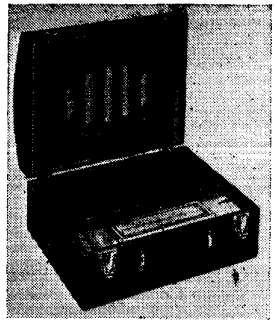
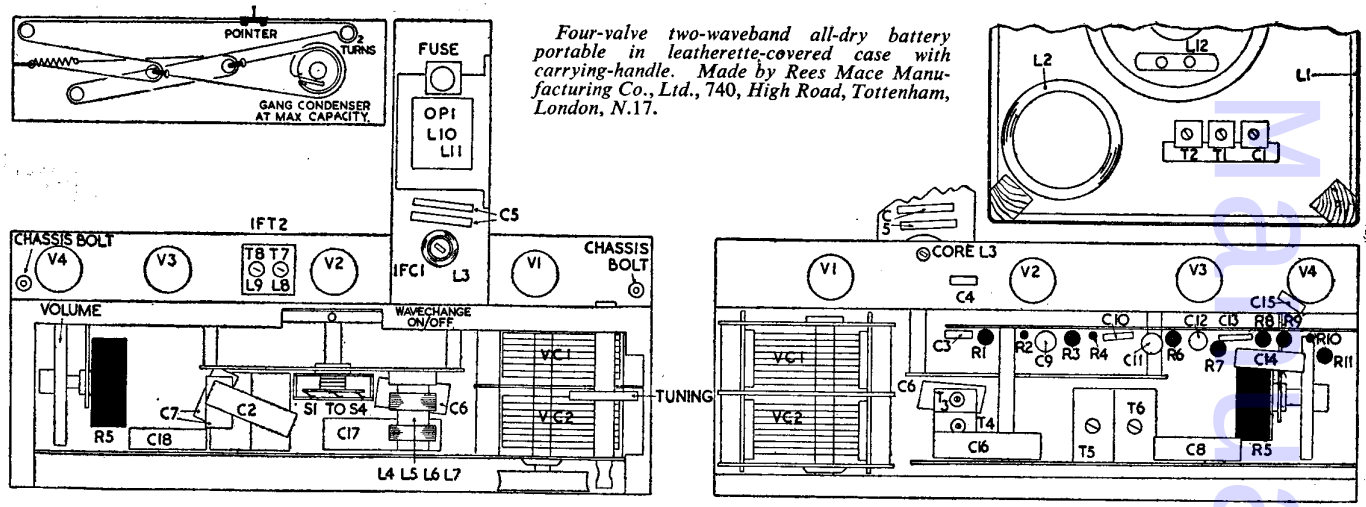
REES MACE MODEL L GNOME





Four-valve two-waveband all-dry battery portable in leatherette-covered case with carrying-handle. Made by Rees Mace Manufacturing Co., Ltd., 740, High Road, Tottenham, London, N.17.

IC1	IF3	IFD9	IP10	FUSE.
G1, G2G4 60V 3MA, F-G5, G3, A 60V ·5MA, F-G5, F+	G2 20V ·035MA, F-G3, A 60V ·85MA, G1, F-G3, F+	G2 ·015MA, A, D ·045MA, G1, F-G3, F+	G2 80V 1MA, G1, F-G3, A 78V 4·4MA, F+	2·5V ·2A

BIAS ACROSS R11=12V

TOTAL HT CURRENT = 10MA

AERIAL circuit consists of frame L1 (MW) and series LW loading coil L2, which are tuned by VC1 and connected to g3 of heptode frequency-changer V1. T2 (MW), T1, C1 (LW) are trimmers and S1 shorts out L2 for MW reception. AVC, decoupled by R4, C2, is fed through the tuned coils to g3 of V1. Filament negative and g5 are connected down to chassis. L3, C5, which are tuned to IF frequency of 430 kc/s, are in the anode circuit.

Oscillator is connected in a tuned-grid series-fed HT circuit. The grid coils L4 (MW), L5 (LW), which are tuned by VC2, trimmed by T4 (MW), T3, C6 (LW), and padded by T5 (MW), T6, C7 (LW), are connected by C3 to oscillator grid (g1) of V1. S2 shorts out L5 for MW reception. Automatic bias for grid is developed on C3 with R1 as leak resistor. HT is fed through the inductively coupled anode reaction coils L6 (MW), L7 (LW) to oscillator anode (g2, g4) of V1. C8 is HT by-pass capacitor.

