DYNATRON — Models RG25B, RG29B, RG32B, RG38B, RG39A, RG40A, RG41A, RG43, RG44, RG45, HFC1A, HFC1M, HFC2A, HFC2M, TRG10 (Radiogram Section)

Models RG25B, RG29B, RG32B, RG38B, RG39A, RG40A, RG41A, RG43, RG44, RG45

General Description: This series of fully transistorised radiogramophones incorporates the four-waveband radio tuner type T66 for the reception of broadcasts on V.H.F., Short, Medium and Long wavebands. The internal ferrite aerial has rotational control and a wire aerial is fitted in the cabinet for A.M. reception, with a separate dipole for V.H.F. A socket is provided for a multiplex decoder unit to be plugged in for reception of stereo radio broadcasts. Automatic frequency control on V.H.F. can be switched in or out. Loudspeaker systems are acoustically matched for each model. A high fidelity 18/24 series integrated stereo amplifier with controls for input selection, balance, volume, treble, bass and ON/OFF is fitted, and slider switches provide stereo/mono selection, S filter, R filter, loudness control, and there is meter indication for Stereo balance or V.H.F. tuning. A socket for tape recording and playback to BREMA standards is fitted.

The pickup cartridge is a Sonotone 9TA with diamond stylus.

Models HFC1A, HFC1M, HFC2A, HFC2M

This series of gramophones incorporates the 18/24 amplifier giving 12 watts R.M.S. per channel. The type T66 tuner is fitted to HFC2A and HFC2M. Loudspeakers are external units, type LS100 incorporating one $6\frac{1}{2}$ in. unit plus one $3\frac{5}{8}$ in. high frequency unit, or type LS200 incorporating one 8-in. unit with high-pass filter, and $3\frac{5}{8}$-in. high frequency unit.

Model TRG10

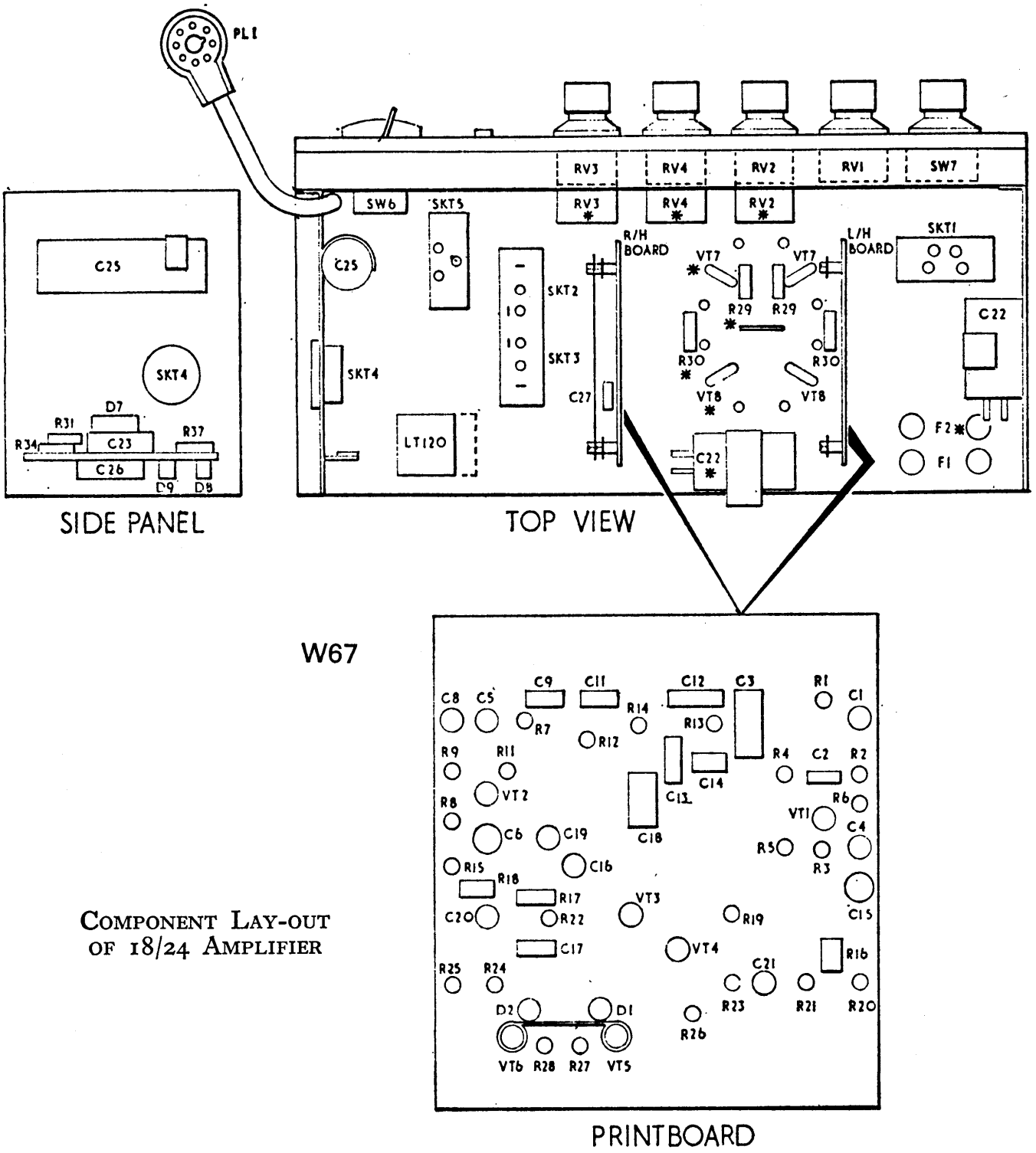
The radiogramophone section of this model incorporates the 18/24 Amplifier giving 12 watts R.M.S. per channel and a type T66 Tuner.

