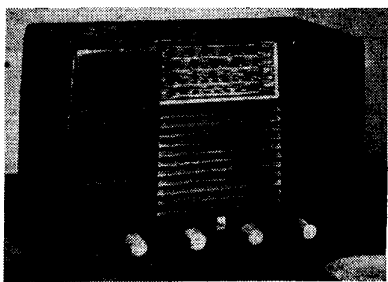
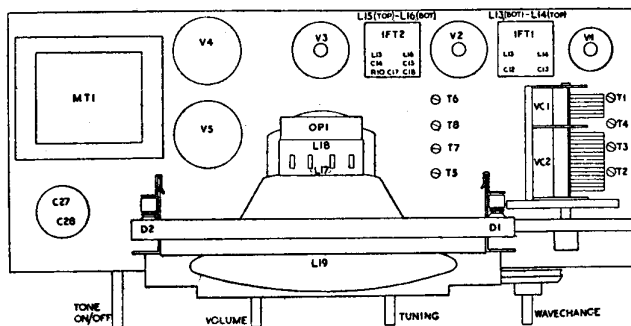


# PHILCO A547B



Five-valve, four-waveband superhét. Sockets fitted for high-impedance pickup and low-impedance extension loudspeaker. Designed for 200-250 volt, 40-100 c/s supplies. Dark brown moulded cabinet. Sold by Philco Radio and Television Corporation (G.B.) Ltd., Perivale, Middlesex.

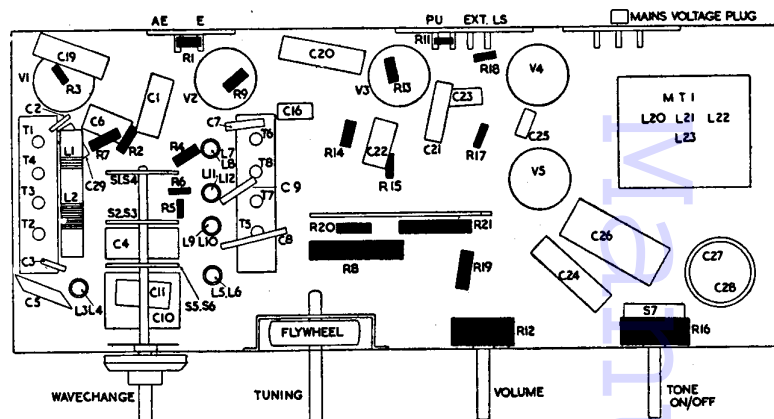


LAYOUT OF IFT.

**A**ERIAL is fed through C1 to S1 and thence to tapings on tuned aerial coils L1 (SW2), L2 (SW1) and to bottom end of L3 (MW) and L4 (LW). A static drain resistor R1 is connected across the aerial and earth sockets. The tuned coils are switched by S2 to g1 of triode-hexode frequency-changer V1, and by S3 to tuning capacitor VC1. On SW2 range a series capacitor C4 is switched in circuit with VC1. A following shorting blade on S2 shorts out and earths the unused coils. T1, C2 (SW2), T3, C3 (SW1), T3 (MW) and T4 (LW) are trimmers.

AVC and a standing bias voltage, decoupled by R2, C5, is applied to g1 through the coils. Cathode

Continued opposite

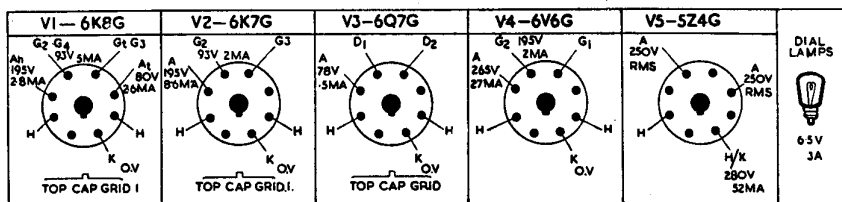
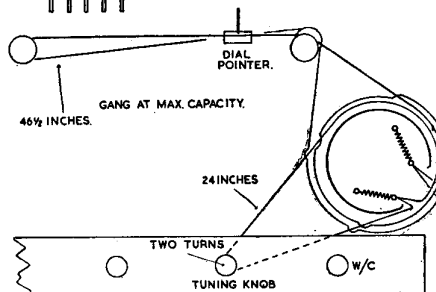


