1 2 0 (Free of P. Tax) (B)



T359



T10



HF816



HF1012

HI-FI EQUIPMENT ENCLOSURES

LOWTHER EQUIPMENT CABINETS



Size 36" long, 29" high, 19" deep, 34½" × 17½" mounting board, ratchet lid stay, adjustable brass feet.

Price £28 10 0 (C)



Block board construction, • Veneered Walnut • Sapele • Oak • Tola
Detachable. • Unit Mounting Board. • Rear Panel and Legs.

Size 50" long, 29" high (legs 11½"), 19" deep, 3⅜" inside lid, unit mounting board 48" × 17½", fitted two pneumatic lid stays.

Price £45 0 0 (C)

THESE CABINETS ARE DESIGNED TO ACCOMMODATE SOUND REPRODUCING & RECORDING EQUIPMENT
56" LONG FOR LARGER TAPE EQUIPMENT TO SPECIAL ORDER

"NEW SOUTHDOWN" CABINET

Here at last is a cabinet that really does justice to the world-renowned Leak Hi-Fi equipment. The cabinet will accommodate any combination of Leak equipment—Stereo or Mono Amplifiers*; Pre-amplifiers; Tuner Units. In addition, any available transcription motor and pick-up can be housed. Cabinet measures only 34" wide × 20" deep × 25" high (on legs). A saving of approx. 2 square feet over previous models yet permitting the use of the largest transcription motor available.

Unique Designing

All knobs are concealed from view yet are easily accessible when needed due to a unique spring-loaded drawer which hinges forwards as required.

Attractive

Modern, elegant design and a choice of two finishes—Sapele mahogany or dark Australian Walnut. Both finishes harmonise delightfully with present-day ideas of room decor. Handles and all exterior trims are in satin anodised aluminium. The attractive legs are fitted with height adjusters.

*The Stereo 50 will require modified cabinet—please indicate when ordering.

Price ... Walnut or Sapele £28 7 0 (C)

Price ... Teak £29 8 0 (C)



"New Southdown"

HI-FI EQUIPMENT ENCLOSURES

THE CHILTERN

The major model in the G.K.D. range for Leak Equipment.

An extremely handsome cabinet designed to accommodate the largest transcription motor available as well as any type of tape recorder or deck. Cabinet measures only 54" wide x 20" deep x 25" high (on legs).

All knobs are concealed from view yet are easily accessible when needed due to a unique spring-loaded drawer which hinges forward as required. It has been designed to match—and harmonise with—the Leak Sandwich speaker. Available in a choice of Sapele Mahogany or Dark Australian Walnut finish. Handles and all exterior trims in satin anodised aluminium. The attractive legs are fitted with height adjusters.

Price Walnut or Sapele ... **37 Gns. (C)**

Price Chiltern De-Luxe in Teak **38 Gns. (C)**



HUNTINGDON EQUIPMENT CABINET

The latest addition to the G.K.D. range, designed in close collaboration with Messrs. Acoustical Manufacturing Co. Ltd. for Quad equipment.

As is standard with all our cabinets, all controls are concealed from view, yet are readily accessible via the hinged front panel which lowers smoothly in a specially designed track. Both lids are hinged allowing full access to both compartments.

Available in a choice of Sapele Mahogany, Dark Australian Walnut and Teak finishes. Handle and exterior trim in satin anodized aluminium. The strongly constructed but unobtrusive legs are finished in Matt, Black and fitted with height adjusters.

The easily removed fascia is cut to receive **Quad control Units**. Uncut fascia for use with other manufacturers' equipment available on demand.

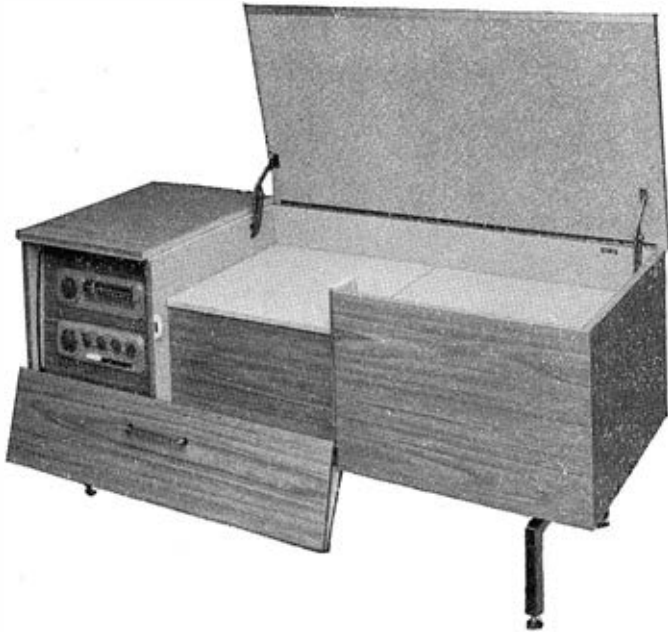
Overall Dimensions: 34 $\frac{1}{4}$ " wide x 21" deep x 25" high (on legs).
Internal Dimensions: 14" wide x 17 $\frac{1}{2}$ " deep x 13 $\frac{3}{4}$ " high.
Motor Board: 18" x 18" x $\frac{3}{4}$ ". 7" clearance above 6" below.
Instrument Fascia: 14" wide x 13 $\frac{1}{4}$ " high.

Price in Walnut and Sapele **27 Gns. (C)**

Price in Teak **28 Gns. (C)**

HI-FI EQUIPMENT ENCLOSURES

THE ANGLIAN



Superbly styled cabinet designed for Quad equipment. In addition to accommodating all transcription units the cabinet will also house a tape recorder or deck. All controls are concealed from view, yet are easily accessible when needed due to a hinged front panel which lowers smoothly in a specially designed track. Both lids are hinged allowing full access to all compartments. Available in a choice of Sapele Mahogany, Dark Australian Walnut and Teak finishes. Handle and exterior trim in satin anodized aluminium. Strongly constructed yet unobtrusive legs are finished in Matt Black and fitted with height adjusters. The easily removed instrument fascia is cut to receive Quad control units or is also available un-cut on request. In addition, an A.M. Tuner may also be fitted in the fascia below the turntable motor board.

Overall dimensions: 55 $\frac{1}{4}$ " wide, 21" deep, 25" high (on legs). Internal dimensions: Main Amplifier Section: 13 $\frac{7}{8}$ " wide, 17 $\frac{1}{4}$ " deep, 13 $\frac{5}{8}$ " high. Instrument Fascia: 13 $\frac{7}{8}$ " wide, 13 $\frac{5}{8}$ " high. Motor Board: 18 $\frac{1}{4}$ " x 18 $\frac{1}{4}$ ", 3 $\frac{7}{8}$ " above, 9" below motor board ($\frac{3}{8}$ "). (The motor board may be lowered to accommodate a LAB "A" changer if desired). Tape Section: 20" wide, 19 $\frac{3}{4}$ " deep, 2 $\frac{1}{2}$ " above, 10 $\frac{1}{2}$ " below motor board.

In Sapele Mahogany or Dark Australian Walnut finishes.

Price 37 Gns. (C)

Teak finish

Price 38 Gns. (C)

THORESBY HI-FI EQUIPMENT CONSOLE (C16)

This takes most makes of tape-deck or record player, amplifier, pre-amplifier control unit and radio tuner.

Size: Height 31" x Width 19 $\frac{3}{8}$ " x Depth 18"

Price in Mahogany £14 14 0 (Free of P. Tax) (C)

Price Walnut (C16A) 10/- extra.



Equipment Console C16

W.B. "PRELUDE" HI-FI TABLE CABINET C9

Will accommodate any make of tape deck or single record player, amplifier, pre-amplifier control unit, and radio tuner. In carton ready to assemble.

Size 17 $\frac{1}{2}$ " x 19 $\frac{1}{4}$ " x 18 $\frac{1}{2}$ ".

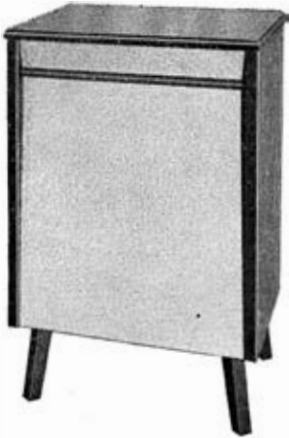
Price £10 10 0 (Free of P. Tax) (C)

Price With Legs £12 0 0 (Free of P. Tax) (C)



"Prelude" Table Cabinet C9

LOUDSPEAKER ENCLOSURES & EQUIPMENT CABINETS



Console Cabinet C15

THORESBY BASS REFLEX CONSOLE CABINET (C15)

This cabinet is designed for Stentorian 8" or 10" Loudspeakers and there is also provision for fitting tweeter unit if desired.

Size: Height 31" x Width 19 $\frac{3}{8}$ " x Depth 18".

Price in Mahogany £12 12 0 (Free of P. Tax) (C)

Price in Walnut (C15A) 7/6 extra.

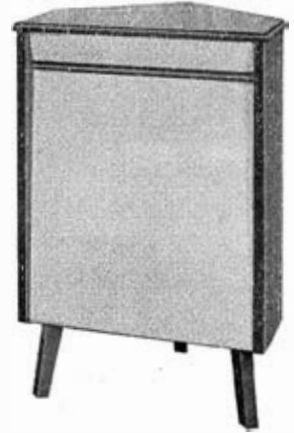
THORESBY BASS REFLEX CORNER CONSOLE (C14)

Specially designed to utilise the natural acoustic properties of walls, it is ideally suitable for use where space-saving is a consideration. It is sturdily constructed to take every advantage of Stentorian 8" or 10" units, with provision for Tweeter Unit.

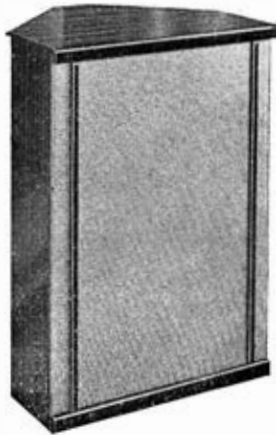
Size: Height 31" x Width 19 $\frac{3}{8}$ " x Depth 17".

Price in Mahogany £11 0 0 (Free of P. Tax) (C)

Walnut (C14A) 5/- extra.



Corner Console C14



Corner Console C3

SENIOR BASS REFLEX CORNER CONSOLE (C2)

Carefully designed to ensure superb quality of reproduction when used in conjunction with Stentorian 10" or 12" units. Provision is also made for Tweeter Unit, if required. Measures (approx.) 35" x 30" x 19".

Price £12 12 0 (Free of P. Tax) (C)

JUNIOR BASS REFLEX CORNER CONSOLE (C3)

A contemporary-style cabinet, specially designed to give a maximum reproduction quality from Stentorian 8" or 10" units, with provision for Tweeter Unit, if required. Measures 33" x 22 $\frac{1}{2}$ " x 18 $\frac{1}{2}$ ".

Price £10 10 0 (Free of P. Tax) (C)



Corner Console C2

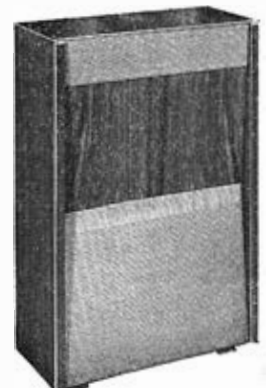
THORESBY SLIM LINE CABINETS (C17)

This enclosure has been designed to accommodate any of the Stentorian range of 8" or 10" units. Provision is made for the addition of either pressure or cone type tweeter and a crossover may be used.

The cabinet is substantially constructed and acoustically proportioned to give a balanced reproduction with the chosen units. Available in Mahogany or Walnut (C17A). Height 31" x Width 20" x Depth 9 $\frac{1}{4}$ ".

Price in Mahogany £8 15 0 (C)

Price in Walnut £9 0 0 (C)



PICK-UPS & CARTRIDGES

GOLDRING

G.60 TRANSCRIPTION ARM



G60 Transcription Arm

A new pick-up arm of transcription quality specially designed to take all modern monaural and stereophonic cartridges with standard fixing dimensions. The slide-in platform carrying the pick-up cartridge is the simplest and most positive "head" arrangement yet devised. Its four pin contacts mate perfectly with the lead carrying contacts in the arm. The height of the arm and also of the folding rest are adjustable for all modern transcription motors. Playing weight is easily adjusted by a milled wheel under the arm from zero upwards. New type precision bearings ensure smooth free movement laterally and vertically. Offset angle and overhang dimensioned to give minimum distortion on 12" records.

Price £3 0 0 plus 9/9 P. Tax. Total £3 9 9 (A)

L.70 TRANSCRIPTION ARM



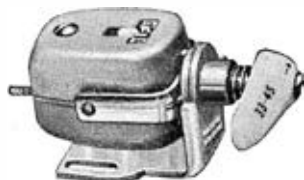
L70 Transcription Arm

Made to the very high standards of Swiss precision engineering, the L.70 is designed for the high fidelity requirements of tomorrow.

The arm is made from light alloy mounted on low friction nylon bearings and requires only a single hole for fixing to the motor board. The head is detachable, wired to take stereo or mono cartridges without modification and the headshell design makes cartridge changeover a fast and easy process. Tracking weight is adjustable by means of a knurled screw at the rear of the arm. The pick-up rest has a completely unique feature—a precision-made locking device to lock the arm into place when it is not in use.

Price £6 6 0 plus £1 0 6 P. Tax. Total £7 6 6 (A)

MODEL 580 CARTRIDGE



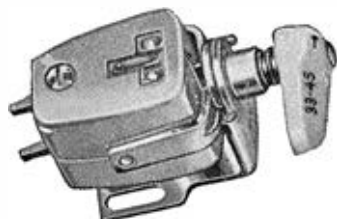
Model 580 Cartridge

A Variable Reluctance Turnover Cartridge of modest price, designed to fit all standard arms. Has a simple and positive turnover mechanism and is fitted with two sapphire styli which are easily replaceable.

The high compliance and low mass of the stylus combine to give superlative results from this cartridge.

Price £4 4 0 plus 13/8P. Tax. Total £4 17 8 (A)

MODEL 600 CARTRIDGE



Model 600 Cartridge

A Variable Reluctance Turnover Cartridge designed to exploit all the advantages of the diamond stylus which is fitted for microgroove records. The high frequency response of this cartridge exceeds beyond 21 Kc./s. and the lateral compliance, which has been made exceptionally high eliminates all tendency to groove jumping. The effective mass at the stylus tip has been reduced to an absolute minimum.

Price £8 8 0 plus £1 7 4 P. Tax. Total £9 15 4 (A)

MONO MX2 CRYSTAL CARTRIDGE



MX2 Crystal Cartridge

This latest Goldring Crystal Turnover Cartridge brings a new vivid concept to monophonic recordings. Designed as a useful replacement cartridge it can be used with any normal domestic reproducing equipment of medium to high output, and gives the highest quality of reproduction from microgroove and standard records.

SPECIFICATION

Type Crystal Turnover. Styli L.P. 0.001" tip radius. S60 and S60 L.P. (Sapphire). D60 L.P. (Diamond). Recommended Playing Weight 5 to 7 grammes. Output 500mV at 1 Kc/c.m./sec. Compliance 3×10^{-6} c.m.s./dyne. Frequency response 30 to 16,000 c/s. Recommended Load Impedance 1 Megohm. Maximum Shunt Capacity 100 pF.

MX2 (with sapphires)

Price £1 11 0 plus 3/5 P. Tax. Total £1 4 5 (A)

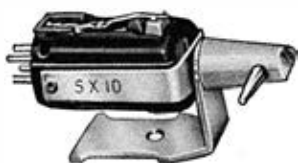
MX2/D (with L.P. diamond).

