

# Catalogue of High Fidelity Equipment & Accessories

254.  
7-0

ACOUSTICAL  
ACOS  
A.D.C.  
A.K.G.  
RICHARD ALLAN  
S. G. BROWN  
B.S.R.  
CHAPMAN  
DECCA  
FANE  
GARRARD  
G.K.D.  
GOLDRING  
GOODMANS  
GRAMPIAN  
K.E.F.  
LEAK  
LENCO  
LINEAR  
LOWTHER  
METROSOUND  
ORTOFON  
PHILIPS  
QUAD  
RESLO  
ROGERS  
SHURE  
S.M.E.  
TANDBERG  
TELEFUNKEN  
THORENS  
TRUVOX  
W.B.  
'WAL'  
WHARFEDALE

A. C. FARNELL (SHEFFIELD) LTD

KENYON STREET, SHEFFIELD 1  
Telephone Sheffield 2801 (3 lines)

Ltd  
A. C. FARNELL LTD

HEAD OFFICE  
HEREFORD HOUSE, NORTH COURT,  
VICAR LANE, LEEDS

Telephone Leeds 2170 (3 lines)

In line with our usual policy ALL ITEMS  
IN THE CATALOGUE ARE CARRIED IN  
STOCK. (See list under "Specialist  
Catalogue" on opposite page)

A. C. F.



# LINEAR AMPLIFIERS

## 'CONCHORD' HIGH FIDELITY ULTRA LINEAR 30 WATT AMPLIFIER



Pre-amplifier and tone controls are incorporated. Two separately controlled high impedance inputs permit individual or simultaneous use of pick-up, microphone, radio or tape. By adjustment of the separate Bass and Treble controls tone compensation (equalization) can be obtained for standard or long playing records with any make of pick-up. Suitable for schools, clubs, theatres and large halls.

**Sensitivity**—Vol. (1) 20 m.v. for full output; Vol. (2) 200 m.v. for full output. **Input Impedance**—Both inputs 500K plus 10 p.f.d. **Frequency Response** + 1 dB. 20—20,000 c/s.

**Rumble Filter** 12 dB. per octave below 50 c/s. **Power Consumption** 110 watts. **Maximum Power Output** in excess of 33 watts. **B.V.A. Valves**—EF86 (2), ECC83 (1), EL34 (2), GZ34 (1). **Effective Output Impedance** 0.9 ohms. across 15 ohms. terminals. **Negative Feedback**—Total 23 dB. **Stability**—Entirely stable with capacity of .08 m.f.d. in parallel with Loudspeaker Load. **Harmonic Distortion** (including Pre-amplifier) 0.05% measured at 10 watts, 0.1% measured at 20 watts. **Damping Factor** 18. **Output Matchings** for 3 ohm. and 15 ohm. Speakers from High Grade Sectionalised Output Trans. **Bass Control** + 12 dB. to -12 dB. at 50 c/s. **Treble Control** + 12 dB. to -6 dB. at 12,000 c/s. **Hum Level** referred to full output and including Pre-amp. -73 dB. **Microphony** virtually eliminated due to use of Mullard EF86 valves.

**Reserve Power Supply** (for Radio Tuner) 300 v. 30 m.a. and 6.3 v. 1.5 a. at 4-pin socket.

For A.C. mains supply of 200-250 v. 50 c/s.

Size of Unit 12½" × 9" × 7½".

Stove Grey hammered finish. Matched protective Cover with carrying handles available at 27/6

Retail Price 17 Gns.

## L50 HIGH FIDELITY ULTRA LINEAR 50 WATT AMPLIFIER



Pre-amplifier and tone controls are incorporated. Two separately controlled high impedance inputs permit individual or simultaneous use of Pick-up, Microphone, Radio, or Tape. By adjustment of the separate Bass and Treble controls compensation (equalisation) can be obtained for standard or long playing records with any make of pick-up.

Suitable for schools, clubs, theatres and large halls, etc.

**Sensitivity**—Vol. (1) 25 m.v. for full output; Vol. (2) 200 m.v. for full output. **Input Impedance**—Both inputs 500K plus 10 p.f.d. **Frequency Response** ± 1 dB. 20—20,000 c/s. **Power Consumption** 130 watts. **Maximum Power Output**

in excess of 50 watts. **B.V.A. Valves**—EF86 (2), ECC83 (1), EL34 (2), GZ34 (1). **Effective Output Impedance** 0.9 ohms, across 15 ohms. terminals. **Negative Feedback**—Total 28 dB. **Stability** entirely stable with capacity of .08 m.f.d. in parallel with Loudspeaker Load. **Harmonic Distortion** (including Pre-amplifier) 0.05% measured at 10 watts, 0.2% measured at 30 watts. **Damping Factor** 18. **Output Matchings** for 3 ohm. and 15 ohm. Speakers from High Grade Sectionalised Output Trans. **Bass Control** + 12 dB. to -12 dB. at 50 c/s. **Treble Control** + 12 dB. to -6 dB. at 12,000 c/s. **Hum Level** referred to full output and including Pre-amp. -60 dB. **Microphony** virtually eliminated due to use of Low Noise EF86 or 6BR7 valves. **Reserve Power**

**Supply** (for Radio Tuner) 300 v. 30 m.a. and 6.3 v. 1.5 a. at 4-pin socket.

Size of Unit 14" × 10" × 8".

For A.C. mains supply of 200-250 v. 50 c/s.

Stoved Grey hammered finish.

Twin-handled matching protective Cover available at 32/6d.

Retail Price 22 Gns.

STOCKED & DISTRIBUTED BY **A. C. Farnell Ltd.**

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

**A. C. FARNELL (SHEFFIELD) LTD.** KENYON STREET, SHEFFIELD.

## L45A 4-5 WATT QUALITY AMPLIFIER



A highly sensitive amplifier for high quality reproduction of Gramophone Records, or for use with most microphones. Separate Bass and Treble controls allowing full tone compensation for Long Playing Records. Output is suitable for the home, small clubs, schools, hotels, etc. Suitable for use with any kind of record playing unit. Especially recommended for those fitted with the latest High Fidelity pick-up heads.

For convenience when the unit is fitted in a gram cabinet the mains switch is incorporated in one of the tone controls.

Sufficient smoothed H.T. current, and L.T. A.C. current is

available for supplying a Radio Tuner Unit (which does not have its own power supply) providing requirements do not exceed 250 v. 25 m.a. and 6.3 v. 1.5 a.

The L45 is suitable for use in the home or in small Clubs, etc., with microphone or gram. It can also be used for intercommunication or as a Baby Alarm.

**Frequency response**  $\pm 3$  dB. 50—15,000 c/s. **Hum Level** referred to maximum output and including pre-amp—68 dB. **Power Consumption** 60 watts. **Maximum Power Output** in excess of 5 watts. **Rated Power Output** 4 watts. **Treble Control** continuous variable + 8 dB. to -8 dB. at 12,000 c/s. **Bass Control** continuously variable + 8 dB. to -8 dB. at 50 c/s. **B.V.A. Valves** ECC83, EL84, EZ80. **Sensitivity** 28 millivolts for rated output. **Negative Feedback** total 16 dB. **Output Matchings** for 3 ohm. Speaker. **Reserve Power Supply** (for Radio Tuner) 250 v. 25 m.a. and 6.3 v. 1.5 a. at 4-pin socket.

For A.C. mains supply of 200-250 v. 50 c/s.

Size of Unit 7" x 7" x 5" high. Stoved Grey hammered finish. Matched protective cover available at 15/-d.

Retail Price £6 - 6 - 0

## L5/5 5+5 WATT STEREOGRAPHIC AMPLIFIER



The L5/5 is designed to provide ample high quality out-put in the home when used with stereo., pick-up and matched Loudspeakers to the same standard. It can also be used as a straight 10 watt Amplifier for large Hall, etc. Practically every make of microphone can be used when required.

The two channel input is high impedance. The sensitivity is high enough to fully load the output when the Amplifier is connected to every make of Stereo. Head at present available. Separate Bass and Treble controls allow full tone compensation for L.P. and Standard records.

Remarkably realistic reproduction can be obtained (at levels normally required in the home). Customers will find it well worth while to use good quality speakers, and cabinets (or baffles) as large as possible, having regard to space available.

Full instructions for use are given on the Guarantee card

The amplifiers use is not limited to stereophony; it can be used with normal pick-ups for standard and long-playing records of the usual monaural type; also, of course, with the turnover pick-up heads for both stereo, and monaural.

**Controls**—Volume, Treble Bass and Balance. **Sensitivity** 10 m.v. **Rated Output** 5 watts on each channel, or 10 watts if both channels are used simultaneously for monaural reproduction. **Negative Feedback** total 28 d.B. **Hum Level** -68 dB. referred to maximum output.

**Frequency Response**  $\pm 3$  dB. 50—15,000 c/s. **Balance Control**  $\pm 10$  dB. on each channel. **Treble Control** + 8 dB. to -8 dB. at 12,000 c/s continuously variable. **Bass Control** + 8 dB. -8 dB. at 50 c/s. continuously variable. **Power Consumption** 60 watts. **Output Matching** for 3 ohm. Speakers on each channel. **Valves** Mullard EZ81, ECC83, ECC83, EL84, EL84.

Size of Unit 10½" x 8" x 6".

For A.C. mains supply of 200-250 v. 50 c/s.

Stoved Grey hammered finish.

A matched protective Cover with carrying handles is available, price 27/6.

Retail Price 12½ Gns.

# A. C. FARNELL LIMITED

---

*Specialist Wholesale Distributors  
of High Fidelity Equipment*

---

**HEREFORD HOUSE, VICAR LANE  
LEEDS 2**

Telephone Leeds 35111

**and KENYON STREET, SHEFFIELD 1**

Telephone Sheffield 78901



ALL items listed in this trade catalogue are carried in stock at all times - subject only to availability from the manufacturers.

We would also point out that our range of Audio Equipment is perhaps the largest in Great Britain.

A vast range of general purpose cartridges, Styli, Microphones, Amplifiers, etc. not listed in this catalogue, are also carried in stock.

Discount Coding: A =  $33\frac{1}{3}$  %

B = 30 %

C = 25 %

**FOR FINEST DELIVERY SERVICE OF  
HIGH FIDELITY EQUIPMENT  
RING LEEDS 35111**

## 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.

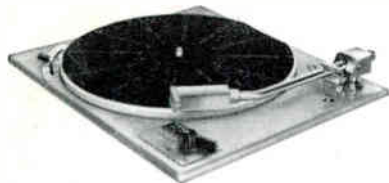
Price ... £15 7 3 plus £2 10 0 P. Tax. Total £17 17 3 (A)

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 cindered 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 ... £23 12 6 plus £3 16 10 P. Tax. Total £27 9 4 (A)

GL70P As above but mounted on wooden plinth.

Price ... £26 12 6 plus £4 6 7 P. Tax. Total £30 19 1 (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  $2\frac{1}{8}"$ .

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

Also unit only available —minus pick-up arm.

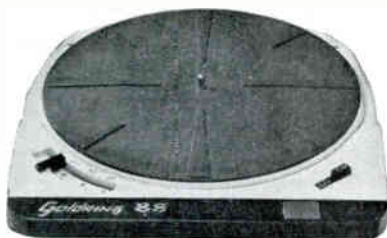
**GL58** Unit complete with pick-up arm but less cartridge.

Price ... .. £14 14 0 plus £2 7 9 P. Tax. Total £17 1 9 (A)

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

Price ... .. £17 4 0 plus £2 15 11 P. Tax. Total £19 19 11 (A)

#### GOLDRING 88



Goldring 88

The turntable of the Goldring 88 unit is die-cast from zinc and copper alloy and weighs 8 lbs. It is dynamically balanced and its lapped steel centre spindle runs in a cinkered 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 ... .. £16 5 6 plus £2 12 11 P. Tax. Total £18 18 5 (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  $2\frac{1}{8}"$ .

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

#### MODEL TD135

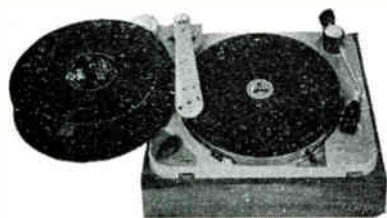


Model TD135

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 BTD125 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  $13\frac{1}{8}"$ , Depth  $3\frac{1}{8}"$ , Height  $3\frac{1}{8}"$ .

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

## TRANSCRIPTION UNIT (AUTO-CHANGE)



Model TD224

### THORENS TD224

#### Basic Performance

Speed regularity (wow and flutter content) and rumble level (horizontal and vertical) exceed NAB standards for studio equipment. 4-speed operation, through long rubber belt, low speed stepped pulley and idler wheel drive system. Patented variable speed control  $\pm 3\%$  with high precision illuminated stroboscope. Precisely machined, non-magnetic 12" turntable. Weight 7 lbs. 100-120, 125-150, 200-250 volts; 50 and 60 cycle operation. Professional type BTD-125 Tone Arm with stylus positioning slide, balancing counterweight and precision-calibrated stylus force adjustment. Low inertia and very low bearing friction. Low frequency resonance below 10 c/s. for high compliance cartridges. Plug-in shielded cable connector for a complete 5-wire system throughout. Inbuilt spirit level.

#### Automatic performance:

Plays automatically up to eight records ( $\frac{3}{4}$ " stack). Intermixes records of any diameter between 7" and 12" provided speed, groove shape and centre hole diameters are alike. Automatically shuts off when all records have been played. Records can be rejected during play. New records may be during an audition. Manual operation for playing single records with-

added and others removed from the reverse stack out automatic cycle. Records cleaned during play by means of built-in continuous record cleaning device mounted on record feed-in arm.

Dimensions with full load of 12 records: Length 26" (660 mm.), Width: 16 $\frac{1}{4}$ " (410 mm.). Depth: 3 $\frac{1}{2}$ " (90 mm.) below top of mounting board. Height: 5 $\frac{1}{2}$ " (140 mm.) above mounting board. Dimensions of unit plate: 15 $\frac{1}{4}$ " x 13 $\frac{1}{2}$ " (400 x 335 mm.) Weight unpacked; 24 $\frac{1}{2}$  lbs. (11 kg.), shipping 37 $\frac{1}{2}$  lbs. (17 kg.).

Price ... .. £67 10 0 plus £12 3 8 P. Tax. Total £79 13 8 (C)

## GRAMOPHONE UNITS (NON AUTO-CHANGE)



B.S.R. TUI2

### B.S.R.

#### B.S.R. TUI2 UNIT

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.

Complete with Pick-up 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

#### B.S.R. GU7 UNIT

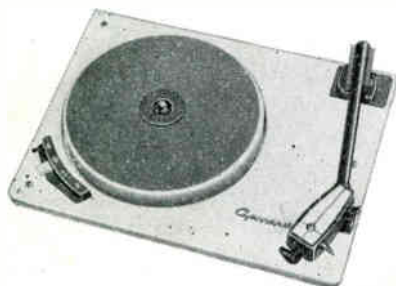
A 4-speed Gramophone unit of compact design. Plays 10", 12" or 7" records. Four speeds: 78, 45, 33 and 16 r.p.m. Available for all mains voltages—50 or 60 c/s. Available for battery operation. Built-in monaural or stereo cartridge. 45 r.p.m. adaptor and clip supplied with each unit.

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 SRP10

### GARRARD

#### GARRARD SRP10 UNIT

Model SRP10 is a new Single 4-speed Record Player.

Size: 11" wide x 8 $\frac{1}{2}$ " deep. 2" above and 1 $\frac{1}{8}$ " below top of motor board.

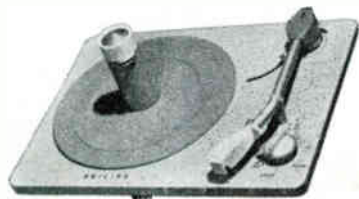
Weight: 3 lbs. 11 ozs.

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: 14½" x 12½" x 3½" above board or 5½" 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—16½" long by 14½" back to front and 6" clearance above and 2½" below top of motorboard.



Garrard Type A

#### 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 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—14½" long x 12½" wide x 4½" above and 2½" 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.

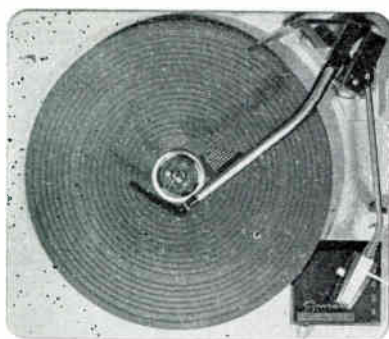
Price ... .. £7 9 0 plus £1 4 4 P. Tax. Total £8 13 4 (A)



Garrard Autoslim



## GRAMOPHONE UNITS (AUTO-CHANGE)



Garrard 3000LM

### GARRARD 3000LM

Manual or fully automatic. Plays up to eight 7", 10" or 12" records. Records of different size but of same speed may be mixed in any order: selection is automatic. Four speeds: 16 $\frac{1}{2}$ , 33 $\frac{1}{2}$ , 45 and 78 r.p.m. Fitted brush removes accumulated dust from stylus. Fine stylus-pressure adjustment. Automatically switches off after last record. Two record spindles supplied: one for automatic, the other for manual play. Optional extra: large record spindle, Type LRS6, for automatically playing 7" 45 r.p.m. records having large centre hole. Changer can be stopped and started by manual control without rejecting record being played. Supplied with dual voltage motor, range 100/130 or 200/250 volts—50 or 60 c.s., according to motor pulley fitted. Finish: unit base plate attractively finished in fine grade, durable stove enamel. All levers are cadmium-plated and passivated, which, with high degree of motor insulation, makes unit ideal for use in tropical climates. Cabinet space required: 13 $\frac{3}{4}$ " x 12 $\frac{1}{2}$ " x 4 $\frac{1}{2}$ " above by 2 $\frac{1}{8}$ " below top of motor board. Supplied complete with fitted spring suspensions and transit fixing screws, template and instruction leaflet.

Complete with 9TA/HC Cartridge

Price ... .. £9 19 6 plus £1 12 5 P. Tax. Total £11 11 11



Garrard Autoslim De-Luxe

### GARRARD AUTOSLIM DE-LUXE AT6

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 x 13 $\frac{1}{8}$ " wide x 4 $\frac{1}{8}$ " above and 2 $\frac{1}{8}$ " 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. Monarch UA14

### B.S.R.

#### B.S.R. MONARCH UA14

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 $\frac{1}{4}$ " x 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 UA15

#### B.S.R. MONARCH UA15

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-Kalee meter better than .2% r.m.s. Dimensions: Height of unit from top of motor board 4 $\frac{1}{2}$ " plus  $\frac{1}{8}$ " when control arm is fully raised. Depth below top face of motor board 2 $\frac{1}{4}$ ". Length 13 $\frac{1}{4}$ ". 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 1/2" x 6 1/2". Weight 18 1/2 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:

330 v. 4 mA.

6.3 v. 1.1 amp.

} Plus current taken by tuner units.

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.

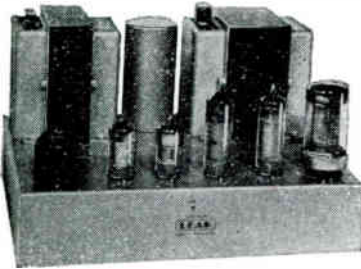
Valves: 2x EF86, 2x ECC83.

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 ( $\pm 1$  db.) at 1,000 c/s. Hum and noise 85 db.  $\pm 3$  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  $\pm 0.5$  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.

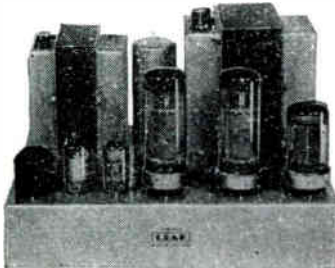
Size: 10" × 7 $\frac{3}{4}$ " × 5 $\frac{1}{2}$ " high. Weight 14 $\frac{1}{2}$  lb.

Finished in beige gold paint with visible accessories black.

Price ... .. ~~£18 18 0~~ (Free of P. Tax) (C)

20-0-0

### "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 ( $\pm 1$  db.) at 1,000 c/s. Hum and noise 86 db.,  $\pm 3$  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  $\pm 0.5$  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.

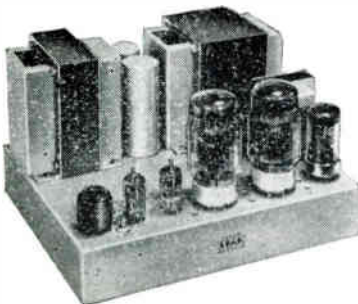
Size: 10" × 7 $\frac{3}{4}$ " × 6 $\frac{1}{4}$ " high. Weight 17 lb. 6 oz.

Finished in beige gold paint with visible accessories black.

Price ... .. ~~£25 4 0~~ (Free of P. Tax) (C)

26-0-0

### "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 ( $\pm 1$  db.) at 1,000 c/s. Hum and noise 83 db.,  $\pm 3$  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  $\pm 0.5$  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 $\frac{3}{4}$ ". Weight 28 lb. 10 oz.

Finished in beige gold paint with visible accessories black.

Price ... .. ~~£33 12 0~~ (Free of P. Tax) (C)

35-0-0

# AUDIO AMPLIFIERS

## LEAK

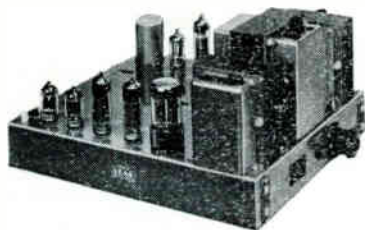
### "STEREO 20" POWER AMPLIFIER

The "Stereo 20" has a total power output of 22 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 ( $\pm 1$  db) at 1,000 c/s. Hum and noise 80 db. ( $\pm 3$  db.), below maximum output with a source impedance of 25,000 ohms. Sensitivity: An output of 120 mv. gives maximum output. Frequency response  $\pm 0.5$  db., 20 c/s. to 20 Kc/s. Input impedance 1 megohm, plus approximately 5 mmfd. Stability margins: Gain 10 db.  $\pm 3$  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 tapplings, 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:  $10\frac{1}{2}'' \times 12\frac{1}{4}'' \times 6\frac{7}{8}''$  high. Weight 22 lb. 6 oz.

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



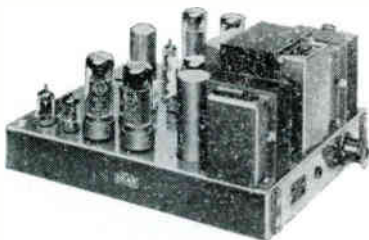
"Stereo 20"

32-08-0

### "STEREO 60" POWER AMPLIFIER

Larger and more powerful version of the "Stereo 20". Valves: 3 × ECC83, 4 × EL34, 1 × GZ34. Power output 60 watts r.m.s. maximum (30 watts per channel) or 120 watts peak (60 watts per channel). Harmonic distortion 0.1% for 25 watts r.m.s. output per channel ( $\pm 1$  db.) at 1,000 c/s. Hum and noise 80 db. ( $\pm 3$  db.), below maximum output with a source impedance of 25,000 ohms. Sensitivity: Input of 120 mv. gives maximum output. Frequency response  $\pm 0.5$  db., 20 c/s. to 20 Kc/s. Input impedance 1 megohm, plus approximately 5 mmfd. Stability margins: Gain 10 db.  $\pm 3$  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 tapplings, 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:  $10\frac{1}{2}'' \times 13\frac{1}{4}'' \times 6\frac{7}{8}''$  high. Weight 27 lb. 6 oz.