### RESISTORS

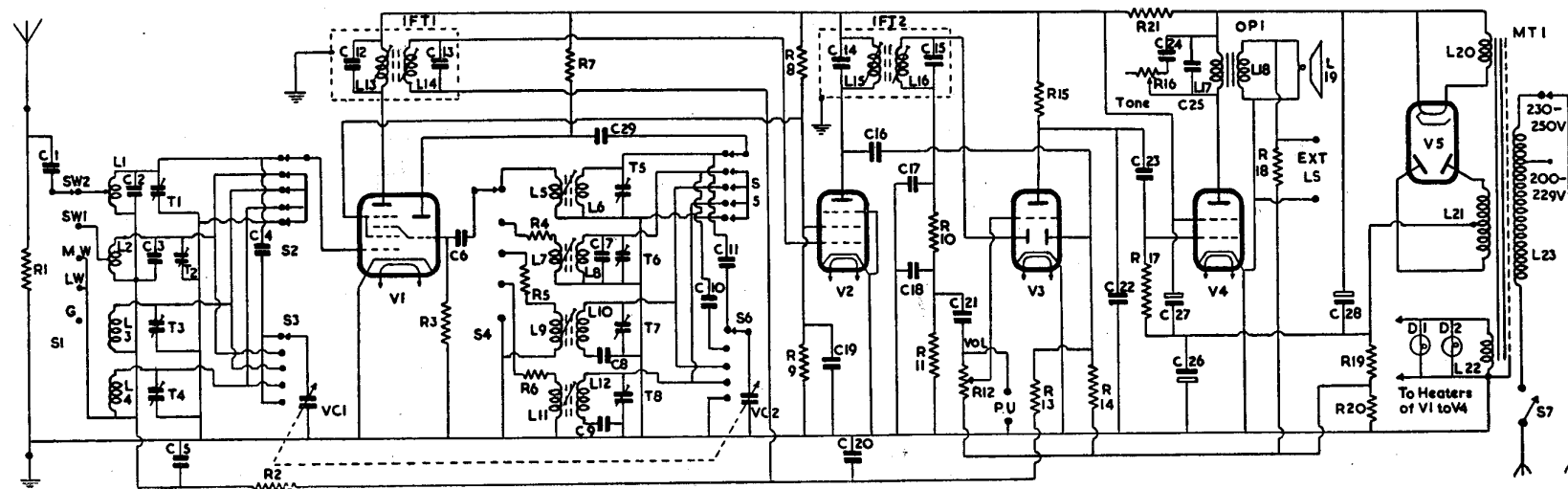
R	Ohms	Watts
1	10K	
2	33K	
3	47K	
4	68	
5	2.2K	
6	2.2K	
7	33K	
8	12K	
9	68K	
10	47K	
11	220K	
12	1 Meg.	
13	1M	Potr.
14	1M	
15	220K	
16	50K	Potr. with Switch
17	470K	
18	220	
19	180	
20	33	
21	4.3K	

### INDUCTORS

L	Ohms
1	very low
2	very low
3	3.5
4	50
5	very low
6	very low
7	.25
8	very low
9	2.5
10	6
11	5.5
12	15
13	8
14	8
15	8
16	8
17	250
18	very low
19	2.5
20	very low
21	800 total
22	very low
23	40 total