Price £1 17 6 plus 6/1 P. Tax. Total £2 3 7 (A)

PICK-UPS & CARTRIDGES

GOLDRING

STEREO SX10 CRYSTAL CARTRIDGE



SX10 Crystal Cartridge

SPECIFICATION

Type Crystal Turnover. Styli L.P./Stereo 0.0007" tip radius, Sapphire or Diamond optional (replaceable). Coarse groove 0.0025" tip radius, Sapphire (replaceable). Playing Weight 4 grammes. Compliance 3×10^{-6} c.m.s./dyne. Nominal Output per Channel 150 mV. at 1 Kc./c.m./sec. (Peak Output 0.5 v.). Frequency response 30 to 14,000 c/s. ± 2 db. Signal/Cross Talk Ratio 20 dB at 1 K/c. Load resistance 1 Megohm. Maximum Shunt Capacity $100 \mu\text{F}$. All measurements refer to ambient temperature of 20° C.

SX10 (with sapphires).

Price £1 8 6 plus 4/8 P. Tax. Total £1 13 2 (A)

SX10/D (with L.P./Stereo diamond).

Price £2 5 0 plus 7/4 P. Tax. Total £2 12 4 (A)

MONO CM60 CERAMIC CARTRIDGE

SPECIFICATION

Type Ceramic Turnover Cartridge. Styli L.P. 0.001" tip radius. Sapphire or Diamond optional (replaceable). Coarse Groove 0.0025" tip radius. Sapphire (replaceable). Recommended Playing Weight 5 to 7 grammes. Output 200 mV. at 1 Kc./c.m./sec. Compliance 2×10^{-6} c.m.s./dyne. Frequency response 30 to 12,000 c/s. Recommended Load Impedance 1—2 Megohms. Maximum Shunt Capacity 100 pF.

CM60 (with sapphires).

Price £1 5 0 plus 4/1 P. Tax. Total £1 9 1 (A)

CM60/D (with L.P. diamond).

Price £2 1 6 plus 6/9 P. Tax. Total £2 8 3 (A)

STEREO CS80 CERAMIC CARTRIDGE

SPECIFICATION

Type Ceramic Stereo/Mono turnover. Styli L.P./Stereo .0007" tip radius Sapphire or Diamond optional (replaceable). Coarse groove 0.0025" tip radius Sapphire (replaceable). Playing Weight 2—4 grammes. Compliance 4×10^{-6} c.m.s./dyne. Nominal Output per Channel 200 mV. at 1 Kc./c.m./sec. Frequency response 30—14,000 c/s. Signal/Cross Talk Ratio—20 db at 1 Kc/s. Load resistance 1—2 Megohms. Maximum Shunt Capacity 100 pF.

CS80 (with sapphires).

Price £1 15 0 plus 5/8 P. Tax. Total £2 0 8 (A)

CS80/D (Stereo/L.P. diamond).

Price £2 11 6 plus 8/5 P. Tax. Total £2 19 11 (A)

PICKERING 380A

Collectors' Series 380A Stereo Cartridge

For the discriminating high fidelity enthusiast this variable reluctance cartridge incorporates many exclusive features; the Pickering 'V' guard; easily replaceable stylus assembly; and the hermetically sealed mu-metal capsule which ensures a lifetime of trouble-free and hum-free performance. The cartridge has standard fixing centres and can be accommodated in all modern high quality arms.

Price £12 12 0 plus £2 0 11 P. Tax. Total £14 12 11 (A)



CS80 Ceramic Cartridge



Pickering 380A



THORENS PROFESSIONAL TONE ARM TYPE BTd-12 S

The tone arm that perfectly matches the performance of Thorens turntables. Taking into account the exhaustive experiments made by professional users, the BTd-12 S arm has been designed to suit the need of the discriminating music lover for a precise, secure, easy to use and rugged instrument.

Specially adapted to receive pick-up cartridges of the highest lateral and vertical compliance, the realisation of the lowest possible inertia, both in the horizontal and vertical plane, has been considered as one of the first objectives.

Precision ball bearings throughout, simultaneous longitudinal and lateral balance, stylus force realised by means of a spring device exerting a torque on the horizontal shaft and precisely adjustable through a knob calibrated in grams, a convenient integrated arm control for lowering and raising the pick-up, are some of the main features of the BTd-12 S tone arm.

Evidence of utmost engineering precision and finely finished work appears here as on each Thorens turntable.

A few minutes and a screwdriver only are necessary to mount a factory pre-adjusted BTd-12 S arm on a THORENS TD 124 turntable.

Price £13 10 0 plus £2 6 6 P. Tax. Total £15 16 6 (C)

PICK-UPS & CARTRIDGES

ORTOFON



PICK-UP ARM TYPE SKG 212

For exchangeable heads. Designed for the type G shell. No other type of shell will fit into it. All ORTOFON cartridges can be mounted into the G shell. The G shell is designed to take standard cartridges of other makes. Distance between disc centre and arm centre: 212 mm. Stylus pressure adjustable.

Price £5 10 0 plus 17/8 P. Tax. Total £6 7 8 (A)



PICK-UP ARM TYPE SMG 212

For exchangeable heads. Due to the special shape of the arm, turntable leveling is unnecessary. The turntable may be up to 30° out of level before tracking difficulties arise. Ball bearings are applied for both horizontal and vertical motions, assuring trouble-free performance even at the lowest possible stylus forces. Designed for the type G shell. No other type of shell will fit into it. All ORTOFON cartridges can be mounted into the G shell. Furthermore, this shell is designed to take standard cartridges of other makes. Height over mounting plate adjustable.

Price £10 0 0 plus £1 12 1 P. Tax. Total £11 12 1 (A)

“ORTOFON” STEREO CARTRIDGE

TYPE SPUGT Stereo moving coil cartridge with transformer.

TYPE SPUGTE As SPUGT but with elliptical diamond stylus.

TYPE SPU Stereo moving coil cartridge without transformer.

ORTOFON STEREO moving coil cartridge is designed for PROFESSIONAL use having extremely high compliance and low inertia of the stylus armature. The cartridge is furnished with a diamond stylus. Channel separation 20-25 dB. Frequency response 20-20,000 c/s.

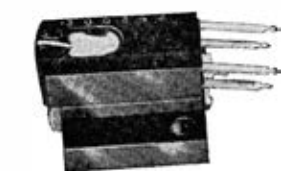
Data for STEREO CARTRIDGE

	SPU	SPU-T
Weight of pick-up cartridge	8 g	17 g*)
Impedance	2 ohms.	**)
Input load impedance		15 K ohms.
Equivalent mass (at stylus point)	1 mg	1 mg
Directional force (at stylus point)	10 mg/u	10 mg/u
Stylus pressure	2 g	2 g
Output in m/Volt/cm./sec.	0.05	2
Stylus tip radius	17u	17u
Compliance	10 ⁻⁵ cm./dyne	10 ⁻⁵ cm./dyne
Colour coding:	Red-Black White-Black	Left channel Right channel

*) Including transformer.

**) Nominal transformer output impedance 15 K ohms.

Price SPUGT	£20 0 0 plus £3 4 2 P. Tax.	Total £23 4 2 (A)
Price SPUGTE	£25 0 0 plus £4 0 3 P. Tax.	Total £29 0 3 (A)
Price SPU	£18 0 0 plus £2 17 9 P. Tax.	Total £20 17 9 (A)

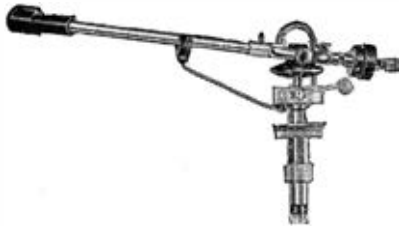


Type SPU

Data for “ORTOFON” Pick-ups

	Monaural Type C	Stereo Type SPU	Impedance	Monaural Type C	Stereo Type SPU
Weight of pick-up cartridge	19 g	8 g	2 ohm.	2 ohm.	2 ohm.
Weight of pick-up head (A and G shell)	30 g	30 g	Stylus pressure	3 g	2 g
Equivalent mass (at stylus point)	1.5 mg	1 mg	Output in mvolt/cm./sec.	0.3	0.05
Directional force (at stylus point)	20 mg/u	10 mg/u			
Price TYPE C Mono Head ... ..	... ..	... ..	£14 0 0 plus £2 4 10 P. Tax.	Total £16 4 10 (A)	
Price Type M41 Matching transformer. ... ..	... ..	... ..	... ..	... ..	£2 7 6 (A)

PICK-UPS & CARTRIDGES



Acos 'Hi-Light' Stereophonic Pick-up

ACOS 'HI-LIGHT' STEREOPHONIC PICK-UP

The 'Hi-Light' Pick-up has been designed to play records at downward pressure within the elastic limit of the disc material. No permanent deformation of the record takes place under these conditions and record wear is not measurable.

The requirements for a cartridge to fulfil such conditions are most stringent. A very low effective tip mass is required, coupled with a high compliance.

Price Arm only £12 16 0 plus £2 1 1 P. Tax. Total £14 17 1 (A)

Heads with diamond stylus .001 L.P. or .0005 Stereo.

Price £2 6 6 plus 7/6 P. Tax. Total £2 14 0 (A)

Heads with sapphire stylus .0025 Std., .001 L.P., .0005 Stereo.

Price £1 11 0 plus 5/- P. Tax. Total £1 16 0 (A)

ACOS 73-1 STEREO CARTRIDGE

A dual purpose Cartridge for Monaural and Stereo use. Incorporates a turn under stylus with one point for 78 r.p.m. Monaural Records and the other for Stereo/L.P. Monaural—a compatible tip. A high output Cartridge with good separation on Stereo.

With one sapphire and one diamond L.P./Stereo stylus.

Price £2 4 7 plus 7/2 P. Tax. Total £2 11 9 (A)

With two sapphire styli.

Price £1 15 0 plus 5/8 P. Tax. Total £2 0 8 (A)

S.M.E. SERIES II PRECISION PICK-UP ARMS MODELS 3009 and 3012

DESIGN FEATURES

Compensation is provided for the force which tries to move a pick-up arm towards the centre of a record. The arm is given an opposing bias, adjustable for various tracking pressures, which balances the stylus centrally in the groove so that it does not favour one wall.

Precision ball races and knife-edge bearings reduce pivot friction to approximately .020 gramme measured at the stylus. Cartridges can be used at

optimum stylus pressure without the excess weight otherwise required to overcome friction in the pivots.

A carefully chosen offset minimises distortion due to tracking error.

The balance system permits accurate longitudinal and lateral balance of cartridges from 7-20 grammes weight and tracking pressures from ¼ to 5 grammes applied precisely without the need for a stylus pressure gauge.

Full advantage can be taken of the best present and future cartridges, impracticable with arms of 'integrated' design.

Lever operated raising and lowering control gives automatic slow descent. Fascinating to use—safeguards valuable records.

Choice of tone arm length to suit space available. If the motor board is big enough the 3012 is better, tracking error is even smaller and for studio use 16" records can be played. Otherwise the 3009 can be used with every confidence and indeed is the one most frequently employed.

Price Model 3009 Series II Precision Pick-up Arm £19 10 0 plus £3 5 0 P. Tax. Total £22 15 0 (A)

Price Model 3012 Series II Precision Pick-up Arm £21 0 0 plus £3 10 0 P. Tax. Total £24 10 0 (A)

Price S.3 Standard Shell (for all standard cartridges) 18/- plus 3/- P. Tax. Total £1 1 0 (A)

Price D.2 Adaptor for mounting Decca heads. £2 0 0 (A)

Note:— S.M.E. shell is not required with D.2 adaptor.

Arms can be supplied without standard shell and price is reduced by £1 1 0.

Price Amplifier connecting lead L.2 length 2 ft. L.4 length 4 ft. L.6 length 6 ft. £2 2 0 (A)

Price TD.124/3012 Special mounting board for model 3012 on Thorens TD124 £3 10 0 (A)

Price P.I. Plinth for raising bedplate with deep turntables. 10/- (A)

S.M.E. ULTRA LIGHT SHELL

Made throughout in light alloy with nearly 120 perforations, this new ultra-light shell weighs only 6 grammes. Developed especially for cartridges having a compliance of 20 and upwards, it offers a valuable saving in mass at the point of greatest effect. Available with companion balance weight as an accessory for all Series II models.

S.2.W/9 Ultra light shell with companion balance weight for Model 3009 Series II Price £2 5 0 plus 7/6 P. Tax. Total £2 12 6 (A)

S.2.W/12 Ultra light shell with companion balance weight for Model 3012 Series II Price £2 5 0 plus 7/6 P. Tax. Total £2 12 6 (A)

S.2. Ultra light shell (can only be used with companion balance weight) Price £1 4 0 plus 4/- P. Tax. Total £1 8 0 (A)



PICK-UPS & CARTRIDGES

LEAK DYNAMIC PICK-UP MONAURAL



Leak Dynamic Pick-Up

Pick-up arm of advanced design having a very low inertia and supplied with pick-up rest. Heads are of the plug-in type, Dynamic (Moving coil) and are fitted with diamond stylus. The shielded step-up transformer delivers an output of 8mV for each c.m./sec. r.m.s. recorded velocity. This means that an amplifier with a sensitivity of 40 mV at 1,000 c/s. will be easily loaded by the pick-up.

Pick-up arm only.
 Price £2 15 0 plus 8/9 P. Tax. Total £3 3 9 (B)
 Pick-up Heads Standard or L.P.
 Price £5 15 0 plus 18/3 P. Tax. Total £6 13 3 (B)
 Mu Metal Matching Transformer.
 Price £1 15 0 (Free of P. Tax) (B)

DECCA ffs STEREOPHONIC PICK-UP



Decca ffs Stereophonic Pick-up

The pick-up and arm are manufactured to precision limits by one of the best equipped instrument makers in the country. The head cover has an internal static screen of silver-plating. Setting and adjustment of the diamond stylus and the final assembly of the armature are so precise that the operation is carried out under a microscope. The whole assembly is designed to keep the arm resonance well below the audio spectrum and is specially damped with viscous fluid to prevent shocks exciting the pick-up. Playing weight is accurately

adjusted in the factory to 3.5 grams. The tip mass of the pick-up is under one milligram so that wear, both of the record and the diamond stylus, is negligible. The output is sufficient to load the majority of high grade stereo amplifiers now on the market.

SPECIFICATION

Output 1.4 mV./m./sec. r.m.s. per channel. Suitable for an amplifier system with recommended sensitivity of 5 mVs. Impedance; 3,000 ohms. at 400 c/s. Recommended termination 47,000 minimum. Diamond stylus radius 0.0005". Tip mass less than 1 milligram. Stylus compliance Lateral: 10×10^{-6} cm./dyne. Vertical: 2×10^{-6} cm./dyne. Frequency response: Proportional to recorded velocity. ± 1 db. from 40 to 15,000 c/s. Cross talk Approximately 20 db. at 1 Kc. Height adjustment range 1.75" + .075". -0.35". Dimensions Overall length 12.5". Height with arm parallel to base 1.75". Distance from reproducer point to centre axis of rotation of pick-up base 9.0". Distance from centre of turntable pin to centre axis of rotation of pick-up base 8.375". Playing weight: 3.5 grams. Weight Pick-up, complete with head and arm rest 9.2 ozs. Cable 3-core screened. Length of free hanging cable 18".

Price complete £16 5 9 plus £2 12 3 P. Tax. Total £18 18 0 (A)
 Price Arm only £4 10 6 plus 14/6 P. Tax. Total £5 5 0 (A)
 Price Stereo/Mono Head £11 15 3 plus £1 17 9 P. Tax. Total £13 13 0 (A)

Monophonic Microgroove Head for the older type of microgroove records which may have been worn by a pick-up of poor compliance. Its frequency response and output is similar to the stereophonic head and no additional switching is necessary if played through a stereophonic system. Diamond tip radius .001". Coding Red label.

Price £8 11 11 plus £1 7 7 P. Tax. Total £9 19 6 (A)

78 r.p.m. Head For the many record enthusiasts who still maintain a large collection of 78 r.p.m. records, a specially designed head has been produced which fits to the ffs arm, thus avoiding the inconvenience of an additional pick-up. The head is quite suitable for an amplifier system of 5 mV. sensitivity and can be fed into the amplifier without additional compensation or switching. Diamond tip radius .0028". Coding Green label.