Alignment

I.F. A.M.

(*a*) Switch to M.W. Inject a 470-kc/s., 30% modulated signal into base winding of M.W. aerial coil, set tuned to 550 kc/s.
(*b*) Adjust in order for maximum output T2, T4 and T6.

R.F. A.M.: Inject signal via dummy aerial to " all band " aerial socket.



COMPONENT LAY-OUT OF 18/24 AMPLIFIER

S.W.

(*a*) Set band limits to 5·5 Mc/s. and 16·25 Mc/s. adjusting L10 and C21.
(*b*) Tune set to 14·5 Mc/s. and adjust C26 for maximum output.
(*c*) Repeat (*a*) and (*b*) until no further improvement can be made.

M.W.

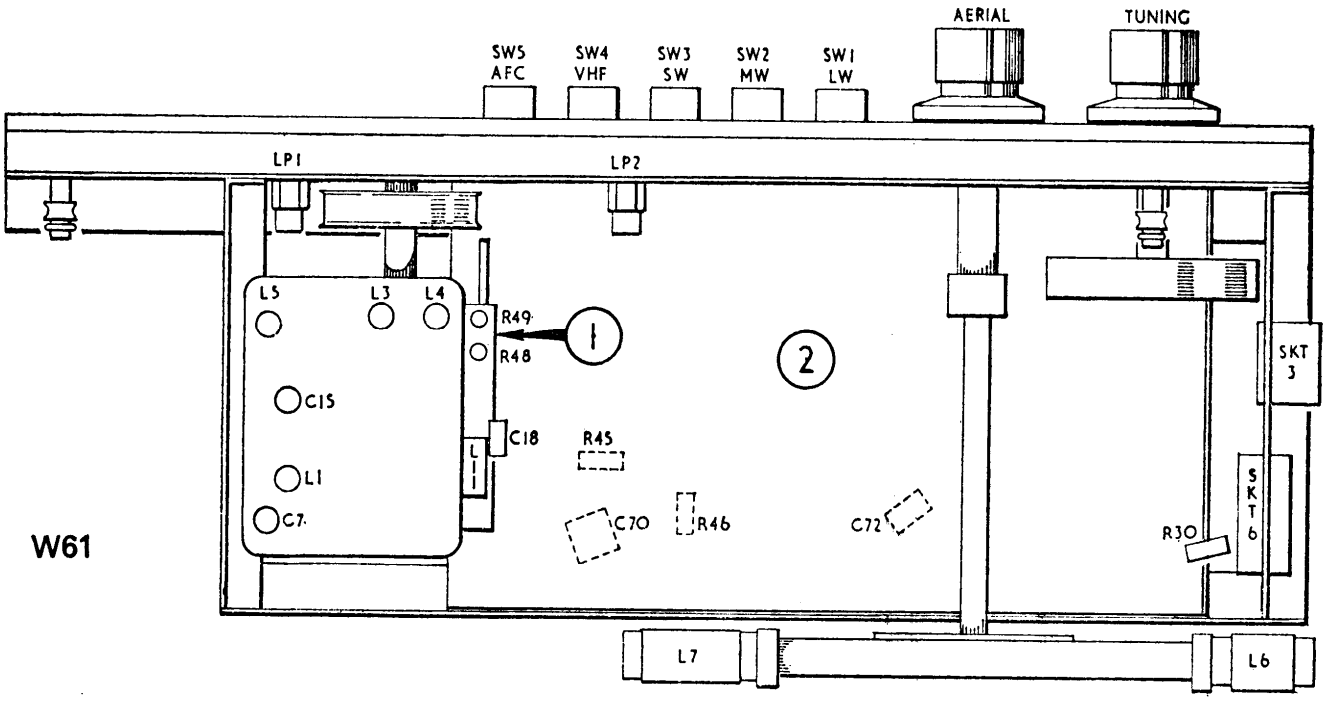
(*a*) Set band limits to 525 kc/s. and 1620 kc/s. adjusting L8 and C23.
(*b*) Tune to 650 kc/s. and set M.W. aerial coil to give maximum output.
(*c*) Tune to 1500 kc/s. and set C24 to give maximum output.