BIAS VOLTAGE DEVELOPED ACROSS R19 R20 10-25V



### CAPACITORS

C Capacity and Type

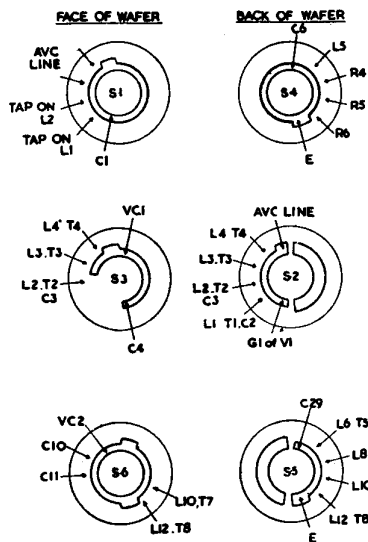
1	.001 Tubular 500V
2	22pF Silver Mica
3	22pF Silver Mica
4	330pF Silver Mica
5	2500pF Silver Mica
6	100pF Silver Mica
7	22pF Silver Mica
8	374pF Silver Mica
9	104pF Silver Mica
10	1800pF Silver Mica
11	293pF Silver Mica
12	100pF Silver Mica
13	100pF Silver Mica
14	100pF Silver Mica
15	100pF Silver Mica
16	47pF Mica
17	100pF Silver Mica
18	100pF Silver Mica
19	.1 Tubular 350V
20	.1 Tubular 350 V
21	.01 Tubular 350V
22	100pF Silver Mica
23	.001 Tubular 1000V
24	.05 Tubular 500V
25	.005 Tubular 500V
26	25 Electrolytic 25V
27	32 Electrolytic 350V
28	32 Electrolytic 350V
29	100pF Silver Mica

For more information remember www.savoy-hill.co.uk

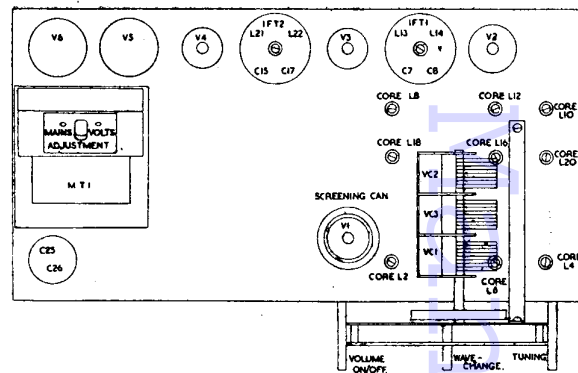
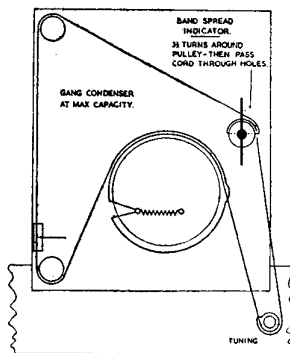
# PHILCO A547B

## WAVECHANGE SWITCH

VIEWED FROM REAR OF UPRIGHT CHASSIS SWITCH IN GRAM POSITION



## CORD DRIVE LAYOUT



is earthed to chassis. Screen (g2, g4) voltage is obtained from potential divider R8, R9 and is decoupled by C19. L13, C12, the primary of IFT1, are in the hexode anode circuit.

**Oscillator** is connected in a shunt-fed tuned-anode circuit. L6 (SW2), L8 (SW1), L10 (MW) and L12 (LW) are the anode tuned coils which are connected by S5, through C29, to oscillator anode (A1) of V1, and by S6 to tuning capacitor VC2. On SW2 and SW1 ranges, series capacitors C11, C10 are switched in circuit with VC2. A following shorting blade on S5 short circuits the unused coils. T5 (SW2), T6, C7 (SW1), T7 (MW), T8 (LW) are trimmers, and C8 (MW), C9 (LW) are padders. R7 is oscillator anode load resistor.

The grid reaction coils L5 (SW2), L7 (SW1), L9 (MW), L11 (LW) are switched by S4 through C6 to oscillator grid. R4, R5 and R6 are series limiter resistors. Self bias for oscillator grid is developed on C6 with R3 as leak resistor. In the "gram" position of the wave-change switch anode and grid of oscillator are earthed through their respective coupling capacitors.