Price Mono 78 Head £8 11 11 plus £1 7 7 P. Tax. Total £9 19 6 (A)

DECCA PROFESSIONAL STEREOPHONIC PICK-UP

Incorporating the Stereophonic Mark II head and the Professional arm

SPECIFICATION
 Output 1.2 mV./cm./sec. per channel. Suitable for an amplifier system with sensitivity of 5 mVs. Impedance 3,000 ohms. at 400 c/s. Recommended termination 50,000 ohms. Diamond stylus radius 0.0005" to 0.0006". Tip mass Less than 1 milligramme. Compliance Lateral: 10×10^{-6} cm./dyne. Vertical: 2×10^{-6} cm./dyne. Frequency response Proportional to recorded velocity. ± 1 db. from 40 to 16,000 c/s. Crosstalk figures Better than -20 db. at 1,000 c/s. and -15 db. at 50 c/s. and 12,000 c/s. Balance between channels Better than -1 db. Recommended playing weight

3.5 grammes. Dimensions The overall length of the arm is 12". From the diamond point to the centre axis of rotation of pick-up base 9". From the centre of the turn table pin to the centre axis of rotation of pick-up base 8.375". A clearance of 2.5" is necessary from the centre axis of rotation to the end of the counterweight. This pick-up should not be used with a magnetic turntable.

As the head dimensions and connections for the ffs pick-up and "Professional" pick-up are identical it follows that the Mark II head can be used with the ffs arm and that the Mark I head can be used with the "Professional" arm.

Price Complete £28 19 1 plus £4 12 11 P. Tax. Total £33 12 0 (A)
 Price Professional Arm £15 16 8 plus £2 10 10 P. Tax. Total £18 7 6 (A)
 Price Mk. II Head £13 2 5 plus £2 2 1 P. Tax. Total £15 4 6 (A)



Decca Professional Stereophonic Pick-up

PICK-UPS & CARTRIDGES

DECCA 'DERAM' TRANSCRIPTION ARM



Decca 'Deram' Transcription Arm

With the knowledge gained in the development of the "ffss" and "Professional" pick-ups, Decca have now produced a transcription arm specifically designed for use with the "Deram" cartridge (though the cartridge can, of course, be used with the majority of other arms). The "Deram" transcription arm is, needless to say, manufactured to precision limits and the whole assembly is designed to keep the arm resonance well below the audio spectrum and is specially damped with viscous fluid to prevent shocks exciting the pick-up.

Transcription Pick-up Complete with stereo cartridge.
 Price ... £8 11 11 plus £1 7 7 P. Tax. Total £9 19 6 (A)

Transcription Arm only
 Price ... £4 10 6 plus 14/6 P. Tax. Total £5 5 0 (A)

DERAM ANTI-RUMBLE INTEGRATED PICK-UP



In the Decca Deram ARI pick-up the mechanical combination of arm and head has been arranged to effect directionally selective filtering which almost eliminates the most troublesome rumble frequencies without reducing any required low frequency signal. The great advantages of this purely mechanical system operating at the point of excitation as opposed to more complex devices built into the amplifiers, are not only its extreme simplicity,

but also the fact that wanted and unwanted modulations even of the same frequency are mechanically separated and the unwanted filtered while the wanted remain unimpaired. The Deram ARI pick-up arm is fitted with the transcription stereo pick-up head suitable for all stereo records and the majority of mono LPs, EPs and 45 r.p.m. singles. The arm will also accept the mono LP and 78 r.p.m. Deram heads. Playing weight is factory pre-set at 3.5 grammes, but this may be adjusted if necessary by altering the setting of the counterweight. Dimensions: Overall length 10.3". Distance from centre of turntable pin to axis of rotation of pick-up base 8". Height adjustment range. Height can be varied over a range of 1.1".

Price ... £9 19 1 plus £1 11 11 P. Tax. Total £11 11 0 (A)

DECCA 'DERAM' CARTRIDGE



Decca 'Deram' Cartridge

There is no need to make extravagant claims for the Decca "Deram" microgroove ceramic cartridge for its very impressive specification speaks for itself. It is perhaps only necessary to draw attention to the low tip-mass to make it clear as to why the "Deram" is revolutionary. Until one considers the minute area of contact between a stylus and a record, it is perhaps difficult to appreciate that the pressures exerted on the groove material are equivalent to those that would be exerted by the largest locomotive running over a penny on a railway line, whilst the accelerations imparted by a record groove to the stylus tracing it are anything from 20 to 100 times the acceleration needed by a space rocket. Whereas under these conditions most commercial cartridges do irreparable damage to records at the very first playing, the wear caused by the "Deram" is so negligible as to be virtually non-existent.

SPECIFICATION

Tip mass 1 milligramme (at 45°) compliance 6×10^{-6} cms./dyne (lateral) 3.5×10^{-6} cms./dyne (vertical) *changer type*; 10×10^{-6} cms./dyne (lateral) 6×10^{-6} cms./dyne (vertical) *transcription type*. Tracking weight 3.5 grammes, (*changer type*) 2.4 grammes (*transcription type*). Frequency response ± 3 dv. 40 c/s. to 12 Kc/s. (no equalisation required). Output 50 mV./cm./sec. (per channel). Impedance (load) 2 Megohms. (capacitance source i.e. long screened leads do not affect frequency response). Transducer ceramic. Stylus tip radius .0005/.0006" (Diamond). Crosstalk -20 db. at 1,000 c/s. Height adjustment range 1.75" +0.75" -0.35". Dimensions Overall length 12.5". Height with arm parallel to base 1.75". Distance from reproducer point to centre axis of rotation of pick-up base 9.0". Distance from centre of turntable pin to centre axis of rotation of pick-up base 8.375".

PICK-UP HEADS

Description	Coding	Box Coding	Stylus Coding
Stereo transcription head	White outer shell-red pocket	White	White
Price ...	£4 1	4 plus 13/2 P. Tax.	Total £4 14 6 (A)
Stereo changer head	Black outer shell-white pocket	White	White
Price ...	£3 3	4 plus 10/2 P. Tax.	Total £3 13 6 (A)
Transcription mono microgroove head	White outer shell-red pocket	Red	Red
Price ...	£4 1	4 plus 13/2 P. Tax.	Total £4 14 6 (A)
Changer mono microgroove head	Black outer shell-white pocket	Red	Red
Price ...	£3 3	4 plus 10/2 P. Tax.	Total £3 13 6 (A)
Changer 78 r.p.m. cartridge	Black outer shell-white pocket	Green	Green
Price ...	£2 9	7 plus 7/11 P. Tax.	Total £2 17 6 (A)

STYLI

Description	Radius	Coding
Stereo diamond	.005/6"	White
Price ...	£1 1	6 plus 3/6 P. Tax. Total £1 5 0 (A)
Mono microgroove diamond	.001"	Red
Price ...	£1 1	6 plus 3/6 P. Tax. Total £1 5 0 (A)
78 r.p.m. sapphire	.003"	Green
Price ...	£4/9 plus 9d. P. Tax.	Total 5/6 (A)

PICK-UPS & CARTRIDGES

SHURE STEREO DYNETIC CARTRIDGES



PROFESSIONAL MODEL M3D SPECIFICATIONS

Channel separation: More than 20 db at 1,000 cps. Frequency Response 20 to 15,000 cps. (± 3 db). Output voltages 5 mv per channel at 1,000 cps. Recommended Load Impedance 50,000 ohms. Compliance Vertical, Lateral 4.0×10^{-6} centimeters per dyne. Tracking force 3 to 6 grams. Inductance 400 millihenrys. D.C. Resistance 400 ohms. Terminals 4 terminals. Adaptable to 3 terminal arms. Mounting Standard $\frac{1}{2}$ " centres. Stylus .0007" diamond stylus.

Model M3D Professional Stereo Dynetic cartridge including .0007 Diamond Stylus.

Price £18 1 3 plus £2 17 11 P. Tax. Total £20 19 2 (B)

Model M3D Stereo Stylus assembly for M3D, including .0007" Diamond.

Price £8 10 0 plus £1 7 4 P. Tax. Total £9 17 4 (B)

M3/N21D

As M3 but fitted with tubular stylus giving higher compliance and increased frequency response 20/20,000 cps. and capable of tracking at $2\frac{1}{2}$ grams maximum.

Price £19 2 6 plus £3 1 4 P. Tax. Total £22 3 10 (B)

N21D replacement diamond stylus assembly.

Price £9 11 3 plus £1 10 9 P. Tax. Total £11 2 0 (B)



CUSTOM MODEL M7D SPECIFICATIONS

Channel separation: More than 20db at 1,000 cps. Frequency Response 20 to 15,000 cps. Output voltage 5mv per channel at 1,000 cps. Recommended Load Impedance 47,000 ohms. Compliance Vertical, Lateral 3.5×10^{-6} centimeters per dyne. Tracking Force 4 to 7 grams. Inductance 400 millihenrys. D.C. Resistance 400 ohms. Terminals 4 terminals. Adaptable to 3 terminal arms. Mounting Standard $\frac{1}{2}$ " and $\frac{7}{16}$ " centres. Stylus .0007" diamond stylus.

Model M7D Custom Stereo Dynetic cartridge . . . including .0007" diamond stylus.

Price £9 11 3 plus £1 10 9 P. Tax. Total £11 2 0 (B)

Model M7D Stereo Stylus assembly for M7D, including .0007" diamond.

Price £4 5 0 plus 13/8 P. Tax. Total £4 18 8 (B)

M7/N21D

As M7 but fitted with tubular stylus giving higher compliance and increased frequency response 20/20,000 cps. and capable of tracking at $2\frac{1}{2}$ grams maximum.

Price £14 17 6 plus £2 7 9 P. Tax. Total £17 5 3 (B)

N21D Replacement diamond stylus assembly.

Price £9 11 3 plus £1 10 9 P. Tax. Total £11 2 0 (B)



A high quality, low cost stereo cartridge designed primarily for use in auto change units. Separation more than 20 db at 1,000 cps. Frequency response 30/15,000 cps. Output 5 mv per channel at 1,000 cps. Load imp. 47K ohm. Tracking force $5/8$ grams. $\frac{1}{2} \times \frac{7}{16}$ " fixing centres. Complete with diamond stylus.

Price £7 8 9 plus £1 3 11 P. Tax. Total £8 12 8 (B)

N8D Replacement diamond stylus assembly.

Price £3 3 9 plus 10/3 P. Tax. Total £3 14 0 (B)

M8D

PROFESSIONAL MODEL M33-7

A magnificent cartridge for the very finest sound systems. Extraordinarily compliant stylus permits pressures as low as 1 gram (!) with flawless tracking, outstanding channel separation, highest fidelity. Choice of needle sizes: conventional .0007" stereo diamond, or micro-miniature .0005" diamond.

SPECIFICATION

Channel separation (at 1,000 c/s.) 25 dB. Frequency response 20 to 20,000 c/s. Output voltage (per channel, at 1,000 c/s.) 6 mV. Recommended load impedance (per channel) 47,000 ohms. Compliance (cms./dyne $\times 10^{-6}$) 20 Vert. and Lat. Tracking force $1\frac{1}{2}$ —3 grammes. Inductance 600 mH. D.C. resistance 750 ohms. Terminals 4 terminals (With adaptor for 3-terminal stereo or monaural use). Mounting centres Fits standard $\frac{1}{2}$ ".

Model M33-7

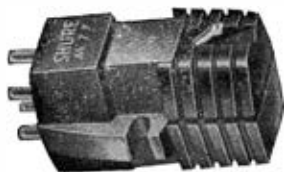
Professional Stereo Dynetic Cartridge including M33-7 stylus assembly (White) with 0007" diamond.

Price £14 17 6 plus £2 7 9 P. Tax. Total £17 5 3 (B)

Model N33-7

Stereo Stylus Assembly for M33-7 (also M33-5). Includes .0007" diamond tip. (White plastic grip).

Price £7 8 9 plus £1 3 11 P. Tax. Total £8 12 8 (B)



PICK-UPS & CARTRIDGES

SHURE STEREO DYNETIC CARTRIDGES

CUSTOM MODEL M77

An excellent, moderately-priced cartridge for use in fine quality sound systems with tone arms that track at 3 to 6 grams. Higher output permits operation of amplifier at lower gain. With .0007" diamond.

SPECIFICATION

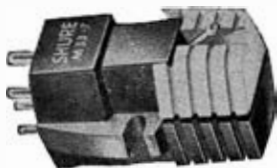
Channel separation (at 1,000 c/s.) 25 db. Frequency response 20 to 17,000 c/s. Output voltage (per channel, at 1,000 c/s.) 9mV. Recommended load impedance (per channel) 47,000 ohms. Compliance (cms./dyne $\times 10^{-6}$) 6 Vert. and Lat. Tracking force 3 to 6 grammes. Inductance 600 mH. D.C. resistance 750 ohms. Terminals 4 terminals (With adaptors for 3-terminal stereo or monaural use). Mounting Standard $\frac{1}{2}$ " and $\frac{7}{16}$ " centres. Stylus .0007" diamond stylus.

Price ... £10 12 6 plus £1 14 1 P. Tax. Total £12 6 7 (B)

Model N77

Stereo Stylus Assembly for M77 Stereo Dynetic Cartridge. Includes .0007" diamond tip. (Black plastic grip).

Price ... £4 5 0 plus 13/8 P. Tax. Total £4 18 8 (B)



DYNETIC 78 R.P.M. MONOPHONIC STYLUS

For M33 or M77 Cartridges

Adapts either M33 or M77 series cartridges to monophonic 78 r.p.m. operation with .0027" diamond tip stylus. Frequency response 30 to 15,000 c/s. Output 9 millivolts; Compliance 6×10^{-6} cms./dyne; tracks at 3 to 6 grams.

Model N78

Stereo Stylus Assembly for M33 or M77 Cartridge, with .0027" diamond (Green plastic grip).

Price £3 3 9 plus 10/3 P. Tax. Total £3 14 0 (B)

SHURE M212 INTEGRATED TONE ARM AND CARTRIDGE



Shure M212 Integrated Tone Arm and Cartridge

This pick-up tracks at the incredibly light weight of $1\frac{1}{2}$ - $2\frac{1}{2}$ grams minimizing record wear and virtually eliminating the possibility of scratch. Jewel bearings throughout. Cartridge is pivoted on ruby sleeve and jewelled bearings. Arm pivot is a ruby thrust bearing. Cartridge is of moving magnet type within stationary coils. Frequency response 20/20,000 cps. Separation better than 21 db at 1,000 cps. Output 4-5mv per channel. D.C. resistance 600 ohms. Compliance (Vert-Lateral 9×10^{-6} cms./dyne).

Price complete with Stereo head.

£36 2 6 plus £5 15 11 P. Tax. Total £41 18 5 (B)

SHURE M232 PROFESSIONAL TONE ARM (12")



Shure M232 Professional Tone Arm

This is an arm of the highest quality which features plug-in head with positive alignment lock which accepts practically all types of cartridges. Precision ball bearings at all pivot points, variable height adjustment. Tracking force 0-8 grams. Easy to instal—all connections can be made from top of motor board. Furnished with cable having plug on each end to simplify installation.

Price Pick-up Arm.

£12 15 0 plus £2 0 11 P. Tax. Total £14 15 11 (B)

Price Plug-in shell.

£1 1 3 plus 3/5 P. Tax. Total £1 4 8 (B)

E.M.I.

E.M.I. EPU100 STEREO PICK-UP Price £16 8 9 plus £2 15 7 P. Tax. Total £19 4 4 (B)

Type EPH/M Monaural L.P. pick-up head for use with EPU100 pick-up.