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



"Stereo 50" Power Amplifier

45-000

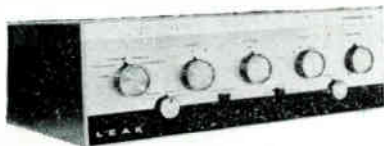
### LEAK "VARISLOPE III" PRE-AMPLIFIER MONO

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 × EF86. Five-position input selector switch. Bass control continuously variable,  $\pm 14$  db. at 50 c/s. Treble control continuously variable  $\pm 14$  db. at 20 Kc/s. Harmonic distortion less than 0.01% for 125 mv. output. Hum and noise approximately 60 db. below full power output on radio and tape positions, and 52 db. below on the other inputs.

Size, chassis:  $10\frac{1}{2}'' \times 3\frac{3}{4}'' \times 5''$  deep. Weight 5 lb. Front panel  $11\frac{1}{2}'' \times 4\frac{1}{4}''$ .

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

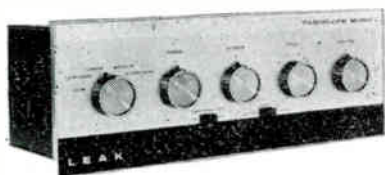


"Varislope III"

# AUDIO AMPLIFIERS

## LEAK

### LEAK VARISLOPE 2 STEREO



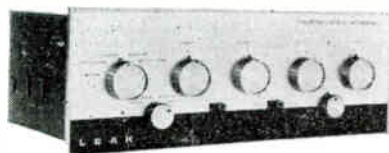
"Varislope Stereo"

Five position input selector switch allows choice of inputs from Pick-up, Tape head, Tuner, Microphone, and Tape amplifier. Bass controls, Treble control, Filter and slope controls, Volume Control with on/off switch Balance control. Tape Monitor switch. This permits instantaneous comparison between the original signal and the recorded signal (with tape recorders having a separate replay head and separate record and replay amplifiers). Total harmonic distortion less than 0.01% for 125 mV. output which will load any Leak Power Amplifiers.

Can be used in conjunction with any combination of two Leak Monaural amplifiers or Stereo 20 and Stereo 60 Power amplifiers.

Price ... .. £25 0 0 (C)

### LEAK "STEREO 30" POWER AMPLIFIER AND PRE-AMPLIFIER



"Stereo 30" Power Amplifier and Pre-Amplifier

A fully transistorized amplifier designed for operation on A.C. Mains 110—250v. Power output 10 watts per channel into a 15 Ω load 15 watts per channel into 4 Ω load. Total harmonic distortion 0.1% for 8 watts r.m.s. output per channel at 1000 c/s. into 15 Ω load ( $\pm 1$ dB.) Frequency response  $\pm 30$ -20,000 c/s. A five position input selector allows the choice of Pick-up, Tape Head, Tuner, Tape Amp., Microphone. Controls, Function control, Bass control, Treble control, Filter and slope controls, Volume controls with on/off switch. Balance control, Tape Monitor switch permits instantaneous comparison between the original signal and the recorded signal (with tape recorders having a separate replay head and separate record and replay amplifiers). Panel indicator light fitted as visual reminder that power supply is switched on when alight. A.C. supply for gram motors, etc.. (Output impedance from 4 to 15 Ω).

The unit may be used free-standing (as on a table or bookcase), or it may be cabinet mounted on a panel of any thickness through a cut-out of 12 $\frac{7}{8}$ "  $\times$  3 $\frac{3}{4}$ ".

Price ... .. £49 10 0 (C)

## ROGERS

### HG88 Mk. II INTEGRATED 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:  $\pm 1$  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 $\frac{3}{4}$ "  $\times$  10 $\frac{3}{4}$ "  $\times$  7" (Chassis) 14"  $\times$  10 $\frac{3}{4}$ "  $\times$  5 $\frac{1}{2}$ ". 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)



HG88 Mk. II Stereo Amplifier

SEE PAGE 51 FOR TRUVOX TSA100 INTEGRATED TRANSISTOR AMPLIFIER

# AUDIO AMPLIFIERS

## ROGERS

### 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  $\pm 4$  dB. Function Slide Switch. Disc Slide Switch (caters for compatible stereo pick-ups). Separate On/Off Switch. Pre-set Rumble Filter. Valves: 2 x ECC83. Dimensions: 9 $\frac{1}{4}$ " x 5 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ ". Weight: 4 $\frac{1}{2}$  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 x ECL86. Operating Voltage: 200. 230. 250 v. 50 c.p.s. Dimensions: 12" x 6" x 4 $\frac{1}{2}$ ". Weight: 10 $\frac{1}{2}$  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)

### 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 x EF86. Dimensions: 4 $\frac{1}{2}$ " x 4" x 2 $\frac{1}{8}$ ".

Price ... .. £4 15 0 (C)

### MASTER II STEREO CONTROL UNIT

Input Facilities: MIC 1 m/v. to 10 m/v. 100K Impedance, DISC 1 2 m/v. to 20 m/v. 68K 8mpedance, DISC 2 60 m/v. to 600 m/v. 2.2M impedance, TAPE 1 m/v. to 10 m/v. 68K impedance, RADIO 15 m/v. to 10J m/v. 300K impedance. Impedance of MIC and DISC 1 inputs may be altered. Provision for plug-in Microphone Transformers on MIC inputs. Sensitivity of all inputs adjustable by N.F.B. Input overload characteristics over 40 dB. Tape Panel Socket: RECORD 200 m/v., external load 100K min. REPLAY 200 m/v., impedance approximately 100K. Auxiliary Socket on Front Panel provides limited mixing facility with selected input, impedance 220K, sensitivity dependent on input selected. Frequency response  $\pm 1$  dB. 20 c/s Cross Talk better than 45 dB. 1,000 c/s better than 35 dB. 10,000 c/s. Front Panel Sockets: MIC, AUX, TAPE, REMOTE CONTROL & HEADPHONES.

Price ... .. £35 0 0 (Free of P. Tax) (C)

### 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)



Cadet Mk.II Stereo Amplifier and Control Unit



Master Stereo Control Unit

Control Facilities: 6-way Push-Button Input Selector. MIC. DISC 1. DISC 2 AUX. TAPE. TUNER. Volume Control. Ganged Close Tolerance stepped type. Matched  $\pm 1$  dB. Balance Control. Ganged. Range 9 dB. ON/OFF Toggle Switch, fitted click-suppressors. Equalisation Switch. LP RIAA/CCIR - Flat - SP RIAA/NARTB. Low Pass Filter Slope. Ganged. Matched  $\pm 1$  dB. 0-15 dB. Per Octave. Bass Control. Matched.  $\pm 1$  dB. + 15 dB. - 40 c/s. - 15 dB. - 40 c/s. Treble Control. Ganged. Matched  $\pm 1$  dB. + 15 dB. 15 - 15 Kc/s. - 20 dB. - 15 Kc/s. Function Switch. Mono A. Stereo Mono B. Disc Slide Switch - MONO/STEREO. Low-Pass Filter Slide Switch - 7 Kc/s., 10 Kc/s. Hi-Pass Filter Slide Switch - 20 c/s., 60 c/s. Phones Slide Switch: IN/OUT. Speaker Output muted in IN Position.

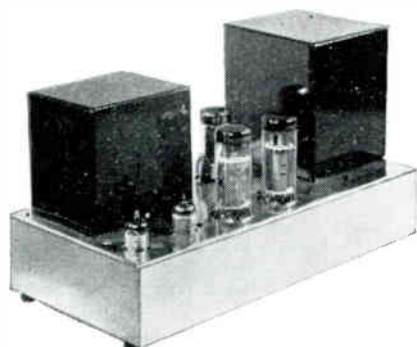
Cathode Follower Output: Adjustable 250-750 m/v., Impedance 25-50 ohms. Plug-in Power Pack: (optional extra) 100 v.-250v. operation. Dimensions: 14" x 6 $\frac{1}{2}$ " x 5 $\frac{1}{4}$ " weight 10 lbs. Styling: Front Panel: Brushed Brass/Matt Black. Control Knobs: Ivory with ground brass inserts.



Remote Balance/Volume Control Unit

# AUDIO AMPLIFIERS

## CHAPMAN

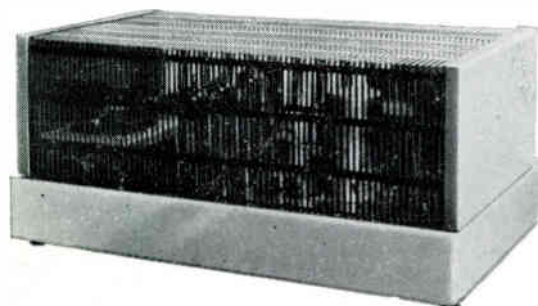


205 Amplifier

### 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. 2 A 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 ... .. £36 0 0 (C)



305 Stereo Main 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 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 0 0 (C)

### 305 Mk. II STEREO CONTROL UNIT

For use with Stereo Main Amplifier 305 or 2 x Model 205

Inputs and Input matching: Gram: 4mV. at 100K ohms. compensated for magnetic pick-ups. Auxiliary: 100mV. at 500K ohms. suitable for crystal pick-ups or connection to other programme sources, flat response. Radio: 100mV. at 250K ohms. flat response. Tape: 50mV. at 250K ohms. flat response. Tape record outlets: 75mV. average. Controls: Push button input selector, Continuous rotary controls for Bass, Treble, Balance and Volume, Function switch selecting Stereo, Stereo reverse, Mono channel A, Mono channel B and Mains Off. Filter switch. Filter: Low pass, 5 Kc/s., 10 Kc/s., 20 Kc/s. and out; approx. 12 dB. per octave. Frequency range: Within 0.2 dB. 30—20,000 c/s. without filters. Rumble Filter: Fixed roll-off below 30 c/s. Distortion Less than 0.1% total. Hum and Noise: Better than—50dB. on all channels. Consumption: Powered from main amplifier, 10 mA. at 250v., 1.5 A. at 6.3v. Valves: 2 x EF 86 and 2 x ECC83. Finish: Gold and black with ivory/gold control knobs, matching all tuners. Dimensions: 14 1/2" x 5 1/2" x 4 1/2" deep (368 x 140 x 115 mm.). Weight: 5 lbs. (2.3 kg.).

Price ... .. £23 0 0 (C)



305 Mk. II Stereo Control Unit

## AUDIO AMPLIFIERS

### CHAPMAN

#### 306 INTEGRATED STEREO AMPLIFIER



306 Integrated Stereo Amplifier

Power output: 8 watt per Channel  $\pm 0.5$  dB. 36 c/s.—20 Kc/s. including roll-off filters. Output matching: 3 and 15 ohms. Inputs and Input Matching: Gram: 4 mV. at 100K. ohms compensated for magnetic pick-ups. Aux.: 100 mV. at 500 K ohms. suitable for crystal pick-ups, flat response. Radio: 100 mV. at 250 K ohms. flat response. Tape: 40 mV. at 250 K. ohms flat response. Tape record outlets: 75 mV. average. Controls: Input selector by push buttons, Bass, Treble, Balance, Function, Volume and Filter. Tone Controls: Boost and Cut fully variable. Filter: Low pass, 5 Kc/s., 10 Kc/s., 20 Kc/s. and out, approx. 12 dB. per octave. Frequency Range:  $\pm 0.5$  dB. 36 c/s.—20 Kc/s. including filters at 1W. 25 c/s.—25 Kc/s. without filters. Distortion: Below 1% at full outpyt. Intermodulation below 1% at 1W. with mixed frequencies. Hum and Noise: Below -60 dB., gram -50 dB. Spare Power: 250v. 30 mA., 6.3v. 2.5A. Valves: 2 x EF 86, 2 x ECC 83, 4 x ECL 86, EZ81. Finish: Gold and black with ivory/gold control knobs. Matching all tuners. Dimensions:  $14\frac{1}{2}$ " x  $5\frac{1}{2}$ " x  $9\frac{1}{2}$ " deep. (368 x 140 x 242 mm.). Weight: 21 lbs. (9.53 kg.).

Price ... .. £40 0 0 (C)

## TUNER UNITS AND RECEIVERS

### CHAPMAN

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



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

Sensitivity: Better than 5 micro volts for 20 dB. quieting. Output Level: Almost constant at 100 mV. for 74 Kc/s. deviation. Output matching: Suitable for connection to inputs of 30K ohms. or greater. Mains Voltage: 100—125 and 200—250 volts A.C. 50/60 c/s. Consumption: 3 Watts approx. Controls: Tuning and on/off function. Connections: Two-core mains cable output socket and aerial socket. Range: 87.5—108 Mc/s. Semi-conductors: AF 102 AF 115, 2 x AF 116, 4 x OA 79, 2 x OA 81, Z10K. Finish: Sat n black with gold escutcheon and ivory/gold control knobs. Tropicalised throughout. Dimensions:  $14\frac{1}{2}$ " x  $3\frac{1}{2}$ " x  $7\frac{1}{2}$ " deep. (368 x 89 x 190 mm.). Weight: 7 lbs. (3.175 kg.).

Note. Provision has been made for a Stereo Multiplex adaptor to be internally fitted when available.

Price £21 10 0 plus £3 15 3 P. Tax. Total £25 5 3 (B)

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



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:  $5$ " x  $4\frac{1}{2}$ " x  $6\frac{1}{2}$ " 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 x ECF80, EF85, EB91, EF80.

Price £15 10 0 plus £2 18 1 P. Tax. Total £18 8 1 (B)



## TUNER UNITS AND RECEIVERS

### CHAPMAN

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

(The finest tuner in our range)



S6BS/FM Mk. II Tuner

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: 13½" × 8½" × 13½" 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 10 0 plus £10 4 6 P. Tax. Total £64 14 6 (B)

#### FM1005 AM/FM TUNER



FM1005 AM/FM Tuner

Sensitivity: FM Band: Better than 5 micro volts for 20 dB. quieting. AM Bands: Better than 10 micro volts for 20 dB. signal/noise ratio. Output Level: FM and AM 100 mV. approx. (for 75 Kc/s. deviation of 30% Modulation). Output Matching: for connection to inputs of 30K. ohms. or greater. Mains Voltage: 100—125 and 200—250 Volts A.C. 50/60 c/s. Consumption: 3 Watts approx Controls: Tuning, Volume, On/off Function, Wave range Connections: Two-core mains cable, output sockets and aerial socket. Ranges: FM 87.5—108 Mc/s., SW 18—50m., TB 50—150m., MW 185—550m., LW 800—2000m. Semi-conductors: AF 102, AF 115, 3 × AF 116, 6 × OA 79, 2 × OA 81, Z10K, AF 114, 2 × AF 115, 2 × AF 117. Finish: Semi black with gold escutcheon and ivory/gold control knobs. Tropicalised throughout. Dimensions: 14½" × 5½" × 7½" deep (368 × 140 × 190 mm.). Weight: 8 lbs. (3.63 kg.).

Note. Provision has been made for an FM Stereo Multiplex adaptor to be internally fitted when available.

Price £32 10 0 plus £6 2 0 P. Tax. Total £38 12 0 (B)

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



S6 BS Mk. II Tuner

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: 13½" × 8½" × 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 £40 10 0 plus £7 12 0 P. Tax. Total £48 2 0 (B)

## TUNER UNITS AND RECEIVERS

### QUAD

#### ACOUSTICAL "QUAD" A.M. II TUNER



"Quad" A.M. 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:  $10\frac{1}{2}'' \times 3\frac{1}{2}'' \times 6''$ . Weight 6 lb.

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

#### ACOUSTICAL "QUAD" F.M. TUNER



"Quad" F.M. Tuner

To be used with the Quad II amplifier. Tuning range: 87.5-108 mc/s. Output 100 mv. at 100 Kohms. impedance (to be terminated by 100 Kohms. 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  $\frac{3}{4}''$  perspex.

Size:  $10\frac{1}{2}'' \times 3\frac{1}{2}'' \times 6''$ . Weight 6 lb.

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

### LEAK

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



Leak Trough-Line F.M. Tuner

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 x ECF80, ECC84, ECC85, EF80, EM34, EZ80, 2 x OA79.

Front panel:  $11\frac{1}{2}'' \times 4\frac{7}{8}''$

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

21-0 - 4-14/6

£31.14.6

## TUNER UNITS AND RECEIVERS

### ROGERS

#### Mk. II VARIABLE FM RECEIVER

Frequency Coverage: 88-108 Mc/s. Sensitivity: 2.5 micro volts for 20 dB. quietening (25 Kc/s. deviation). Audio Output: 1.5v. R.M.S. for 30% modulation. A.G.C. Characteristics: Output level  $\pm 1$  dB. for inputs from 2.5 micro volts—500 M/v. Oscillator Drift: Maximum drift after 1 hour 10 Kc/s. Aerial Impedance: 75 ohm. co-axial. Operating Voltage: 200, 230, 150v. 50 c/s. and 110v. 50/60 c/s. Consumption: 40 watts. Controls: Tuning, On/Off Toggle Switch, Function: Mono 'A'/Stereo/Mono B'B', Pre-set output volume controls. Valves: ECC85, 4x6AU6, 4xOA79, ECC83, EM87. Dimensions:  $10\frac{1}{4}'' \times 7\frac{1}{2}'' \times 4\frac{1}{4}''$ . Weight: (Chassis) 7 lbs. (Case)  $10\frac{1}{2}$  lbs. Styling: Frong Panel: Brushed Brass. Knobs: Ivory with ground brass insert. Teak Case available as an optional extra. Design Features: Printed Circuit Coil Pack featuring exceptional frequency stability. Twin limiters ensuring optimum AM rejection. Foster-Seeley Discriminator. Accurate and sensitive bar type Tuning Indicator. Provision for addition of Stereo Multiplex Adaptor. Dual cathode follower outputs.

In Teak Case

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

Chassis Only (Self Powered)

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



Mk. II Variable FM Receiver

*MR HALL*



Mk. II Switched FM Receiver

#### Mk. II SWITCHED FM RECEIVER

Frequency Coverage: 89-96 Mc/s. Sensitivity: 10 micro volts for 20 dB. quietening (25 Kc/s. deviation). Audio Output: .25v. R.M.S. (average). Aerial Impedance: 70-90 ohms. Controls: Rotary On/Off Switch. 3-position Station Selector. Valves: ECC84, 3x ECF80, 2x OA79. Overall Dimensions:  $6\frac{1}{4}''$  wide  $\times 10''$  deep  $\times 4\frac{1}{4}''$  high. Styling: Front Panel: brushed brass with black sub-panel. Control Knobs—ivory with ground brass inserts. Operating voltage: 110, 205, 225, 245v. 50/60 c/s. Design Features: AFC Cascode RF Stage. Foster-Seeley Discriminator. Cathode Follower Output. Provision for addition of Stereo Multiplex Adaptor. Completely self-powered.

Chassis Only

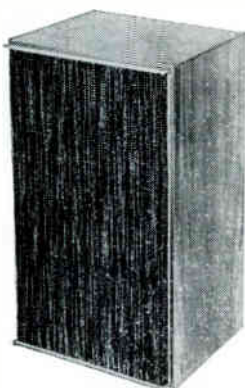
Price ... £15 16 0 plus £2 14 0 P. Tax. Total £18 10 0 (B)

## LOUDSPEAKER SYSTEMS & ENCLOSURES



### 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.



Leak "Sandwich"

Price ... .. £39 18 0 (B)

### 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.



Quad Electrostatic

Price ... .. £52 0 0 (C)

# LOUDSPEAKER DRIVE UNITS

## WHARFEDALE



Super 3

### SUPER 3

Still one of the most efficient treble units on the world market the Super 3 is now fitted with a bakelised cone and cloth surround, and covers the range 1 to 20 Kc/s. with remarkable smoothness. Impedance 2/3 ohms. or 10/15 ohms. Flux density 14,500 oersteds. 1" dia. centre pole. Aluminium voice coil. Max. input 6 watts R.M.S. or 12 watts peak. Frequency range 1,000-20,000 c/s.

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

### PST/4

Cloth surround and polystyrene diaphragm. Impedance 10/15 ohms. only. Flux density 11,500 oersteds. 3/4" dia. centre pole. Aluminium voice coil. Max. input 5 watts R.M.S. or 10 watts peak. Frequency range 300-15,000 c/s.

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



PST/4

### 8" BRONZE/RS/DD

When mounted in a 1 cu. ft. enclosure with slotted back (or tuned with 9" x 1" vent), this unit performs well in the bass and gives good "top" and justifies connection to a good FM set or average tape recorder. The HF output can easily be augmented by adding a PST/4. Impedance 10/15 ohms. only. Frequency range 50-20,000 c/s. Roll surround and double diaphragm.

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



8" Bronze/RS/DD

### SUPER 8/RS/DD

There is a saying that handsome is as handsome does, but there is no gain-saying that this speaker scores on both counts. The output is well maintained up to 20 Kc/s., and we have shown on page 3 that it will give some undistorted output in a small enclosure even as low as 30 c/s., although we only claim reasonable coverage down to 40 c/s. Impedance 10/15 ohms. only. 1" dia. centre pole. Ceramic magnet. Flux density 14,500 oersteds. Max input 6 watts R.M.S. or 12 watts peak. Frequency range 40-20,000 c/s. Aluminium voice coil. Roll surround and double diaphragm.

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



Super 8/RS/DD

### 10" BRONZE /RS/DD

Impedance 10/15 ohms. only. 1" dia. centre pole. Flux density 10,500 oersteds. Max. input 6 watts R.M.S. or 12 watts peak. Frequency range 35-10,000 c/s. Roll surround and double diaphragm.

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



10" Bronze/RS/DD

### GOLDEN 10/RS/DD

Introduced about 25 years ago, the Wharfedale Golden has always enjoyed a high reputation. The RS/DD treatment brings the speaker up to date and improves the response at both ends of the scale. Impedance 10/15 ohms. only. 1" dia. centre pole. Flux density 14,500 oersteds. Max. input 8 watts R.M.S. or 16 watts peak. Frequency range 30-20,000 c/s. Aluminium voice coil. Roll surround and double diaphragm.

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



Golden 10/RS/DD

10 15  
3 4 2  
-----  
13 19 2

85 6

22  
13 19 0  
-----  
8 11  
17 2 1  
4 5 6  
-----  
12 16 6

# LOUDSPEAKER DRIVE UNITS

## WHARFEDALE

### SUPER 10/RS/DD



Super 10/RS/DD

This model was demonstrated at the 1962 Audio Fair fitted in a 2 cu. ft. enclosure tuned with 12" x 3/4" slot, and created a most favourable impression. Although the frequency range is similar to the Golden, the higher flux density of the Super 10 (formerly W10) magnet gives higher sensitivity and rather better HF and transient performance. Impedance 10/15 ohms. only. 1" dia. centre pole. Flux density 16,000 oersteds. Max. input 10 watts R.M.S. or 20 watts peak. Frequency range 30-20,000 c/s. Aluminium voice coil. Roll surround and double diaphragm.