L.W.: Set pointer at 1400 m. and inject 214-kc/s. signal. Set C21 and L.W. aerial coil to give maximum output.

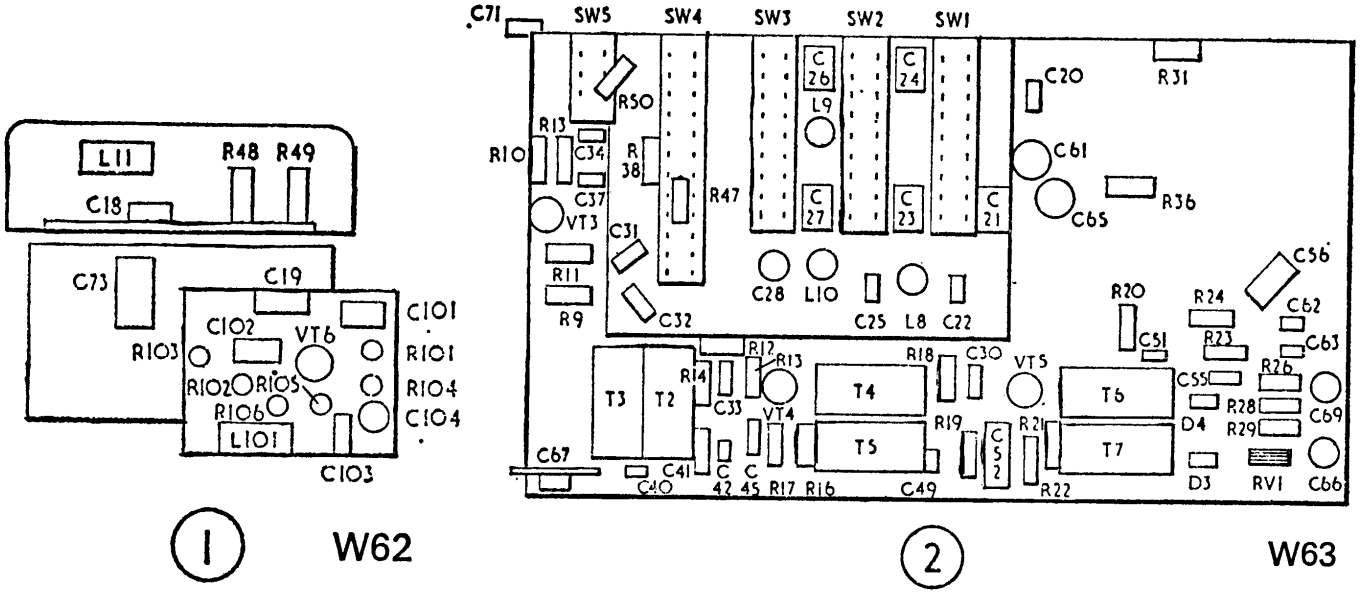
I.F. V.H.F.: Tune receiver to approximately 92 Mc/s. clear of interfering carriers, and inject a wobbulated signal at 10·7 Mc/s. to Pin B on Tuner unit.

(*a*) With C66 and C69 disconnected, connect display input to free end of C66. Adjust secondary of T7 for maximum, then T5, T3, L101, L3 and L4 to produce a symmetrical response centred on 10·7 Mc/s.

(*b*) Re-connect C66 and C69 and connect display input to Pin 5 on circuit board. Adjust secondary of T7 for symmetrical " S " curve.



TOP VIEW



T66 TUNER

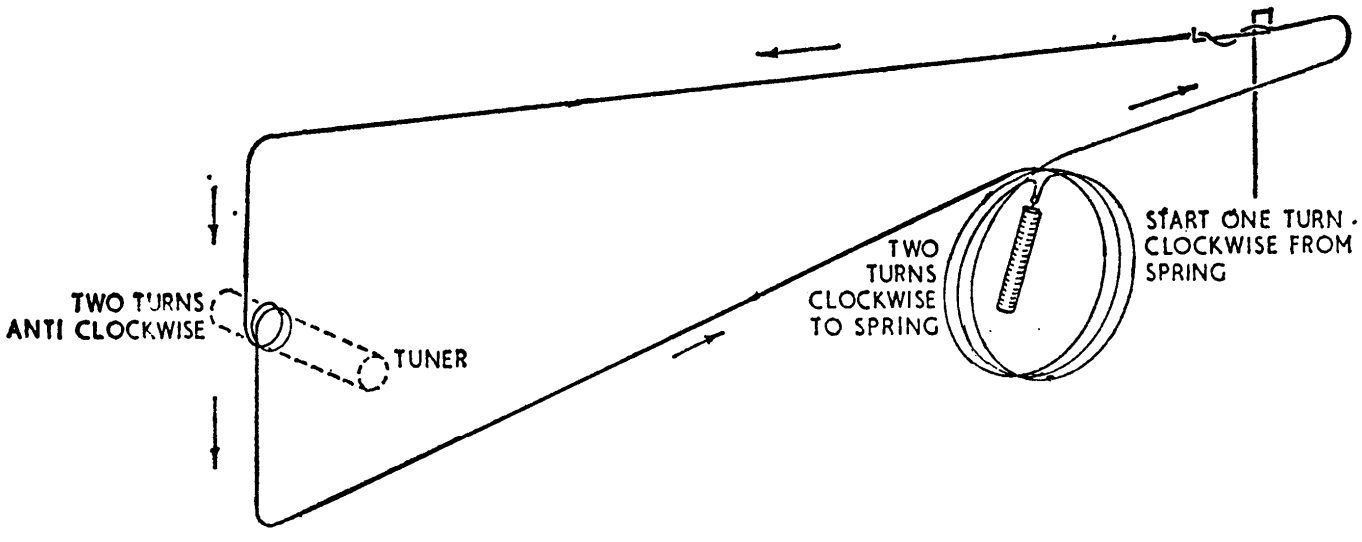
R.F. V.H.F.