IF amplifier operates at 430 kc/s. C4 feeds signal appearing at anode V1 to g1 of IF amplifier V2. AVC, decoupled by R4, C2 is fed through R2 to g1.

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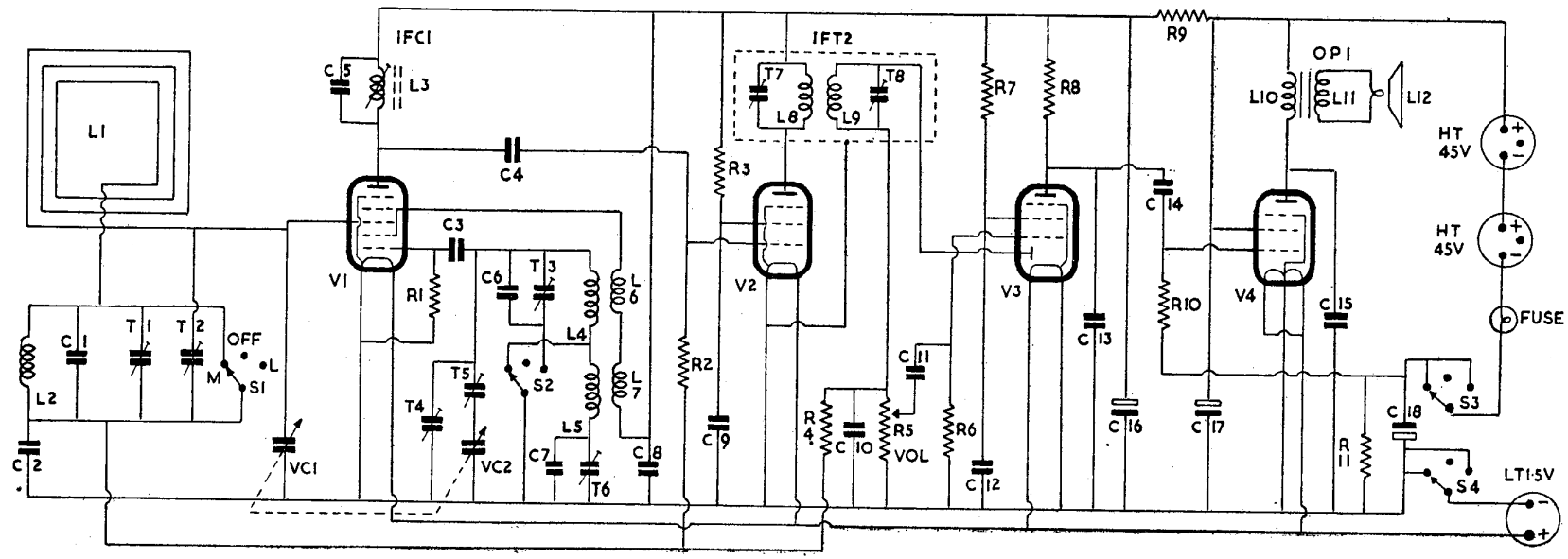

RESISTORS

R	Ohms	Watts
1	100K	½
2	2.2M	½
3	100K	½
4	2.2M	½
5	1M	Potr
6	10M	½
7	3.3M	½
8	1M or 470K	½
9	3.3K	½
10	2.2M	½
11	1.2K	½

CAPACITORS

C	Capacity	Type
1	Trimmer	
2	.1 Tubular	350V
3	50pF Silver Mica	
4	1000pF Tubular	Ceramic
5	100pF Silver Mica / 50pF Silver Mica	
6	150pF Silver Mica	
7	200pF Silver Mica / 200pF Silver Mica	
8	.1 Tubular	350V
9	.01 Tubular	750V
10	200pF Silver Miea	
11	.01 Tubular	750V
12	.01 Tubular	750V
13	330pF Silver Mica	
14	.01 Tubular	750V
15	1000pF Tubular	Ceramic
16	4 Electrolytic	200V
17	4 Electrolytic	200V
18	30 Electrolytic	15V

INDUCTORS

L	Ohms
1	.5
2	9.5
3	6.25
4	1.5
5	2.25
6, 7	1.75 together
8	12.5
9	12.5
10	350
11	Very Low
12	3

HMV 1807

S1, ganged to the Brightness control, is the on/off switch. Fuses are fitted to the input mains lead.