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

### W12/RS/PST

For clean bass down to 25 c/s. in large enclosures, or 30 c/s. in quite small ones, the W12/RS/PST is hard to beat. The polystyrene diaphragm although shown white here, is actually sprayed black so it does not show through the mesh. Impedance 12/15 ohms. only. 1 1/2" dia. centre pole. Ceramic magnet. Flux density 14,000 oersteds. Max. input 15 watts R.M.S. or 30 watts peak. Frequency range 25-4,000 c/s. Roll surround and polystyrene diaphragm.

Price ... .. £10 15 0 (No P. Tax) (B)



W12/RS/PST

### RS12/DD

Fitted with roll surround and 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. The centre diaphragm is a one-piece moulding, including dome, similar to the type used so successfully in the Super 3. Impedance 12/15 ohms. only. Flux density 14,000 oersteds. 1 1/2" dia. centre pole. Aluminium voice coil. Max. input 15 watts R.M.S. or 30 watts peak. Frequency range 25-17,000 c/s.

Price ... .. £11 10 0 (No P. Tax) (B)



RS12/DD

### SUPER 12/RS/DD

This fine loudspeaker employs the same double diaphragm assembly as the RS12/DD but with a more powerful Alcomax III magnet giving improved sensitivity, damping and power handling capacity. Impedance 12/15 ohms. only. Flux density 17,000 oersteds. 1 1/2" dia. centre pole. Aluminium voice coil. Max. input 20 watts R.M.S. or 40 watts peak. Frequency range 25-20,000 c/s.

N.B.—The LF performance of these 12" RS/DD units is on a par with the waveforms shown for the RS/PST type. The response above 12 Kc/s. has been improved since these models were introduced.

Price ... .. £17 10 0 (No P. Tax) (B)

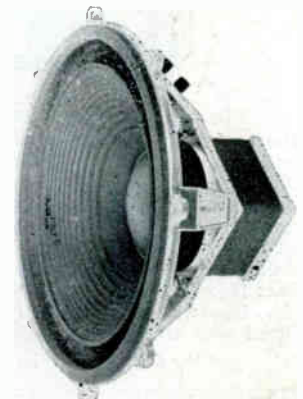


Super 12/RS/DD

### W15/RS

Converted to the RS type in June 1961, this magnificent bass unit has a smooth response up to 2,000 c/s. and goes down to 25 c/s. in suitable enclosures as small as 4 cu. ft. in volume. It is used in the Airedale cabinet model, which has achieved world fame for its magnificent bass. Impedance 12/15 ohms. only. Flux density 13,500 oersteds. 2" dia. centre pole. Max. input 20 watts R.M.S. or 40 watts peak. Frequency range 25-1,500 c/s. Roll surround.

Price ... .. £17 10 0 (No P. Tax) (B)



W15/RS

# LOUDSPEAKER SYSTEMS & ENCLOSURES

## WHARFEDALE SPEAKER SYSTEMS

### STANDARD FINISHES

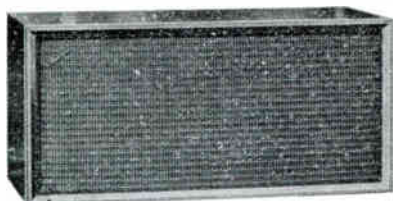
All Wharfedale cabinet models are now available in the following finishes:—

Polished walnut or mahogany veneer. Oiled teak veneer.

Polished oak veneer (light, medium or dark) available to special order.

Also unpolished at lower cost.

Tropical versions can be supplied at extra cost.



**PST/8 (Cabinet Only)**

This small enclosure is constructed with expanded polystyrene panels giving reduction of cabinet resonance. (Patent No. 890886).

Fitted with a good 8" unit, the PST/8 provides high quality performance at an economical price. It is suitable for mono or stereo use, and may be stood on a table or on the floor.

Many hundreds have been sold for use with tape recorders and the model is strongly recommended for this purpose.

For optimum results, the new Super 8/RS/DD is recommended, but any type of CS, FS or RS 8" speaker can be used in this cabinet.

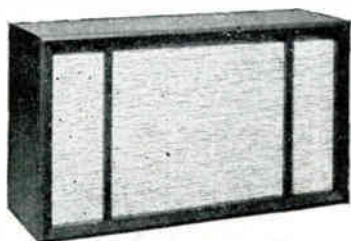
Size: 24" x 12" x 12". Weight 17 lbs. cabinet only.

Also available unpolished or whitewood at a lower cost.

Price (Polished) ... .. £10 10 0 (B)

Price (Unpolished) ... .. £9 10 0 (B)

Price (Whitewood) ... .. £7 10 0 (B)



**BOOKSHELF 2**

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.

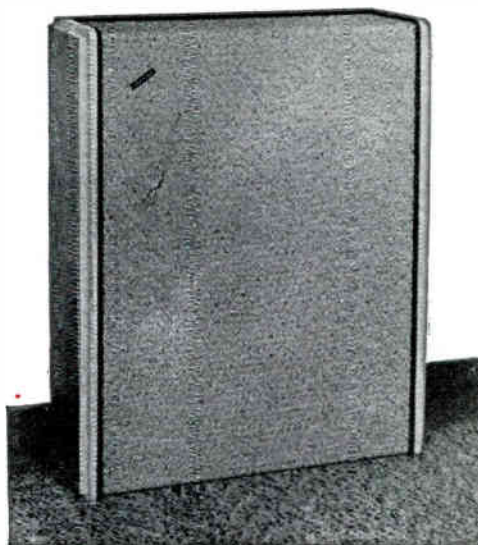
Units Specially designed 10" and 5" speakers.

Size: 19" x 11" x 6½". Weight: 18 lbs. Impedance: 8-16 ohms. Max. input: 10 watts R.M.S. Frequency range: 50-16,000 c/s. Fitted with treble control.

Price (Polished or Oiled) ... .. £16 10 0 (B)

Price (Unpolished) ... .. £15 15 0 (B)

(All Bookshelf 2 cabinets fully tropicalised)



**SLIMLINE 2**

The Slimline 2 requires a minimum of room space and is suitable for floor, wall or table mounting. It has, in fact, been described as Wharfedale's answer to the housewife's prayer, being attractive to the eye as well as to the ear.

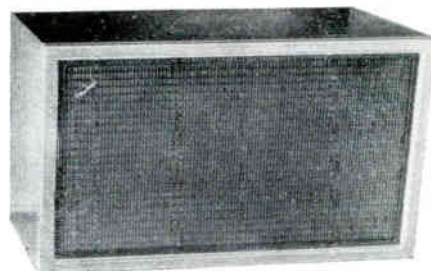
Units: PST12/RS and PST/4, both fitted with polystyrene diaphragms to reduce resonance effects.

Crossover frequency: 1,000 c/s. Size: 25" x 20" x 7". Weight: 32 lbs. Impedance: 10/15 ohms. Max. input 15 watts R.M.S. Frequency range: 35-15,000 c/s.

Price (Polished or Oiled) ... .. £22 10 0 (B)

Price (Unpolished) ... .. £22 0 0 (B)

Tropical £1 10 0 extra.



**W2**

This compact two-speaker system gives a remarkable wide-range performance for its size, with pure, full-bodied bass reproduction. It is extremely versatile, being equally suitable as a floor standing model and for shelf or table mounting. The cabinet is fully finished on all four sides, and can therefore be used either horizontally or vertically.

Units: WLS/12 and Super 5. Crossover frequency: 1,000 c/s.

Size: 23½" x 14" x 12". Weight: 37 lbs. complete. Impedance: 12/15 ohms. only. Power handling capacity: 15 watts max. Frequency range: 30-17,000 c/s. Fitted with treble control in back panel.

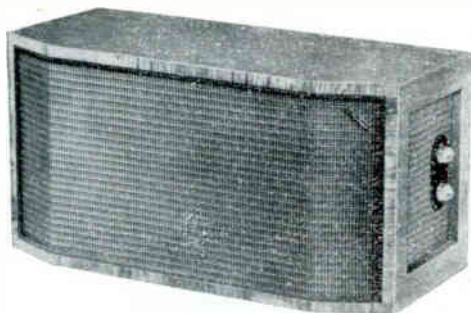
Price (Polished or Oiled) ... .. £29 10 0 (B)

Price (Unpolished) ... .. £28 10 0 (B)

Tropical £1 15 0 extra.

# LOUDSPEAKER SYSTEMS & ENCLOSURES

## WHARFEDALE SPEAKER SYSTEMS



W3

W3

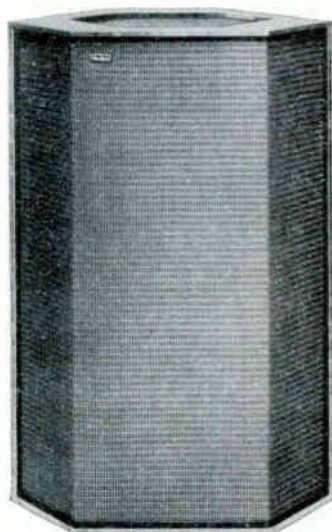
Slightly larger and heavier than the W2, this three-speaker system is equally versatile and has a better extreme top response. A special feature is the open mounting of the treble units which are isolated from the main enclosure. This arrangement gives a free, open quality to the reproduction, with good diffusion of middle and top registers. The rear panel is fitted with two ceramic tiles to subdue resonance.

Units: WLS/12, 5" W3 and Super 3. Crossover frequencies: 1,000 c/s. and 5,000 c/s. Size: 28" x 14" x 12". Weight: 48 lbs. complete. Impedance: 12/15 ohms. only. Power handling capacity: 15 watts max. Frequency range: 30-20,000 c/s. Two controls for middle and treble are provided at one end of the cabinet.

Price (Polished or Oiled) ... .. £39 10 0 (B)

Price (Unpolished) ... .. £38 10 0 (B)

Tropical £2 0 0 extra.



W4

W4

The W4 is a four-speaker system designed for use on mono or stereo. The middle and treble units are arranged for omni directional radiation, giving the effect of a broad sound source for which Wharfedale speakers have long been noted. This model is suitable for use along with our large corner speaker system on stereo.

The bass enclosure is loaded by a slotted acoustic filter in the rear panel. This gives smooth resonance-free bass down to 25 c/s.

Although primarily a corner design, the W4 can be used along a wall if required; it is in fact virtually a stand-anywhere model.

Units: WLS/12, two Special 5" units and Super 3. Details of the special 12" and 5" units are given on page 00. Fitted with quarter-section three-way network, with cross-over frequencies at 400 c/s. and 5,000 c/s. Size: 35" x 24" x 12". Weight: 65 lbs. complete. Impedance: 12/15 ohms. Power handling capacity 15 watts maximum. Frequency range: 25-20,000 c/s. Separate controls for middle and treble are located in the rear panel.

Price (Polished or Oiled) ... .. £49 10 0 (B)

Price (Unpolished) ... .. £48 10 0 (B)

Tropical £2 10 0 extra.

## AIREDALE

For many years the Wharfedale omni-directional three-speaker Corner system has been recognised as a superbly natural reproducer.

The AIREDALE is the latest version of this famous speaker presented for the first time in a one-piece free-standing assembly suitable for corner or along the wall location, and ideally suited to work with the original corner model on stereo, especially where the second corner is not available, or is too far away.

The smooth, clean bass is characteristic of the high flux 15" unit which is now fitted with roll surround.

The 8" mid-range and 3" treble units face upwards for omni-directional treble, and are arranged in a manner which imparts a natural airiness to the reproduction.

Cabinet resonance is avoided by sand-filling the front panel and fitting ceramic tiles to rear side panels.

Units: W15RS fitted with heavy cone and impregnated cloth roll surround for minimum distortion.

SUPER 8/CS

SUPER 3

Half-section three-way separator unit with cross-over frequencies at 400 c/s. and 5,000 c/s. Size: 39" x 28½" x 14". Weight: 91 lbs. complete. Impedance: 12/15 ohms. only. Frequency range: 20/20,000 c/s. Max. input: 20 watts. Individual controls for middle and treble response are located in the rear panel.

Price (Polished or Oiled) ... .. £65 0 0 (B)

Price (Unpolished) ... .. £64 0 0 (B)

Tropical £2 15 0 extra.



Airedale



## LOUDSPEAKER SYSTEMS & ENCLOSURES

### WHAREDALE SPEAKERS FOR ELECTRIC GUITARS

After months of tests with various guitar groups, we have produced a 12" and 15" speaker robustly constructed to stand up to long periods of guitar input and specially designed to give good tonal quality in cabinets of portable size and weight.

The W12/EG is a wide-response unit fitted with double diaphragm and intended for use with LEAD GUITARS. The W15/EG is the 15" unit, fitted with heavy cone, giving full output down to the E-string of BASS GUITARS at 41 c/s.

**Guarantee.** With guitar input it is always necessary to make judicious use of the amplifier volume control to avoid excessive and distorted output which can overload practically any loudspeaker. Although these models have been specially designed for guitar use, the maker's guarantee does NOT cover physical damage due to overloading.

**Cabinets.** The models EG12 and EG15 can be supplied separately, or fitted with the appropriate unit, plus its list price. Constructional details are given on a separate leaflet, with a larger 15" enclosure which can be made and used where extra bass is preferred to mobility.



W12/EG

#### W12/EG

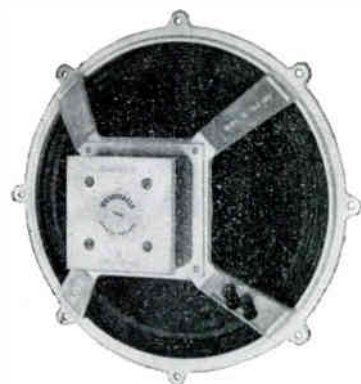
12/15 ohms. Weight 12 lbs.

Price ... .. £10 10 0 (B)

#### W15/EG

12/15 ohms. Weight 13½ lbs.

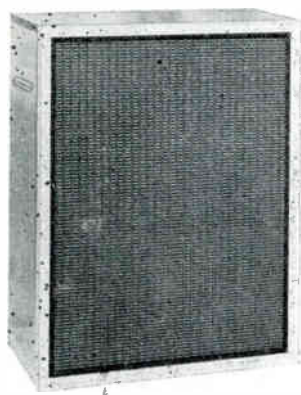
Price ... .. £17 10 0 (B)



W15/EG

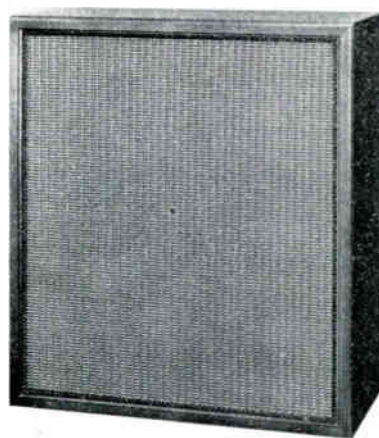
#### SPECIFICATION

	W12/EG	W15/EG
Flux density, oersteds ... ..	14,000	13,500
Total flux, maxwells ... ..	156,000	180,000
Maximum input R.M.S. ... ..	15 watts	20 watts
Maximum input peak ... ..	30 watts	40 watts
Frequency range ... ..	40-17,000 c/s.	35-5,000 c/s.



Available in the following finishes:

- Whitewood
- Sprayed Grey
- Oiled teak veneer



**EG12** Cabinet 20¼" × 16" × 8½". Weight with 12" unit: 29 lbs.

Price (Oiled Teak) ... ..	£11 0 0 (B)
Price (Sprayed Grey) ... ..	£10 0 0 (B)
Price (Whitewood) ... ..	£8 15 0 (B)
Extra for Tropical ply ... ..	£1 10 0 (B)

**EG15** Cabinet 24" × 21" × 11¼". Weight with 15" unit: 52½ lbs.

Price (Oiled Teak) ... ..	£15 10 0 (B)
Price (Sprayed Grey) ... ..	£14 0 0 (B)
Price (Whitewood) ... ..	£12 10 0 (B)
Extra for tropical ply ... ..	£2 10 0 (B)

# LOUDSPEAKER DRIVE UNITS

## WHARFEDALE

### CROSSOVER UNITS

The use of reversible electrolytic capacitors and ferrite-cored coils, with a consequent reduction in size has enabled us to re-design the Wharfedale crossover units to make them much more compact and lighter in weight. The range has been streamlined to cater for the two basic types necessary for either a two or three-way speaker system.

#### HS/400/3



Half-section three-way separator with crossover frequencies at 400 and 3,000 c/s. Available for 7-16 ohms. only.

This separator unit gives an attenuation of about 12 dB. per octave from the main crossover frequency.

Volume controls are fitted in the middle and treble speaker circuits to assist in balancing the three units and to compensate for room acoustics.

Size: 6" x 5" x 2 1/4". Weight: 32 ozs. Maximum input: 30 watts.

The HS/400/3 can be used as a two-way half-section network by ignoring the treble terminals and putting the shorting switch to the two-way position.

Price ... .. £6 5 0 (B)

#### QS/800



Quarter-section two-way network with a crossover frequency of 800 c/s. Available for 7-16 ohms. only. This separator gives a maximum attenuation of about 6 dB. per octave.

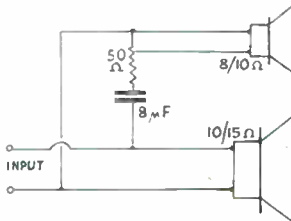
Size: 5" x 3" x 2 1/4". Weight: 15 ozs. Maximum input: 30 watts.

A tweeter can be added to the QS/800 using the circuit shown below.

All separator boxes are filled with wax to keep out damp or moisture, and the units are therefore suitable for tropical use.

Price ... .. £2 17 6 (B)

N.B.—Full details of crossover circuits and how they work are given in the books *Loudspeakers* and *More About Loudspeakers* listed on page 23.



### ADDING A TWEETER

When it is desired merely to improve the HF response, without rolling off the main speaker, this simple circuit can be used, and in fact often reduces audible mid-range coloration.

*Tweeter with volume control. If the impedance of the main loudspeaker is 2/3 ohms. the filter capacitor and VC should then be 12 Mfd. and 20 ohms. respectively.*

### WMTI MATCHING TRANSFORMER



Auto Transformer for matching 10-16 ohm. or 7-9 ohm. speakers to sets with 2-5 ohms. output or vice versa.

Frequency response within 1 dB. from 20 c/s. to 15 c/s. Power handling capacity 15 watts. Can be used to match loudspeakers of different impedances to cross-over unit in high quality two or three-speaker system.

N.B.—This is not an isolating transformer.

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

### WMT 2 ISOLATING AND MATCHING TRANSFORMER



A matching transformer similar to the WMT 1 but having separate windings with heavy insulation. This enables it to be used safely as a matching/isolating transformer for connecting an external loudspeaker to a T.V. set. In this connection it is essential to mount the WMT 2 inside the set and ensure that the leads are well soldered to the tags provided.

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

# LOUDSPEAKER DRIVE UNITS

## WHARFEDALE

### "TRUQUAL" VOLUME CONTROL

The "Truqual" volume control is designed to give constant load impedance and therefore does not cause distortion at low levels. There are six switched positions giving the following approximate steps:

Position	1	2	3	4	5	6
	Full on	-4dB.	-10dB.	-16dB.	-24dB.	Off

N.B.—In the "Off" position the supply line is open circuited to prevent break through.

The "Truqual" is available in two types:

**Type 32** for speakers 1½—5 ohms. impedance. Complete with knob and plastic recessed escutcheon. **Type 98** for speakers 6-15 ohms. impedance.

Size: 3" dia. x 2¼" deep. Mounting hole: 2⅜" dia. Weight: 4 ozs

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



### SPEAKER SWITCH

A very useful fitting for any Set operating a LOW IMPEDANCE Extension Speaker. The switch may be mounted on the side of back or the receiver, and gives the following the side or back of the receiver, and gives the following connections by turning the knob:

1. Set Speaker only.
2. Extension Speaker only.
3. Both Speakers.

Complete with knob and engraved metal escutcheon. Size: 2" x 2" x 2⅜". Weight: 3¼ ozs.

N.B.—This switch is not suitable for use in the primary circuit of an output transformer.

Price ... .. 17/6 (Free of P. Tax) (B)



### CONICAL DIFFUSERS

Provide omni-directional radiation with upward facing units. Spun from 18 swg aluminium with ⅜" dia. apical hole for easy attachment to supporting strut which may be of wood, metal or plastic.

Two sizes available for 8" and 10" speakers.

8" model. Size: 4" dia. x 2⅜" high. Weight: 1½ ozs.

Price (8" Speaker) ... .. 7/6 (Free of P. Tax) (B)

10" model. Size: 7" dia. x 4⅜" high. Weight: 6 ozs.

Price (10" Speaker) ... .. 10/6 (Free of P. Tax) (B)

### BOOKS by G. A. BRIGGS

<b>Audio and Acoustics</b> 168 pages, 140 illustrations ... ..	10/6 (11/6 post free) (B)
<b>More About Loudspeakers</b> 136 pages, 112 illustrations ... ..	8/6 (9/6 post free) (B)
<b>Cabinet Handbook</b> 112 pages, 90 illustrations ... ..	7/6 (8/6 post free) (B)
<b>Loudspeakers</b> 336 pages, 230 illustrations ... ..	25/- (26/3 post free) (B)
<b>A to Z in Audio</b> 224 pages, 160 illustrations ... ..	15/6 (16/6 post free) (B)
<b>Stereo Handbook</b> 146 pages, 88 illustrations ... ..	10/6 (11/6 post free) (B)
<b>Audio Biographies</b> 344 pages, 112 illustrations ... ..	19/6 (20/9 post free) (B)
<b>Pianos, Pianists and Sonics</b> 190 pages, 102 illustrations ... ..	10/6 (11/6 post free) (B)

### LOUDSPEAKER DATA

Model	Bass Resonance c/s.	Flux Density Oersteds	Total Flux Maxwells	Max. Input		Weight Lds.	Baffle opening In.	Chassis Dia. In.	Overall Depth In.	Fixing Holes P.D.C. In.
				R.M.S. Watts	Peak Watts					
Super 3 ... ..	Treble only	14,500	60,000	6	12	3½	3	3⅝	2½	3½
PST/4 ... ..	Treble only	11,500	28,800	5	10	1½	3⅝	4	2½	4½
8" Bronze ... ..	70/80	10,500	41,500	5	10	2½	7	8	3½	7½
8" Bronze/RS/DD ... ..	50/60	10,500	41,500	5	10	2½	7	8	3½	7½
Super 8/RS/DD ... ..	50/60	14,500	60,000	6	12	4½	7	8	3½	7½
10" Bronze/RS/DD ... ..	38/43	10,500	41,500	6	12	4½	8½	9½	4½	9½
Golden 10/RS/DD ... ..	38/43	14,500	60,000	8	16	5½	8½	9½	5½	9½
Super 10/RS/DD ... ..	38/43	16,000	85,000	10	20	10½	8½	9½	5½	9½
W12/RS/PST ... ..	26/32	14,000	156,000	15	30	12	10½	12½	5½	12½
RS/12/DD ... ..	26/32	14,000	156,000	15	30	12	10½	12½	5½	12½
Super 12/RS/DD ... ..	26/32	17,000	190,000	20	40	18½	10½	12½	7	12½
W12/EG ... ..	46/52	14,000	156,000	15	30	12	10½	12½	5½	12½
W15/RS ... ..	26/32	13,500	180,000	20	40	13½	12½	14½	7½	14½
W15/EG ... ..	36/42	13,500	180,000	20	40	13½	12½	14½	7½	14½

RS=Roll surround DD=Double diaphragm PST=Polystyrene diaphragm

## 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 KI 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 10½" x 6¼" (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 ... .. £24 19 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.