(*a*) Inject a 92-Mc/s. signal and set pointer to 92 Mc/s. Tune to obtain signal, and adjust L1 for maximum output.
(*b*) Inject 102-Mc/s. signal and set pointer to 102 Mc/s. Tune C15 to obtain signal, and adjust C7 for maximum output.
(*c*) Repeat (*a*) and (*b*) until no further improvement can be made.
(*d*) Inject a signal at 92 Mc/s., 30% modulated to Pin B, on Tuner unit, and set RV, to give minimum output.
(*e*) Inject a signal at 10·7 Mc/s., unmodulated to Pin B and set T7 secondary to give a zero reading, measured on a 2·5-volt meter between R24 and chassis.
(*f*) Repeat (*d*) and (*e*) until no further improvement can be made.
(*g*) Inject a signal at 10·7 Mc/s. with 22·5 kc/s. deviation to pin C and adjust L11 to give minimum output.

To Check A.F.C. Action

(*a*) With A.F.C. button " out " tune to 92 Mc/s. With an R.F. input of 30 μV., detune until output falls 10 dB. Press A.F.C. button and output should increase to within 1 dB. of original level.
(*b*) Repeat (*a*) detuning in the opposite direction.

Stereo Decoder: A stereo decoder unit can be used with all models covered by this manual. A suffix " D " indicates that the decoder is already fitted. The decoder is available as a kit type SD2 with fitting instructions.