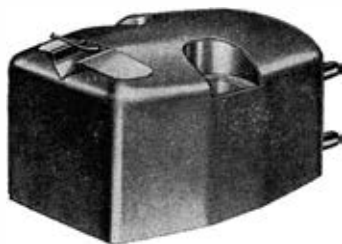
Price £7 0 11 plus £1 3 6 P. Tax. Total £8 4 5 (B)

PICK-UPS & CARTRIDGES

ADC

ADC PROFESSIONAL STEREO CARTRIDGE

The ADC Professional cartridge has been widely acclaimed as one of the best pick-ups in the world and with justifiable pride KEF Electronics Limited are glad to offer this superb transducer as a complement to the K1 series of loudspeakers. The cartridge is a moving magnet design featuring the highest lateral and vertical compliances so far achieved, and with suitable tone arms, such as the SME, the playing weight may be reduced to below 1 gram. Record wear virtually disappears. Response is unusually smooth over the whole range from 10-20,000 c/s. and separation between channels is better than 30dB. up to 7 kc/s. and does not fall below 18 dB. even in the difficult octave up to 20 kc/s. In these respects the performance of the pick-up is probably superior to that of currently available records. Mu-metal shielding is used to minimise hum and no difficulty has been encountered even when using transcription motors known to have stray magnetic fields.



SPECIFICATION

Sensitivity 7mV. \pm 2 dB. at 5.5 cm./sec. Frequency response 10-20,000 c/s. \pm 2 dB. Useful response extends to 30,000 c/s. Channel separation 30 dB. from 50-7,000 c/s. (not less than 18 dB. up to 20 kc/s.) Lateral and Vertical 20×10^{-6} cm/dyne minimum. Stylus Material selected and orientated diamond. Stylus Tip Mass 0.5 milligram. Stylus Tip Radius 0.6 mil \pm 0.1 mil. Recommended Tracking Force 0.75-1.5 grams in top quality arms. Mounting Standard $\frac{1}{2}$ " and $\frac{7}{16}$ " centres. Fits standard SME and Worden Shells. Terminals 4 pins are provided to accommodate 3 or 4 lead connections. Load Resistance: 47,000 ohms. With Quad 22 preamplifier use type 'A' compensator.

Price £20 10 0 plus £3 5 9 P. Tax. Total £23 15 9 (A)

Replacement Stylus Assembly

Price £9 0 0 plus £1 8 10 P. Tax. Total £10 8 10 (A)

ADC-3 UNIVERSAL STEREO PHONIC CARTRIDGE

For owners of turntables, automatic turntables, or record changers, we believe that the new ADC-3 universal stereophonic phonograph cartridge is the best buy on the market.

SPECIFICATIONS

Type: Miniature moving magnet. Sensitivity: 10 millivolts per channel \pm 2 dB. at 1,000 c/s. (5.5 cm./sec. recorded velocity). Frequency response: 10 to 20,000 c/s. \pm 3 dB. Channel Separation: 30 dB. 50 to 7,000 c/s. Stylus Tip Radius: $\frac{1}{10007}$ " (accurately maintained). Stylus Tip Mass: .8 milligrams. Lateral and Vertical Compliance: 15×10^{-6} cms./dyne minimum. Recommended Load Impedance: 47K. Ohms. Tracking Force: 2 to 5 grams. Mounting Centres: Standard $\frac{1}{2}$ " and $\frac{7}{16}$ " centres. Unit adapts to virtually all tone arms.

Price £12 0 0 plus £1 18 6 P. Tax. Total £13 18 6 (B)

B. & O. STEREO PHONIC PICK-UP CARTRIDGES

SPECIFICATIONS:

Frequency Response: \pm 2.5 dB. from 30 c/s. to 15 Kc/s. (Equalizing after RIAA Standard). Output Voltage: 7 mV. per channel at 5 cm./sec. at 1,000 c/s. (i.e. 1.4 v. 1 cm/s.). Channel Separation: 20 dB. minimum. D.C. Resistance: 1250 Ω . Inductance: 200 mHy. Recommended Tracking Force: 3 grams. Compliance: $5 \times 10^{6-}$ cm./dyne in all directions. Moving Mass: Less than 3 mg. Recommended Load: 47-000 ohms. or higher. Mounting: Standard $\frac{1}{2}$ ". Weight: 10 grams. Stylus Standard: Diamond, radius of curvature: 17μ (7 mil.).

T2/5 Cartridge with 0.5 mil. Diamond stylus for Stereo only.

T2/7 Cartridge with 0.7 mil. Diamond stylus for Stereo/Compatible.

T2/1 Cartridge with 1 mil. Diamond stylus for Mono/L.P.

Price for T2/5, T2/7 and T2/1 {£5 5 9 plus 17/6 P. Tax. Total £6 2 9 (A)

PICK-UPS & UNIT ACCESSORIES

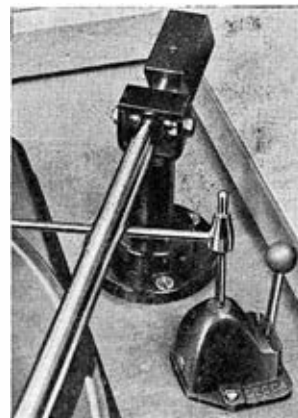
DECCA MICROLIFT

Easy to fit and adjust for any pick-up. Positive positioning at any point on the record. Ensures against damage to styli and the surface of records. Never in contact with the pick-up while playing.

Gently and accurately the Microlift lowers the stylus on to the record at any point you choose. . . and just as gently lifts it clear. A simple operation but one which fingers so often fail to accomplish, with dire results to record life, stylus life and the quality of reproduction.

Fit a Microlift to protect your favourite records . . . for less than the cost of replacing just one of them.

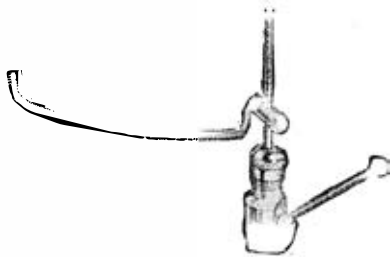
Price £1 5 10 plus 4/2 P. Tax Total £1 10 0 (A)



Decca Microlift

PICK-UPS & UNIT ACCESSORIES

ORTOFON HI-JACK



Ortofon Hi-Jack

The ideal pick-up arm control to safeguard your records against accident damage. The Ortofon Hi-Jack is an all metal chromium plated construction based on a special spring loaded friction system which provides "air cushioned" lowering and a positive vertical lifting and lowering of a manual pick-up arm at any point on the record. The lowering speed can be adjusted by turning the thumb screw located on the housing.

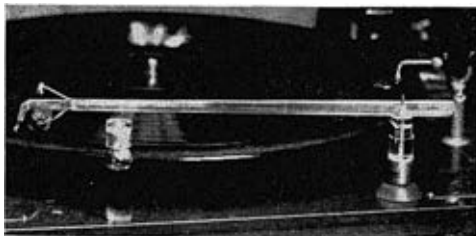
The device is designed to eliminate accidental damage either to record or pick-up and can be used with most types of record players.

The Ortofon Hi-Jack works independently of the weight of pick-up head or stylus pressure as the lever goes down automatically when released.

The height of the curved horizontal arm lift can be adjusted to fit any pick-up arm height by means of a sliding head. A space of 2 mm. between the arms should be sufficient to avoid contact when playing.

The Ortofon Hi-Jack is easy to fit as only one $\frac{1}{8}$ " hole is needed for fixing. The mounting should be at a point from about 100 mm. to 201 mm. from the centre of the armbase towards the front of the record player and in such a position that the pick-up arm works freely between the arm rest and about 10 mm. from the centre of the runtable. Care should be taken that the horizontal arm lift does not overlap the turntable as otherwise it will hinder changing of records.

Price £2 14 0 plus 8/8 P. Tax. Total £3 2 8 (A)



The "Dust Bug"

THE "DUST BUG"

Easily fitted to any turntable and will remove dust and static from the grooves of a record at the moment of playing. A device which has already sold in many thousands and is to be highly recommended.

Price 17/6 plus 2/11 P. Tax. Total £1 0 5 (A)

Spare Plush Pads.

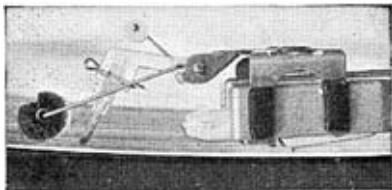
Price 9d. (No P. Tax) (A)

Spare Nylon Bristles.

Price 1/- (No P. Tax) (A)

Spare Bottles Cleaning Fluid.

Price 1/6 (No P. Tax) (A)



Auto Changer "Dust Bug"

AUTO CHANGER "DUST BUG"

As above but specially designed for fitting to pick-up arms on Auto-Change units.

Price 17/6 plus P. Tax 2/11 Total £1 0 5 (A)

Cecil Watts 'Dust Preener'

Price 6/9 plus P. Tax 1/2 Total 7/11 (A)

Cecil Watts 'Manual Parastat'

Price £2 5 0 plus P. Tax 7/5 Total £2 12 5 (A)

GARRARD SPG3 STYLUS PRESSURE GAUGE



Garrard SPG3 Stylus Pressure Gauge

FEATURES. Elegantly styled—Modern design—Pleasing appearance. Easily readable scale, visible through a clear plastic window, reading 0-12 grammes, with $\frac{1}{2}$ gramme indications. Utmost sensitivity and accuracy. Accurate through the entire scale, 0-12 grammes. Easy to operate. Readily adjustable. Plastic Scale Pan—no damage to delicate stylus. Swivelling Balance Lever to ensure sensitivity with all pick-ups. Will accommodate all current Pick-up Arms and Heads. Measures the exact Stylus Pressure at the actual stylus and at record level. Supplied complete with a 5 gramme checking weight.

Price 15/3 plus 2/6 P. Tax. Total 17/9 (A)

GOLDRING STYLUS PRESSURE GAUGE



Goldring Stylus Pressure Gauge

A small, simple, yet accurate balance which does not rely on springs. The stylus tip rests in an indentation at one end, and a sliding weight, moving along a scale graduated from 3 to 10 grammes indicates stylus pressure. An inexpensive "must" for all gramophone users.

Price 3/6 plus 7d. P. Tax. Total 4/1 (A)

PICK-UPS & UNIT ACCESSORIES



Decca Stylus Cleaner

DECCA STYLUS CLEANER

This new product is soundly constructed and incorporates a wheel covered in soft hair which engages with the stylus when the pick-up is in its rest position. A height adjustment screw means that the Cleaner can be accommodated to suit any pick-up on the market and the wheel is easily turned in one direction only by means of a single device.

The Cleaner helps to preserve your records and keep your sapphire or diamond stylus in excellent condition—indeed, it is a 'must' for all discerning and conscientious record collectors.

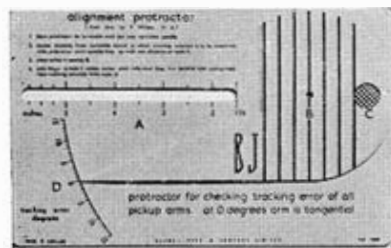
Note:—For use with all non-automatic record players.

Price 18/- plus 3/- P. Tax. Total £1 1 0 (A)

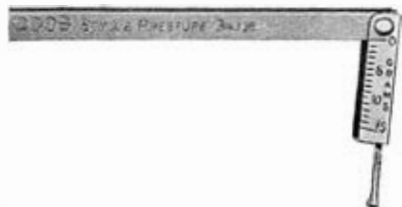
B.J. PICK-UP ALIGNMENT PROTRACTOR

Produced in plastic ivoryne instantly measures the tracking accuracy of all pick-up assemblies, thus allowing the mounting position to be checked.

Price 7/- (No P. Tax) (D)



B.J. Pick-up Alignment Protractor



Acos Stylus Pressure Gauge

ACOS STYLUS PRESSURE GAUGE

The new ACOS stylus pressure gauge enables you to check the downward force on your stylus in an instant, and keeps your equipment in first-rate condition, thereby protecting your records.

The ACOS stylus pressure gauge is constructed of channel-section nickel-plated brass and is graduated from 0-15 grammes. It is of robust construction and folds up to protect the spring when not in use.

Price 9/6 plus P. Tax 1/7 Total 11/1 (A)

GOLDRING STYLUS MICROSCOPE

A new Stylus Storage Cabinet with a Microscope designed specially for the examination of styli. The cabinet is fitted with an attractive plastic top, recessed to hold microscope.

Styli are easily positioned under the lens of the microscope by means of the rotating snap clip. Twin illumination is provided to offer maximum contrast and magnification is variable from 50 to 150 times, enough for even the smallest flaw or flat to be detected.

Price £6 6 0 Net



Goldring Stylus Microscope

AURIOL PICK-UP CONTROLS

Standard Model for single record players only.

Price £3 1 3 plus 10/3 P.Tax Total £3 11 6 (A)

Mk II For auto-changer/manual players

Price £3 12 0 plus 12/- P.Tax Total £4 4 0 (A)

TAPE RECORDERS

'MAGNETOPHON AUTOMATIC'

Telefunken the pioneers of modern tape recording have now produced the first automatic tape recorder in the World. By simply connecting a microphone or a radio receiver to the appropriate socket and pressing the 'Record' button, high quality recordings may be made immediately. The recording level is automatically accurately controlled to the correct level without the need for any adjustments by the operator. The 'magic eye' is purely to indicate that the automatic recording level control is in operation. Playback is just as easily achieved by depressing the 'Playback' button and adjusting the volume control to the desired level. This machine is so simple to operate that the person who has never operated a tape recorder before can immediately achieve good quality recordings. Tape speeds: $3\frac{3}{4}$ i.p.s. Frequency range: 40-14,000 c/s. Playing time: 3 hours ($5\frac{3}{4}$ " DP tape).

Twin track to International standards. The Telefunken extra-sensitive braking and tape tension control system ensures high performance and long life for tapes and recording head. Telefunken ultra-fine gap recording head makes possible the high standard of reproduction. Fast rewind and forward wind. Three digit counter. Automatic tape-end stop. Automatic radio/microphone selector switch. Tape splicing groove. Attractive lightweight Styron case.

Mains supply: 110/127/200/220/240 volts A.C. at 50 c/s. Power consumption: 40 watts. Valves: EF86, EF83, ECC83, EM84, EL95. Recording Inputs: 3 mV. into 47 K Ω (Radio). 3 mV into 470K Ω (Microphone). Playback Outputs: 1v. into 12K Ω (Radio). 2.5 watts loaded with 4.5 Ω (Loudspeaker). Signal to Noise Ratio: ≥ 40 dB. Wow and Flutter: $\leq \pm 0.2\%$ corrected.

Portable Model: Height 6.3", Width 12.4", Depth 12.6", Weight 15 lbs.

Price £52 10 0 (B)
 (Includes $5\frac{3}{4}$ " L.P. tape and spare spool).



MAGNETOPHON 75/15

The ideal general purpose domestic or business machine that incorporates the well-known Telefunken Features that are the secret of its high standard of reproduction and fidelity. Easy in operation, and designed to give long, trouble-free service. The Magnetophon 75K-15 has slim elegant appearance that well reflects its inner quality and efficiency.

Two tape speeds: $3\frac{3}{4}$ i.p.s. and $1\frac{7}{8}$ i.p.s. Frequency range: 60-16,000 c/s. at $3\frac{3}{4}$ i.p.s. and 60-9,000 c/s. at $1\frac{7}{8}$ i.p.s. Playing time: 6 hours ($5\frac{3}{4}$ " D.P. tape at $1\frac{7}{8}$ i.p.s.) Twin track to International standards. Fully automatic press-button controls. The Telefunken extra-sensitive braking and tape tension control system ensures high performance and long life for tapes and recording head.

Telefunken ultra-fine gap recording heads make possible the high standard of reproduction at slow speeds. Indirect flywheel drive minimises wow and flutter. Fast rewind and forward wind. Quick stop button. Record safety button. Digit counter. Automatic tape-end stop. Connections for earphones, remote stop/start control and extension speaker. Tape splicing groove. Tone control. Attractive lightweight Styron case.

Mains supply: 110/125/150/220/240 volts A.C. at 50 c/s. Power consumption: 40 watts approx. Valves: EF86, ECC83, EL95, EM84. Recording inputs: 2 mV at 2M Ω (Microphone). 2mV at 50K Ω (Radio). Playback outputs: 1.5 volts at 18K Ω (Radio). Earphone monitoring. 2.5 watts loaded with 4.5 Ω (Loudspeaker). Signal to Noise Ratio: ≥ 40 dB. Wow and Flutter: $< \pm 0.3\%$ peak to peak unweighted at $3\frac{3}{4}$ i.p.s. $< \pm 0.4\%$ peak to peak unweighted at $1\frac{7}{8}$ i.p.s.