Cathode-ray tube is a 10-in. triode, having an aluminised screen and providing a 9 by 7-inch picture. It is magnetically focused by ring magnet on the neck in conjunction with a variable control in the grid circuit of V12. This control, by varying the line flyback period, alters the EHT to the CRT anode and so alters the focus of the beam as well as having some effect on brightness.

Picture brightness is controlled by varying the bias applied to the grid of the CRT. This voltage is obtained from R38, the Brightness control, which forms part of a bleeder network.

Picture signals are fed to the cathode.

Note on Testing. Most stages can be checked by normal methods, but it is not advisable to break into the fine connections to RF coils if this can be avoided. Dynamic testing by signal injection is probably the best way to check RF, demodulator, video and AF stages.

Due to pulse operation in the time-base sections, DC voltage and current readings are of little value, and oscilloscope waveforms offer a more reliable check of performance.

None of the EHT points is lethal—peak current is approximately 1mA, but a RF burn may result from physical contact. Except for a check on the smoothed EHT point with an electrostatic meter or current indicator of less than 100 microamps loading, no other test is possible on the line output transformer primary circuit.

It is unlikely that failure of the scan during testing will damage the tube except due to disconnection of the scanning coils.

Alignment procedure. Connect micro-ammeter, decoupled by 20,000 ohms to grid of video amplifier. Connect output meter across 4 ohms to LS leads.

Allow 5 minutes for receiver to stabilise, then, from signal generator of 50 ohms output impedance, inject signals as below.

Signal mc/s.	Transformer or Trimming Condenser	Procedure
41.5 (Mod. 400 c/s 30%)	RFT3 RFT6	Tune to secure minimum input giving 250mW output.
41.5 (No. mod.)	T1	Minimum video output
43	RFT1	Minimum input for 2V at video diode.
44	RFT2	
42.5	RFT4	
45	RFT5	

Retune RFT1 for balance of sound to vision gain and curve shape.

Response should be as follows: Flat within +2dB between 42.5 and 44mc/s; —4 to —6dB at 45mc/s with respect to 43.5mc/s; more than 25dB down at 41.5mc/s.

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Filament negative and g3 are connected down to chassis. Screen (g2) voltage is obtained from R3 and decoupled by C9.

Signal rectifier. L9, T8, the secondary of IFT2, feeds signal to diode anode of V3. R5, the volume control, is the load resistor and C10 filter capacitor.

AVC. The DC component of the rectified signal is used for this purpose and is fed by R4 to g3 of V1 and g1 of V2. C2 is decoupling capacitor.

AF amplifier. C11 feeds signal from volume control R5 to g1 of pentode section of V3. Bias for g1 is developed on C11 with R6 as leak resistor. Filament negative and g3 are connected down to chassis. Screen (g2) voltage is obtained from R7 and decoupled by C12. R8 is the anode load resistor and C13 anode RF by-pass capacitor.

Output stage. C14 feeds signal at anode V3 to g1 of pentode output valve V4. Bias for grid, which is developed across R11 in the HT negative return to chassis and decoupled by C18, is fed through R10 to g1. Centre tap of filament and g3 are connected down to chassis. (The two halves of filament are paralleled so as to operate from the 1.5V LT supply.)

Screen voltage is obtained from HT line. L10, the primary of output matching transformer OP1, is in the anode circuit. C15 is tone correction capacitor. L11, the secondary of OP1, feeds into a 5-in. PM loudspeaker L12.

HT is provided by two 45V batteries, such as Ever Ready Type B104, connected in series. The coupling together of the batteries is effected by the wo non-reversible plugs provided on the HT lead. HT battery is decoupled by C17. Further decoupling is provided by R9, C16.

S3 in its off position breaks the negative HT lead to receiver.

ALIGNMENT INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 430 kc/s direct to g3 of V1 (with g1 shorted to chassis)	—	T8, T7. Core L3
(2) 1.5 mc/s to L1 via a loop	200 metres	T4, T2
(3) 600 kc/s as above...	500 metres	T5. Repeat (2) and (3)
(4) 273 kc/s as above...	1,100 metres	T3, T1
(5) 150 kc/s as above...	2,000 metres	T6. Repeat (4) and (5)

LT of 1.5V is supplied by an Ever Ready All-Dry 4 type battery. S4, which is ganged to S3 and the wavechange switch breaks the LT negative lead to chassis.