WINDING DETAILS SHOWN FROM REAR WITH GANG OPEN W64

DRIVE CORD

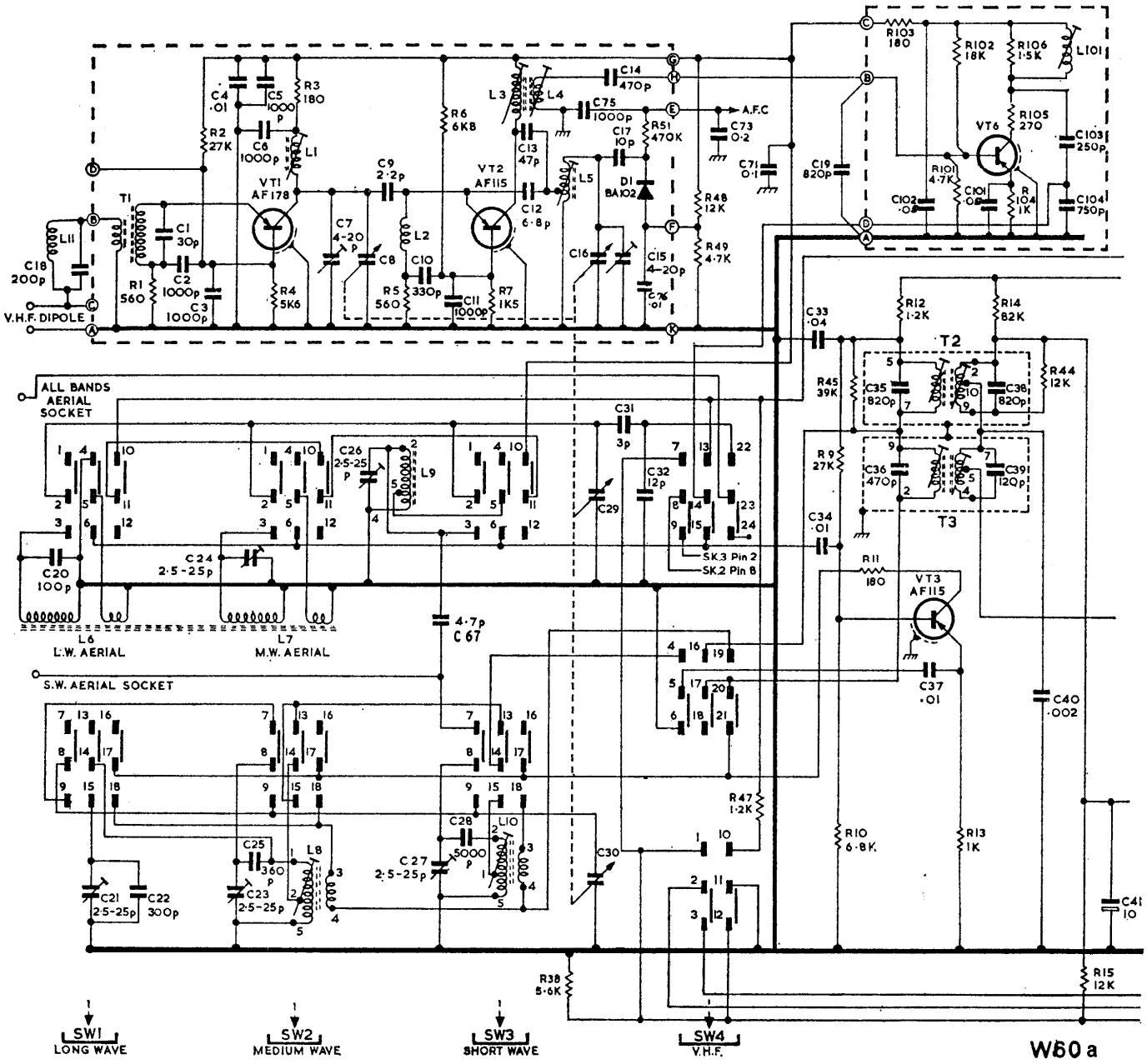
Transistors and Diodes

Tuner Type T66

VT1	AF178	R.F. amplifier (F.M.).
VT2	AF115	Mixer (F.M.).
VT3	AF115	Frequency changer (A.M.) 2nd I.F. amplifier (F.M.).
VT4	AF116	I.F. amplifier (A.M.–F.M.).
VT5	AF116	I.F. amplifier (A.M.–F.M.).
VT6	AF116	1st (F.M.) I.F.
D1	BA102	A.F.C. diode.
D2	SFD107	A.M. detector.
D3, D4	IN542	F.M. detector.

Amplifier Type 18/24

VT1	NKT216	
VT2	NKT275	
VT3	NKT773	
VT4	NKT213	
VT5	NKT717	Complementary pair driver stage.
VT6	NKT212	
VT7, VT8	NKT452	Class B. Output stage.
D1	NKT279	
D2	NKT279A	
D3, D4, D5, D6	LT120	
D7	NKT449	
D8, D9	249A30	

