

# GOBLIN TIME SPOT

Four-valve, plus rectifier, receiver for 200-250V AC covering three bands and fitted with mains clock and on/off programme switch. Marketed by the British Vacuum Cleaner and Engineering Co. Ltd., Leatherhead, Surrey.

**CIRCUIT** consists of a triode-hexode frequency changer V1 coupled to a variable-mu HF pentode IF amplifier V2. A double-diode triode V3 is used for signal demodulation, AVC and AF amplification. The output valve V4 is a beam tetrode and drives an eight-inch energised speaker. HT is supplied by V5, an indirectly heated full-wave rectifier. An electric clock with adjustable time switch is fitted for automatic switching on/off of the receiver. This device can be cut out by the mains

auto-radio switch if so desired and the set can then be switched on and off manually.

Aerial is fed to coupling coils L1(SW), L3(MW), L5(LW) through selector switch S1. L17, T9 form an IF filter circuit. Aerial tuned coils L2(SW), L4(MW) and L6(LW) are connected to grid V1 through S2. VC1 is the aerial tuning capacitor and T1(SW), T2(MW), T3(LW) are trimmers.

AVC is applied to grid V1 on MW and LW from R7, C1 being AVC line decoupling capacitor. Cathode bias is supplied by R2 and decoupled by C2. Screen voltage is obtained from R6 and decoupled by C6.

L13, T10, which form the primary of IFT1, are connected in the hexode anode circuit of V1.

Oscillator is connected in a parallel-fed tuned-anode circuit. R5 is oscillator anode load resistor. S4 switches the oscillator tuned circuits L8(SW), L10(MW), L12 (LW) to anode through C4. VC2 is the oscillator tuning capacitor and T4(SW), T5 (MW), T6(LW) are trimmers. C5 is SW padder and T7, T8 are MW and LW padders.

S3 switches the reaction coils L7(SW), L9(MW), L11(LW) to oscillator grid through coupling

capacitor C3 and limited resistor R3. Bias for the oscillator grid is provided by R4, R3, C3 network

IF Amplifier operates at a frequency of 465 kc/s. Secondary L14, T11 of IFT1 feeds the signal to grid V2. AVC is applied in series with L14 from R7. No standing bias is provided, the valve's cathode being returned direct to chassis. Screen voltage, in common with that of V1, is obtained from R6. C6 is decoupling capacitor L15, T12, primary of IFT2, are in anode circuit of V2.

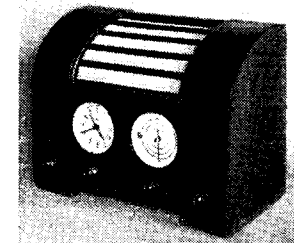
Demodulation and AVC are provided by the strapped diodes of V3. Secondary L16, T13 of IFT2 applies signal to diodes. R9, the volume control, is the diode load. R8, C7, C8 form an IF filter. AVC is taken from R8 and fed through R7 to grids of V1 and V2. PU sockets are fitted across R9.

AF Amplifier. C9 feeds signal from volume control R9 to grid V3. R10 is grid resistor and C9, R10 provide self bias, cathode being connected down to chassis. R11 is anode load resistor.

Output Stage. C10 feeds signal to grid V4 through stopper resistor R13. R12 is grid resistor.

R15, C14 provide cathode bias. Screen voltage is obtained from HT line of receiver.

Primary L18 of OPI, the output matching transformer, is connected in anode circuit. C11 and R14 provide variable tone control across L18. L19, secondary of OPI, feeds L21 the low-impedance speech coil of loudspeaker. L20 is humbucking coil and is connected in series with L21. Extension LS sockets for low-impedance speaker are fitted across L19. A plug/socket is fitted to disconnect the internal speaker.