Portable Model: Height 6.3", Width 12.4", Depth 12.6", Weight 21 lbs.

Price £52 10 0 (B)
 (Includes $5\frac{3}{4}$ " L.P. tape and spare spool).



TAPE RECORDERS

MAGNETOPHON 95

The 'Magnetophon 95' is an entirely new design in the Telefunken range and is distinguished by its exceptional versatility, simple operation and attractively styled case. The 'Magnetophon 95' conforms to the most up-to-date standards of domestic tape recorders and meets the demands of modern tape recorder technology by providing special facilities for trick recording and effects.

Three tape speeds: $7\frac{1}{2}$ i.p.s.; $3\frac{3}{4}$ i.p.s.; $1\frac{7}{8}$ i.p.s. Frequency range: 30-18,000 c/s. at $7\frac{1}{2}$ i.p.s. 30-16,000 c/s. at $3\frac{3}{4}$ i.p.s. 30-9,000 c/s. at $1\frac{7}{8}$ i.p.s. Playing time: 8 hours at $1\frac{7}{8}$ i.p.s. on 7" D.P. tape.

Twin track to International Standards. Maximum spool size 7". Automatic tape end stop on recording and playback. Automatic extra sensitive braking and tape tension control system ensures long life for tapes and heads. Separate controls for recording and playback. Tone control. Three digit counter working forwards and backwards with zero adjustment. Tape splicing groove. Recording level control by fluorescent bar indicator. Studio type mixing by simple push button controls. Facilities for using recorder as an amplifier. Extension loudspeaker socket. Fast forward and rewind. Permanent magnet $10" \times 3"$ oval loudspeaker with cut-out switch.

Mains supply: 110/200/220/240 volts A.C. at 50 c/s. Power consumption: 60 watts approx. Valves: EF86, ECC83, EL95, EM84. Recording Inputs: 2mV at $2M \Omega$ (Microphone); 2mV at $50 K \Omega$ (Radio). Playback Outputs: 1 volt at $18K \Omega$ (Radio). Earphone monitoring. 2.5 watts loaded with 4.5Ω (Loudspeaker). Signal to Noise Ratio: ≥ 40 dB. Wow and Flutter: $\pm 0.15\%$ at $7\frac{1}{2}$ i.p.s. $\pm 0.2\%$ at $3\frac{3}{4}$ i.p.s. $\pm 0.3\%$ at $1\frac{7}{8}$ i.p.s.

Portable Model: Width 16.2", Height 7.8", Depth 11.5", Weight 24lbs.

Price ... £61 19 0 (B)
(Includes $5\frac{3}{4}"$ L.P. tape and spare spool).



MAGNETOPHON 96

This recorder provides all the unique advantages of the fabulous four-track technique. Tape playing time is doubled, and for cine and trick recording enthusiasts two tracks may be played back together or multiple transcription of one track to another is possible giving perfect duet and trick effects. Facilities are also provided for the stereo playback of pre-recorded stereo tapes utilising a stereo amplifier or radio.

Three tape speeds: $7\frac{1}{2}$ i.p.s., $3\frac{3}{4}$ i.p.s., $1\frac{7}{8}$ i.p.s. Frequency range: 30-18,000 c/s. at $7\frac{1}{2}$ i.p.s., 30-16,000 c/s. at $3\frac{3}{4}$ i.p.s., 30-9,000 c/s. at $1\frac{7}{8}$ i.p.s. Playing time: 16 hours at $1\frac{7}{8}$ i.p.s. on 7" D.P. tape.

Four track to International standards. Maximum spool size 7". Automatic tape end stop on recording and playback. Automatic extra sensitive braking and tape tension control system ensures long life for tapes and heads. Separate controls for recording and playback. Tone control. Three digit counter, working forwards and backwards with zero adjustment. Tape splicing groove. Recording level control by fluorescent bar indicator. Studio type mixing by simple push button controls. Monitoring of one track whilst recording another by means of 'Teleset 3' earphone available as an extra. Facilities for using recorder as an amplifier. Quick stop control. Printed circuits. Extension loudspeaker socket. Fast forward and rewind. Permanent magnet $10" \times 3"$ oval loudspeaker with cut-out switch.

Mains supply: 110/200/220/240 volts A.C. at 50 c/s. Power consumption: 62 watts approx. Valves: EF86, $2 \times$ ECC83, EL95, EM84. Recording Inputs: 2mV at $2M \Omega$ (Microphone), 2mV at $50K \Omega$ (Radio). Playback outputs: 1 volt at $18K \Omega$ (Radio). Earphone monitoring. 2.5 watts loaded with 4.5Ω (Loudspeaker).

Signal to Noise Ratio: ≥ 40 dB. Wow and Flutter: $\pm 0.15\%$ at $7\frac{1}{2}$ i.p.s. $\pm 0.2\%$ at $3\frac{3}{4}$ i.p.s. $\pm 0.3\%$ at $1\frac{7}{8}$ i.p.s.

Portable Model: Width 16.2", Height 7.8", Depth 11.5", Weight 24 lbs.

Price ... £72 9 0 (B)
(Includes $5\frac{3}{4}"$ L.P. tape and spare spool).



TAPE RECORDERS



MAGNETOPHON 97

STEREO TAPE RECORDER. Provides not only outstanding four-track facilities with manifold possibilities for transcribing and trick effects, but also twin channel stereo four-track technique for recording and playback. Special permanent magnet loudspeaker in the lid together with the loudspeaker in recorder provides perfect reproduction of stereo tapes without extra equipment.

Three tape speeds: $7\frac{1}{2}$ i.p.s., $3\frac{3}{4}$ i.p.s., $1\frac{7}{8}$ i.p.s. Frequency range: 30-18,000 c/s. at $7\frac{1}{2}$ i.p.s., 30-16,000 c/s. at $3\frac{3}{4}$ i.p.s. 30-9,000 c/s. at $1\frac{7}{8}$ i.p.s. Playing time: 16 hours monaural and 8 hours stereo operation at $1\frac{7}{8}$ i.p.s. on a 7" D.P. tape.

Four tracks to International standards. Maximum spool size 7". Automatic tape end stop on recording and playback. Built-in stereo balance control. Automatic extra sensitive braking and tape tension control system ensures long life for tapes and heads. Separate controls for recording and playback. Tone control. Three digit counter working forwards and backwards with zero adjustment. Tape splicing groove. Recording level control by fluorescent bar indicator. Facilities for using recorder as a monaural amplifier. Quick stop control. Printed circuits. Two extension speaker sockets. Fast forward and rewind. Two permanent magnet $10" \times 3"$ oval speakers, one in recorder, one in lid.

Mains supply: 110/200/220/240 volts A.C. at 50 c/s. Power consumption: 65 watts. Valves: $2 \times$ EF86, $2 \times$ ECC81, $2 \times$ EL95, EM84. Recording inputs: 2×2 mV. into $50 K \Omega$ (Radio). 2×2 mV. into $2M \Omega$ (Microphone). Playback outputs: 1 volt into $18K \Omega$ (Radio). Earphone monitoring. 2×2.5 watts loaded with 4.5Ω (Loudspeakers). Signal to Noise Ratio: ≥ 40 dB. Wow and Flutter: $\pm 0.15\%$ at $7\frac{1}{2}$ i.p.s. $\pm 0.2\%$ at $3\frac{3}{4}$ i.p.s. $\pm 0.3\%$ at $1\frac{7}{8}$ i.p.s.

Portable Model: Width 16.2", Height 9", Depth 11.5", Weight 29 lbs.

Price £99 15 0 (B)
(Includes $5\frac{3}{4}"$ L.P. tape and spare spool).

MAGNETOPHON 85

Telefunken 'Magnetophon 85' de Luxe in the new styled case offers all the features of its well known predecessor the 'Magnetophon 85' KL plus new improvements which will provide the quality enthusiasts with all they require. The 'Magnetophon 85' de-Luxe now incorporates the popular 'fluorescent bar' recording level indicator and a new control to enable the record player input to be mixed with either the radio or microphone inputs. This model achieves very high quality by incorporating D.C. heating on the pre-amplifier stages, efficient double screening of the motor and a Philberth transformer with an especially low stray field. These features enable an excellent signal to noise ratio of ≥ 50 dB. to be achieved and maintained throughout the life of the recorder.

Two tape speeds: $7\frac{1}{2}$ i.p.s. and $3\frac{3}{4}$ i.p.s. Frequency range: 30-20,000 c/s. ± 3 dB. at $7\frac{1}{2}$ i.p.s. 30-15,000 c/s. at $3\frac{3}{4}$ i.p.s. Playing time: 4 hours (7" D.P. tape at $3\frac{3}{4}$ i.p.s.) Silent input selector switch for radio, microphone and record player. Press button controls for recording stop/start, playback, recording interlock, trick button, fast rewind, speed change and quick stop. Telefunken patented tape tension control. Indirect flywheel drive. Automatic tape end stop switch. Digit counter. Connections for earphones, remote control. Built-in splicing groove. Two matched, permanent magnet, oval loudspeakers with cut-out switch, 6 watts push-pull output stage. Separate volume, bass and treble tone controls. The loudspeaker and volume control may be used for monitoring while recording. Straight through amplifier facilities. Fluorescent bar recording level indicator. Extension speaker connection. Continuously variable trick control can be fitted.

Mains supply: 110/125/200/220/240 volts A.C. at 50 c/s. Power consumption: 55 watts. Valves: EF86, ECC83, ECC81, EM84, ECC83 $2 \times$ EL95. Recording Inputs: 2mV. at $2M \Omega$ (Microphone), 2 mV. at $100K \Omega$ (Radio), 150 mV. at $1M \Omega$ Pick-up. Playback outputs: 1.5 volts at $18 K \Omega$ (Radio). Earphone monitoring. Signal to Noise Ratio: ≥ 50 dB. Wow and Flutter $\leq \pm 0.2\%$ peak to peak unweighted at $7\frac{1}{2}$ i.p.s., $\leq \pm 0.4\%$ peak to peak unweighted at $3\frac{3}{4}$ i.p.s. Power Output: 6 watts loaded with 4.5Ω . Impedance of Extension Speaker Socket: 15Ω .

Portable Model: Width 18.2", Height 8.5", Depth 16.8", Weight 33lbs.

Price £87 3 0 (B)



TAPE RECORDERS

TRUVOX

R82 TWIN TRACK R84 FOUR TRACK

Two Brilliant Recorders

4 watt Output. Tone/Monitoring Control. Autostop. Mixer Input. Superimposition. Extension Speaker 3 and 15 ohms. matching. Hi-Fi Outlet. Internal Speaker Switch. Supplied with Microphone, full 7" tape, spare spool and recording lead. Two brilliant Recorders, beautifully styled, equipped with every modern feature and facility, precise, elegant and astonishingly simple to use. Added to the superb performance of the tape deck is TRUVOX' latest electronic circuitry designed for purest tone and perfect reproduction. There are two inputs controlled independently of each other allowing simultaneous recording from two sources and mixing of two programmes in any proportion. A "TRICK" Switch" allows commentaries to be added to completed recordings. A tone control is provided for perfect tonal balance during reproduction. The output is 4 watt through a large (8" x 6") elliptical speaker and there are connections for external loudspeakers with 3 ohms. and 15 ohms. matching. Outlets for replaying through High Fidelity or Public Address equipment are also provided and there is a switch for the internal loudspeaker for monitoring or muting. Continental multi-pin connecting sockets for simplicity, jack socket for microphone. An accessory pocket at the rear contains the mains cable, the microphone and recording lead. There is accommodation for two extra tape spools. A stereo outlet on Model R84 can be used for replay of stereophonically recorded tapes with an extra amplifier. Valve line-up: EF86, ECC81, ECC82, EM87, ECL86, OA81, B250-C75.

Dimensions Recorders R82 and R84: 16½" x 16" x 10" (42 x 40 x 26 cm.). Weight 36 lbs. (16.3 kg.).

R82 Twin Track										
Price	...	...	...	...	...	...	...	...	...	£57 15 0 (B)
R84 4-Track										
Price	...	...	...	...	...	...	...	...	...	£61 19 0 (B)



TRUVOX TAPE UNITS PD82 TWIN TRACK PD84 FOUR TRACK

For use with existing reproducing equipment

These self-powered units will add full tape facilities to existing sound reproducing installations (high fidelity equipment, radiograms, record reproducers, or good radio receivers).

Comprising a Series 80 Tape Deck, plus integral record amplifier, play-back pre-amplifier and push-pull erase/bias oscillator, ready for easy connection. Presented in handsome wooden plinth with connections at rear. For building into furniture, connecting panel can be mounted in any other position.

The amplifier is built to high fidelity standards, with precise automatically selected compensation for each tape speed.

Two independently controlled inputs for programme mixing. Superimposition for adding commentaries. Auto stop. Output controlled up to 1 volt at 47 Kohms. Valve line-up: EF86, ECC81, ECC82, EM87, OA81, B250-C75, FST1 /0.

Dimensions Tape Units PD82 and PD84: 14½" x 13¼" x 7⅞" (37 x 33 x 20 cm.). Weight 26 lbs. (12 kg.)

PD82 Standard Twin Track										
Price	...	...	...	...	...	...	...	...	...	£42 0 0 (C)
PD84 Standard 4-Track										
Price	...	...	...	...	...	...	...	...	...	£46 0 0 (C)



TAPE RECORDERS

TRUVOX

TRUVOX PROFESSIONAL TAPE UNITS PD83 TWIN TRACK PD85 FOUR TRACK

For use with existing reproducing equipment

These instruments were developed in consultation with Educational Authorities for use in establishments where sound reproduction facilities are already installed. The PD 83/85, self-powered, comprise a Tape Transport of high performance standard with integral Record Amplifier, erase and bias supply, and Replay Pre-Amplifier correctly compensated for both tape speeds of $3\frac{3}{4}$ and $7\frac{1}{2}$ i.p.s. A precise record-level meter is incorporated.

Recordings can be made independently, but playback requires an Amplifier and Loudspeaker.

In accordance with professional practice, G.P.O. Jack Sockets are used for input and output connections but Continental, or American 'Phono' Sockets can be fitted to special order.

The instruments are supplied mounted on simple robust wooden plinth, leather-cloth covered.

Valve line-up: EF86, ECC81, ECC82, ECC83, B250-C75, FST1/0.

Dimensions Tape Units PD83 and PD85: $14\frac{7}{8}'' \times 16\frac{3}{8}'' \times 7\frac{7}{8}''$ (38 x 42 x 20 cm.). Weight 30 lbs. (14 kg.).

Price PD83 Professional Twin Track	£48 10 0 (C)
Price PD85 Professional 4-Track	£52 10 0 (C)



TRUVOX PROFESSIONAL TAPE UNITS PD86 QUARTER TRACK PD87 HALF TRACK

For use with existing reproducing equipment

These instruments comprise a precision tape transport with three heads (erase, record, replay) and two record amplifiers with push-button controlled level meter, erase and bias supply, plus two replay pre-amplifier channels, correctly and automatically compensated for both tape speeds of $3\frac{3}{4}$ and $7\frac{1}{2}$ i.p.s. The Units contain their own mains power supply and are mounted in attractive leather-cloth covered plinths.

The PD86 and PD87's record independently but require connection to reproducing equipment such as a conventional stereophonic Hi-Fi installation for replay. Input mixing can be done during mono or stereo recording. The two channels can be used together for recording or playing stereophonically or singly. They can also be used simultaneously, one for playing, the other for recording. The mode of operation is pre-selected by push buttons and clearly indicated by coloured indicator lights. Accidental erasure is impossible. Special provision has been made for injecting programme matter recorded on one channel into the other, whilst mixing it with additional inputs. This is simply selected by push buttons and makes it possible for an instrumentalist to record a first voice then re-record adding a second voice, accompaniment or commentary, whilst monitoring the previous recording with headphones. This process can be repeated and voices or other matter added ad lib. The second track can also accommodate conveniently control pulses for slide projectors which can be recorded, erased and re-recorded without interfering with the programme.