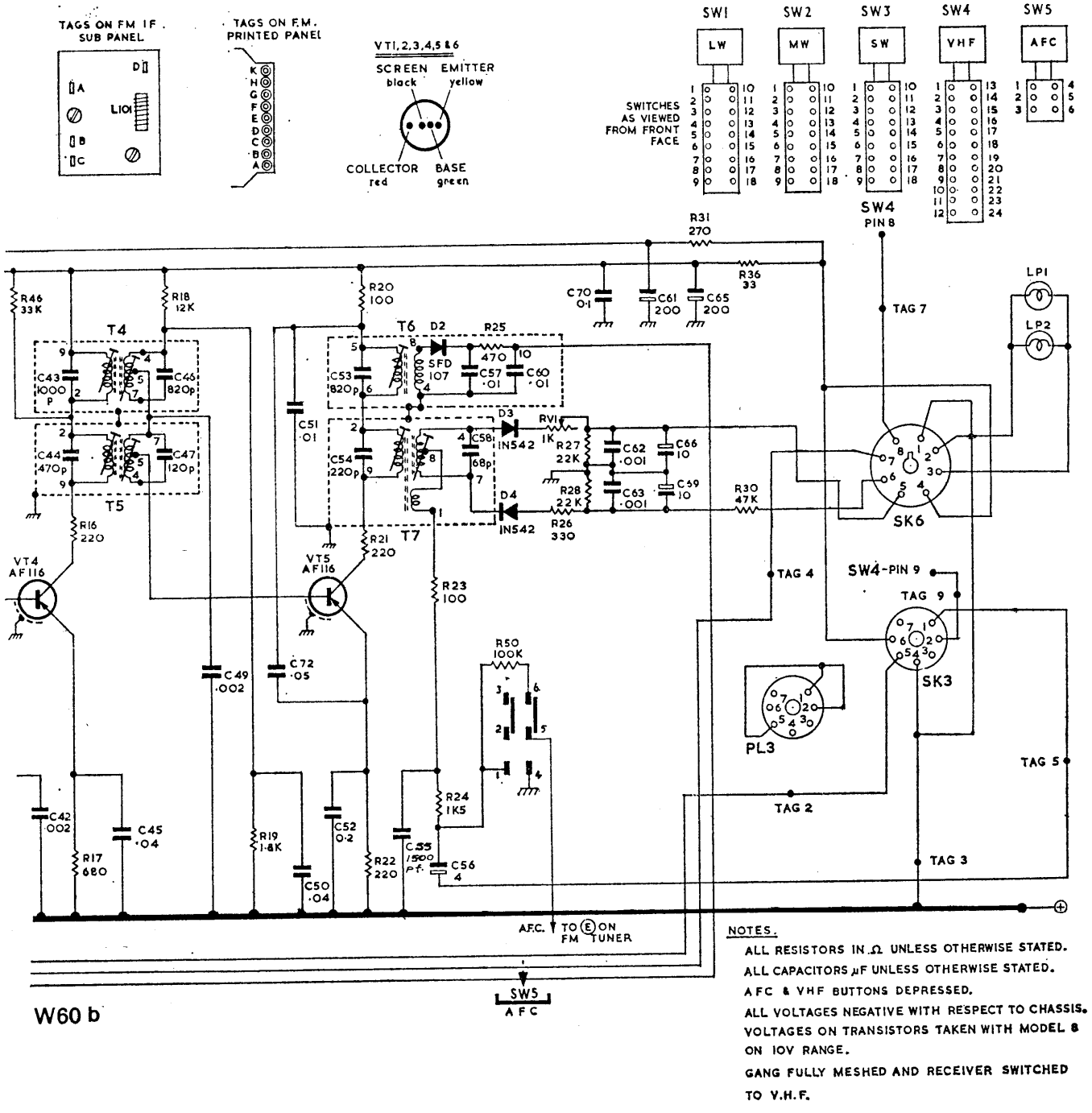


T66 Tuner Circuit—(Part)

Loudspeakers: Impedance 3 ohms. RG39A, RG 43: 2 × 8 in. dual cone units. RG41A: 2 ×8 in. units. RG44: 2 × 10 in. × 6 in. units. RG25B, RG38B: 2 × 8 in. plus 2 × 5 in. middle and high frequency units. RG29B, RG32B: 2 × 10 in. plus 2 × 5 in. middle frequency units plus 2 × 4 in. high frequency units. RG40A, RG45: 2 × 8 in. dual cone units, 2 × 4 in. high frequency units.

Power Output

Models: RG39A, RG41A, RG43, RG44. 9 watts R.M.S. per channel.
Models: RG25B, RG29B, RG32B, RG38B, RG40A, RG45. 12 watts R.M.S. per channel.



Distortion

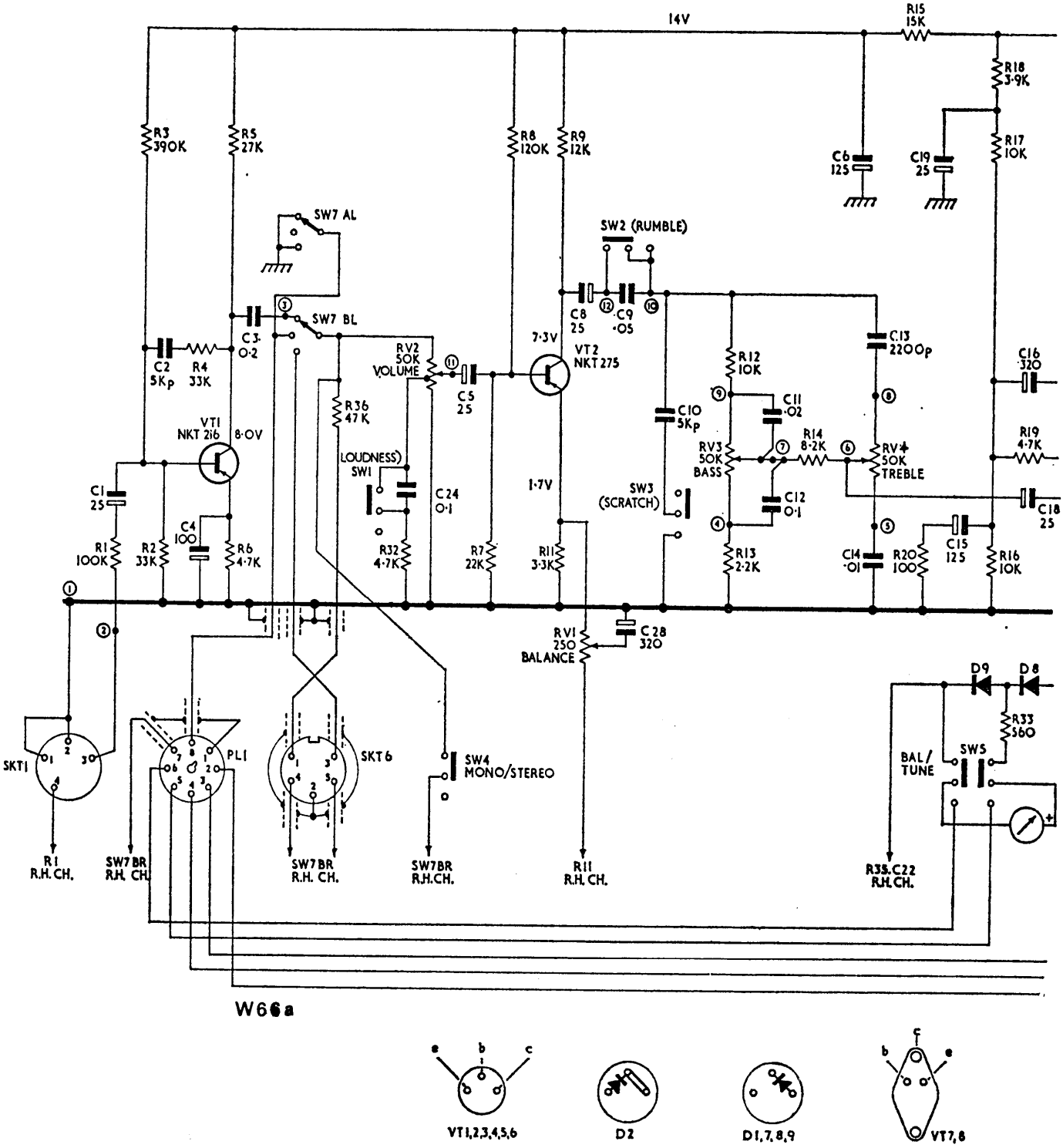
Power Amplifier: Less than 1 per cent. at full output.
Total Overall: Less than 3 per cent. at full output.