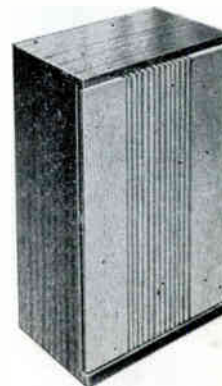
Exceptional transient response and freedom from colouration achieved by latest type B139 rectangular bass diaphragm. The T15 hemispherical tweeter reproduces frequencies above 1 Kc/s. with smoothness usually associated with ribbon and electrostatic units.

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 15½" 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 DRIVE UNITS



Trebax 5K/20XL



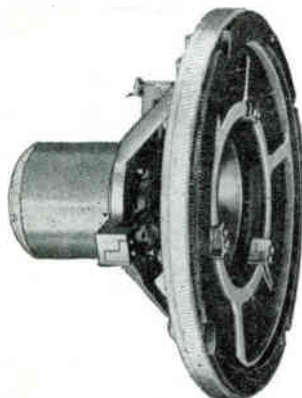
Midax 650



Axiette 8



Axiom 10



Axiom 80 9 1/2"



Trebax 100



## 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 10 2 (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 7 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 9/16" with 5/16" radii corners. Overall length 9 1/8".

Price ... .. £9 19 6 (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 3/4" (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 3/8" 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  $1\frac{1}{4}$ " 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  $11\frac{1}{2}$ " (29.8 c.m.) diameter (PCD) Overall diameter  $12\frac{3}{8}$ " (32.1 c.m.) Overall depth  $5\frac{3}{8}$ " (13.2 c.m.) A.R.U. 172 enclosure 7,800 cubic inches. volume (internal).

Price ... .. £10 17 4 (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  $1\frac{1}{2}$ " 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  $11\frac{1}{2}$ " (29.8 c.m.) diameter (PCD). Overall diameter  $12\frac{3}{8}$ " (32.1 c.m.). Overall depth  $6\frac{3}{8}$ " (15.6 c.m.) ARU 172 enclosure 7.800 cubic inches volume (internal).

Price ... .. £15 4 6 (Free of P. Tax) (A)

### TRIAxiOM 1220C 12" TRIPLE-ELEMENT HIGH FIDELITY LOUDSPEAKER

The following special features are incorporated to give a span of more than nine octaves. Plastic terminated vacuum formed 12" diaphragm. Automatic cross-over at 2,000 c/s. to high stability mid-range radiator. Pre-wired double section L-C type electrical cross-over at 5,000 c/s. to pressure driven horn loaded high frequency unit complete with its own separate magnet system. Aluminium diaphragm and extra long  $1\frac{1}{4}$ " voice coil in self-aligning assembly with air chamber and phase equaliser. Adjustable constant impedance L-pad attenuator on flying lead for high frequency level balancing. Massive diecast unitary chassis. High efficiency Feroba II magnet systems. Phased terminals for easy stereophonic connections.

#### SPECIFICATION

Frequency Range: 30-20,000 c/s. Power Handling Capacity: 20 watts (40 watts U.S.A.). Fundamental resonance: 35 c/s. Flux density (main gap): 16,500 gauss. Total Flux (main gap): 185,000 maxwells. Pole diameter (main gap):  $1\frac{1}{4}$ " (4.4 cms.) dia. (Bass and Mid-Range). Pole diameter (H.F. gap): 1" dia.—aluminium (High Frequency). Impedance: 15/16 ohms. Crossover: 5 Kc/s. L.C. network. Chassis H.F. control: 15 ohms. L-pad. Chassis: Diecast. Overall diameter:  $12\frac{3}{8}$ " (32.1 c.m.). Overall depth:  $6\frac{3}{8}$ " (15.6 cm.). A.R.U. 172 enclosure volume (internal): 7,800 cu. ins. Baffle hole diameter: 11" (28 cm.). Fixing holes 4 holes 0.312" (0.8 cm.) dia. equally spaced on,  $11\frac{1}{2}$ " (29.8 c.m.) P.C.D. Nett weight: 19 lbs. (8.621 kg.).

The TRIAXIOM 1220c. brings professional standard High Fidelity to domestic listening.

Price ... .. £18 10 0 (A)



Triaxmon 1220C

### 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  $1\frac{1}{4}$ " 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  $11\frac{1}{2}$ " (29.8 c.m.) diameter (PCD). Overall diameter  $12\frac{3}{8}$ " (32.1 c.m.) Overall depth  $5\frac{3}{8}$ " (13.2 c.m.) A.R.U. 172 enclosed volume (internal) 7,800 cubic inches.

Price ... .. £9 2 8 (Free of P. Tax) (A)



Audiom 51

# LOUDSPEAKER DRIVE UNITS

**GOODMANS**



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  $6\frac{3}{2}$ " (15.6 cm.) A.R.U. 172 enclosure volume (internal) 7,800 cubic inches.

Price ... .. £14 7 8 (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.

## 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.

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  $15\frac{1}{16}$ " (38.2 cm.) Overall depth  $6\frac{9}{32}$ " (16.0 cm.) ARU 280 enclosure volume (Internal) 9,600 cu. ins. Baffle hole diameter  $13\frac{1}{4}$ " (33.8 cm.) Fixing holes 8 slots  $\frac{5}{8}$ " x  $\frac{5}{16}$ " (0.95 cm x 0.8 cm) on  $14\frac{1}{2}$ " (36.9 cm) P.C.D. Nett weight 20 lbs. (9.075 Kg.)

Price ... .. £25 0 0 (A)

## AUDIOM 91 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 29½ lbs. Baffle Hole dia.  $16\frac{1}{4}$ ". Rating 50 Watts. Depth  $10\frac{1}{4}$ " Guitar and Public Address version also available—bass resonance 50 c/s.

Price ... .. £27 10 0 (Free of P. Tax) (A)

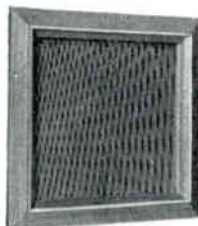
## ATTENUATOR AND CROSSOVERS



XO/5,000

	Price
Attenuator (12 db.) 8-step variable ... ..	£2 11 2
Chokes 1005 (4.5 mH), per pair ... ..	£1 17 0
Crossover Type XO/5,000 c/s. ... ..	£2 0 11
Type XO/950 ... ..	£5 10 11
Type XO/950/5000 ... ..	£7 7 6

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



172ARU

## GOODMANS' ACOUSTICAL RESISTANCE UNITS

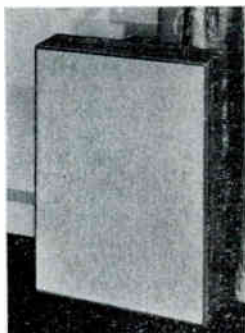
The acoustical resistance unit is a rectangular panel having specific acoustic properties, and it is fitted into an aperture cut in one wall of the enclosure. This system reduces the cone resonance both in amplitude and frequency and eliminates all serious resonances above this frequency. As a consequence,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

Cat No.	Loudspeaker Type:	Price
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 SYSTEMS & ENCLOSURES

**GOODMANS**

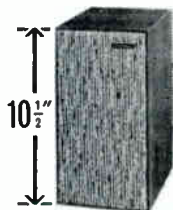


Eleganzia

### 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 $\frac{1}{4}$ " deep. Finish Satin walnut, scratch and heat resistant or Teak.

Price ... .. £27 10 0 (Free of P. Tax) (B)



Maxim

### GOODMANS MAXIM

True High Fidelity from the most compact loudspeaker system ever! To make all this come true has involved the most exhaustive investigations into diaphragm behaviour and electro-magnetic control characteristics. The end result is two tiny precision direct radiator drive units with the most unusual capabilities. Quite apart from their ability to handle power, they cover the frequency range with less deviation from level response than almost any other High Fidelity Loudspeaker.

These 'mighty midget' drivers were developed exclusively for use in an enclosure no larger than a stout book—so that in this sized housing they are giving optimum results. In fact, if they were to be housed in anything larger, performance would suffer.

It has taken a long time for even Goodmans expert and experienced Engineers to achieve results like this, so now we ask only one thing. Give it a good signal. In return it will give you a good sound—very good. No problems in finding room for it—just move a couple of books.

Externally too, the sturdy little MAXIM'S enclosure is meticulously finished, and is polished on all sides so it can be used upright or horizontally.

**Vital Statistics:** Dimensions: 10 $\frac{1}{2}$ " x 5 $\frac{1}{2}$ " x 7 $\frac{1}{4}$ ". Frequency range: A clear clean 45-20,000 c/s. Power handling: No weakling this at 8 watts.

Available in either Walnut or Teak finish to order.

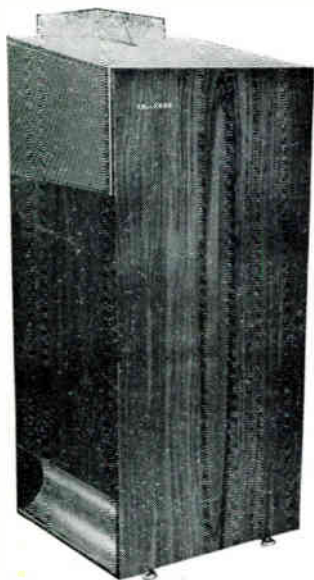
Price ... £15 0 0 plus £2 10 6 P. Tax. Total £17 10 6 (B)



# 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.

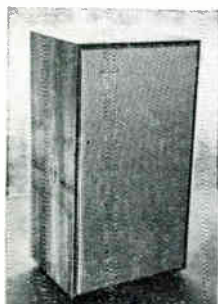
The Lowther Acousta Twin will not give the listener 'divided' music or reproduction with a hole-in-the-middle in any circumstances. The blending of sound and distribution through the four special apertures is a most important feature, providing presence, balance of sound, naturalness, and complete lack 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 ... .. £40 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 ... .. £20 0 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.

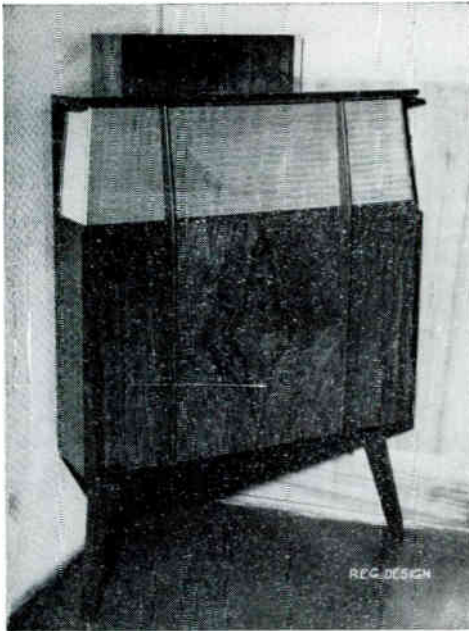
Price, Enclosure only ... .. £20 0 0 (C)

See Page 31 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 ... .. £105 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 ... .. £55 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 ... .. £12 11 2 plus £2 2 4 P. Tax. Total £14 13 6 (B)



Clumber 912C

See Page 31 for Lowther Drive Units.



# LOUDSPEAKER SYSTEMS & ENCLOSURES



"Quartet"

## FANE

### 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: 25½" x max. width 25½" x frontal width 14¼" x 8¼" deep.

Weight: 22 lbs.

Finished in figured walnut, sapele mahogany or oak.

Price ... .. £35 0 0 (Free of P. Tax) (A)

### FANE 12" HEAVY DUTY LOUDSPEAKERS MODELS 122/10 and 122/10A

	Model 122/10	Model 122/10A
Dia. of Magnet Pole ... ..	2"	2"
Flux density of Magnet, gauss ... ..	10,000	10,000
Total lines ... ..	100,000	100,000
Power Handling ... ..	20	20
Frequency Response c/s. ... ..	30—5,000	30—15,000
Input Impedance ohms. ... ..	15	15
Main Resonance c/s. ... ..	40	40
Voice Coil Winding Material ... ..	Copper	Aluminium
Cone ... ..	Single	Dual
Max. overall diameter ... ..	12½"	12½"
Height ... ..	4½"	4½"
Mounting ... ..	4 holes ½" dia. on pitch circle 11½" dia.	11"
Baffle hole dia. ... ..	11"	11"
Nett Weight Lbs. ... ..	5	5
Price (carriage paid in U.K.) ... ..	£5 5 0 (A)	£6 6 0 (A)

The Model 122/10 is normally supplied with a main resonance of 40 c/s. for use as a bass reproducer. It can be supplied, on request with a cone giving a resonance of 70 c/s. which is very suitable for the rhythm electric guitar.

The Model 122/10A is normally supplied with a main resonance of 40 c/s. for use as a full range speaker. It can also be supplied with a cone giving a resonance of 70 c/s. when it is very suitable for the lead electric guitar.

Both models are built with robust cast aluminium chassis, and can be supplied to special request with bi-filar wound voice coils giving a 4 ohm. input impedance without the usual loss in efficiency.

### FANE 15" and 18" EXTRA HEAVY-DUTY LOUDSPEAKERS MODELS 153 and 183 3" VOICE COILS—CERAMIC MAGNETS

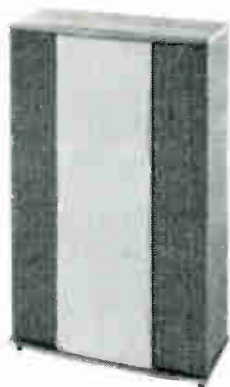
	Model 153	Model 183
Diameter of Magnet Pole ... ..	3"	3"
Flux density gauss ... ..	14,500	14,500
Total Flux maxwells ... ..	375,000	375,000
Power Handling—Watts R.M.S. ... ..	40	60
Voice Coil Winding ... ..	Copper	Copper
Cone ... ..	Single	Single
Frequency Response c/s. ... ..	30—3,500	20—3,000
Input Impedance ohms. ... ..	15	15
Main Resonance c/s. ... ..	40	30
Chassis diameter ... ..	15"	18"
Diameter over fixing lugs ... ..	15¼"	18¼"
No. of mounting holes ... ..	4	8
Diameter of mounting holes... ..	½"	⅝"
Pitch circle diameter of mounting holes ... ..	14.67"	17½"
Baffle hole diameter ... ..	13½"	16½"
Overall height ... ..	6½"	7½"
Nett Weight ... ..	20 lbs.	22 lbs.
Price (Carriage paid in U.K.) ... ..	£18 18 0 (A)	£25 4 0 (A)

These two models have very large ceramic-type magnet systems with 3" diameter pole pieces. They are built with massive cast aluminium chassis and are ideal for high power applications such as the Electric Organ, Bass Guitar, or the bass unit in a large Hi-Fi system.

The voice coils are built with a special epoxy-type resin cement which gives great strength and permits the handling of extreme load conditions.

# LOUDSPEAKER SYSTEMS & ENCLOSURES

## ROGERS



Cadet II

### CADET II HORN LOADED SPEAKER SYSTEM

Pressure horn loaded system: horn length 5', exponential flare. Bass Unit:  $8\frac{3}{4}'' \times 5\frac{1}{4}''$  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  $33\frac{3}{4}''$ . Width  $20\frac{1}{4}''$ . Depth  $8\frac{1}{4}''$ . Construction: Chipboard covered with 'VYNAIR' with contrasting centre panel; top panel Teak finish plastic laminate-scratch and stain resistant.

Price ... £20 5 0 plus £3 9 0 P. Tax. Total £23 14 0 (C)



Mini Cadet Speaker

### MINI CADET SPEAKER SYSTEM

This latest addition to the range of ROGERS Speaker Systems has been developed expressly to cater for the listener requiring an extremely compact speaker system suitable for shelf or wall mounting where space is at a premium. Despite its small size the performance is quite outstanding and belies the modest price.

Two speaker units are employed in an infinite baffle enclosure. The bass unit is a heavy duty 12" unit on a die-cast chassis; the treble unit is a high flux 3" unit. An effective damping technique is used to minimise bass resonance and distortion.

Styling follows that adopted for the CADET II Horn-Loaded Speaker System and features panels in teak finish plastic laminate and fabric in contrasting "Vynair".

Impedance: 10-16 ohms. Power Rating: 10 watts. Frequency Range: 45-18,000 c/s. Bass Unit: Heavy duty 12" die-cast chassis. Cambric treated cone suspension. Gap flux 14,000 gauss. Treble Unit: High flux 3" unit. Plastic cone suspension. Gap flux 13,000 gauss. Cross-over: 1/4 Section. Frequency 2,200 c/s. Overall Dimensions:  $13\frac{1}{2}''H \times 20''W \times 8\frac{1}{2}''D$ .

Price ... .. £21 10 0 (C)

### EIGHTY EIGHT SPEAKER SYSTEM

Provides a higher standard of performance and greater power handling capacity than either the CADET II or MINI-CADET Speaker Systems. Particularly suitable for use with the HG88 II Integrated Stereo Amplifier and similar models.

A near infinite baffle enclosure houses a heavy duty 12" Bass Unit on die-cast chassis and four special high performance  $3\frac{1}{2}''$  Tweeter Units. The radiation pattern resulting from the special method adopted for mounting the Tweeter Units ensures excellent stereo effect being obtained over a wide area. A narrow slot in the base of the enclosure results in reduced distortion and improved power output at very low frequencies.

External appearance is virtually identical to the CADET II Horn-Loaded Speaker System.

Frequency Response: 30-18,000 c/s. Power Rating: 12 watts. Bass Unit Magnet: 14,000 gauss. Treble Unit Magnet: 13,000 gauss. Cross-over Frequency: 1,200 c/s. Impedance: 15 ohms. Overall Dimensions:  $33\frac{3}{4}''H \times 20\frac{1}{4}''W \times 8\frac{1}{4}''D$ .

Price ... .. £32 10 0 (C)

# LOUDSPEAKER SYSTEMS & ENCLOSURES

## METRO-SOUND

### METRO-SOUND CLASSIC HIGH DEFINITION SPEAKER



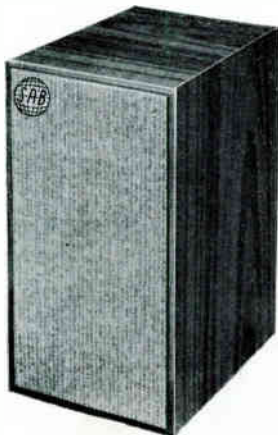
A further major advance in compact loudspeaker design. Available singly, or in matched pairs for true stereo reproduction. Attractively finished in heavy teak. The METRO-SOUND CLASSIC speaker enclosures equal in style and performance those in higher price categories.

The Metro-Sound Classic Loudspeaker has been designed and produced to match high quality amplifiers and pick-ups. This has been achieved by the use of a 12" base unit incorporating a unique base reflex system thus ensuring fuller response from the lower frequency spectrum. A 5" diameter totally enclosed treble unit brilliantly reproduces the upper registers. A crossover network at 1,000 c/s. ensures even balance throughout the complete audible range.

Dimensions: 24" high x 14" wide x 12½" deep. Frequency Range: 28-17,500 c/s. Impedance: 15 ohms. Power Handling Capacity: 15 watts. Finish: Natural Teak. Stereo: Available in special matched pairs for stereophonic use. Connections: Standard "Continental" Type Plug and Socket (Pin 1 positive—Pin 3 negative).

Price ... .. £32 0 0 (B)

### MODEL Mini B



SAB Mini B

#### Technical Details

Impedance: 15-16 ohms. (3-4 ohms. for Tape Recorders, etc.)

Power Handling Capacity: 6 watts.

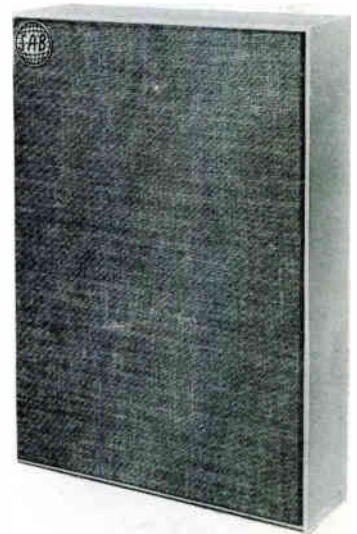
Frequency Response: 45-16,000 c/s.

Dimensions: 5¾" wide x 10" high x 7" deep.

Cabinet: Teak

Price £10 0 0 plus £1 13 6 P. Tax.  
Total £11 13 6 (B)

### MODEL B7



SAB 7

#### Technical Details

Impedance: 15-16 ohms. (3-4 ohms. for Tape Records, etc.)

Power Handling Capacity: 6 watts.

Frequency Response: 45-16,000 c/s.

Dimensions: 11¾" wide x 16½" high x 3½" deep.

Cabinet: Teak or Cellulose Grey

Price £10 10 0 plus £1 15 5 P. Tax.  
Total £12 5 5 (B)

# Richard Allan

## RICHARD ALLAN HIGH FIDELITY ENCLOSURES AND SYSTEMS

The SC12 is a three-way speaker system in which the bass frequencies are handled by the CG 12 Super, mid frequencies by the 812F and upper frequencies by the 410 T tweeter. The mid range unit is housed in a separate sealed enclosure within the main cabinet and the tweeter has a sealed housing, eliminating acoustical interaction between the units. The tweeter can be either upward or forward facing.

Impedance 15 ohm. Response: 40-17,000 c/s./Max. Power input 15 watts R.M.S. Overall size:  $29\frac{3}{4}'' \times 19\frac{1}{2}'' \times 7\frac{3}{4}''$ .

Price Complete ... .. £32 0 0 (Free of P. Tax) (B)

The SC 10 is a two-way speaker system using the CG10 as bass and mid-range, 410T as tweeter. Impedance 15 ohms. Response: 50-17,000 c/s. Max. Power input 10 watts R.M.S. Overall size:  $24'' \times 15'' \times 7\frac{3}{4}''$ .

	List Price	P. Tax	
SC10 Cabinet ... ..	£10 12 6	—	(B)
CG10 Unit ... ..	£6 0 0	19 3	(A)
410T Tweeter ... ..	£1 5 0	4 0	(A)
CN104 Crossover ... ..	£2 5 0	—	(A)

£20 2 6    £1 3 3

Total £21 5 9

The SC 8 is a two-way speaker system CG 8 as bass and mid-range, 410T as tweeter. Impedance 15 ohms. Max. Power input 8 watts R.M.S. Overall size  $19'' \times 12'' \times 6\frac{3}{4}''$ .