**IF amplifier** operates at 465 kc/s. L14, C13, the secondary of IFT1, feeds signal, AVC and a standing bias voltage, decoupled by R13, C20, to the grid of IF amplifier V2. Cathode and suppressor grid are connected down to chassis. Screen voltage is obtained from potential divider R8, R9 and is decoupled by C19. L15, C14, which form the primary of IFT2, are in the anode circuit.

**Signal rectifier.** L16, C15, the secondary of IFT2, feeds signal to one of diodes of V3. R11 is load resistor and R10, C17, C18 an IF filter.

**Automatic volume control.** C16 feeds signal at anode V2 to second diode of V3. The load resistor R14 is returned to earth via the bias network formed by R19, R20. This provides a delay voltage for the AVC diode and a standing bias for grids of V1 and V2.

**AF amplifier.** C21 feeds rectified signal to volume control R12 and thence to grid of triode section of V3. Cathode is at earth potential so bias for grid is obtained by returning bottom of R12 to bias network R19, R20. R15 is anode load resistor and C22 anode RF bypass capacitor.

**Pickup.** Sockets are fitted for connection of any high impedance gramophone pickup. The sockets are wired so as to connect the pickup between top of volume control R12 and chassis.

**Output stage.** C23 feeds signal from anode of V3 to grid of tetrode output valve V4. R17 is grid resistor. Cathode is at earth potential and bias for grid is developed across R19, R20 and is fed through R17 to grid. C26 decouples the bias voltage. Screen voltage is obtained from R21 and decoupled by C27. R21 also supplied HT to V1, V2 and V3. L17, the primary of output matching transformer OP1 is in the anode circuit of V4, the HT for which is obtained direct from reservoir capacitor C28.

C24, C25 and R16 provide tone control. L18, the secondary of OP1, feeds signal to an 8 in. PM loudspeaker L19. Sockets are fitted on L18 for connection of a low-impedance extension speaker.

Negative feedback from L18 is fed by R18 and R12 to grid of V3.

**High tension** is provided by an indirectly heated, full-wave rectifier V5. L21, the HT secondary of mains input transformer MT1, supplies its anode

voltage and L20 its heater current. R21, C27, C28 provide resistance capacity smoothing.

The negative side of HT supply is returned to chassis through R19, R20 so as to provide bias for grids of V1 to V4 and delay voltage for AVC diode of V3. C26 is bias decoupling capacitor.

**Chassis removal.** Remove the four push-on type control knobs and fibre rear panel of cabinet. Unscrew and remove the two screws securing dial assembly to front of cabinet. Remove the two screws holding wooden supporting strip at rear of cabinet.

## TRIMMING INSTRUCTIONS

Apply signal as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to g1 of V1, via .1 mF	—	Core L16, L15, L14, L13
(2) 350 kc/s to AE socket, via dummy aerial	857 metres	T8, T4
(3) 160 kc/s as above	1875 metres	Core L12, repeat (2) and (3)
(4) 1.4 mc/s as above	214 metres	T7, T3
(5) 600 kc/s as above	500 metres	Core L10, repeat (4) and (5)
(6) 13 mc/s as above	13 mc/s	T6, T2
(7) 6 mc/s as above	6 mc/s	Core L8, repeat (6) and (7)
(8) 21 mc/s as above	21 mc/s	T5, T1
(9) 13 mc/s as above	13 mc/s	Core L6, repeat (8) and (9)

NOTE.—Two peaks may be found when adjusting T1 and T2. The maximum capacity setting should be selected.

## PETO SCOTT—from page 36

**AERIAL** is fed through C1 to S1 and thence to coupling coils L1 (SW), L3 (MW), L5 (LW). The grid coils L2 (SW), L4 (MW), L6 (LW), which are trimmed by T1, T2 and T3, C30, are switched by S2 to tuning capacitor VC1, and to signal grid of RF amplifier V1. AVC, decoupled by R1, C2, is fed through the tuned coils. The coupling coils L7 (SW), L9 (MW), L11 (LW) are switched by S3, in series with the anode circuit of V2.