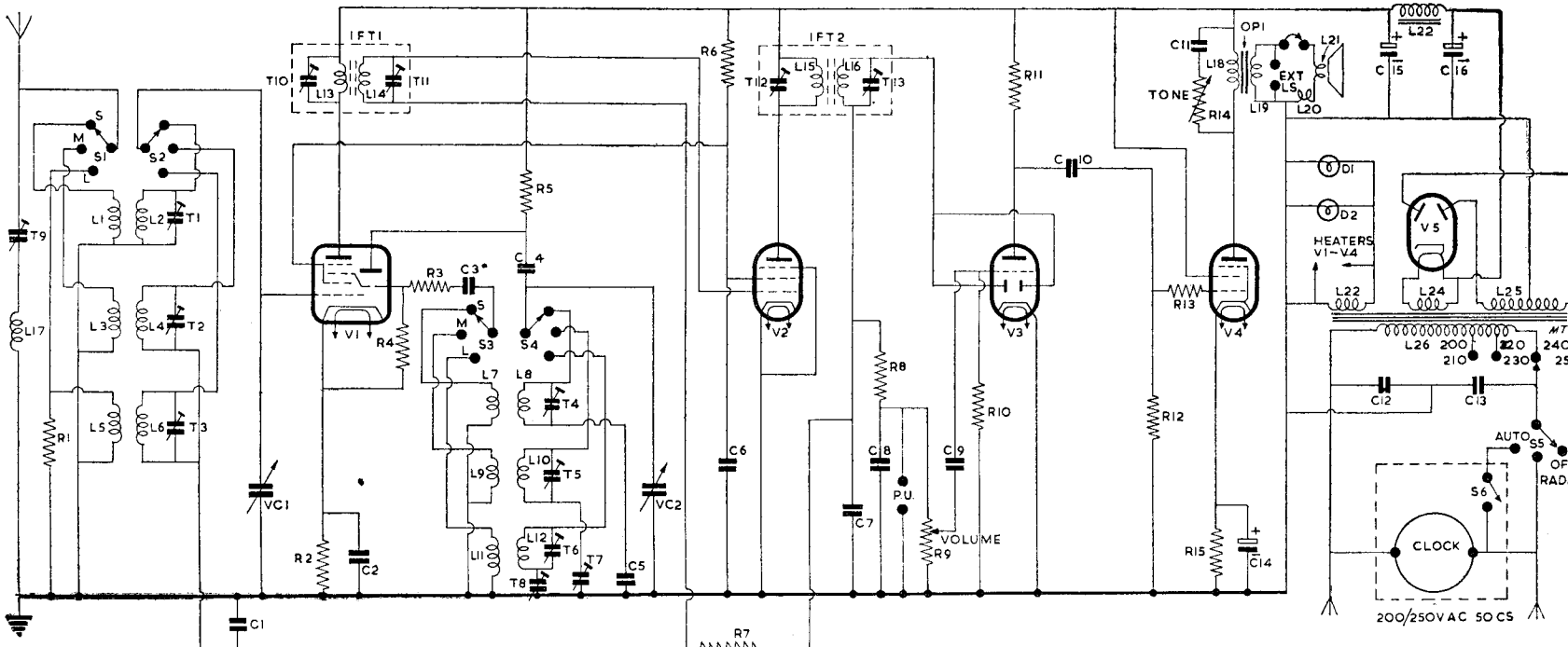
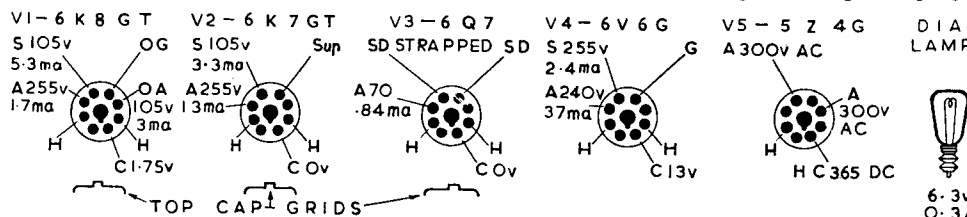


Goblin Time-spot Radio

HT is supplied by full-wave indirectly heated rectifier V5. L24 provides heater voltage and L25 anode voltages. Field coil (L22) of the speaker with capacitors C15 and C16 smooth the HT. C12 and C13 fitted across the primary L26 of MT1 suppress modulation hum or mains interference.

Heaters of V1/V4 and dial lamps are supplied from L23. Primary L26 of MT1 is tapped for input voltages 200/250 AC 50 c/s.

Clock. The self-starting synchronous clock



## INDUCTORS

L	Ohms	L	Ohms
1	...	10	...
2	...	11	...
3	...	12	...
4	...	13	...
5	...	14	...
6	...	15	...
7	...	16	...
8	...	17	...
9	...	18	...
19	...	19	...
20	...	20	...
21	...	21	...
22	...	22	...
23	...	23	...
24	...	24	...
25	...	25	...
26	...	26	...