An echo effect of two different time constants is available by using both tracks.

Valve line-up: 2-EF86, 2-ECC81, 2-ECC82, ECC83, B250-C75, FST1/0.

Dimensions Tape Units PD86 and PD87: $14\frac{7}{8}'' \times 16\frac{3}{8}'' \times 7\frac{7}{8}''$ (38 x 42 x 20 cm.). Weight 30 lbs. (14 kg.).

Price PD86 Professional-Stereo $\frac{1}{4}$ -Track	£63 0 0 (C)
Price PD87 Professional-Stereo $\frac{1}{2}$ -Track	£63 0 0 (C)



All Recorders and Tape Units in the "Series 80" share these features

Reel size: 7" (18 cm.).
Tape speeds $7\frac{1}{2}$ and $3\frac{3}{4}$ i.p.s. (19 and 9.5 cm.)—speed change possible whilst running.
International Tracking Sense: top track left to right.
Perfect push button control interlock.
Conveniently positioned controls.
Instant mechanical brakes.
Silent running.
Very fast Wind and Rewind.
Automatic stop operated through metallic foil on tape ends.
Two inputs with independent mixer controls.
Safety record interlock and automatic return to playback after completion of recordings.

"Straight-through" use of amplifier or pre-amplifier with level response.

Push pull erase and bias oscillator for purest wave form.

Frequency response 30-20,000 c/s.

Input sensitivity and matching:

Input 1 (Mic)	1mV—2Mohms.
Diode	1mV—2Mohms. (Recorders only)
Input 2 (Radio, P.U.)	150mV—500Kohms.

Output to external amplifier
(depending on setting of volume control) 1 Volt max.
Impedance 47 Kohms.

Tandberg

SERIES 6

STEREO TAPE DECK

AVAILABLE 2 or 4 TRACK PRICE 110 gns. EITHER MODEL



This World Famous example of Norwegian Electronic and Mechanical engineering is a product of TANDBERGS RADIOFABRIKK AJS, OSLO, pioneers in the development of high class Stereo, two and four track, tape techniques.

This is a "No compromise" instrument capable of delivering consistently fine "Professional" quality. Entirely self-contained and without need of Add-on Unit. The Tandberg Model 6 is complementary to the finest Audio and Speaker Systems and it is not possible to incorporate Amplifiers and Speakers, in portable case, capable of doing justice to this exceptional Deck.

For further details and Reprints of Technical Reviews, apply to the British Distributors, our associated company—

TANDBERG G.B.

ELSTONE ELECTRONICS LIMITED EDWARD STREET TEMPLAR STREET LEEDS 2

Telephone: Leeds 35111 (7 lines)

NOTE: Enquiries and Orders for TANDBERG may be included when writing to A. C. FARNELL LTD.

TANDBERG STEREO TAPE DECK

SERIES 6 4 TRACK

SPECIFICATION

The following is a brief specification detailing the manufacturers figures as referred to in aforementioned reviews:—
Heads. Incorporates a THREE-HEAD four-track system permitting design without the sacrifices necessary when a combined Record/Playback Head is used. Erase Head is wired for single and double track erasing.

Tape Speeds. $7\frac{1}{2}$ "', $3\frac{3}{4}$ "' and $1\frac{1}{2}$ "' sec. Reels 7"'.
Amplifiers. Four: Two separate recording Amplifiers with ganged concentric controls for mixing or balancing. Two separate Playback Amplifiers with ganged concentric volume controls. Cathode follower outputs of approx. $1\frac{1}{2}$ volts each.

Record Level Indicators. Two magic eyes, one for each channel, mounted side by side in one frame.

Inputs. Each channel has one Microphone input using standard Jack Plug and one high level and one low level input using standard Midget Co-axial Plugs.

Mixing. When recording a single channel (Monaural) you can utilise all Tandberg inputs to mix up to four signals. When recording two channels (Stereo) you can utilise three inputs to mix up to two signals per channel or track.

Monitoring. All recordings Monaural or Stereo, whether using single or mixed inputs, can be monitored with A or B TEST. ("A" Test monitors signal before the recording head and "B" Test, the signal just recorded, from the playback head).

Sound-on-Sound. A unique Tandberg feature completely doing away with the old system of superimposition with its attendant degrading of the master recording.

Language Laboratory Application. Master records one track. Pupil monitors Master's playback and records lesson on other track. Stereo position is then selected for dual playback with master from one speaker and pupil from the other.

Tape Counter. 4-Digit in place of usual 3-Digit counter.

Power requirements: 110—125—145—200—220—245 volts. 50 Cycles, 65 watts. (Can be changed easily to 60 cycles by means of motor pulley and capacitor).

Inputs, Sensitivity and Impedance.

Two Microphones ...	.00125 volts RMS.	5 Megohm.
Two High Level ...	.05 volts RMS.	1 Megohm.
Two Low Level ...	.005 volts RMS.	100K ohm.

Playback Outputs. With the output control-knobs set to max. (6) the RECORDING LEVEL INDICATOR LIGHT BEAMS touch each other in A-Test, and 3% distortion the cathode Follower output is adjusted to $1\frac{1}{2}$ volts.

Frequency Response. $7\frac{1}{2}$ I.P.S. 30 to 20,000 cycles (± 2 db, 30 to 16,000 cycles).
 $3\frac{3}{4}$ I.P.S. 30 to 15,000 cycles (± 2 db, 40 to 11,000 cycles).
 $1\frac{1}{2}$ I.P.S. 30 to 7,000 cycles (± 2 db, 50 to 5,500 cycles).

Distortion. A recording level 10 db. below maximum level results in 2/10 of 1% distortion of a 400 cycles signal when played back.

Recording Amplifiers Distortion. $\frac{1}{2}$ of 1% at maximum recording level.

Playback Amplifiers Distortion. 2/10 of 1% at $1\frac{1}{2}$ volts output and with a load impedance of 10,000 ohms. or more.

Bias and Erase Current Distortion. 4/10 of 1%.

Noise Level. 55 db. below maximum recording level. Maximum recording level corresponds to 3% distortion.

Bias and Erase Frequency. 80 to 100 kc, common bias supply to each recording channel.

Wow and Flutter. .1% RMS $7\frac{1}{2}$ I.P.S. .2% RMS. $3\frac{3}{4}$ I.P.S. .25% RMS. $1\frac{1}{2}$ I.P.S.

Speed Accuracy. $\pm .2\%$ or ± 3.6 seconds in 30 minutes.

4-Track Stacked Record Head. Gap width .00052".

4-Track Stacked Playback Head: Designed for ideal playback characteristics of highest frequency response, plus maximum sensitivity, gap width .00012".

Cross-talk Rejection: Better than 60 db.

Motor. Hysteresis synchronous motor, system Papst. Instant start or stop by push-button.

Automatic Stop. When metalized leader tapes are used.

Valve Complement. 6 - ECC83. 3 - ECC82. 2 - Selenium Rectifiers. 2 - EAM86.

Dimensions. Teak Cabinet 16" long, 12" wide, 6" high.

Weight. Instrument alone 25 lbs. With carrying case (priced extra) 30 lbs.

TANDBERG SERIES 6 STEREO TAPE DECK 2 TRACK MODEL

The specifications are identical with the 4 track model except for the following:

2 TRACK STACKED ERASE HEAD: Min. 70 db. erasure.

Influence on tracks left on the tape less than 0.5 db.

2 TRACK STACKED RECORD HEAD: Designed for highest recording performance with ideal airgap for recording 0-0006".

2 TRACK STACKED PLAYBACK HEAD: Designed for ideal playback characteristics of highest frequency response, plus maximum sensitivity, gap width 0-00012".

Noise from erased tape reduced 3 db. in playback compared with 4 track system.

CROSS-TALK REJECTION: Better than 70 db.

Tandberg

STEREO TAPE RECORDER

SERIES 7 MODEL 74 (4 TRACK) MODEL 72 (2 TRACK)



PRICE 93 gns.

*Combines Tandberg quality with complete mono/stereo portability.
A worthy companion to the famous series 6.*

Build-it-in or Carry-it-around

**Description of features Model 74 (4 track) and Model 72 (2 track)
TANDBERG SERIES 7 STEREO TAPE RECORDER.**

HEADS. Incorporates the most modern type of ferrite-core Erase Head and a high quality combined Record/Playback Head.

TAPE SPEEDS. $7\frac{1}{2}$ " $\frac{3}{4}$ " and $1\frac{7}{8}$ " Sec. Max. size of reel 7".

AMPLIFIERS. Two separate recording pre-amplifiers, two playback pre-amplifiers with transistor input (AC107) giving very low hum and noise level, and two 3 watts output amplifiers operating as record amplifiers during recording. During playback of a mono programme the Series 7 will give 2×3 watts output. Mu-metal screening of essential stages for low noise level.

DUAL VOLUME CONTROL. During RECORDING the upper control knob adjusts the recording level for channel 1 and the lower knob controls channel 2. These same controls are also used when the recorder is switched to PLAYBACK or AMPLIFIER and the two channels are individually adjusted in a similar manner.

RECORD LEVEL INDICATORS. Two tuning indicators, so essential for good stereo recording balance, are mounted in one frame for easy comparison.

INPUTS (a) One phono-socket for each channel is mounted on a panel at the rear together with two adjustable attenuators in order that the operator may set the input level according to the signal source. Capacitors protect the recorder against D.C. voltage across the input terminals.

(b) Two standard Jack-sockets on the top plate enable a high impedance microphone to be plugged into each channel. Insertion of a microphone Jack-plug disconnects the input for that channel at the back of the recorder.

MONITORING. All recordings, mono or stereo, may be monitored (A Test only). Left speaker monitors channel 1 and right speaker monitors channel 2. In position RECORD the output for the channel concerned is reduced after monitoring but if AMPLIFIER is selected on the other channel then 3 watts is available regulated by the other half of the volume control.

ADD-A-TRACK. It is possible to playback on one channel while recording on the other channel and in complete synchronisation, due to the combined Record/Playback Head. When playing back in Stereo both channels can be heard simultaneously. Examples of the use of this feature are:—(A) Language Teaching where the pupil hears the lesson (by phone) from one track and records his exercise on the other track. (B) Musical background on one track with a spoken commentary on the other. (C) Duet by one person by means of two successive synchronised recordings on two tracks, played back in stereo.

OUTPUTS. Phono sockets supply external speakers or hi-fi amplifiers. Note:—Low impedance connection to high impedance amplifier inputs eliminates hum pick-up, and treble loss due to screened leads. Also, in this condition the output transformer is feeding into a higher load and full feed-back over the transformer ensures a flat distortionless output.

SPEAKERS. Two internal Goodmans 7" \times 4" Speakers.

SPEAKER SWITCH. Three positions select (A) Internal, (B) Internal plus External or (C) External-speakers only.

BASS SWITCH. In PLAYBACK or AMPLIFIER mode a bass lift of 8 db. at 100 cycles may be introduced without affecting the higher frequencies.

AUTO STOP. A new microswitch system is fitted which switches off the motor when the tape runs out thereby making metal stop-foils unnecessary and avoiding wear to the heads. As a result the motor will not operate until a tape is in position.

PAUSE BUTTON. Instant START-STOP feature.

TAPE COUNTER. 4-Digit in place of the usual 3-Digit counter to take care of low speeds and LP or DP tapes.

FUNCTION SELECTOR SWITCHES. Two centrally situated lever switches, one for each channel select RECORD, PLAYBACK, or AMPLIFIER. As each switch can be used independently a large number of working combinations are possible; some of them are:—

1. Channel 1 Mono Record and Monitor.
2. Channel 1 Mono Record plus Channel 2 Amplifier.
3. Channel 1 Mono Playback (3 watts).
4. Channel 1 Mono Playback plus Channel 2 Amplifier i.e.:—(6 watts).
5. Channel 1 Mono Playback and Record Channel 2.
6. Channels 1 and 2 Record Stereo.
7. Channels 1 and 2 Playback Stereo (6 watts).
8. Channels 1 or 2 As straight 3 watts amplifier.
9. Channels 1 and 2 As straight 6 watts amplifier.
10. etc. etc. The above are only some of the permutations of the six switching positions.

BASIC SPECIFICATIONS MODELS 74 AND 72

Power requirements: 110—125—145—200—220—245 volts. 50 cycles 85 watts. (Motor pulley for 60 cycles 24/- extra).

Tape Speeds: $7\frac{1}{2}$ "', $3\frac{3}{4}$ " and $1\frac{7}{8}$ " per sec. 7" Reels. Speed can be changed while recorder is running.

Speed Accuracy: $\pm 1\%$ for all speeds at correct line frequency and voltage.

Fast Forward and Rewind: Approx. 2 minutes for 1,200 ft. of tape without wear to the tape heads.

Inputs, Sensitivity and Impedance: 2 microphones 1.5 mV. R.M.S. 3.3 megohms. 2 Line inputs—adjustable external presets 7 mV. to 7 volts R.M.S.

Outputs: At maximum recording level with the indicator beams touching each other, 5% distortion at 3 watts output.

Recording Level Indicators: Electronic for each channel ($2 \times$ EAM86) with damped backward movement. Electronic eye takes range of 25 db. plus overload. Indicator beams just touch at 5% distortion (from tape).

Wow and Flutter: $\cdot 15\%$ R.M.S.— $7\frac{1}{2}$ I.P.S. $\cdot 2\%$ R.M.S.— $3\frac{3}{4}$ I.P.S. $\cdot 3\%$ R.M.S.— $1\frac{7}{8}$ I.P.S.

Frequency Response:

$7\frac{1}{2}$ I.P.S. 30 to 20,000 cycles (± 2 db. 40 to 16,000 cycles).

$3\frac{3}{4}$ I.P.S. 30 to 14,000 cycles (± 2 db. 40 to 10,000 cycles).

$1\frac{7}{8}$ I.P.S. 50 to 7,000 cycles (± 2 db. 50 to 5,000 cycles).

Bias and Erase Frequency: 85.5 kc/s. distortion 0.5%.

Erase Head: with ferrite core. Minimum erasure 70 db.

Record-Playback Head: gap with 0.00012".

Motor: Asynchronmotor.

Valve Complement etc.: 1—ECC82, 2—ECC83, 2—ECL86, 2—EAM86, 2—Philips AC107 transistors, Selenium Rectifier 125 mA. 250V.

Dimensions: $15\frac{3}{8}$ " \times $11\frac{13}{16}$ " \times $6\frac{7}{8}$ " (teak cabinet).

Weight: Instrument alone $27\frac{1}{2}$ lbs. With Carrying Case $32\frac{1}{2}$ lbs.

Note:— All the preceding details are common to models 74 and 72. The following differences between 4 track and 2 track Series 7 should be noted

Noise Level:

(74) 4 track 53 db. below maximum recording level.

(72) 2 track 56 db. below maximum recording level
maximum recording level corresponds to 5% distortion.

Cross Talk Rejection: (Stereo Playback)

(74) 4 track. Better than 65 db. at 1,000 c/s., crosstalk from track in between better than 65 db. above 150 c/s.

(72) 2 track. Better than 60 db. at 1,000 c/s.

PRICE:—Including empty reel and connecting leads:

Model 74 (4 track) 93 gns.

Model 72 (2 track) 93 gns.

Luggage type Carrying Case £7. I. 8d. extra (includes 21/8d. P. Tax).

TAPE RECORDING ACCESSORIES

TRUVOX TELEPHONE ATTACHMENT

Attached by suction to your desk telephone set and connected to your tape recorder, this device enables recordings of two-way telephone conversations to be made. It is not wired to the telephone hand set and does not inconvenience the user in any way. (It will not function on local battery or magneto systems).

Adaptor TA2

Price £1 1 0 (Free of P. Tax) (C)

Plug extra.

TRUVOX STETHOSET HEADPHONES

The quality of reproduction achieved by this type of headphone is of an exceedingly high order. For monitoring or listening when the loudspeaker is switched off. Extremely light weight.

Headphones TA2000

Price £3 3 0 (Free of P. Tax) (C)

Plug extra.