Frequency Response

30 c/s. — 15 Kc/s. ± 3 dB at full output.

Tone Controls

Bass: 18 dB at 60 c/s.
Treble: 18 dB at 15 Kc/s.



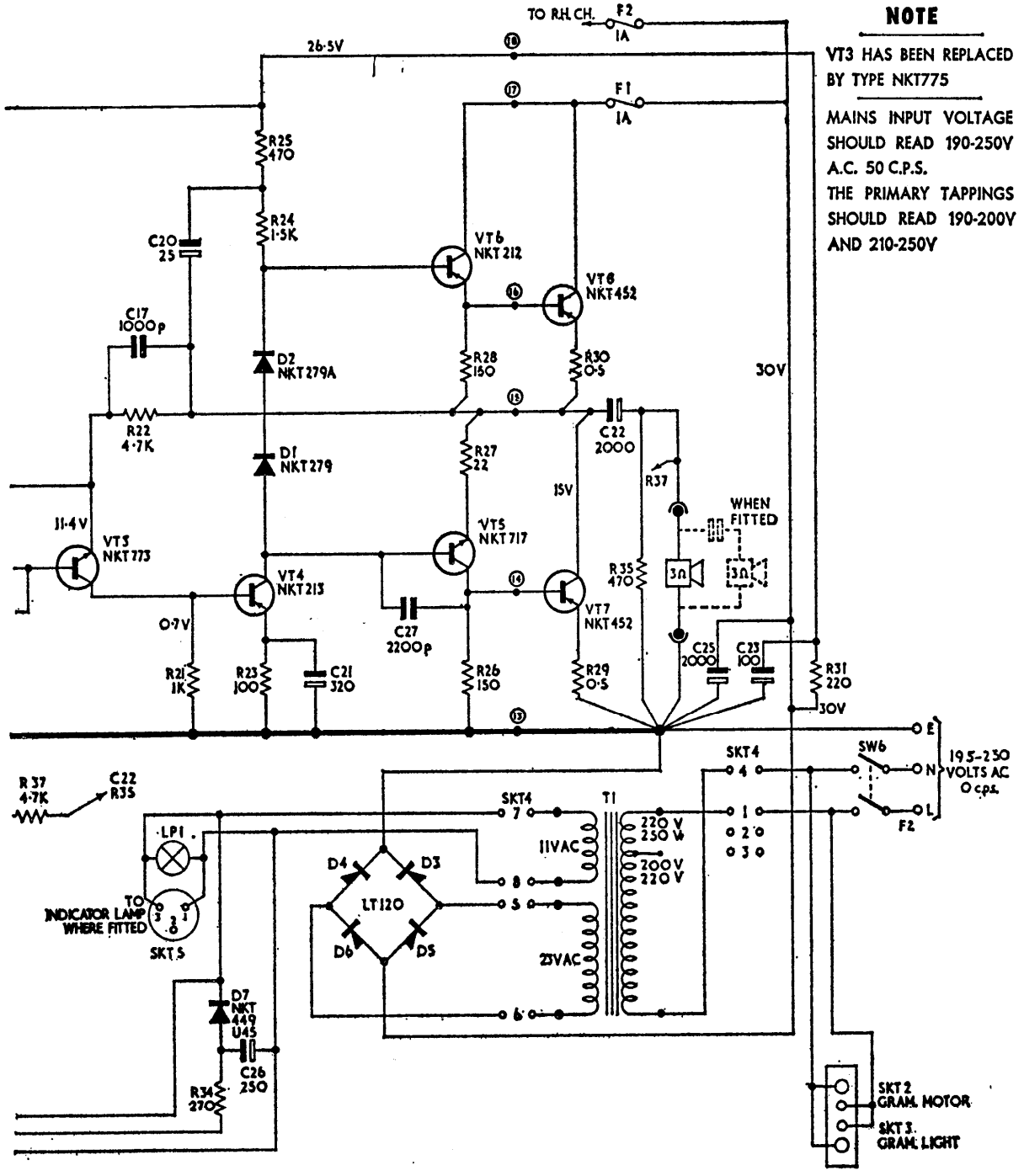
18/24 Amplifier Circuit—(Part)

Loudness Switch: +10 dB at 60 c/s. below half rotation of volume control.