**Frequency-changer.** The grid coils L8 (SW), L10 (MW), L12 (LW), trimmed by T4, T5 and T6, C29, are switched by S4 to signal grid of triode-hexode frequency changer V2 and to tuning capacitor VC2.

The MW and LW coils are shunted by R29, R30 respectively. AVC, decoupled by R3, C5, is fed through the tuned coils. L13, C7, which form the primary of IFT1, are in the hexode anode circuit.

**Oscillator** is connected in a tuned-anode shunt-fed circuit. The anode coils L16 (SW), L18 (MW), L20 (LW), which are trimmed by T7, T8 and T9, C31, and padded on MW and LW by C12 and C13, are switched by S6 through C10 to oscillator anode of V2, and to tuning capacitor VC3. R7 is anode load. The oscillator HT supply is disconnected by S12 when the combined radio-gram and tone control switch is in the Gram position.

The grid reaction voltages are developed inductively on L15 (SW), L17 (MW), and capacitively across C13 (LW) and are switched by S5 through C11 and series limiter resistor R9, to oscillator grid of V2.

**IF amplifier** operates at 465 kc/s. L14, C8, the secondary of IFT1, feeds signal, and AVC voltage, to IF amplifier V3.

**Signal rectifier.** L22, C17, the secondary of IFT2, feeds signal to one diode of V4. R12 is load.

**Tone control—radiogram.** S7, S8 combine switching the gramophone pickup and providing three degrees of tone control. The pickup signal is fed through R13 to S7 and thence through C19 to the volume control R20. S8 brings into circuit across either the radio or pickup signal the tone control components R14, C18.

**AVC.** C16 feeds signal at anode of V3 to second diode of V4. R19, its load, is returned to chassis via R24, in the negative HT lead, so as to provide a delay bias for the AVC diode. R1, C2, R3, C5

## TRIMMING INSTRUCTIONS

Apply signals as stated below	Tune Receiver to	Trim in Order stated for Max. Output
(1) 465 kc/s to g1 of V2, via .01 mF with VC3 short circuited	—	Core L22, L21, L14, L13
(2) 300 kc/s to AE socket, via dummy aerial	1000 metres	T9, T6, T3
(3) 150 kc/s as above	2000 metres	Core L20, L12, L6. Repeat (2) and (3)
(4) 1.5 mc/s as above	200 metres	T8, T5, T2
(5) 668 kc/s as above	450 metres	Core L18, L10, L4. Repeat (4) and (5)
(6) 20 mc/s as above	15 metres	T7, T4, T1
(7) 7.5 mc/s as above	40 metres	Core L16, L8, L2. Repeat (6) and (7)

and R18, C21 decouple the AVC line to grids of V1, V2 and V3.

**AF amplifier.** C20 feeds signal from volume control R20 to triode grid of V4. Bias is developed on C20 with R15 as leak.

**Output stage.** C22 feeds signal from anode V4, through stopper resistor R22, to grid of pentode output valve V5. R21 is grid resistor and C28 prevents parasitic oscillation. Cathode bias is provided by R23, which is returned to chassis through secondary L24 of output matching transformer OP1, to introduce negative feedback.

L23, output transformer primary, is in the anode circuit, HT for which is obtained from junction of R25, R26. C27 is fixed tone corrector.

L24, OP1 secondary, feeds an 8 in. PM loudspeaker L25. Sockets are fitted for a low-impedance extension speaker. S10 enables the internal speaker to be silenced when the extension speaker is in use.

**High tension** is provided by directly heated full-wave rectifier V6. L27, the HT secondary of mains input transformer MT1, supplies its anode voltages and L26 its heater current. R25, R26, R27, C24, C25, C26 give resistance-capacity smoothing. R24 provides delay bias for the AVC diode of V4.