TRUVOX RADIO JACK

When plugged into the microphone socket with a single wire aerial connected to it, B.B.C. Medium Wave (Light and Home) transmissions will be received and may be recorded. The stations are selected by the switch, trimmers are provided for tuning. (Not suitable for areas where the Light Programme can only be received on 1,500 metres).

Brit. Jack Plug TA3

Price ... £2 10 0 Plus 9/3 P. Tax Total £2 19 3 (C)

Metric Jack Plug TA7

Price ... £2 10 0 Plus 9/3 P. Tax Total £2 19 3 (C)

TRUVOX RADIO JACK ADAPTORS

For interconnecting Truvox Radio Jacks or any lead with Brit. Jack Plug to Continental or American 'phono' sockets.

Jack Socket TA44—Cont. 3-pin plug.

Price 10/0 (Free of P. Tax) (C)

Jack Socket TA45—American 'Phono' plug.

Price 10/0 (Free of P. Tax) (C)

A K G MICROPHONES & ACCESSORIES

D7 DYNAMIC MICROPHONE

With omni-directional characteristic and with generally rising frequency response. This type of response improves speech intelligibility.

Technical Data

Frequency range 100-10,000 c/s. (rising frequency response). Sensitivity 0.23 mv/ubar, low impedance (—73 dB. re 1 v/dyne/cm.²); 2.8 mv/ubar, high impedance (—52 dB. re 1 v/dyne/cm.²). Output impedance 200 ohms./50,000 ohms. Directional characteristic omni-directional. Retractable built-in stand. Dimensions 3 $\frac{1}{8}$ " × 2" × 1 $\frac{1}{4}$ " (80 × 51 × 32mm.) Weight 5 ozs. (140 g.).

Price £3 15 0 (B)

DIIN

Low and high impedance, with bass attenuation switch.

Technical Data

Frequency range 80-12,000 c/s. Sensitivity 0.18 mv/ubar, low impedance (—75 dB. re 1 v/dyne/cm.²); 2.5 mv/ubar, high impedance (—52 dB. re 1 v/dyne/cm.²). Output impedance 200 ohms./50,000ohms. Directional characteristic cardioid. Plug connections pins 1 and 2=high impedance, pin 2=ground, pins 2 and 3=low impedance. Standard 3 contact miniature plug. Stand connection $\frac{3}{8}$ " thread. Discrimination at 180° sound incidence approx. 12 dB.

Price £6 10 0 (B)

DI9 DYNAMIC DIRECTIONAL MICROPHONE

With cardioid characteristic and bass attenuation switch, covering the entire frequency range from 40-16,000 c/s. for high quality domestic tape recorders. Gradually rising frequency response. The directional characteristic is more pronounced than with the D11, especially in the lower frequencies, resulting in freedom from background noises and in natural reproduction.

Price DI9B/60 ohms. £17 10 0 (B)

Price DI9B/200 ohms.... .. £17 10 0 (B)

DI9B/Hi-Z=DI9B/200 with U212 Transformer

Price £19 9 6 (B)

D77S DYNAMIC STEREO MICROPHONE

For brilliant stereo recordings with stereo tape recorders XY or MS stereo systems). This microphone is also recommended for monaural recordings where a high quality directional microphone with particularly broad recording angle and very good discrimination is required.

D 88/200—low impedance. D88/Hi—high impedance, with cable transformer.

Technical Data

Frequency range 80-15,000 c/s. (flat, stereo matched frequency response, falling slightly at low frequency end). Sensitivity of each system 0.18 mv/ubar, low impedance (—75 dB. re 1 v/dyne/cm.²); 2.5 mv/ubar, high impedance (—52 dB. re 1 v/dyne/cm.²). Output impedance of each system 200 ohms., with transformer 50,000 ohms. Directional characteristic for stereo recordings; double cardioid (the two systems are so arranged that their directions of maximum sensitivity [live side of microphone] form an angle of 90° in the horizontal). Directional characteristic for monaural recordings: broad-angle cardioid. Unchanged pick-up direction for stereo and mono recordings. Discrimination approx. 15 dB. Stand connection $\frac{3}{8}$ " thread. Dimensions 5 $\frac{7}{16}$ " × 2 $\frac{1}{4}$ " diameter (138 × 58 mm.) Weight approx. 17 $\frac{1}{2}$ ozs. (500 g.).

Price D77S/Hi-Z £18 0 0 (B)

DI2 DYNAMIC DIRECTIONAL MICROPHONE

For stage and with P.A. systems, for tape recording musical bands etc. No tendency for developing feedback when loudspeakers are located near the microphone. Shielded against stray magnetic fields.

Technical Data

Frequency range 40-12,000 c/s. Sensitivity 0.12 mv/ubar (—78 dB. re 1 v/dyne/cm.²). Output impedance 60 ohms. Directional characteristic cardioid. Cable connection two conductor, shielded, length 5 m. (16 $\frac{1}{2}$ '). Stand connection choice of $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{5}{8}$ " thread. Discrimination at 180° sound incidence approx. 18 dB. Dimensions 5 $\frac{3}{8}$ " × 2 $\frac{7}{8}$ " (142 × 54 × 73 mm.). Weight 1 lb. 7 ozs. (650 g.).

Price £34 0 0 (B)

MICROPHONES & ACCESSORIES

A K G

MICROPHONE TRANSFORMERS

U 203 LINE TRANSFORMER with 0.5 meters mounted cable for all AKG microphones with designation "/Hi" for connection of extension lines to high impedance amplifier inputs. With 3 contact miniature standard socket and 3 contact miniature standard plug.

Technical Data

Frequency range 30-20,000 c/s. Frequency response 50 to 20,000 c/s. ± 2 dB. Matching ratio 1:15. Connection primary 200 ohms.—socket contacts 2, 3; secondary approx. 50,000 ohms.—pins, 1, 2, ground=2. Dimensions Diameter— $\frac{11}{16}$ " (18 mm.), length $2\frac{1}{2}$ " (63 mm.). 1.6 ft. (0.5 meters) primary cable. Weight 4 ozs. (110 g.).

Price £1 12 6 (B)

U 212 LINE TRANSFORMER as U203, but with balanced input, for connection of all low impedance AKG microphones (with designation "/200") to high impedance amplifier inputs. Connections Primary 200 ohms.—1, 3; 2=ground. Secondary approx. 50,000 ohms.—1, 2=ground.

Price £1 19 6 (B)

MICROPHONE TABLE STANDS & FLOOR STANDS

St 10 MICROPHONE TABLE STAND in brown hammer tone, attractively shaped, circular table stand. Foam rubber cushion on base. Stand thread $\frac{3}{8}$ ", also $\frac{1}{2}$ " if desired. Diameter—approx. $4\frac{3}{4}$ " (120 mm.), height—approx. $3\frac{7}{8}$ " (100 mm.), weight—approx. 14 ozs. (400 g.). Suitable for microphones D-12, D20 B, D 25 B and with stand adaptors Sa 1, Sa 2 or Sa 3 for microphones D 19 B and D 24 B and with stand adaptor Sa 4 for microphones C 28 A and C 29 A.

Price £1 15 0 (B)

St 200 MICROPHONE FLOOR STAND Heavy construction with built-in shock absorbing filters, collapsible. For broadcasting, stage and electro-acoustic installations. Total height (extended)—approx. 5' 11" (1.8 meters), radius of legs—approx. $10\frac{3}{4}$ " (27 cm.). Folded—length approx. 3' 3" (1 meter), diameter—approx. $4\frac{3}{4}$ " (12 cm.). Weight approx. 11 lbs. (5 kg.).

Price £12 10 0 (B)

MICROPHONE STAND ADAPTORS

Sa 1 P.V.C. Stand Adaptor. Clamps made of soft plastic material, incorporating steel spring. $\frac{3}{8}$ " inside thread. For microphones D 19B.

Price 7/- (B)

Sa 2 Metal Clamp Stand Adaptor with swivel joint and adjustable metal clamps. $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{5}{8}$ " inside thread For

microphones D 19 B. Clamp diameter approx. $\frac{1}{8}$ " \times $\frac{1}{8}$ " (20-24 mm.).

Price £2 15 0 (B)

Sa 3 Metal Clamp Stand Adaptor with swivel joint and built-in miniature plug connector. $\frac{3}{8}$ ", $\frac{1}{2}$ " and $\frac{5}{8}$ " inside thread. For microphones D 19 B.

Price £1 4 6 (B)

K50 DYNAMIC HEADPHONES

For quality monitoring of mono and stereo programme material. Ideal for Hi-Fi listening, audiometric use, acoustic laboratories and broadcast stations.

Technical Data

Frequency range 30-20,000 c/s. Impedance 400+400 ohms. Power requirement less than one milliwatt. Weight incl. cable 3 ozs. (80 g.).

Price £7 10 0 (B)

Z50 Pairs earpads for K50

Price 9/- (B)

U50 Matching transformer (2 required for Stereo).

Price £1 5 0 (B)



MICROPHONES & ACCESSORIES

RESLO

MINIATURE RIBBON

Figure of '8' Polar diagram. Attachment threads $\frac{1}{8}'' \times 26$ or $\frac{3}{16}'' \times 27$ **RB/T** 'T' Base **RB/WS** 'W' Base with Switch. Each available in three impedances.

Alternative Cable Sets available any impedance.
Cable Colour Code: White Dot 30-50 ohms. Blue Dot 600 ohms. Red Dot Hi-Z.

Frequency response ± 3 dB. 30 c/s. to 16 Kcs/s.	
Price RBL/T 30-50 ohms.	£10 2 0 (C)
Price RBM/T 600 ohms.	£10 12 6 (C)
Price RBH/T Hi-Z	£10 12 6 (C)
Price RBL/TS 30-50 ohms.	£12 7 0 (C)
Price RBM/TS 600 ohms.	£12 17 6 (C)
Price RBH/TS Hi-Z	£12 17 6 (C)

CARDIOID RIBBON

15 dB. Discrimination Front to back. CRL 30-50 ohms. CRM 250 and 600 ohms. CRH 30 ohms. and Hi-Z. Frequency response smoothly maintained 50 c/s. to 15 Kc/s., level ± 5 dB. 100 c/s. to 12 Kc/s.

Price CRL 30-50 ohms.	£10 2 0 (C)
Price CRM 600 ohms.	£10 12 6 (C)
Price CRH Hi-Z	£10 12 6 (C)

PENCIL RIBBON

(non swivel)

Characteristic as RB. PRL 30-50 ohms. PRM 250 and 600 ohms. PRH Hi-Z and 30-50 ohms. Frequency response extends from 50 c/s. to 16 Kc/s., level ± 5 dB. 100 c/s. to 10 Kc/s.

Price PRL 30-50 ohms.	£8 8 0 (C)
Price PRM 250 and 600 ohms.	£8 18 6 (C)
Price PRH Hi-Z and 30-50 ohms.	£8 18 6 (C)

DYNAMIC TYPE C.D.

All purpose including recording and high quality public address. Frequency response ± 5 dB. 100 c/s. to 10 Kc/s. The optional perspex baffle gives 3 dB. extra lift at 5 Kc/s. resulting in improved 'presence' on speech.

Back to front discrimination at high and mid frequencies of 15 dB.

CABLE CODING TYPE C.D.

30 ohms. white dot on plug 250 ohms. green, 600 ohms. blue, Hi-Z red.

Price CDL 30-50 ohms.	£10 15 6 (C)
Price CDM 600 ohms.	£11 6 0 (C)
Price CDH Hi-Z	£11 6 0 (C)

DYNAMIC TYPE V.M.C. Mk.II

Ruggedly constructed general purpose high output moving coil microphone. Soft rubber coupled to housing.

Speech coil impedance 15 ohms. Frequency response ± 5 dB. 100 c/s. to 10 Kc/s. with peak at 5 Kc/s. giving maximum 'presence' for speech reproduction. Overall response extends from 50 c/s. to 12 Kc/s.

Price	£7 7 0 (C)
Additional cable sets for all microphones except V.M.C.	
Price	£2 7 6 (C)

MICROPHONE ACCESSORIES

	Retail Price		
	£	s.	d.
Stands: Floor Stand (Adjustable)	6	15	0
Table Stand (Adjustable)	3	17	6
Desk Stand (Circular)	1	17	0
Desk Stand Type 'S'	1	9	0
Desk Base Type 'SF'	1	14	0
Extra, for muting switch on types 'S' and 'SF' Stands only	13	0	0



RBL/T



Cardioid Ribbon



RBL/TS
Miniature Ribbon



Dynamic Type CD



Pencil Ribbon (Non-swivel)

MICROPHONES & ACCESSORIES

RESLO

STEREO MICROPHONE MOUNT Type T.M.I

Specially designed dual mounting bar for two microphones type RB/T. Knurled locking screws are provided at the ends which fix each microphone in the optimum stereo position. Ten yards of twin screened cable is supplied for each microphone. Pairs of microphones can be specially matched at a nominal charge.

Price £6 0 0 (C)

TRANSISTOR COUPLER Type G.E.I

This coupler, designed for external use adjacent to the tape recorder or amplifier, gives a gain of 75-100, i.e. 35-40 dB. over the impedance range 30 to 600 ohms. Frequency response ± 1 dB. 50 c/s. to 15 Kc/s. A Reslo three pin plug is supplied for connecting microphone lead to coupler. A 36" screened lead with screened jack plug is fitted for high impedance connection to tape recorder or amplifier. Self-contained battery type P.P.4 expected life 1,500 hours.

Price £7 0 0 (C)

M.T. 101 AND M.T. 102

Mu-Metal Screened. Input M.T. 101 15-50 ohms. Input M.T. 102 600 ohms. Output 100,000 ohms. Length $1\frac{1}{2}$ ". Diameter $1\frac{1}{4}$ ". Centre Tap Leads Loose Screened. Frequency Response M.T. 101 ± 2 dB. 50 c/s. to 15 Kc/s.

Price M.T.101 £2 12 6 (C) M.T.102 £2 18 6 (C)

L.T.U. 1 COUPLER

Built into Mu-Metal shielded, circular diecast casing, 3 pin plug supplied for balanced line connection for low impedance and screened jack plug for high impedance performance as M.T. 101. Length $2\frac{1}{4}$ " \times $1\frac{1}{2}$ " Diameter. Frequency response ± 1 dB. 50 c/s. to 15 Kc/s.

Price £3 15 0 (C)

ACCESSORIES, ADAPTORS AND SPARES

	Net Price
	U.K.
	£ s. d.
Ribbon Assembly	15 6
Desk Stand Stem	8 6
Swan Neck Fitting	2 0 6
S.U. 10 Diaphragm	15 0
S.U. 10 Diaphragm with S.U. 6 Fixing	1 0 0
Microphone Cable	per yard 1 6
Stand Top $\frac{1}{2}$ " \times 26 BSB	3 6

ADAPTORS WITH INTERNAL THREADS

$\frac{1}{2}$ " \times 26 BSB to $\frac{5}{8}$ " \times 27 U.S. Standard	3 6
$\frac{3}{8}$ " \times 27 U.S. \times $\frac{5}{8}$ " \times 27 U.S. Standard	3 6

REDUCERS (Internal and External Thread)

$\frac{5}{8}$ " \times 27 Standard External Thread to $\frac{5}{8}$ " \times 27 Internal Thread	3 6
$\frac{1}{2}$ " \times 26 BSB Standard External Thread to $\frac{3}{8}$ " \times 26 BSB Int. Thread	3 6
$\frac{1}{2}$ " \times 26 BSB Standard External Thread to $\frac{5}{16}$ " BSB Int. Thread	3 6
$\frac{1}{2}$ " \times 26 BSB Standard Ext. Threaded Nipple \times $\frac{1}{4}$ " long with $\frac{5}{16}$ " bore	3 6

PLUGS AND SOCKETS ETC.

T.C. 3-Pin Socket; Chassis or Panel Mounting $\frac{13}{16}$ " diameter complete... ..	5 9
T.C. 3-Pin Plug with cable outlet	7 6
T.C. Male and Female Extension Connectors	Pair 16 9
T.C. 3-Pin Plug in Suspension Fitting	15 0
Suspension Fitting only	7 6
Filter pads for the R.B. series supplied free.	