SC8 Cabinet ... ..	£7 15 0	—	(B)
CG8 Unit ... ..	£4 10 0	14 5	(A)
410T Tweeter ... ..	£1 5 0	4 0	(A)

£13 10 0    18 5

Total £14 8 5

### CROSSOVER CN 104

This is a constant resistance network designed to give a crossover frequency of 5,000 c/s. with sufficient attenuation on either side of this frequency to give the best results.

Price ... .. £2 2 0 (Free of P. Tax) (A)

### 4" TWEETER

This Tweeter gives a smooth response from 1,500 c/s. to 17,000 c/s. Because larger type speakers such as an 8" are better fitted to handle the frequency range 1,500 to 5,000 c/s. it is recommended that this unit be used from 5,000 c/s. It will be found to provide an excellent top response and the response curve of the Triple and Twin assemblies show the characteristics of the Tweeter from 5 to 17 Kc/s.

#### SPECIFICATION TYPE 410T

Natural Resonance: 1,100 c/s. Response: 1,500—17,000 c/s. Power Rating (British): 3 Watts R.M.S. (American): 6 Watts Peak. Flux Density 10,000 gauss. Total Flux: 15,000 Maxwells. Magnet Weight: 2.0 ozs. Magnet Type: Alcomax III. Centre Pole:  $\frac{9}{16}''$  (1.43 cm.). Impedance at 5 Kc/s.: 6 or 15 ohms. Hole Fixing: 4 Slots  $\frac{3}{8}'' \times \frac{3}{16}''$  on  $4\frac{3}{32}''$  p.c.d. Nett Weight: 12 ozs. (340 Grammes).

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



CN 104



4" Tweeter

# LOUDSPEAKER DRIVE UNITS

## RICHARD ALLAN

### TYPE CG8



CG8

Size Nominal: 8" (20.3 cm.). Natural Resonance: 55 c/s. Response: Bass Unit 50 to 10,000 c/s. Wide Range with Tweeter Inner: 50 to 17,000 c/s. (CG8T). Power Rating: (British) 6 watts R.M.S. (American) 12 watts Peak. Flux Density: 14,000 gauss. Total Flux: 56,000 Maxwells. Magnet Type: Feroba II. Centre Pole: 1" (2.54 cm.). Impedance at 400 c/s. 8 or 15 ohms. Hole Fixing:  $4 \times \frac{7}{32}$ " Diameter on  $7\frac{3}{8}$ " p.c.d. Nett Weight: 4 lbs. (1.8 Kilo). Max. overall Depth:  $3\frac{3}{8}$ " (9.1 cm.).

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

### TYPE CB10



CB10

Size Nominal: 10" (25.4 cm.). Natural Resonance: 45 c/s. Response—Bass Unit 40-6,000 c/s. Wide Range with Tweeter Inner: 40-15,000 c/s. Power Rating: (British) 8 watts R.M.S. (American) 16 watts Peak. Flux Density: 12,000 gauss. Total Flux 73,000 Maxwells. Magnet Type: Feroba II. Centre Pole:  $1\frac{1}{2}$ " (3.8 cm.). Impedance at 400 c/s. 8 or 15 ohms. Hole Fixing:  $4 \times \frac{1}{4}$ " Diameter on  $9\frac{3}{8}$ " p.c.d. Nett Weight:  $4\frac{1}{2}$  lbs. (2.2 Kilos). Max. Overall Depth:  $3\frac{1}{2}$ " (8.8 cm.).

Price £5 5 0 plus 16/10 P. Tax. Total £6 1 10 (A)

### TYPE CG12



CG12

Size Nominal: 12" (30.5 cm.). Natural Resonance: 30 c/s. Response: Bass Unit 25-9,000 c/s. Wide Range with Tweeter Inner: 25-15,000 c/s. Power Rating: (British) 10 watts R.M.S. (American) 20 watts Peak. Flux Density 14,000 gauss. Total Flux 82,000 Maxwells. Magnet Type: Feroba II. Impedance at 400 c/s. 8 or 15 ohms. Hole Fixing:  $4 \times \frac{1}{4}$ " Holes equally spaced on  $11\frac{3}{8}$ ". Nett Weight:  $7\frac{1}{2}$  lbs. (3.4 Kilos). Max. overall Depth  $4\frac{1}{2}$ " (12 cm.).

Price ... .. £9 0 0 (Free of P. Tax) (A)

### TYPE CG15



Size Normal: 15" (38.1 cm.). Natural Resonance: 25 c/s. Response: 20-5,000 c/s. Power Rating (British): 20 watts R.M.S. (American) 40 watts Peak. Flux Density: 17,000 gauss. Total Flux: 220,000 Maxwells. Magnet Type: Feroba II. Centre Pole: 2" (5.3 cm.). Impedance at 400 c/s. 15 ohms. Hole Fixing:  $4 \times \frac{1}{4}$ " holes on a  $14\frac{1}{8}$ " p.c.d. Nett Weight: 16 lbs. (7.3 Kilos). Max. Overall Depth:  $6\frac{1}{2}$ " (15.8 cm.).

Price ... .. £16 5 0 (Free of P. Tax) (A)

### THE NEW 812/F

Response: 25-17,000 c/s. Crossover Frequencies: 1,100 c/s. and 5,000 c/s. Impedance at 400 c/s. 15 ohms. Middle Unit 12,000 gauss. 48,000 Maxwells,

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



CG15



812/F



# LOUDSPEAKER DRIVE UNITS

## W.B.



T359



T10



HF816



HF1012

### \$510 TWEETER UNIT

Recommended for use with Stentoreo loudspeaker system.

Price ... .. £1 13 2 plus 5/7 P. Tax. Total £1 18 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 7 7 plus 4/8 P. Tax. Total £1 12 3 (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 12 9 (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 2 2 plus 7/1 P. Tax. Total £2 9 3 (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 8 9 plus 8/3 P. Tax. Total £2 17 0 (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 5 6 plus 11/- P. Tax. Total £3 16 6 (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 7 10 plus 18/2 P. Tax. Total £6 6 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 18 9 plus 13/3 P. Tax. Total £4 12 0 (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 ... .. £6 5 10 plus £1 1 2 P. Tax. Total £7 7 0 (B)

Price HF1016 New Type £8 1 4 plus £1 7 2 P. Tax. Total £9 8 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 ... .. £16 10 9 (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 15 9 (Free of P. Tax) (B)

### CROSSOVER NETWORKS

Type CX3000 For use with Models T10 and T12, 3,000 c/s. £1 13 3 (Free of P. Tax) (B)

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

Type CX500 For use with 3-speaker systems, 500 c/s. £1 8 9 (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 3 3 (Free of P. Tax) (B)

## 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 19½" x Depth 18".

Price in Mahogany £12 17 6 (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.

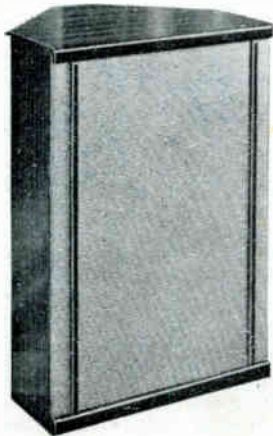
Size: Height 31" x Width 19½" x Depth 17".

Price in Mahogany £11 17 6 (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 ... .. £14 5 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 22½" x 18½".

Price ... .. £11 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 9½".

Price in Mahogany ... .. £10 5 0 (C)

Price in Walnut ... .. £10 10 0 (C)



## HI-FI EQUIPMENT ENCLOSURES



### 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.

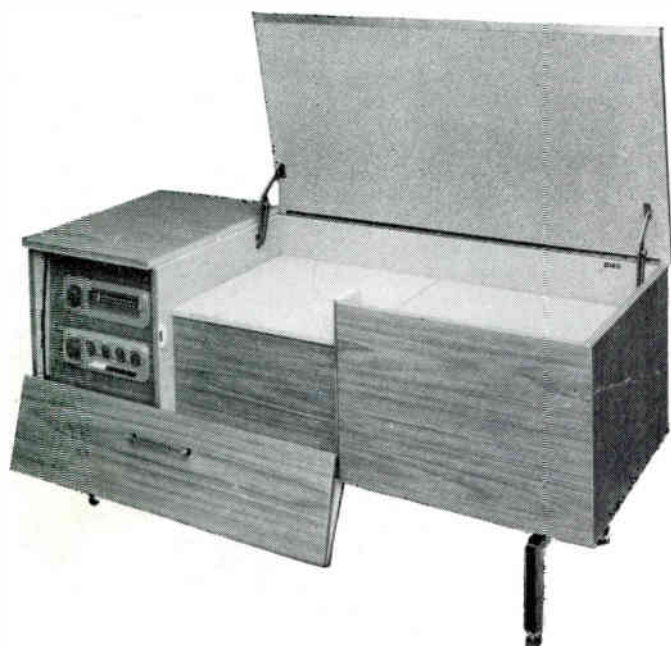
Available in a choice of Sapele Mahogany, Dark Australian Walnut and Teak finishes. Handle and exterior trim in satin anodized aluminium. The strongly constructed but unobtrusive legs are finished in Matt, Black and fitted with height adjusters.

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

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

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



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

## HI-FI EQUIPMENT ENCLOSURES

### "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 x 20" deep x 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"



The Chiltern

### 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)

### 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 $\frac{3}{4}$ " x Depth 18"

Price in Mahogany £15 0 0 (Free of P. Tax) (C)

Price Walnut (C16A) 10/- extra.



Equipment Console C16

## PICK-UPS & CARTRIDGES



Decca Mk. I Super

### DECCA MK. I SUPER PICK-UP ARM

This arm supercedes original Mk. I arm and is specially designed for a playing weight of 2 grams. for Mk. III head. Like the Mk. I this is damped with viscous fluid.

Price ... £6 15 9 plus £1 1 9 P. Tax. Total £7 17 6

Mk. I arm suitable for Mk. I and Mk. II heads and 78 r.p.m. and L.P. mono heads. Tracking weight 3½ grams.

Price ... £4 10 6 plus 14/6 P. Tax. Total £5 5 0

### DECCA RESTYLED PROFESSIONAL ARM

The Restyled Professional Arm, when used in conjunction with the ffs Mk. III head, creates a combination unrivalled throughout the world for quality of sound reproduction.

This unique arm possesses many outstanding features. They are both coarse and fine counterweight adjustments for achieving perfect dynamic balance. An additional sliding weight in conjunction with an accurately calibrated scale allows for adjustment of stylus pressure to suit all the heads in the ffs range. A lowering device is incorporated, and a degree of bias compensation is another feature of the design. The pick-up leads are brought out to a 4-pin socket at the base of the pillar. This allows for ease of installation and overcomes the danger of added torsional forces caused by twisted pick-up leads.

This completely supercedes original Professional Arm at no difference in price.

Price less Mk. III Head £15 16 8 plus £2 10 10 P. Tax. Total £18 7 6

Price complete with Mk. III Stereo Head (note saving of 3 gns.)  
£28 19 1 plus £4 12 11 P. Tax. Total £33 12 0



Decca Professional

### DECCA ffs STEREO HEAD Mk. I

Designed for use with Decca arm but can also be used with appropriate adaptor on S.M.E. precision arms. Separate heads of identical fitting are available for Standard and L.P. microgroove records and these are detailed below.

STEREO ffs HEAD. Output 1.4 mV./cm./sec. Impedance 3,000 Ω  
Frequency response 50-15,000 c/s. ± 1dB. Playing weight 3.5 grams.  
Cross talk 20 dB. at 1 K/s. Diamond stylus 0.0005" Coding D.

Price ... .. £11 15 3 Plus £1 17 9 P. Tax. Total £13 13 0

MICROGROOVE ffs HEAD Diamond tip radius .001" Coding X.  
Price ... .. £8 11 11 Plus £1 7 7 P. Tax. Total £9 19 6

78 r.p.m. ffs Head Diamond tip radius .0028" Coding Y.  
Price ... .. £8 11 11 plus £1 7 7 P. Tax. Total £9 19 6



Decca ffs Stereo Head Mk. I

### DECCA ffs STEREO HEAD Mk. II

Identical as regards fitting and connections as MKI head.  
Output 1.2 mV./cm./sec. Impedance 3,000 Ω. Frequency response 40-16,000 c/s. Cross talk better than -20 dB. at 1,000 c/s. Diamond stylus 0.0005". Coding M.

Recommended playing weight 3.5 grams.

Price ... .. £13 2 5 plus £2 2 1 P. Tax. Total £15 4 6



Decca ffs Stereo Head Mk. II

### DECCA ffs Mk. III STEREO HEAD

A magnetic Stereo Head which can be used with Mk. I Super ffs Arm, Professional Arm, and Professional (Restyled) Arm. Or with D3 SME adaptor with SME Arms. Incorporates elliptical diamond stylus. Output 1.2 mV./cm./sec. Suitable for amplifiers with sensitivity of 5 mV. Load 50K Ω Tracking weight 2 grams. Frequency response 20-16,000 c/s.

Price ... .. £15 16 8 plus £2 10 10 P. Tax. Total £18 7 6



Decca ffs Stereo Head Mk. III

### DECCA ffs ELLIPTICAL DIAMOND MONO L.P. HEAD

A magnetic mono L.P. Head fitted with elliptical diamond stylus. Suitable for use with pick-up arms as detailed for Mk. III Stereo Head. Output 1 mV./cm./sec. suitable for amplifiers with a sensitivity of 5 mV. Load 50K. Tracking weight 2 grams. Frequency response 20-16,000 c/s.

Price ... .. £11 6 3 plus £1 16 3 P. Tax. Total £13 2 6

## PICK-UPS & CARTRIDGES

MR HAZEL



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, manufacture 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 ... .. £9 11 11 plus £1 7 7 P. Tax. Total £10 19 6

Transcription Arm only.

Price ... .. £4 10 6 plus 14/6 P. Tax. Total £5 5 0



Decca Anti-Rumble Pick-up

### DECCA 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 L.P.'s., E.P.'s. and 45 r.p.m. singles. The arm will also accept the mono L.P. and 78 r.p.m. Deram heads. Playing weight is factory pre-set at 3.5 grams, 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

### DECCA DERAM CERAMIC CARTRIDGE

This ceramic cartridge is manufactured in a variety of types to cater for both Mono and Stereo requirements. Output 50mV./cm./sec. (per channel). Frequency response  $\pm 3$  dB. 40 c/s.-12 Kc/s. Tracking weight 3-5 grams. (Changer type) 2-4 grams. (Transcription type).

Stereo Transcription Cartridge White outer shell—red pocket.

Price ... .. £4 1 4 plus 13/2 P. Tax. Total £4 14 6

Stereo Changer Cartridge. Black outer shell—white pocket.

Price ... .. £3 3 4 plus 10/2 P. Tax. Total £3 13 6

Mono L.P. Transcription Cartridge. White outer shell—red pocket.

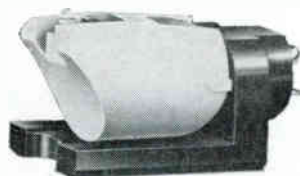
Price ... .. £4 1 4 plus 13/2 P. Tax. Total £4 14 6

Mono L.P. Changer Cartridge. Black outer shell—white pocket.

Price ... .. £3 3 4 plus 10/2 P. Tax. Total £3 13 6

Mono Std. Changer Cartridge. Black outer shell—white pocket.

Price ... .. £2 9 7 plus 7/11 P. Tax. Total £2 17 6



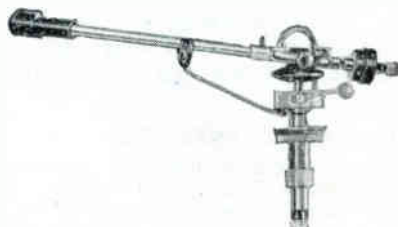
Decca Deram Ceramic Cartridge

### ACOS HI-LIGHT STEREO PICK-UP

The 'Hi-Light' Pick-up has been designed to play records at downward pressure with 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. With one head Stereo or L.P.

Price ... .. £12 16 0 plus £2 1 1 P. Tax. Total £14 17 1

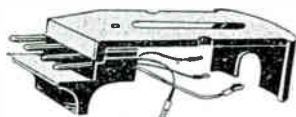


Acos Hi-Light

## PICK-UPS & CARTRIDGES



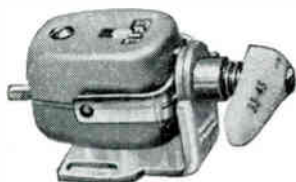
G60 Pick-up Arm



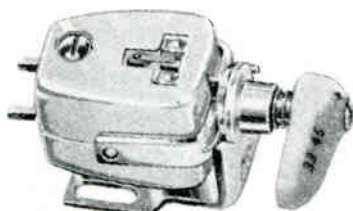
Slide-in Platform



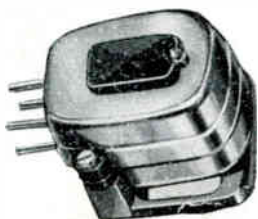
L70 Pick-up



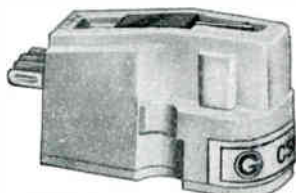
Goldring S80



Goldring 600



Goldring 700 Mk. II



CS90 Ceramic Cartridge

### GOLDRING G60 TRANSCRIPTION PICK-UP 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 cartridges 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 of 12" records.

Price ... .. £3 0 0 plus 9/9 P. Tax. Total £3 9 9

Additional slide-in platforms

Price ... .. 10/6 plus 1/8 P. Tax. Total 12/2

### GOLDRING-LENCO L70 PICK-UP

Transcription type pick-up arm of tubular metal with plug-in type head shell wired for both monaural and Stereophonic.

Suitable for use with all types of cartridges using the standard  $\frac{1}{2}$ " fixing centres. Playing weight 0-15 grams, and height can be adjusted to fit all types of installations.

Price ... .. £6 6 0 plus £2 1 0 P. Tax. Total £8 7 0

PH3 Spare Head Shells.

Price ... .. £1 10 0 plus 4/11 P. Tax. Total £1 14 11

### GOLDRING-LENCO L80 PICK-UP

As L70 but (12" Arm).

Price ... .. £8 8 0 plus £2 14 8 P. Tax. Total £11 2 8

### GOLDRING 580 VARIABLE RELUCTANCE CARTRIDGE

A high quality variable reluctance Cartridge almost approaching 600 type in performance but fitted with two sapphire styli. Complete with mu-metal screen. Can be identified from 600 cartridge by finish of mu-metal screen which is dull bronze.

Output 3-2 mV./cm./sec. Load 68K  $\Omega$ . Frequency response 20-18,000 c/s. Tracking weight 7 grams.

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

### GOLDRING VARIABLE RELUCTANCE CARTRIDGE 600

Similar to 580 Cartridge but designed specifically around a Diamond L.P. Stylus. A High Fidelity cartridge with flat frequency response from 20 to 20,000 c/s. Sapphire 78 r.p.m. and Diamond L.P. fitted as standard. Can be distinguished from S80 by its gold plated finish.

Output 3-2 mV./cm./sec. Load 68K  $\Omega$ . Frequency response 20-21,000 c/s. Tracking weight 7 grams.

Price ... .. £8 8 0 plus £1 7 4 P. Tax. Total £4 15 4

### GOLDRING 700 Mk. II STEREO CARTRIDGE

A magnetic variable reluctance type of high quality with diamond stylus for stereo records. Frequency response 40-12 Kc/s. separation 15 dB. Output 3 mV./cm./sec. Load 50K  $\Omega$ . Stylus pressure 3-4 grams.

Price ... .. £7 7 0 plus £1 3 8 P. Tax. Total £8 10 8

### CS90 STEREO CERAMIC CARTRIDGE

A Cartridge designed to give the highest possible quality at a reasonable price. Fits all arms with standard fixing centres. Playing weight  $1\frac{1}{2}$  to 3 grams. Frequency response 30-20,000 c/s. Output per channel 50 mV. at 1Kc/cm. sec. Characteristics of frequency response and separation equal to that of best magnetic cartridge.

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

## PICK-UPS & CARTRIDGES



Pickering 380A

### PICKERING-GOLDRING 380A STEREO CARTRIDGE

A high quality Magnetic Cartridge fitted with Diamond Stylus. Hermetically sealed and fully encased in mu-metal. Compatible for Stereo and Monaural records. Frequency response 20-15,000 c/s.  $\pm 2$  dB. Separation -35 dB. Output 15 mV. per channel. Stylus pressure 4-7 grams.

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



E.M.I. EPU100 Pick-up

### E.M.I. EPU100 PICK-UP

A variable reluctance pick-up of the highest quality designed to meet the exacting demands of all Hi-Fi enthusiasts. Incorporates lifting and lowering device.

Separate heads are available for Mono and Stereo.

**Stereo** Frequency response 30-20,000 c/s. Output 1.5 mV. per channel.

**Mono.** Frequency response 30-20,000 c/s. Output 1.0 mV. Tracking weight 2.5 grams. Impedance 4,000  $\Omega$ .

EPU100 PICK-UP WITH STEREO HEAD

Price £16 8 9 plus £2 16 1 P. Tax. Total £19 4 10

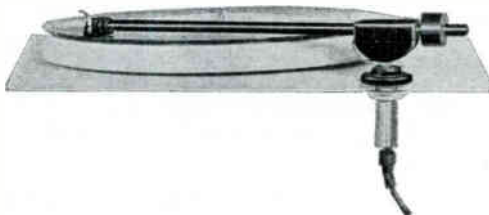
EPH/M MONO L.P. HEAD

Price £7 0 11 plus £1 4 1 P. Tax. Total £8 5 0

EPH/78 MONO STD. HEAD

Price £10 0 0 plus £1 14 2 P. Tax. Total £11 14 2

### LEAK DYNAMIC PICK-UP



Leak Dynamic Pick-up

Pick-up Arm is of advanced design having very low inertia. The arm is counter-weighted and has provision for plug in inter-changeable heads. Tracking weights 2/3 grams. L.P. 5/6 grams Standard. Automatically adjusted by the weight of the head. Frequency range. Total variation = 20,000 c/s. to 40 c/s. with L.P. head, including transformer. Output. The shielded step-up transformer delivers an output of 11mV. for each cm./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 from commercial records.

**Pick-up Arm only.**

Price ... .. £2 15 0 plus 8/9 P. Tax. Total £3 3 9

Pick-up head. Standard or L.P. fitted with Diamond Stylus.

Price ... .. £5 15 0 plus 18/3 P. Tax. Total £6 13 3

### ORTOFON SPU-G STEREO HEAD



Ortofon Stereo Moving Coil Cartridge is designed for professional use, having extremely high compliance and low inertia of the stylus armature. Cartridge fitted with Diamond Stylus. Channel separation 20-25 dB. Frequency response 20-20,000 c/s. Impedance 2  $\Omega$ . Output 0.05 mV./cm./sec. Stylus pressure 2 grams.

Ortofon cartridge also available in THORENS shell for BTD125 Pick-up arm. TD135 unit. Specify SPU/TT.