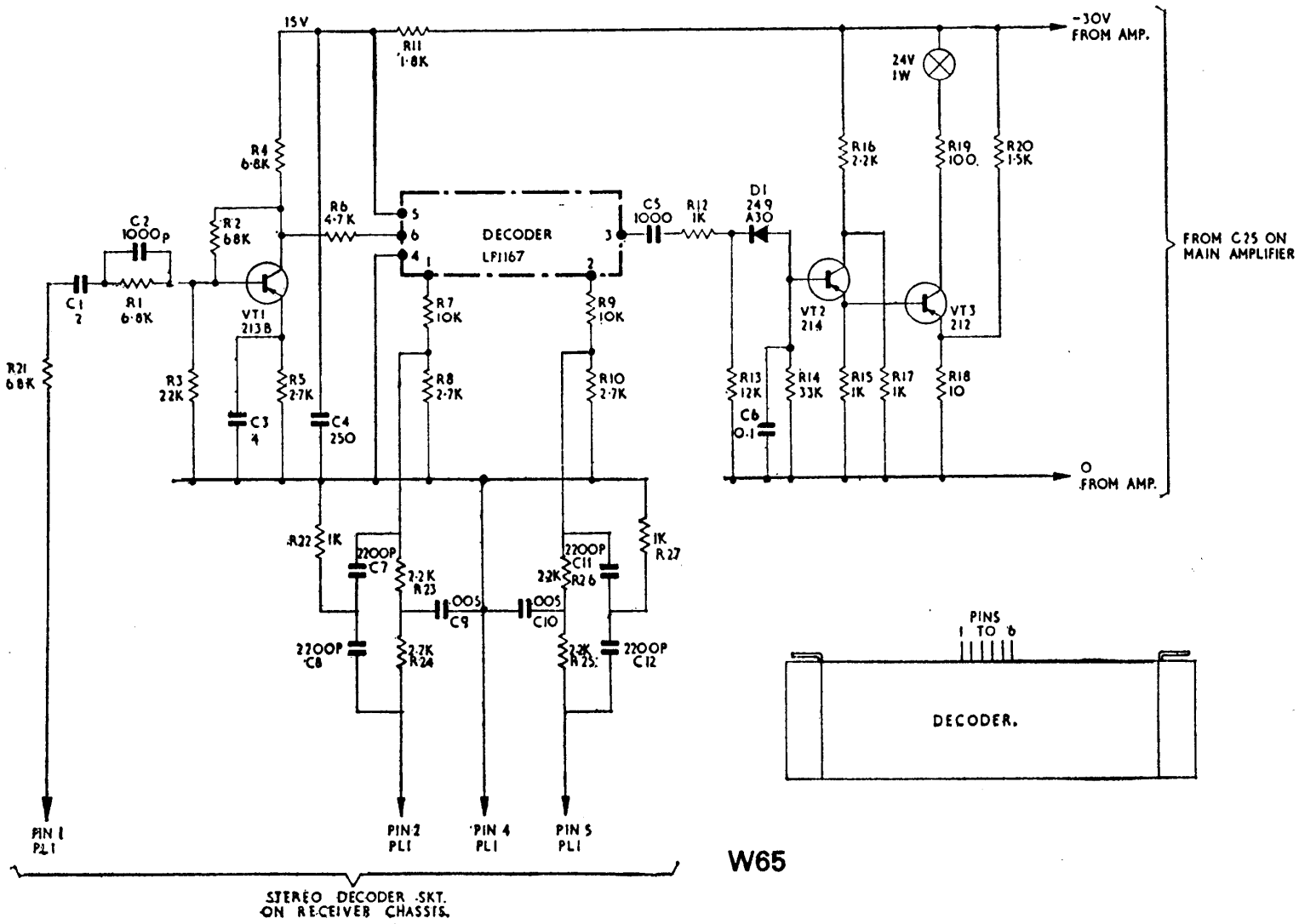
"S" Filter switch: 8 dB at 10 Kc/s. Roll off from 5 Kc/s. reaching 6 dB per octave above 10 Kc/s.

"R" Filter switch: 12 dB at 20 c/s. Roll off from 90 c/s. reaching 12 dB per octave above 25 c/s.

Volume: Continuously variable with tone compensation to give 10 dB lift at 60 c/s. with control set below half rotation with loudness switch in.



18/24 Amplifier Circuit—(Part)



STEREO DECODER