STAND DAMPERS AND ADAPTORS

The Stand Damper consists of a 2" barrel with rubber insulation to isolate top from bottom, the unit screws in 'series with the stand and the microphone. With 'W' base microphones a stud adaptor is necessary. 10/6

COMPLETE SPECIFICATIONS OF ANY OF OUR PRODUCTS ARE AVAILABLE FROM OUR SALES DIVISION.

MICROPHONES & ACCESSORIES

GRAMPIAN

DYNAMIC MICROPHONE TYPE DP4



DP4 Microphone

The Grampian DP4 dynamic microphone meets the requirements of Public Address, Wire, Tape and Disc Recording, Call Systems and Communication equipment.

The microphone is slender and unobtrusive in appearance, and the light weight, a little under ½ lb., makes it ideal for use in the hand.

It can also be used as a stand microphone by means of a swivel holder. Although firmly held the microphone can be readily lifted out of the holder when required.

The microphone unit is fitted in an alloy case finished in black enamel with a chromium plated bezel ring and the metal diaphragm is protected by a perforated steel plate.

The lead is readily detachable and a ribbed anti-roll ring is provided to prevent mishaps when the microphone is laid down on a smooth surface.

The high output pressure type dynamic microphone has a uniform, wide range frequency response which extends from 50 c/s. to 15,000 c/s., and therefore reaches the high performance level of all Grampian equipment.

The microphone is available in three types: DP4/L—Low impedance 25 ohms. DP4/M—Medium impedance 600 ohms; DP4/H—High Impedance 50,000 ohms.



Microphone with Swivel Holder and Table Stand

TECHNICAL DATA

Frequency response 50 c/s. to 15,000 c/s.

Output levels:

DP4/L 25 ohms.—86 dB. below 1 volt/dyne/c.m.².

DP4/M 600 ohms.—70 dB. below 1 volt/dyne/c.m.².

DP4/H 50,000 ohms.—52 dB. below 1 volt/dyne/c.m.².

Weight of hand microphone 7¾ ozs. ·219 Kg.

Length of hand microphone 8¼". 21 c.m.

Diameter overall 1⅝". 3 c.m.

Thread on holder and swivel ⅝" 27 T.P.I. Supplied with adaptor ⅝" B.S.F.

Finish Black and chrome.



Microphone Switch Assembly

STANDARD MICROPHONES

DP4/L	25 ohms. microphone complete with connector and 18' screened lead	...	...	...	8 0 0 (B)
DP4/M	600 ohms. microphone complete with connector and 18' screened lead	...	...	...	9 0 0 (B)
DP4/H	50,000 ohms. microphone complete with connector and 18' screened lead	...	...	...	9 0 0 (B)

ACCESSORIES

Swivel holder, adaptor for fitting to floor or table stand	...	...	...	...	16 6 (B)
Circular table base for use with swivel holder.	...	...	...	...	13 6 (B)
On/Off switch assembly (fitting between mic. and lead). With Stand Fixing Lug	...	...	...	...	2 5 0 (B)
Connector plug only	...	...	...	...	8 0 (B)
Cable Socket	...	...	...	...	8 0 (B)

The lead length normally supplied is 18 feet long.

Low and medium impedance leads may be of any length but high impedance leads should not exceed 25 feet.

If you wish to employ a long microphone line and your equipment has a high impedance input, you should use a low impedance microphone and a G.7 matching unit at the amplifier end.

LIST PRICES

MICROPHONE STAND TYPE S.I.

A light-weight folding stand, firm when erected and compact when closed, finished in black crackle paint and chrome plate. Height erected. Max. 58" (1473 mm.) Min. 38" (965 mm.). Height closed 26" (660 mm.). Weight 4 lbs. (1·8 Kg.)

Price £3 12 6 (B)

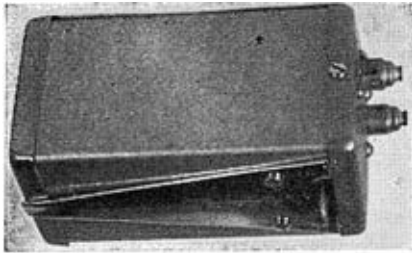
MICROPHONE MATCHING UNITS SERIES G.7.

Consisting of a double wound transformer housed in a Mu-metal case, it is provided with a jack socket on the primary side for input and a short screened lead on the output for connecting to the input of the amplifier. Length 3⅝" × 1¼" dia. (92 × 31 mm.). Weight 5½ ozs. (159 grms.).

The "low to high" model, type G7/LH is of special advantage in instances where it is required to use a very long microphone lead. It permits the use of a low impedance microphone in conjunction with high impedance input equipment, without the instability and treble loss which occurs if the high impedance leads are extended.

Input 15-30 ohms. Output High Impedance Type G7/LH. NOTE: High Impedance—50,000 ohms. or greater.
Price £3 5 0 (B)

WAL GAIN PRE-AMPLIFIERS & TAPE ACCESSORIES



MONO WAL GAIN

An impedance matching transistorised pre-amplifier, battery operated (3,000 hour life). Noise and distortion too low to measure, gain better than 100.

Size $3\frac{5}{8}'' \times 2\frac{1}{8}'' \times 2\frac{1}{8}''$

Price **£5 10 0 (C)**

Due to its compactness, long life and versatility, the Wal Gain can be mounted in any position, and has many applications in the Industrial, Commercial, Medical, Scientific Audio and Cine fields. In fact for any purposes where it is necessary to amplify a minute voltage into a useful output. Suitable for direct connection to tape head, or for use with low output pick-up, etc.

STEREO WAL GAIN

Transistorised, battery operated. Gives you the EXTRA GAIN you need, without hum or distortion. This version too has a number of applications: including being used to provide extra amplification for microphones, or tape heads, or as a two channel mixer with resistive network. Each channel is independent of the other for stereo operation, cross talk between channels being better than $\pm 60\text{db}$, and the Wal Gain can be used for operation on two separate mono channels. Also many Audio, Medical, Commercial, Scientific, Industrial and Cine applications.

Size $6\frac{7}{8}'' \times 2\frac{1}{8}'' \times 2\frac{1}{8}''$

Price **£7 10 0 (C)**



THE NEW HI-GAIN Pre-Amplifier

Fully transistorised, battery operated, with tape equalisation. The complete answer to monitoring, for dubbing purposes with a second deck etc. Provides sufficient equalised CCIR voltage to directly couple to a pair of head phones, or to a Hi-Fi amplifier with sensitivity of not less than 100 mV. Also you can add a second 'stereo' channel to existing mono tape equipment. Many applications.

Size $6\frac{7}{8}'' \times 2\frac{1}{8}'' \times 2\frac{1}{8}''$.

Price **£7 16 0 (C)**



THE WAL BULK TAPE ERASER

THE IDEAL ACCESSORY FOR TAPE RECORDING.

Wipes both tracks, perfectly 'clean' in under half a minute. Used in laboratories, colleges, schools, dealers' demo rooms, studios, offices, tape clubs, etc.—in fact by ANYONE who does a lot of tape recording and wishes to rapidly 'clean' up tapes ready for the next session.

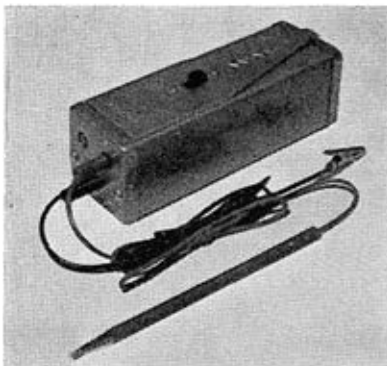
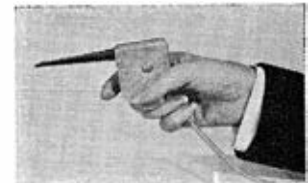
Price **£7 18 6 (C)**



THE NEW D-MAG

A Mains operated, pocket size head de-magnetiser, that provides a complete de-gaussing circuit. Especially designed for ERASING SHORT UNWANTED PASSAGES OF SOUND from tape or striped film. Demagnetising tape Deck heads, etc. A necessity for the professional and the amateur for tape and film editing.

Price **£2 10 0 (C)**



WALTRAK POCKET AUDIO OSCILLATOR

The accessory that Service Engineers, Radio and Laboratory technicians, keen enthusiasts consider a necessity in their kit. Battery operated, transistorised, supplied complete with probe, etc. for fault finding, 'dead' set checking, stereo matching, recording bias check, etc. Output 1,000 cps., sine wave. Over 2v max. Calibrated 1v., 0.1v., and 0.01v. tapings.

Price **£6 10 0 (C)**

Full technical leaflets are available on all WAL GAIN products from A. C. FARNELL LTD. on request.

STEREO DECOLA SEPARATES



Decola Speaker

DECCA

STEREO DECOLA

Unquestionably the Decca Stereo Decola is a superb piece of record reproducing equipment, incorporating components of the very highest quality, built into a beautifully-styled Regency cabinet.

These components are now available separately (though still in cabinets of matching style) and provide the first opportunity for anyone wishing to install high-fidelity equipment to obtain all components from one manufacturer, knowing that each part has been specifically designed for use in conjunction with the others. Each bank of speakers (with six HF units and one bass unit) is housed in a handsome furniture-built corner cabinet with a hand-made brass grille and the whole assembly can be accommodated neatly under domestic conditions in the tidiest possible way. A cabinet, designed to house the control unit, radio unit, amplifier and playing desk is also available.

Price £314 17 9 plus £50 10 3 P. Tax. Total £365 8 0

SPEAKERS

1 bass unit. 6 HF loudspeakers specially mounted at various angles. Crossover frequency 400 c/s. complete with built-in crossover units. Impedance 15 ohms. capable of handling 15 W. Housed in walnut cabinets with hand-made brass grilles. Specifically designed for stereo but giving a wide distribution for mono reproduction if used singly.

Price £53 11 0

AMPLIFIER UNIT

A twin AF amplifier and power unit. Power output: 12 W. per channel. Frequency response: flat from 30-25,000 c/s. Distortion: measured at 10 W. less than .1% at 1,000 c/s. less than 1.0½ at all other frequencies. Input: sensitivity 90 mV. for full output. Background:—75 dB. referred to 12 W. Output impedance: 15 ohms. Power supply: input A.C. 100-110-200-250 in 10 v. steps. 40-60 c/s. 200 W. consumption including control unit, radio and gramophone motor. Valves: four EL34s, two ECC83s, two EF86s. one GZ34. Amplifier has bronze hammer stove enamel finish.

Price £37 16 0



Amplifier Unit

CONTROL UNIT

Frequency response: 40-25,000 c/s. built-in negative feedback rumble-filter). Input sensitivity: for 90 mV. output. Gramophone: 14 mV. Radio: 60 mV. Auxiliary: 30 mV. Bass and treble controls Bass: +15 dBs. and —9 dBs. relative to 50 c/s. Treble: +12 dBs. and —10 dBs. relative to 100,000 c/s. Valves: two 8D8s, two ECC83s. Housed in Walnut.

Price £23 2 0



Control Unit

TURNTABLE UNIT

Garrard 301 motor unit. Decca ffs pick-up with Mark I head. Decca microlift. Motor and board resiliently mounted. Housed in walnut.

Price £52 9 8 plus £8 8 4 P. Tax.
Total £60 18 0



Turntable unit

RADIO UNIT

Magic eye tuning. Fine tuner unit 86-108 megacycles. Housed in walnut.

Price £17 3 10 plus £2 15 2 P. Tax.
Total £19 19 0



Radio Unit

SUNDRY ITEMS

B.S.R.

45 r.p.m. Adaptor Spindles for Monarch changer	... ..	Price ...	17/6 plus 2/11 P. Tax.	Total 20/5 (A)
AF333 Pick-up matching transformer	... ..	Price ...	... ..	... £1 16 0 (C)
Clip-in 45 r.p.m. Adaptor for 7" records	... .. (per doz.)	Price ...	3/- plus 6d. P. Tax.	Total 3/6 (A)

REGENTONE

Replacement Jockey Pulley Assemblies for HG5W	... ..	Price ...	6/6 plus 1/1 P. Tax.	Total 7/7 (A)
Replacement Pick-up Arm Mouldings for HG5W	... ..	Price ...	6/6 plus 1/1 P. Tax.	Total 7/7 (A)

GARRARD

Plastic Centre-hole Adaptor for 45 r.p.m. records	... ..	Price ...	9d. plus 1½d. P. Tax.	Total 10½d. (A)
Centre Spindles for RC72A, RC75, RC75A, RC75M, RC80, RC80M, RC90	... ..	Price ...	7/10 plus 1/3 P. Tax.	Total 9/1 (A)
Centre Spindles for RC110-RC111, RC120-RC121	... ..	Price ...	16/6 plus 2/8 P. Tax.	Total 19/2 (A)
Centre Spindles for RC88-RC98	... ..	Price ...	8/10 plus 1/5 P. Tax.	Total 10/3 (A)
Drive Bands for RC72-RC75-RC80 and GDT3 unit	... (per pair)	Price ...	1/1 plus 2d. P. Tax.	Total 1/3 (A)
Inter wheels for RC72, RC75, RC80 and T unit	...46524B	Price ...	5/9 plus 11d. P. Tax.	Total 6/8 (A)
Inter wheels for RC90	...50873	Price ...	6/3 plus 1/- P. Tax.	Total 7/3 (A)
Inter wheels for RC110-RC111	...51325	Price ...	6/6 plus 1/1 P. Tax.	Total 7/7 (A)
Inter wheels for RC120-RC88-RC98-3 Speed	...52567	Price ...	4/11 plus 10d. P. Tax.	Total 5/9 (A)
Inter wheel for 4HF	...55568	Price ...	8/5 plus 1/4 P. Tax.	Total 9/9 (A)
Inter wheels for 301	...51858	Price ...	8/3 plus 1/4 P. Tax.	Total 9/7 (A)
Inter wheels for Type T Mk. I	...52856	Price ...	4/11 plus 10d. P. Tax.	Total 5/9 (A)
Inter wheels for Slimline and AT6	...58220	Price ...	3/6 plus 7d. P. Tax.	Total 4/1 (A)
Inter wheels for RC120 Mk. II, RC88-RC98-4SP-TA Mk. II	... ..	Price ...	9/3 plus 1/6 P. Tax.	Total 10/9 (A)
209-210, RC88 Mk. II Lab Type A	...53883	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS1 45 r.p.m. Adaptor Spindle for RC80M and RC90	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS3 45 r.p.m. Adaptor Spindle for RC88-RC98	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS2 45 r.p.m. Adaptor Spindle for RC110-RC111-RC120-RC121	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS4 45 r.p.m. Adaptor Spindle for RC120-RC121 Mk. II	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS4/W 45 r.p.m. Adaptor Spindle for 210	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS5 45 r.p.m. Adaptor spindle for Autoslim	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
LRS6 45 r.p.m. Adaptor spindle for Autoslim De-Luxe AT6	... ..	Price ...	20/3 plus 3/4 P. Tax.	Total 23/7 (A)
Stroboscopes	... ..	Price ...	9d. plus 1½d. P. Tax.	Total 10½d. (A)
Record Arm Selector Caps	Price ...	6d. plus 1d. P. Tax.	Total 7d. (A)

E.M.I.

Rubber Drive Bands	Price ...	3/- plus 6d. P. Tax.	Total 3/6 (A)
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LENCO

Spare Idler wheels	Price ...	9/9 plus 1/9 P. Tax.	Total 11/6 (C)
Spare sets, Mounting Springs, Nuts, etc.	Price ...	11/3 plus 2/- P. Tax.	Total 13/3 (C)
Spare Mains Switches	... ..	Price ...	7/6 plus 1/3 P. Tax.	Total 8/9 (A)
45 r.p.m. Clip-in adaptors (12 per card)	... ..	Price per doz.	3/6 plus 7d. P. Tax.	Total 4/1 (A)
Sets Mounting Springs (Lenco)	... ..	Price ...	11/3 plus 1/10 P. Tax.	Total 13/1 (A)