## CAPACITORS

C	Value	Type	Voltage
1	.1	Tubular	500v
2	.1		500v
3	200pF	Silver Mica	
4	25pF	"	
5	5000pF	"	
6	.1	Tubular	350v
7	100pF	Silver Mica	
10	.005	Tubular	500v
11	.02	"	750v
12	.05	"	500v
13	.01	Mica	
14	10	Electrolytic	25v
15	8	"	
16	16	"	450v

## RESISTORS

R	Value	Power
1	4.7K	1/2W
2	220	1/2W
3	220	1/2W
4	56K	1/2W
5	47K	1/2W
6	15K	1/2W
7	2.2M	1/2W
8	56K	1/2W
9	.5M	Potentiometer
10	10M	1/2W
11	220K	1/2W
12	470K	1/2W
13	10K	1/2W
14	25K	Potentiometer
15	330	1/2W

# GOBLIN TIME SPOT—Contd.

can be replaced the pointer and scale mounting plate must be removed.

Unclip scale lamp fitting, remove dial pointer (centre screw) and two screws fixing scale mounting plate to chassis. Restring as shown in diagram with flax braided cord No. 40.

### TRIMMING INSTRUCTIONS

Apply Signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
1) 465 kc/s to top cap VI short circuit VC2	—	T13, T12, T11, T10
2) 1.45 mc/s to aerial socket via dummy aerial	207 metres	T5, T2
3) 600 kc/s as above ...	500 metres	T7 and repeat (2)
4) 300 kc/s as above ...	1,000 metres	T6, T3
5) 175 kc/s as above ...	1,714 metres	T8 and repeat (4)
6) 20 mc/s as above ...	15 metres	T4, T1
7) 465 kc/s as above ...	500 metres	T9 for minimum output

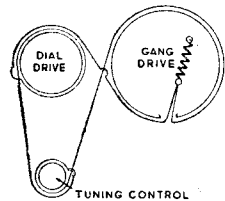
movement is connected directly across the input mains. S5 allows the receiver to be switched on/off without stopping the clock. S5 when in the AUTO position brings into circuit the time switch S6 incorporated internally in the clock. S6 will switch on the receiver at any desired time and without further attention will automatically switch off after approximately 2 hours.

**Removing Chassis.** Remove back of cabinet and small screw at centre rear edge of LS baffle. Slide out speaker and baffle. Unfasten chassis bolts on underside of cabinet and slide out chassis.

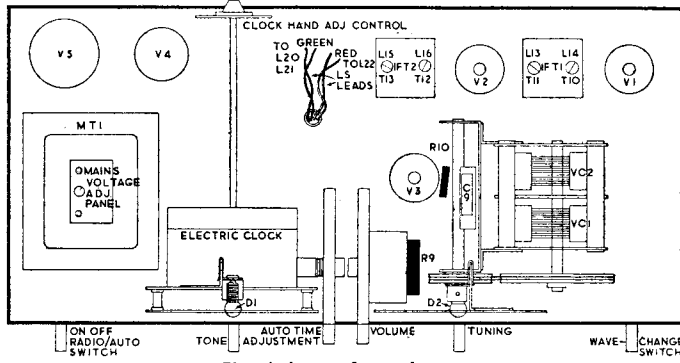
**Removing Clock.** Disconnect red, black and yellow leads from points under chassis. Unscrew handset knob and shaft by depressing and turning against the arrow marked on the knob. Unclip dial lamp fitting.

Remove clock unit, complete with dial and thumb wheel, by undoing the two bolts which fix the clock mounting plate to chassis. Also release back support bracket by removing the screw at the back of the clock cover.