Price ... .. £18 0 0 plus £2 17 9 P. Tax. Total £20 17 9

#### TYPE SPU/GT

This Cartridge is identical to type SPU but incorporates the novel feature of an inbuilt matching transformer to suit input of all amplifiers.

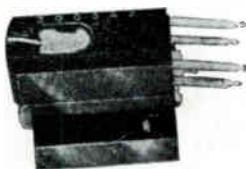
Price ... .. £20 0 0 plus £3 4 2 P. Tax. Total £23 4 2

#### TYPE SPU/GTE

As above but incorporates special elliptical diamond stylus.

Both types are available to special order fitted to S.M.E. ultra light shell.

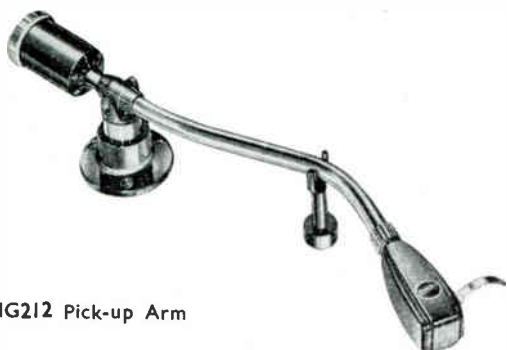
Price ... .. £25 0 0 plus £4 0 3 P. Tax. Total £29 0 3



SPU-G Stereo Head



## PICK-UPS & CARTRIDGES



SMG212 Pick-up Arm

### ORTOFON SMG212 PICK-UP ARM

Due to the special shape of the arm, turntable levelling 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

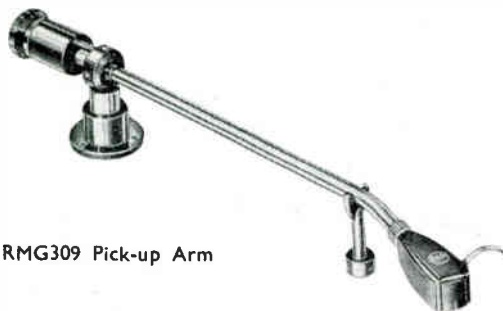


SKG212 Pick-up Arm

### ORTOFON TYPE SKG212 PICK-UP ARM

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



RMG309 Pick-up Arm

### ORTOFON TYPE RMG309 PICK-UP ARM

Distance between disc centre and arm centre: 309 mm. Statically balanced, stylus pressure adjustable by means of a spring.

Rubber damping between arm and counterweight. Height over mounting plate adjustable.

Fitted with type G pick-up head shell which will accommodate Ortofon and all other standard cartridges.

Price ... £21 0 0 plus £3 6 8 P. Tax. Total £24 6 8

### TYPE RKG 30

As above but stylus pressure adjustment by means of counterweight.

Price £17 0 0 plus £2 14 0 P. Tax. Total £19 14 0



S.M.E. Pick-up Arm

### S.M.E. PRECISION PICK-UP ARM

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 grams weight and tracking pressures from 1/4 to 5 grams, 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.

Model 3009 Series II Precision Pick-up Arm complete with L4 connecting lead but less shell.

Price ... .. £20 9 6 plus £3 8 3 P. Tax. Total £23 17 9

Model 3012 Series II Precision Pick-up Arm complete with L4 connecting lead but less shell.

Price ... .. £21 19 6 plus £3 13 3 P. Tax. Total £25 12 9

Price S3 Standard Shell ... .. 18/- plus 3/- P. Tax. Total £1 1 0

Price D3 Adaptor ... .. £1 8 0 (Free of P. Tax)

## PICK-UPS & CARTRIDGES

### SME ULTRA LIGHT HEAD SHELL

Made throughout in light alloy with nearly 120 perforations, this new ultra-light shell weighs only grams. 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

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

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



S.M.E. Ultra Light Head Shell

### 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 install—all connections can be made from top of motor board. Furnished with cable having plug on earth end to simplify installation.

Pick-up Arm

Price £12 15 0 plus £2 0 6 P. Tax. Total £14 15 6

Plug-in Head Shell

Price ... .. £1 1 3 plus 3/5 P. Tax. Total £1 4 8



Shure M232 Tone Arm

### SHURE M212 TONE ARM and STEREO CARTRIDGE

This pick-up tracks at the incredible light weight of 1½-2½ 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 c/s. Separation better than 2 dB. at 1,000 c/s. Output 4-5 mV. per channel. D.C. resistance 600 Ω. Compliance (Vert-Lateral 9 × 10<sup>-6</sup> cms./dyne.

With Stereo Head

Price £36 2 6 plus £5 15 11 P. Tax. Total £41 18 5

A Monaural L.P. Head is available for this type of arm. Type M1

Price £15 18 9 plus £2 11 2 P. Tax. Total £18 9 11



Shure M212 Tone Arm

### THORENS TRANSCRIPTION TONE ARM BTD-12S

The tone arm that perfectly matches the performance of Thorens turntables. Taking into account the exhaustive experiments made by professional users, the BTD-12S 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-12S 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-12S arm on a THORENS TD 124 turntable.

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



Thorens Transcription Arm BTD-12S

## PICK-UPS & CARTRIDGES



A.D.C. Point Four Stereo Cartridge

### A.D.C. POINT-FOUR/E

Type: Induced magnet. Stylus/Tip size: Diamond/0.8 x 0.2 mil. Recommended playing weight: 0.75-1.5 grams. Low impedance: 47K. Output voltage (cm./sec.): 1.2mV. Compliance:  $30 \times 10^{-6}$  cm./dyne. Vertical tracking angle: 15°.

Price £25 0 0 plus £4 0 2 P. Tax. Total £29 0 2

### A.D.C. 660

Type: Induced magnet. Stylus/Tip size: Diamond/0.5 mil. Recommended playing weight: 1.5-4 grams. Load impedance: 47K. Output voltage (cm./sec.): 1.5 mV. Compliance:  $20 \times 10^{-6}$  cm./dyne. Vertical tracking angle: 15°

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

### A.D.C. POINT-FOUR

Type: Induced magnet. Sensitivity: 5mV. at 5.5 cms./sec. Channel separation. 30 dB., 50 to 8,000 c/s. Frequency response: 10 to 20,000 c/s.  $\pm 2$ dB. Stylus tip radius: 0.4 mil. Vertical tracking angle: 15°. Tracking force range:  $\frac{1}{4}$  to  $1\frac{1}{2}$  grams. Compliance:  $30 \times 10^{-6}$  cms./dyne.

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

### A.D.C. 770

Type: Induced magnet. Stylus/Tip size: Diamond/0.7 mil. Recommended playing weight: 2-6 grams. Load impedance: 47K. Output voltage (cm./sec.): 2.1 mV. Compliance:  $15 \times 10^{-6}$  cm./dyne. Vertical tracking angle 15°.

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

### A.D.C. 40 TONE ARM

Specially recommended for use with A.D.C. Point-Four cartridge. Has very low moment of inertia, anti-drag lead out wires and side thrust compensator. Fitted with plug-in head shell and integrated arm rest.

Arm length:  $10\frac{3}{4}$ " overall. Pivot to stylus tip: 9". Rear overhang:  $1\frac{3}{4}$ ". Stylus overhang: 0.007". Fundamental resonance 6 c/s./sec. System tracks at  $\frac{1}{4}$  gram. (with Point-Four cartridge.)

Price £14 8 0 plus £2 6 3 P. Tax. Total £16 14 3

## PICK-UPS & UNIT ACCESSORIES



Acos Pressure Gauge

### THE 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 grams. It is of robust construction and folds up to protect the spring when not in use.

Retail Price ... .. 9/6 plus 1/7 P. Tax. Total 11/1



SPG3 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 grams., with  $\frac{1}{2}$  gramme indications. Utmost sensitivity and accuracy. Accurate through the entire scale, 0-12 grams. 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 gram. checking weight.

Retail Price ... .. 15/3 plus 2/6 P. Tax. Total 17/9



Goldring Pressure Balance

### GOLDRING STYLUS PRESSURE BALANCE

A small, simple and 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 4 to 10 grams indicates stylus pressure. An inexpensive "must" for all gramophone users.

Retail Price ... .. 3/6 plus 7d. P. Tax. Total 4/1

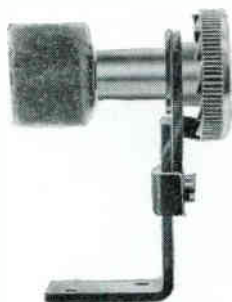
## PICK-UPS & UNIT ACCESSORIES



Lenco Stylus Pressure Balance STB2

### LENCO STYLUS PRESSURE BALANCE STB2

As illustrated. A simple but accurate balance graduated 0-5 grams.  
Retail Price ... .. 12/6 plus 2/1 P. Tax. Total 14/7



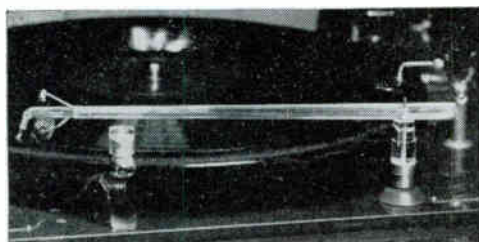
Decca Stylus Cleaner

### 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.

Retail Price ... .. 18/- plus 3/- P. Tax. Total £1 1 0



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.

Retail Price ... .. 17/6 plus 2/11 P. Tax. Total £1 0 5

#### SPARE PLUSH PADS

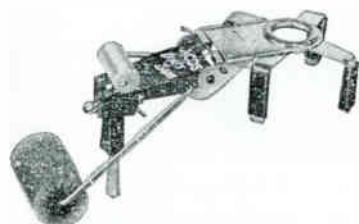
List Price ... .. 9d.

#### SPARE NYLON BRISTLES

List Price ... .. 1/-

#### SPARE BOTTLES OF CLEANING FLUID

List Price ... .. 1/6

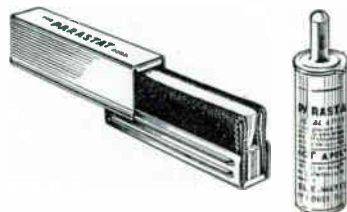


Auto Changer Dust Bug

### AUTO CHANGER "DUST BUG"

As above but specially designed for fitting to Pick-up Arms on Auto-Change units.

Retail Price ... .. 17/6 plus 2/11 P. Tax. Total £1 0 5



Parastat

### PARASTAT

The "Parastat" has a dual function of cleaner for older records, when held upright to enable the nylon bristles to penetrate the record groove, the preener, when tilted, for the maintenance of new records. Removes dust, grit and residue deep within the record groove, bringing old records to life and maintaining new records as new.

The brush is made of nylon bristles with tips less than 0.00025" radius. "Restores fidelity to older records".

Retail Price in U.K. complete with Parastatik Dispenser.

£2 5 0 plus 7/6 P. Tax. Total 2 12 6

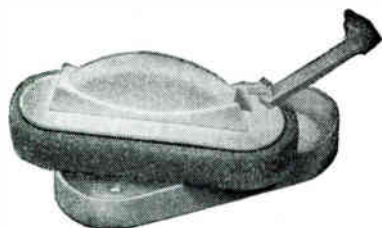
Components for replacements as follows:—

Brush ... ..	8/6 each
Plush Pad Covers ... ..	2/- each
Absorbent Pad (inside cover) ... ..	1/- each
Dispenser complete (charged 15 c.c. Parastatik Agent) ... ..	4/6 each

## PICK-UPS & UNIT ACCESSORIES



Parastatic Disc Preener



Cleaning Unit CP3

### THE MICROLIFT

This is a simple, precision-made device, indispensable to every record collector. For less than the cost of replacing one 12-inch L.P. disc, the MICROLIFT gives complete protection against the pitting and scratching of fragile microgroove records, which is bound to occur when the pick-up is raised and lowered by hand. It is easily adjustable to suit any back-pivoted pick-up and the arm of the MICROLIFT does not project over the turntable so as to hinder record handling.

Retail Price ... .. £1 5 10 plus 4/2 P. Tax. Total £1 10 0

### AURIOL PICK-UP CONTROL

AURIOL pneumatically lowers the stylus, eliminating the handshake which can ruin a record.

AURIOL is calibrated to immediately locate the very groove you want, anywhere on the record.

AURIOL makes it impossible to drop the pick-up accidentally on the record.

AURIOL positions the stylus with a featherlike touch.

AURIOL is unique. No other control has all these features.

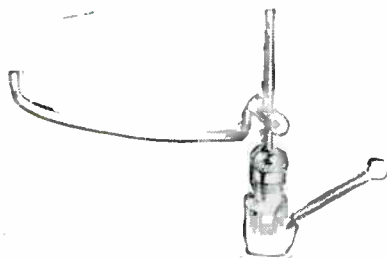
Two models of the control are available. *The Standard model* has a non-pivoting arm and is intended for single record playing equipment only the *Mk. II model* has a pivoting arm which 'clicks' into the operating position and can be moved clear of the turntable when required. This is intended for auto changer/manual equipment but may be recommended for single record equipment when cabinet conditions impede record changing.

Standard Model

Retail Price ... £3 1 3 plus 10/3 P. Tax. Total £3 11 6

Mk. II Model

Retail Price ... £3 12 0 plus 12/- P. Tax. Total £4 4 0



Ortofon Hi-Jack Pick-up Control

### PARASTATIC DISC PREENER

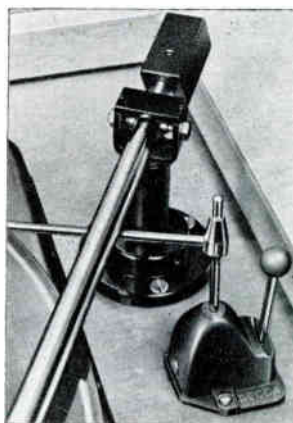
This device provides a most efficient form of maintenance for all NEW records. Capable of removing all micro particles from the groove. The use of this method will preserve the mirror-like polish of the groove, leaving no trace of film or residue to clog the stylus of ultra light pick-ups. A built-in non-ionic compound prevents static build up during use and will gradually render records less liable to static charges.

Retail Price ... .. 6/9 plus 1/2 P. Tax. Total 7/11

### RECORD CLEANING UNIT CP3

A special synthetic pad, to be moistened with water or disc cleaning solution, for gentle and safe cleaning of gramophone records and removal of static charges. The handle provides a firm grip. A small stylus brush, designed for the removal of dust and "fluff" from pick-up styli, is located in the handle. The whole unit fits into a tray which can be fixed permanently by two screws, to the motor-board.

Retail Price ... .. 4/6 plus 9d, P. Tax. Total 5/3



Microlift



Auriol Pick-up Control

### ORTOFON HI-JACK PICK-UP CONTROL

**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.

Retail Price ... .. £2 14 0 plus 8/8 P. Tax. Total £3 2 8

## TAPE RECORDERS

# Tandberg

World Famous examples of Norwegian Electronic and Mechanical Engineering products of TANDBERGS RADIOFABRIKK A/S, OSLO, pioneers in the development of high class Stereo, two and four track, tape techniques.



### MODEL 6 (2 or 4 Track) STEREO TAPE DECK

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 Systems and it is not possible to incorporate Amplifiers and Speakers, in one portable case, capable of doing justice to this exceptional Deck.

3 heads. 3 speeds. 7" reels. 4 amplifiers. 2 record level indicators. Sound on Sound. Frequency response:  $7\frac{1}{2}$  i.p.s.  $\pm 2$ dB. 40 to 16,000 cycles, Wow and flutter  $\cdot 15\%$  R.M.S. Noise level 55 dB.

Price (2 or 4 Track) ... .. 110 Gns. (C)  
Carrying case TC56 (extra) ... .. £7 1 8 (C)

### MODEL 7 (2 or 4 Track) STEREO TAPE RECORDER

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

2 heads. 2 speakers. 2 indicators. 3 speeds. 7" reels. Add-a-track. Frequency response:  $7\frac{1}{2}$  i.p.s.  $\pm 2$ dB. 40 to 16,000 cycles. Wow and flutter  $\cdot 15\%$  R.M.S. Noise level 53 dB.

Price (2 or 4 Track) ... .. 93 Gns. (C)  
Carrying case TC56 (extra) ... .. £7 1 8 (C)



### MODEL 92 (2 track) MONO TAPE RECORDER

Quality of reproduction compares favourably with the more expensive Tandberg four-track stereo instruments, and anyone with knowledge of the firm's reputation will confirm that Model 9 can be expected to be superior to other portable recorders, although Tandberg modestly refer to its heavy duty Goodmans unit as a "Monitor Speaker".

3 speeds. 4 digit counter. 7" reels. Bass switch. Pause control. Output 3 watts. Speaker 7" x 4". Frequency response:  $7\frac{1}{2}$  i.p.s.  $\pm 2$ dB. 40 to 16,000 cycles. Wow and flutter 0-15% R.M.S. Noise level 50 dB.

Price ... .. 69 Gns. (C)  
Carrying case TC92 (extra) ... .. £7 1 8 (C)



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: TANDBERG RECORDERS ARE ONLY SUPPLIED TO APPOINTED DEALERS BUT IN CERTAIN AREAS no arrangements have been concluded.**

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



## TAPE RECORDERS

### MAGNETOPHON 55

Telefunken for the first time offer a tape recorder at a price which is within the reach of everyone, yet still retains all the quality features for which their machines are renowned. The 'MAGNETOPHON 55' is based on a very well tried and proven design which ensures long trouble-free service. New design of loudspeaker and output transformer provide unsurpassed sound reproduction which together with all the other features make this the ideal choice for the newcomer to tape-recording as well as to the enthusiast. The modern slim elegant appearance well reflect the quality and capability of this latest recorder from Telefunken.

Two tape speeds:  $3\frac{1}{2}$  i.p.s. and  $1\frac{7}{8}$  i.p.s. Frequency range 40-16,000 c/s. at  $3\frac{1}{2}$  i.p.s., 40-9,000 c/s. at  $1\frac{7}{8}$  i.p.s. Playing time: 6 hours ( $5\frac{1}{2}$ " 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 ensures high performance and long life for tapes and recording head. The Telefunken ultra fine gap head provides high quality reproduction at the slow speed. Indirect flywheel drive minimises wow and flutter. Fast rewind and forward wind. Quick stop button. Record safety button. Three digit counter. Automatic tape end stop. Connections for earphones, remote stop/start control and extension speaker. Tape splicing groove. Tone control. Attractive modern style wooden case finished in two tone grey.

Mains supply: 110/127/200/220/240v. A.C. at 50 c/s. Power consumption: 40 watts. Valves: EF86, ECC83, EL95, EM84. Recording Input: 2mV. at  $2M \Omega$  (Microphone). 2mV. at  $47K \Omega$  (Radio). 160mV. at  $2M \Omega$  (Radio). Outputs: 1.5v. across  $18K \Omega$ . Earphone monitoring 2.5 watts loaded with  $4.5 \Omega$  (loudspeaker). Signal to noise ratio:  $\geq 46$  dB. Wow and Flutter:  $\geq \pm 0.2\%$  corrected value.

**Portable Model:** Width 14.5". Height (including lid) 6". Depth 13". Weight: 22 lbs.

Price ... .. £45 3 0 (B)  
(Includes  $5\frac{1}{2}$ " L.P. tape, spare spool, mike and audio lead).



### 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.,  $3\frac{1}{2}$  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  $3\frac{1}{2}$  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" x 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 x 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  $4.5 \Omega$  (Loudspeaker).

Signal to Noise Ratio:  $\geq 40$ dB. Wow and Flutter:  $\pm 0.15\%$  at  $7\frac{1}{2}$  i.p.s.  $\pm 0.2\%$  at  $3\frac{1}{2}$  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 ... .. £65 2 0 (B)  
(Includes  $5\frac{1}{2}$ " 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:  $2 \times 2$  mV. into 50 K  $\Omega$  (Radio).  $2 \times 2$  mV. into 2M  $\Omega$  (Microphone). Playback outputs: 1 volt into 18K  $\Omega$  (Radio). Earphone monitoring.  $2 \times 2.5$  watts loaded with 4.5  $\Omega$  (Loudspeakers). Signal to Noise Ratio:  $\geq 40$  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  $5\frac{1}{2}$ " L.P. tape and spare spool).

## MAGNETOPHON 98

This new STEREO model is designed for the recording enthusiasts who not only require the very high quality possible from half track recording, but also the full facilities for effects recording normally associated with four-track recorders. The Magnetophon 98, by means of the three half-track stereo heads, exceedingly high signal-to-noise ratio and wide frequency range achieves studio quality.

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 monaural and 4 hours stereo operation at  $1\frac{7}{8}$  i.p.s. on 7" D.P. tape.

Twin 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. Quick stop control. "Before" and "Off" tape monaural monitoring through earphones or loudspeaker to compare incoming and recorded signals. Facilities for echo and reverberation effects. Facilities for intertrack transcription and utilising recorder as a monaural amplifier. Two extension speaker sockets. Fast forward and rewind. Permanent magnet  $10" \times 3"$  oval loudspeaker with cut-out switch. Full stereo playback achieved by means of additional extension speaker or suitable radiogram. Mains supply: 110/127/220/240v. A.C. at 50 c/s. Power consumption: 80 watts. Valves:  $2 \times$  EF86,  $2 \times$  ECC82,  $2 \times$  EL95, EM84. Recording Inputs:  $2 \times 2$  mV. into 47K  $\Omega$  (Radio).  $2 \times 2$  mV. into 2M  $\Omega$  (Microphone). Playback outputs: 1v. into 18 K  $\Omega$  (Radio). Monaural/Stereo Earphone monitoring 2.5 watts loaded with 4.5  $\Omega$  (Loudspeaker). Signal to noise ratio:  $\geq 45$  dB. at  $1\frac{7}{8}$  i.p.s.,  $\geq 50$  dB. at  $3\frac{3}{4}$  i.p.s.,  $\geq 55$  dB. at  $7\frac{1}{2}$  i.p.s. 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.,  $\pm .3\%$  at  $1\frac{7}{8}$  i.p.s.



**Portable Model:** Width 16.2". Height 7.8". Depth 11.5". Weight: 29 lbs.

Price ... .. **£99 15 0 (B)**  
(Includes  $5\frac{1}{2}$ " L.P. tape and spare spool).

# TAPE RECORDERS

## 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  $\geq 50$ 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: 40-18,000 c/s.  $\pm 3$ dB. at  $7\frac{1}{2}$  i.p.s. 40-16,000 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  $18K \Omega$  (Radio). Earphone monitoring. Signal to Noise Ratio:  $\geq 50$ 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  $4.5 \Omega$ . Impedance of Extension Speaker Socket:  $15 \Omega$ .

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

Price ... .. £87 3 0 (B)  
(Includes 7" L.P. tape, spare spool and audio lead).



## MAGNETOPHON 300

The latest model in the Telefunken range is the high quality Battery/Mains portable recorder, the 'Magnetophon 300'. The new Telefunken patented drive mechanism provides constant speed running whatever position the recorder may be held in and even allows the recorder to be used whilst being swung from the carrying handle. A combined recording level/play-back volume control and a pause control are built into the handle so that the recorder can be easily operated with one hand leaving the other free for the microphone.