Chassis Removal. Remove battery cover and unplug and remove the HT and LT batteries. Chassis is held in cabinet by two bolts—one at each end of valve platform. On unscrewing the nuts, chassis is free to be withdrawn to extent of leads into frame aerial and speaker compartment.

Top panel of chassis with dial escutcheon can be lifted off after removing the four self tapping screws. To expose wavechange switch, the dial plate must be removed.

Frame Aerial and Speaker Removal. Remove the two lower wood screws (nearest to edge) securing hinge to lid and also the two inner screws of snap fastener catches. Carefully ease out cover panel.

Undo the four wood screws at extreme sides of speaker baffle and carefully withdraw assembly so as to avoid damage to frame aerial.

HMV HAIR DRYER—*from page 31*

and remove paxolin gasket (Fig. 3). Unscrew brush caps located at each side of main body and remove carbon brushes.

Remove the two screws immediately below switch buttons (Fig. 4). Pull off oval-shaped plate marked "HMV" and remove slotted nut below it. Lift off switch escutcheon and carefully ease out switch assembly. Remove lead marked A (with yellow sleeve on it) from centre terminal of switch. Switch can then be temporarily placed back in position. Remove black lead (from one of motor field coils) which is held under the bolt at left-hand side of housing. Remove the four bolts (two at each side of motor) which secure bars under which motor frame lugs are clamped to body (Fig. 3). Motor can now be withdrawn from housing.

Dismantling motor. On removal of the two bolts at opposite sides of endplates (one is used to anchor earth lead of interference suppressor capacitors) the end plates, laminations, and armature can be separated (Fig. 6).

When reassembling see that the fibre washers are placed one at each end of armature spindle. These prevent any surplus oil from the end bearings being splashed on to commutator segments or armature windings. To relieve any tension on the armature bearings due to misalignment when re-assembly of motor is completed, it is advisable to tap the free side of laminations lightly but sharply with a small hide mallet.

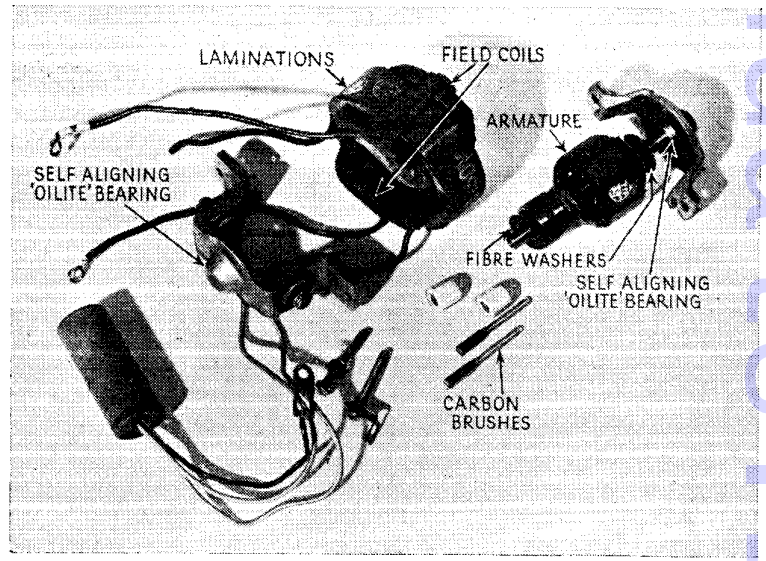

Fig. 6 — Motor armature, end-plates, laminations and field coils can all be taken down on removal of two bolts. Generally, the only attention needed is occasional renewal of the carbon brushes

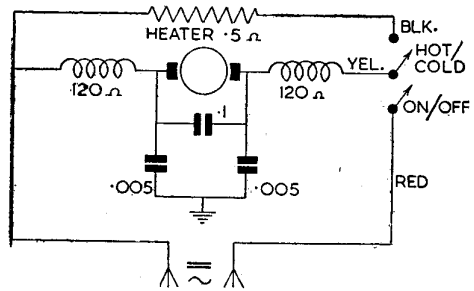

Fig. 7—Circuit diagram of the hair dryer showing motor, element and the two switches. Resistance of the heater when cold is 100 ohms

ATLAS FLUORESCENT FITTINGS

The original Quickstart control gear circuit for twin 40W fittings was given in Fig. 2 of last month's Service Chart on Atlas decorative fluorescent units.

A modified circuit is now in use and is reproduced below.

ATLAS "DOUBLE FORTY" Q.S. UNIT