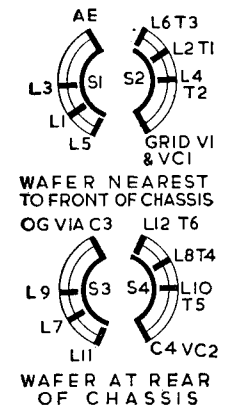
**Drive Cord Replacement.** Before the drive wire



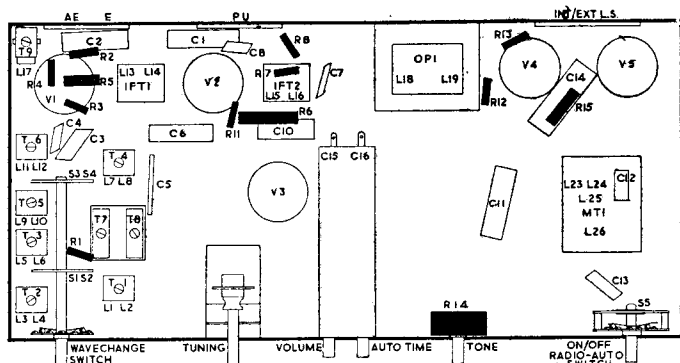
Tuning cord drive arrangement



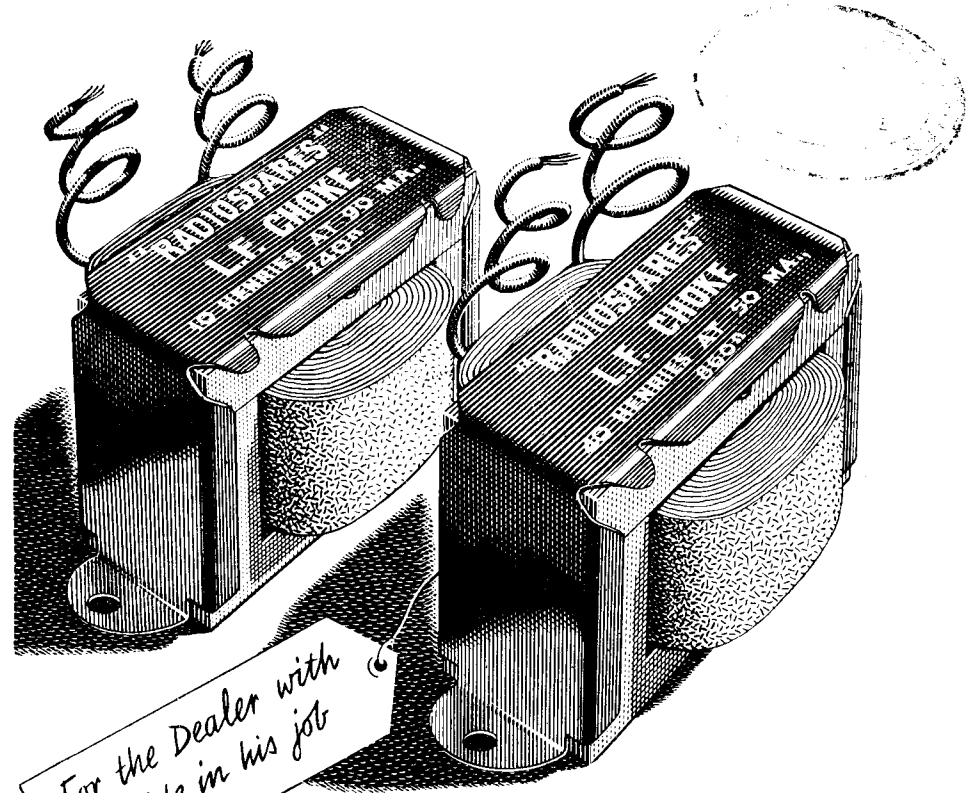
Chassis layout from above



Key to the wave change switch



Chassis layout from below



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Illustrations are strictly accurate

We present our range of L.F. (Smoothing) Chokes. They are guaranteed quality components with the following general characteristics. WINDINGS: paper-interleaved, wax-impregnated. LAMINATIONS: high-mu alloy steel. OVERALL HEIGHT: 2 in. OVERALL WIDTH: 2 3/4 in. (fixing centres: 3 1/8 in.). OVERALL DEPTH: 1 7/8 in. (Stack only: 1 1/8 in.). They are available in two distinct types. (1) INDUCTANCE: 10 Henries, capacity: 90 M/a. RESISTANCE: 240Ω. (2) INDUCTANCE: 40 Henries, capacity: 50 M/a. RESISTANCE: 860Ω. The price of both types is 6/9 each net trade; and they are available as and when listed in the current bulletin. Obtainable only direct from:

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