The TD7 microphone supplied with the recorder is ideally suited for general purpose and on-the-spot outdoor recordings. For the serious enthusiast a special microphone having a built-in recording level control and indicator is available as an extra. This microphone enables a continuous check on the recording level to be kept during interviews. This recorder with its high quality reproduction, battery/mains operation, long playing time, easy controls and modern styling make it equally useful for commentaries, interviews and on-the-spot recordings as well as for use as a home recorder.

Tape speed:  $3\frac{3}{4}$  i.p.s. Frequency range: 40-14,000 c/s. Playing time: 3 hours at  $3\frac{3}{4}$  i.p.s. on 5" T.P. tape.

Twin track to international standards. Maximum spool size with lid closed 5". Fast forward and rewind. Moving coil recording level indicator. Battery capacity indicator. Extension loudspeaker socket. Push button controls. Permanent magnet  $4" \times 2\frac{3}{4}"$  oval loudspeaker. Recorder can be operated either from normal domestic dry batteries, rechargeable battery or mains charger unit which can be used not only for operating the recorder but also for recharging the battery. Batteries:  $5 \times 1.5$ v. (LPU2 or equiv.). Transistors: AC150,  $6 \times$  AC122,  $3 \times$  AC117. Recording inputs: 0.15 mV. at  $2K \Omega$  (Radio). 150 mV. at  $2.2M \Omega$  (Radio). 0.15mV. at  $2K \Omega$  (Microphone). Playback outputs: 1.5v. at  $18K \Omega$  (Radio). Earphone monitoring 1 watt loaded with  $4.5 \Omega$  (loudspeaker).

**Portable Model:** Width: 10.6". Height: 3". Depth: 10.8". Weight: 7 lb.

Price (excluding batteries) ... .. £61 19 0 (B)  
(Includes 5" L.P. tape, spare spool, audio lead, TD7 mike).



# MICROPHONES & ACCESSORIES

## A K G

### D7A DYNAMIC MICROPHONE

#### TECHNICAL DATA

Frequency range: 80-11,000 c/s. Frequency response:  $\pm 4$  dB. related to published curve. Directional characteristics: omni-directional. Impedance: 200/50,000 ohms. Sensitivity, unloaded: 0.18mV./ubar ( $-75$  dB. re 1v/dyne/cm<sup>2</sup>), low impedance (200 ohms.), 2.2 mV./ $\mu$ bar ( $-53$  dB. re 1v/dyne/cm<sup>2</sup>), high impedance (50,000 ohms.). Connection: Miniature-plug 3-pole, 1-2=high imp. (50,000 ohms), 2=ground, 2-3=low imp. (200 ohms.). Dimensions: 3 $\frac{1}{8}$ "  $\times$  2 $\frac{1}{4}$ "  $\times$  1 $\frac{3}{8}$ " (82  $\times$  56  $\times$  35 mm.). Weight: 5.3 ozs. net (150 g.), shipp. wgt.: 1 lb. 7 ozs. (650g.).

Price ... .. £4 4 0 (B)



### DIIC DYNAMIC CARDIOID MICROPHONE

#### TECHNICAL DATA

Frequency range: 80-13,000 c/s. Frequency response:  $\pm 3.5$  dB. related to published curve. Directional characteristic: cardioid. Front-to-back ratio: approx. 13 db at 180° sound incidence. Impedance: low-Z 200 ohms., hi-Z 50,000 ohms. Sensitivity: (unloaded) 0.22 mV./ $\mu$ bar ( $-73$  dB. re 1v/dyne/cm<sup>2</sup>) low-Z 2.8 mV./ $\mu$ bar ( $-51$  dB. re 1v/dyne/cm<sup>2</sup>) hi-Z. Connection: miniature-plug 3-pole, 1-2=high imp. (50,000 ohms.) 2=ground, 2-3=low imp. (200 ohms.). Stand connector:  $\frac{3}{8}$ ", with folding stand. Dimensions: 3 $\frac{3}{8}$ "  $\times$  2 $\frac{7}{16}$ "  $\times$  1 $\frac{1}{4}$ " (85  $\times$  58  $\times$  31 mm.). Weight: 5.7 ozs. net (160g.) Shipp. wgt: 1. lb. 7 ozs. (670 g.).

Price ... .. £6 0 0 (B)



### DI2 DYNAMIC CARDIOID MICROPHONE

#### TECHNICAL DATA

Frequency range: 40-15,000 c/s. Frequency response:  $\pm 3$  dB. related to published curve. Directional characteristic: cardioid. Front-to-back ratio: approx. 18 dB. at 180° sound incidence. Impedance: 60 ohms. Sensitivity, unloaded: 0.16 mV./ $\mu$ bar ( $-77$  dB. re 1v/dyne/cm<sup>2</sup>). Microphone cable: approx. 16.4 ft. long (5 m.), 2-pole, shielded, without plug. Stand connector: thread adapter for  $\frac{3}{8}$ ",  $\frac{1}{2}$ ",  $\frac{5}{8}$ " —27 threads. Dimensions: 5 $\frac{3}{8}$ "  $\times$  2 $\frac{1}{4}$ "  $\times$  2 $\frac{3}{8}$ " (142  $\times$  54  $\times$  73 mm.). Weight: 1 lb. 1.5 ozs. net (650 g.). Shipping weight: 3 lbs. 4.8 ozs. (1,500 g.).

Price ... .. £28 0 0 (B)



### DI7 DYNAMIC CARDIOID MICROPHONES

#### TECHNICAL DATA

Frequency range: 50-14,000 c/s. Frequency response:  $\pm$  dB. related to published curve. Directional characteristic: cardioid. Front-to-back ratio: approx. 18 db. at 180° sound incidence. Impedance: 200 ohms. Sensitivity: 0.2 mV./ $\mu$ bar ( $-74$  dB. re 1v/dyne/cm<sup>2</sup>, unloaded. Connection: AKG-connector, type 1-2=moving coil, 3=ground Dimensions: 4 $\frac{3}{8}$ " long, 1 $\frac{3}{4}$ " diameter (106 mm. long, 43.5 mm. diameter) Weight: 10.7 ozs. net (300 g.). Shipping weight: 1 lb. 12.8 ozs. (820 g.).

Price With MSH22 Flexible Shaft ... .. £25 10 0 (B)



# MICROPHONES & ACCESSORIES

## A K G

### D19C D19E DYNAMIC CARDIOD MICROPHONES

#### TECHNICAL DATA

	D 19 C	D 19 E
Frequency range:	40-16,000 c/s.	40-16,000 c/s.
Frequency response:	±3 dB. related to published curve.	±3 dB. related to published curve.
Directional characteristic:	cardioid.	cardioid.
Front-to-back ratio at 180° sound incidence:	approx. 15 dB.	approx. 15 dB.
Bass attenuation switch:	0 to -10 dB. at 50 c/s.	0 to -10 dB. at 50 c/s.
Impedance:	200 ohms., 60 ohms. if specified.	60, 200 ohms, hi-Z (3 impedances).
Sensitivity, unloaded:	0.18 mV./μbar (-75 dB. re 1v/dyne/cm <sup>2</sup> ).	0.18 mV./μbar (for 200 ohms).
Connection:	D19C: miniature-plug, 3-pole, 1-3=moving coil, 2=ground. D19E: XLR-5 connector, 1-4=high impedance, 2-4=200 ohms., 3-4=60 ohms., 5=ground.	
Stand connector:	D19C: SA2, SA3, or SA8, stand adapter SA8 for ¼", ½", ¾" —27. D19E: only with SA2 or SA8, SA8 is supplied.	
Dimensions:	D19C: 6" long, 1 7/8" diameter (152 mm. long, 36.2 mm. diameter). D19E: 7 1/4" long, 1 7/8" diameter (180 mm. long, 36.2 mm. diameter).	
Weight:	D19C: 5.7 ozs. net (160 g.), shipping weight: 1 lb. 9.6 ozs. (730 g.). D19C comb: shipping weight: 2lbs. 10.3 ozs. (1,200 g.). D19E: 7 ozs. net (190 g.), shipping weight: 1 lb. 9.6 ozs. (730 g.). D19E comb: shipping weight: 2 lbs. 13.8 ozs. (1 300 g.).	
Connection diagram:	N.	
Price (D19C) ... ..	£17 10 0 (B)	
Price (D19E) ... ..	£21 10 0 (B)	



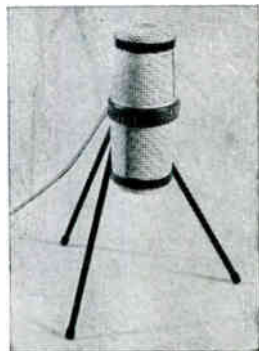
D19C D19E

### D77A DYNAMIC STEREO-MICROPHONE

#### TECHNICAL DATA

Frequency response: 80-13 000 c/s. Frequency response: ±3.5 dB. related to published curve. Directional characteristic: crossed cardioids. Front-to-back ratio: approx. 13 dB. at 180° sound incidence per channel. Impedance: 200 ohms. per system 60 ohms. if specified. Sensitivity: 0.22 mV/μbar. (-73 dB. re 1v/dyne/cm<sup>2</sup>). Connection: minia-ture-plug 5-pole on 16' 6" (5 m.) microphone cable, channel 1 (left) 1-3=moving coil 1=ground, channel 2 (right) 4-5=moving coil, 4=ground. Stand connection: ¾" inside thread. Dimensions: 5 1/2" long (138 mm.), 2 1/4" diameter (50 mm.). Weight: 14.6 ozs. net (410 g.), shipping weight: 2 lbs. 6.8 ozs. (1,100 g.). Connection diagram: SN.

Price ... .. £13 0 0 (B)



D77A

### K50 DYNAMIC HEADPHONES

#### TECHNICAL DATA

Frequency range: 20-25,000 c/s. Normal power requirement: 0.156 mW. (=250 mV.) per unit for a sound pressure level of 95 dB. Maximum undistorted continuous power level: 127 db. (90 mW. at 6 volts) per unit, with distortion under 3% (20-25,000 c/s.) Translation efficiency: 1mW. input (=630mV.) per unit will produce 106 dB. sound pressure level Distortion: 1% or less at 1 mW. input (20-25,000 c/s.). Impedance: 400 ohms. per unit ± 20% over the range 20-25,000 c/s. Connection cable: 4-wire cable, 5'9" long (1.75 m.). Finish: crystal-clear ear cups, light gray bail and drive capsules. Weight: K50: 4.6 ozs. net (130 g.), shipping weight: 1 lb. 12.8 ozs. (850 g.). K50/1: 5.3 ozs. net (150 g.), shipping weight: 1 lb. 12.8 ozs. (850 g.). Connection: stereo/mono. Mono: systems in series 800 ohms., parallel 200 ohms.

#### ACCESSORIES

Matching transformer U50, rubber ear cushions Z50.

Price ... .. £7 10 0 (B)



# MICROPHONES & ACCESSORIES

## A K G

### K58 K59 HEADPHONE-MICROPHONE COMBINATIONS

#### TECHNICAL DATA K58

##### HEADPHONES:

Frequency range: 20-25,000 c/s. Normal power requirement: 0.312 mW. (=250 mV.) for a sound pressure level of 95 dB. Maximum undistorted continuous power level: 127 dB. (180 mW. at 6 volts) with distortion under 3% (20-25,000 c/s.). Translation efficiency: 2 mW input (=630 mV.) will produce 106 dB. sound pressure level. Distortion: 1% or less at 2 mW. (=630 mV.), (20-25,000 c/s). Impedance: 200 ohms.  $\pm 20\%$  between 20-25,000 c/s. (both earphone connected in parallel).

##### MICROPHONE:

Frequency range: 100-12,000 c/s. (for speech at 5 cm. distance). Impedance: 290 ohms. Average output: approx. 0.5 mV. (for speech at 5 cm. distance). Average discrimination: -22 dB. at 1,000 c/s., -37 dB. at low frequencies and -15 dB. at high frequencies. Weight: 5 ozs. net (140 g.), shipping weight: 1 lb. 12.8 ozs. (850 g.).

Price (K58) ... .. £13.10 0 (B)

#### TECHNICAL DATA K59

##### MICROPHONE:

Frequency range: 70-12,000 c/s. (at a speech distance of approx. 5 cm.). Frequency response:  $\pm 3$ dB. based on standard curve (measured at a dist. of 5 cm. from artificial voice). Directional characteristic: sensitive only in close proximity (up to 10 cm.). Impedance: 60 or 200 ohms. Average output: approx. 0.5 mV. (200 ohms.), (for speech at 5 cm. distance). Average discrimination against undesired noise: 35 dB. at 200 c/s., 26 dB. at 1,000 c/s., 15 dB. at 5,000 c/s., compared with a diffuse sound field whose source lies at a distance of 1 metre from the microphone and which produces the same sound pressure as the sound source at a distance of 5 cm. Cable connection: microphone capsule connected to balanced 2-pole shielded cable.

##### HEADPHONES:

Frequency range: 20-25,000 c/s. Average power requirement: 0.156 mW. at a level of 250 mV., delivering 95 dB. sound pressure level per system. Maximum undistorted continuous acoustic output: 127 dB. spl. per system with an input level of 6 volts at 90 mW., with a total harmonic distortion of less than 3%. Translation efficiency: 1 mW. input at 630 mV. will produce 106 dB. spl. per system. Total harmonic distortion: (throughout entire range) 1% or less at 1 mV. input. Impedance: 400 ohms. per system  $\pm 15\%$ . Cable connection: headphones with 2 x 1-pole shielded cable led out separately from microphone (headphones normally in series).



##### ACCESSORIES:

Z50 rubber ear cushions for exclusion of outside sounds W59 windscreen with particularly favourable attenuation (higher than 25 dB.).

Price (K59) ... .. £22 0 0 (B)

### MICROPHONE MATCHING TRANSFORMERS

**U50.** Statically shielded matching transformer with terminal strip. For matching the stereo headphones K 50 or K50/1 to high impedance outputs. Matching ratio: 4:1. Two U50 are necessary for stereo. Dimensions:  $1\frac{1}{8} \times 1\frac{3}{8} \times 1\frac{3}{8}$ " (17 x 20 x 30 mm.). Weight: 0.6 ozs. (15 g.). Suitable for K50 headphones, K58 headphone-microphone combination.

Price ... .. £1 5 0 (B)

**U203.** Microphone cable transformer with 1' 8" (0.5 meters) mounted cable and 3-pole miniature standard connector. Unbalanced 200 ohms. input at the 3-pole miniature standard socket. Frequency range: 30-20,000 c/s. Frequency response: 50-20,000 c/s.  $\pm 2$  dB. Matching ratio: 1:15. Connections: primary 200 ohms., socket contacts 2-3, 2=ground (shield), secondary approx. 50,000 ohms. (high impedance), pins 1-2, 2=ground. Dimensions: diameter  $\frac{3}{4}$ " (18 mm.), length  $2\frac{1}{2}$ " (63 m.m.) Weight: 2.5 ozs. (70 g.). Suitable for: D7A, D11C.

Price ... .. £1 12 6 (B)

**U212.** Microphone cable transformer with 1' 8" (0.5 meters) mounted cable and 3-pole miniature standard connector. Balanced 200 ohms. input at the 3-pole miniature standard socket. Frequency range, frequency response, matching ratio, dimensions and weight as U203. Connections: primary 200 ohms., socket contacts 1-2-3, 2=ground (shield), secondary approx. 50,000 ohms. (high impedance), pins 1-2+3 2+3=ground (shield). Weight: 2.5 ozs. (70 g.). Suitable for: D12, D19, D58.

Price ... .. £1 19 6 (B)

# MICROPHONES & ACCESSORIES

## A K G

### MICROPHONE MATCHING TRANSFORMERS

**U400.** Stereo cable transformer with 1' 8" (0.5 meters) mounted cable and 5-pole miniature standard connector, unbalanced stereo 200 ohms. input at the 5-pole miniature standard socket. Channel 1 left: socket contacts 1-3, 1=ground (shield), channel 2 right: socket contacts 4-5, 4=ground (shield). Socket contact 2=free. Unbalanced stereo high impedance output at the 5-pole miniature standard connector. Channel 1 left: 1-2, 2=ground (shield), channel 2 right: 2-4, 2=ground (shield). Pins 3 and 5=free. Frequency range, frequency response, matching ratio and dimensions as U203. Weight: 2.1 ozs. (60 g.). Suitable for: D77A.

Price ... .. £2 10 0 (B)

### ST 10 MICROPHONE STAND

The ST10 microphone table stand has a foam rubber cushion on the base and is supplied with a thread adapter of  $\frac{3}{8}$ " outside thread (not mentioned separately in list of accessories). Suitable for: D12, D19E, D24B (with SA8, SA2 or SA3), D19E, D24E (with SA8 or SA2), D58 (with SA3), C28A (with SA4) and C60 (with SA6 or MK 60/1.5). Dimensions: diameter  $4\frac{1}{2}$ " (120 mm.), height 4" (100 mm.). Weight: 12.8 ozs. net (360 g.), shipping weight: approx. 2 lbs. (900 g.).

Price ... .. £4 10 0 (B)



ST10

### ST19 MICROPHONE STAND

The ST19 microphone table stand is made of cast metal and stands on three in-built foam rubber contact points. It incorporates a  $\frac{3}{8}$ " thread for stand adapter types SA8, SA3 and SA6. Suitable for: D19C, D24B (with SA8 or SA3), D58 (with SA3), D19E, D24E (with SA8) and C60 (with SA6). Dimensions:  $5\frac{1}{2}$ "  $\times$   $3\frac{3}{8}$ "  $\times$   $2\frac{7}{16}$ " (130  $\times$  85  $\times$  55 mm.). Weight: 7 ozs. net (200 g.), shipping weight: approx. 1 lb. 5.1 ozs. (600 g.).

Price ... .. £2 10 0 (B)



ST19

### ST88 MICROPHONE STAND

The ST88 table stand is of handy design, it can be dismantled to facilitate transport and can easily be assembled again. A  $\frac{3}{8}$ " connecting thread is supplied with the stand. It is particularly suitable for the D77 stereo microphone.

Dimensions: (when assembled) height  $5\frac{1}{4}$ " (133 mm.), surface area necessary  $9\frac{1}{8}$ " (250 mm.) diameter. Weight: 4.6 ozs. net (135 g.), shipping weight: approx. 1 lb. 3.2 ozs. (550 g.).

Price ... .. £1 5 0 (B)

### ST200 MICROPHONE STAND

The ST200 microphone floor stand incorporates special built-in filters to prevent floor-borne sound reaching the microphone. It protects the microphone against shock without any loss in stability. The legs fold together, thus facilitating transport, and the stand is equally suitable for use with the lighter or heavier types of microphones. It has a  $\frac{3}{8}$ " mounting thread (the ST200 can also be supplied with a  $\frac{1}{2}$ " mounting thread). Various stand adaptars and elastic suspensions can be fixed to the mounting thread. Dimensions: diameter of feet: 2' (600 mm.), height when closed: 3' 7 $\frac{1}{2}$ " (1,110 mm.), extended: 6' (1,800 mm.) (when folded, length approx. 3' 4" (1,000 mm.), diameter approx  $4\frac{1}{4}$ " (120 mm.). Weight: 7lbs. 12.8 ozs. net (3,300 g.), shipping weight: approx. 22 lbs. (10 kg.).

Price ... .. £13 10 0 (B)



ST200

---

## MICROPHONES & ACCESSORIES

---

### A K G

#### SHZ 4 THREAD ADAPTER

Universal thread adapter of many accessory parts and microphones. Outside thread:  $\frac{3}{8}$ " —27. Inside thread:  $\frac{1}{8}$ " and  $\frac{1}{4}$ ". Necessary when microphones with a  $\frac{3}{8}$ " —27 stand thread are to be mounted on a  $\frac{1}{8}$ ",  $\frac{1}{4}$ " or  $\frac{3}{8}$ " —27 thread.

Price ... .. 4 6 (B)

#### SA2 STAND ADAPTER

For microphones with a microphone body diameter of  $\frac{13}{16}$ " (21 mm), Incorporates a swivel joint for adjusting the angle of operation. Suitable for employment with D19C, D19E, D24B and D24E. Thread adapter: SHZ4. Weight: 3.9 ozs. net (110 g.), shipping weight: approx. 1 lb. 1.6 ozs. (500 g.).

Price ... .. £3 15 0 (B)

#### SA3 STAND ADAPTER

For microphones with a 3-pole miniature connector. Incorporates a swivel joint for adjusting the angle of operation. Suitable for employment with D19C, D24B and D58. Thread adapter: SHZ4. Weight: 3.2 ozs. net (90 g.).

Price ... .. £1 19 0 (B)

#### SA8 STAND ADAPTER

For microphones with a microphone body diameter of  $\frac{13}{16}$ " (21 mm.). Suitable for employment with D19C, D19E, D24B and D24E. Thread adapter: SHZ4. Weight: 0.7 ozs. net (20 g.).

Price ... .. 10 0 (B)

#### MSH21 MICROPHONE FLEXIBLE SHAFT

For light microphones with built-in 3-pole miniature connector. Suitable for employment with D19C, D24B, D58. Microphone connection: 3-pole miniature connector. Flexible shaft mounting:  $\frac{3}{8}$ " inside thread with fixing screw. Overall length: 8" (200 mm.). Diameter:  $\frac{7}{16}$ " (11 mm.). The flexible shaft is supplied with approx. 15' 4.6 meters) cable connected to a 3-pole miniature connector. Accessories recommended: SHF1 flexible microphone shaft flange or ST200 floor stand. Weight: 7.1 ozs. net (200 g.), shipping weight: approx. 1 lb. 8 ozs. (700 g.).

Price ... .. £4 10 0 (B)

#### MSH 30 MICROPHONE FLEXIBLE SHAFT

For heavy microphones with a  $\frac{3}{8}$ " stand thread. Suitable for employment with D12 and D20B. Microphone connection:  $\frac{3}{8}$ " outside thread. Flexible shaft mounting:  $\frac{3}{8}$ " inside thread with fixing screw. Overall length: 1' 4 $\frac{1}{2}$ " (315 mm.). Diameter: approx.  $\frac{3}{8}$ " (15 mm.). The flexible shaft is supplied without cable. Accessories recommended: ST301 heavy table stand (combined only with SHZ2 thread adapter), SHF1 flexible microphones shaft flange or ST200 floor stand. Weight: 10.3 ozs. net (290 g.), shipping weight: approx 1 lb. 11.2 ozs. (800 g.).

Price ... .. £2 10 0 (B)

#### MSH58 MICROPHONE FLEXIBLE STAND

For light microphones with a built-in 3-pole miniature connector. Suitable for employment with D58, D19C and D24B. Microphone connector: 3-pole miniature connection. Flexible shaft mounting: universal thread adapter type SHZ4 for  $\frac{3}{8}$ ",  $\frac{1}{2}$ " and  $\frac{3}{4}$ " —27. Overall length: 1' (305 mm.). Diameter: approx.  $\frac{3}{8}$ " (10 mm.). The flexible shaft is supplied without cable. Recommended accessories: SHF1 or ST200 floor stand. Weight: 6 ozs. net (170 g.), shipping weight: approx. 1 lb. 8 ozs. (700 g.).

Price ... .. £3 15 0 (B)

#### Z50 PAIR OF RUBBER EAR CUSHIONS

The cushions are made of soft rubber. Z50's stay cool even after hours of use. They fit closely to the ears and shut out ambient noise: fit K25, K50, K58, K59. Available in pairs only. Weight: 10.7 ozs. net (300 g.).

Price ... .. 9 0 (B)

## MICROPHONES & ACCESSORIES

### SHURE

#### MODEL 535

Type: Dynamic. Frequency response: 60 to 13,500 c/s. Output level: L-50-250 ohm. impedance—83 dB. H-High impedance—61dB. (0dB.=1 volt/dyne/cm<sup>2</sup>). Impedance: Equipped with a dual-impedance switch, furnishing a choice of 2 impedances—L-50-250 ohms., H-high. Polar Pattern: Omni-Directional. Magnetic Circuit: Uses Alnico V magnet. Case: Brass. Finish: Satin chrome. Swivel Adaptor: Furnished with Model A25 type Swivel Adaptor. It is self-adjusting and permits the microphone to be tilted through 90° from vertical to horizontal, making it simple to aim the microphone at the source of sound. Cable Connector: Equivalent to Amphenol MC3M plug. Cable: 18ft. 2-conductor shielded broadcast type. Stand Thread: With swivel adaptor, standard  $\frac{3}{8}$ "—27 thread.  $\frac{1}{2}$ "—26 thread external adaptor available at no extra charge. Switch: On-off (normally closed). Dimensions:  $7\frac{3}{8}$ " high. 1" diameter. Net Weight: (less cable):  $\frac{3}{4}$  lb.; packaged weight  $2\frac{3}{8}$  lbs. Furnished Accessories: On-off Switch Adaptor plate, A25 type Swivel Adaptor.

Price ... .. £24 6 8 (C)



Model 535

#### MODEL 555

Type: Dynamic. Frequency response: 50 to 15,000 c/s. Output level: L—35-50 ohms. —84dB. M—150-250 ohms. —78 dB. H—High —57dB. (0dB.=1 volt/dyne/cm<sup>2</sup>). Impedance: Equipped with a Multi-Impedance switch, furnishing a choice of 3 impedances—L-35-50 ohms. M-150-250 ohms., H-35,000 ohms. Polar Pattern: Ultra-Cardioid (uni-directional) Response at rear down 15 dB. from front. Magnetic Circuit: Uses Alnico V Magnet. Case: Die cast zinc. Finish: Satin chrome. Swivel: New improved self-adjusting "positive action" lifetime swivel permits tilting of the head through 80° so that the microphone can be aimed at the source of sound. Cable Connector: Equivalent to Amphenol MC3M. Cable: 18ft., 2-conductor, shielded broadcast type. Stand Thread: Standard  $\frac{3}{8}$ "—27 thread.  $\frac{1}{2}$ "—26 thread external adaptor available at no extra charge. Dimensions:  $7\frac{3}{8}$ " high,  $2\frac{3}{16}$ " wide,  $3\frac{1}{16}$ " deep. Net Weight (less cable):  $1\frac{3}{8}$  lbs.; packaged weight  $3\frac{1}{8}$  lbs.

Price ... .. £27 13 4 (C)



Model 555

#### MODEL 245

Type: Ceramic. Frequency Response: 50 to 7,000 c/s. Output Level: —59 dB. at end of 7ft. (2.1m.) cable across 1 to 5 megohms (0 dB.=1 volt/dyne/cm<sup>2</sup>). Impedance: High —Recommended load impedance 1 to 5 megohms. Polar Pattern: Cardioid (uni-directional). Response at rear down 15 db. from front. Case: Die cast Zinc. Cable and Connectors: Models 245 and 245S provided with 15ft. (4.6m.) single-conductor shielded cable with a plug (equivalent of Amphenol MCI F) for attaching cable to microphone. Models 245G and 245GS—7ft. (2.1m.) single-conductor shielded cables attached to microphone. Switches: Models 245S have built-in "On-off" switch. Stand Thread: Models 245 and 245S provided with Model A25B swivel adaptor with  $\frac{3}{8}$ " —27 thread —26 thread external adaptor available at no extra charge. Dimensions: (Microphone only)  $4\frac{3}{4}$ " high,  $1\frac{1}{4}$ " diam. Net Weight: (Microphone only)  $\frac{3}{8}$  lb. packaged weight  $\frac{1}{2}$  lb.

Price (Model 245) ... .. £11 13 4 (C)  
Includes A25B Swivel-Stand adaptor and removable cable.

Price (Model 245S) ... .. £12 6 8 (C)  
Includes "On-off" switch, A25B Swivel-Stand adaptor and removable cable.



Model 245

#### MODEL 545

Recommended for public address, tape recording, fixed-station communications, and a variety of other applications requiring compactness coupled with maximum operating efficiency.

Type: Dynamic. Frequency Response: 50-15,000 c/s. Output Level: Low —77 dB. High —55 dB. (0 dB.=1 volt/dyne/cm<sup>2</sup>). Impedance: Dual. Choice of 50-250 ohms. or high. Polar Pattern, Cardioid (Uniform with frequency, symmetrical about axis). Magnetic Circuit: uses Alnico V magnet. Case: Die cast zinc and "Armo-Dur". Finish: Satin chrome and black. Cable Connector: Equivalent to Amphenol MC4M plug. Cable: 18ft., 3 conductor shielded. Dimensions: Length  $5\frac{1}{8}$ "; Diameter  $1\frac{1}{4}$ ". Net Weight (less cable):  $\frac{1}{2}$  lb., packaged weight  $2\frac{1}{4}$  lbs. Furnished Accessories: A25B swivel adaptor. Optional Accessories: A86A Cable Type Transformer, S33B desk stands.

Price ... .. £28 6 8 (C)



Model 545



# MICROPHONES & ACCESSORIES

## RESLO

### MINIATURE RIBBON TYPE RBT

Figure of '8' Polar diagram. Attachment threads  $\frac{1}{8} \times 26$  or  $\frac{3}{8} \times 27$  RBT 'T' Base RBTS 'T' 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  $\pm 3$ dB. 30 c/s. to 16 K/cs. Price RBT/L 30-50 ohms. ... £10 12 6 (C) Price RBT/M 600 ohms. ... £11 2 6 (C) Price RBT/H Hi-Z ... £11 2 6 (C) Price RBTS/L 30-50 ohms. ... £13 0 0 (C) Price RBTS/M 600 ohms. ... £13 10 0 (C) Price RBTS/H Hi-Z... £13 10 0 (C)



RBT



Cardioid Ribbon CR2

### CARDIOID RIBBON TYPE CR2

15 dB. Discrimination Front to back. CR2L 30-50 ohms. CR2M 250 and 600 ohms. CR2H 30 ohms. and Hi-Z. Frequency response smoothly maintained 50 c/s. to 15 Kc/s., level  $\pm 5$  dB. 100 c/s. to 12 Kc/s. Price CR2L 30-50 ohms. ... £10 12 6 (C) Price CR2M 600 ohms. ... £11 2 6 (C) Price CR2H Hi-Z ... £11 2 6 (C)

### PENCIL RIBBON TYPE PR

(non swivel)

Characteristic as RB. PRL 30-50 ohms. PRM250 and 600 ohms. PRH Hi-Z and 30-50 ohms. Frequency response extends from 50 c/s. to 16 Kc/s., level  $\pm 5$  dB. 100 c/s. to 10 Kc/s. Price PRL 30-50 ohms. ... £8 17 6 (C) Price PRM 250 and 600 ohms. ... £9 7 6 (C) Price PRH Hi-Z and 30-50 ohms. ... £9 7 6 (C)



MPD

### DYNAMIC TYPES PD & MPD

All purpose including recordings and high quality public address. MPD supplied with Lavalier attachment, but can be used on stands with A922 flexible stem, and the PD is supplied with plastic standholder. Frequency range—smoothly maintained from 50 c/s. to 15 Kc/s.

Price MPDL 30/50 ohms. ... £10 0 0 (C) Price PDL 30/50 ohms. ... £11 0 0 (C) Price PDM 250 or 600 ohms. (Dual) £12 0 0 (C) Price PDH Hi-Z (40K ohms.) or 30/50 ohms. (Dual) ... £12 0 0 (C)



RBTS

Miniature Ribbon with switch

### DYNAMIC TYPE VMC2

An excellent rugged, robust and high output microphone with a wide field of application for all Public Address work, such as paging and announcing over hotel sound systems, and addressing large audiences via horn loudspeakers. Fitted with on-off switch and 6yds. of flexible screened cable.

Frequency response:  $\pm 5$ dB. 100 c/s. to 15 Kc/s., with peak at 5 Kc/s. giving maximum "presence" for speech reproduction. Overall response 50 c/s. to 16 Kc/s. Impedance: 15 ohms. Price ... £8 17 6 (C)

### MICROPHONE ACCESSORIES

Stands: Floor Stand (Adjustable) MS100 £7 0 0 Table Stand (Adjustable) MS200 £4 0 0 Desk Stand (Circular) MS300 £2 0 0 Desk Stand Type MS400 (Foam Pads) £1 15 0 Desk Base Type MS500 ... £1 10 0 Extra for muting switch on types MS400 and MS500 Stands only ... 13 6 (C)



Pencil Dynamic Type PD



Pencil Ribbon PR (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 6 0 (C)

### TRANSISTOR COUPLERS

**Type G.E.1.** 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  $\pm 1$ 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 7 0 (C)

**Type G.E.2.** This is similar in design to the G.E.1. but is in addition fitted with a 30/50 ohms. input transformer for balanced to earth input.

Price ... .. £11 11 0

### 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  $2\frac{1}{4}$ " x  $1\frac{1}{2}$ " Diameter. Frequency response  $\pm 1$ dB. 50 c/s. to 15 Kc/s. Price £4 7 6 (C)

### TUBULAR SWITCH ADAPTOR A923

This unit, fitted at the top and bottom with the plug/socket assembly allows on/off switch facilities to be added to all unswitched Reslo microphones. Price £2 12 6 (C)

### FLEXIBLE STEM A922

This consists of a length of flexible tubing laminated at each end with a 3 contact plug and socket. The wiring allows use with any standard Reslo microphone. Price £2 12 6 (C)

### ACCESSORIES, ADAPTORS AND SPARES

	Net Price U.K.
	£ s. d.
Ribbon Assembly (RB056A for RB and CR) (PR897A for PR) ... ..	1 17 6 (C)
Desk Stand Stem ... ..	10 9 (C)
S.U.10 Diaphragm ... ..	1 17 6 (C)
Microphone Cable ... ..	1 6 (C)
Stand Top $\frac{1}{2}$ " x 26 BSB ... ..	4 6 (C)

### ADAPTORS WITH INTERNAL THREADS

AR220 $\frac{1}{8}$ " x 26 to $\frac{1}{8}$ " x 27 ... ..	5 6 (C)
AR221 $\frac{1}{8}$ " x 27 to $\frac{1}{8}$ " x 27 ... ..	5 6 (C)

### REDUCERS (Internal and External Thread)

AR222 $\frac{1}{8}$ " x 27 Ext. to $\frac{1}{8}$ " x 26 Ext. Coupler ... ..	5 6 (C)
AR223 $\frac{1}{8}$ " x 26 Ext. to $\frac{1}{8}$ " Int. ... ..	5 6 (C)
AR224 $\frac{1}{8}$ " x 26 Ext. to $\frac{1}{8}$ " x 26 Int. ... ..	5 6 (C)
AR225 $\frac{1}{8}$ " x 27 Ext. to $\frac{1}{8}$ " x 26 Int. ... ..	5 6 (C)
AR226 $\frac{1}{8}$ " x 26 Ext. Nipple x $\frac{3}{4}$ " long x $\frac{5}{16}$ " bore ... ..	5 6 (C)

### PLUGS AND SOCKETS ETC.

A900 T.C. Extension Plug ... ..	12 6 (C)
A901 Line Extension Socket ... ..	15 6 (C)
A902 T.C. 3 pin Socket $\frac{1}{8}$ " dia. ... ..	9 6 (C)
A903 T.C. 3 pin Side Entry Plug ... ..	12 6 (C)
A920 T.C. 3 pin Plug mounted in Suspension Fitting ... ..	£1 5 0 (C)
A921 Suspension Fitting only ... ..	12 6 (C)

Filter pads for the RB Series supplied free.

### STAND DAMPER

This consists of two concentric sleeves secured to each other by rubber under compression. Both sleeves have  $\frac{1}{8}$ " threads and thus the unit screws onto any stand.

Retail Price ... .. 10/6

# 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  $\frac{1}{2}$  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.<sup>2</sup>.

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

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

Weight of hand microphone  $7\frac{1}{4}$  ozs. ·219 Kg.

Length of hand microphone  $8\frac{1}{2}$ " 21 c.m.

Diameter overall  $1\frac{1}{8}$ " 3 c.m.

Thread on holder and swivel  $\frac{3}{8}$ " 27 T.P.I. Supplied with adaptor  $\frac{5}{16}$ " B.S.F.

Finish Black and chrome.



Microphone Switch Assembly

### LIST PRICES

#### STANDARD MICROPHONES

		£	s.	d.	
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	0	(B)	+
Circular table base for use with swivel holder. ... ..	13	6	0	(B)	
On/Off switch assembly (fitting between mic. and lead). With Stand Fixing Lug ... ..	2	5	0	(B)	+
Connector plug only ... ..	8	0	0	(B)	
Cable Socket ... ..	8	0	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.

### 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  $3\frac{3}{8}$ " x  $1\frac{1}{4}$ " dia. (92 x 31 mm.). Weight  $5\frac{1}{2}$  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)

# HEADPHONES

## S. G. BROWN

### TYPE F HEADPHONES

A general purpose instrument, designed to give long and trouble free service. Standard D.C. resistance 4,000  $\Omega$ . Standard impedance 15,000  $\Omega$  at 1,000 c/s. Duralumin double headbands with plated brass stirrups. 3C 400/1 High Imp. 3C.400/4 Low Imp.

List Price ... .. £3 4 0 (B)

### HOSPITAL HEADPHONES

As type 'F' but with single headband. High Impedance 3C.402/1.

List Price ... .. £3 1 0 (B)

### SUPER 'K' HEADPHONES

Designed for high fidelity reproduction, these headphones incorporate an extremely comfortable plastic covered headgear, with plastic earpads which support the whole assembly on the bone structure of the head, rather than on the ears. Input lead is to one side only, and stereo wiring is available. Standard D.C. resistance 24  $\Omega$  each earpiece. Standard impedance 26  $\Omega$  at 1,000 c/s. Code No. 3C.501/1.

List Price ... .. £6 17 0 (B)

### STETHOSCOPE HEADSET

Available in either low or high impedance. High Impedance 5C.600/1. Low impedance 5C.100/2.

List Price ... .. £3 6 0 (B)

### PILLOW PHONES

Sponge type M/C High Imp. Code 6C.101/1.

List Price ... .. £3 19 0 (B)

M/I Immersible type High Imp. Code 6C.102/1.

List Price ... .. £2 8 0 (B)

M/C Immersible type High Imp. Code 6C.104/1.

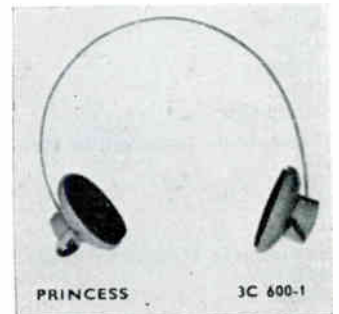
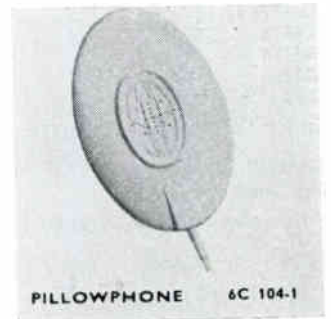
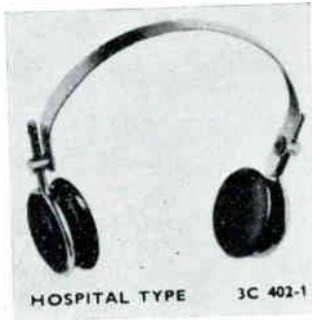
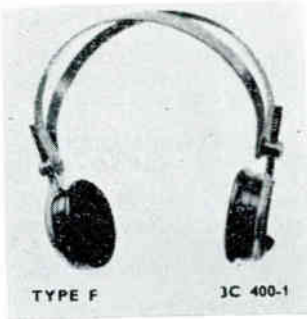
List Price ... .. £3 14 0 (B)

### PRINCESS HEADPHONES

A new general purpose lightweight headphone with single wire headband. High Impedance.

Code No. 3C.600/1.

List Price ... .. £1 16 0 (B)



# HEADPHONES & ACCESSORIES

## S. G. BROWN

### THE DIPLOMAT "PERSONAL AUDITORIUM"



The "Personal Auditorium" is a new and fascinating approach to personalised listening in the home. It provides the ultimate in musical appreciation, which can be enjoyed by any member of the family.

By a simple connection to your tape recorder, amplifier, or record player—you can enjoy a full symphony without disturbing 11 plus home work—or a little one sleeping. In fact you can be carried away into a world of your own choosing without actually leaving the fireside.

The Diplomat headset has been developed to provide a lightweight and attractive instrument of advanced design—using new ceramic piezo—electric transducers. These possess an excellent response over a wide range of audio frequencies.

To extract the full benefit from these, the headset is teamed with a control unit, housed in a most attractive zip-topped carrying case. This provides control of parameters which are of prime importance for high fidelity reproduction, particularly in the case of stereophonic equipment. It provides the following control facilities:—

- Independent control of sound level for each earpiece, providing balance and level adjustment on stereophonic and monophonic listening.
- Channel mixing on stereophonic, which is essential when listening on headphones, if the full potentialities of such recordings are to be realised. The mixing control has a very wide range of adjustment and will give monophonic, true stereophonic, or two channel listening, as desired. The mixing control is only operative on stereophonic systems.
- Switched selection of input impedance, giving matching to 15 ohms. or 600 ohms. per channel on stereophonic or 7.5, 30, 300 or 1,200 ohms. on monophonic depending upon method of connection, since the two channels can be wired in series or parallel when connected to monophonic equipment.

The Headset is exceptionally well engineered and elegantly styled, and has a general colour scheme of smoke grey. A 5 ft. length of 4-way flexible cable is fitted for connection to the main equipment.

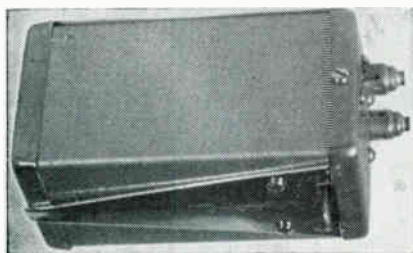
Code Nos. 3C.700/1 Black, 3C.700/2 Pigskin, 3C.700/3 Ivory.

List Price ... .. £15 15 0 (B)

### SPARE PARTS FOR BROWNS EQUIPMENT

Code No.	Description	Price
		£ s. d.
<b>Hospital and Standard 'F' type High Impedance (Codes 3C.402/1 and 3C.400/1)</b>		
106151	Diaphragm	each 1 0
106354	Circular Stirrup	each 4 6
106147	Neckband Hospital type	each 7 0
100177	Grey Plastic Cord	each 9 6
106313	'U' Washer	gross 10 0
106154	Coil Set 2,000 Ω D.C. Res.	set 9 6
106358	Headband type 'F'	each 9 0
7093	Anti-Dermatitis Rubber Earpads	each 3 0
<b>Super 'K' Stereo (3C.501/1)</b>		
3076	Cord 4-way P.V.C. single	each 9 0
HV3225	Rubber Caps	each 6
No Number	Earpad grey Plastic	each 6 6
<b>Pillowphones Sponge Type M/C High Impedance (6C.101/1)</b>		
6561	Transformer c/w cord, 600 Ω	each 1 12 6
6537	'J' Unit	each 1 18 0
40206	Cord Cleats	gross 1 2 6
6569	Sponge Cover	pair 6 6
6564	Sponge Cover	pair 6 6
6566	Fabric Bag	each 2 6
<b>Pillow Phones Immersible M/C (6C.104/1)</b>		
41853	Membrane	each 6
676	M/C Unit	each 1 15 6
HD304	Top Covers	each 3 0
HD305	Lower Covers	each 3 0
6562	Plastic Cord	each 5 0
No Number	Transformer with cord	each 1 14 6
<b>Pillowphone Immersible M/I type (6C.102/1)</b>		
6562	Plastic Cord	each 5 0
HD304	Top Plastic Covers	each 3 0
HD305	Lower Plastic Covers	each 3 0
6146	Earpiece M/I type	each 1 10 6
<b>Stethoscope Headset (5C.600/1 and 5C.100/2)</b>		
100203	Conduction tube assy. (S/A)	each 11 0
100189	Spring	each 3
23567/C13	Grey P.V.C. tube	each 5 6
100055	Earplug	each 1 0

## 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  $3\frac{3}{8}'' \times 2\frac{1}{4}'' \times 2\frac{1}{8}''$

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 +60db, 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.

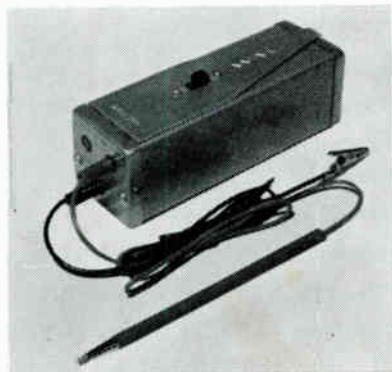
Price ... .. £6 18 6 (C)



### 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. tappings.

Price ... .. £6 10 0 (C)

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

## 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)

### 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	...	Price	...	5/9 plus 11d. P. Tax.	Total 6/8 (A)
Inter wheels for RC90	...	Price	...	6/3 plus 1/- P. Tax.	Total 7/3 (A)
Inter wheels for RC110-RC111	...	Price	...	6/6 plus 1/1 P. Tax.	Total 7/7 (A)
Inter wheels for RC120-RC83-RC98-3 Speed	...	Price	...	4/11 plus 10d. P. Tax.	Total 5/9 (A)
Inter wheel for 4HF	...	Price	...	8/5 plus 1/4 P. Tax.	Total 9/9 (A)
Inter wheels for 301	...	Price	...	8/3 plus 1/4 P. Tax.	Total 9/7 (A)
Inter wheels for Type T Mk. I	...	Price	...	4/11 plus 10d. P. Tax.	Total 5/9 (A)
Inter wheels for Slimline and AT6	...	Price	...	3/3 plus 7d. P. Tax.	Total 3/10 (A)
Inter wheels for RC120 Mk. II, RC88-RC98-4SP-TA Mk. II 209-210, RC88 Mk. II Lab Type A	...	Price	...	4/11 plus 10d. P. Tax.	Total 5/9 (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)
--------------------	-----	-------	-----	----------------------	---------------

### 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)