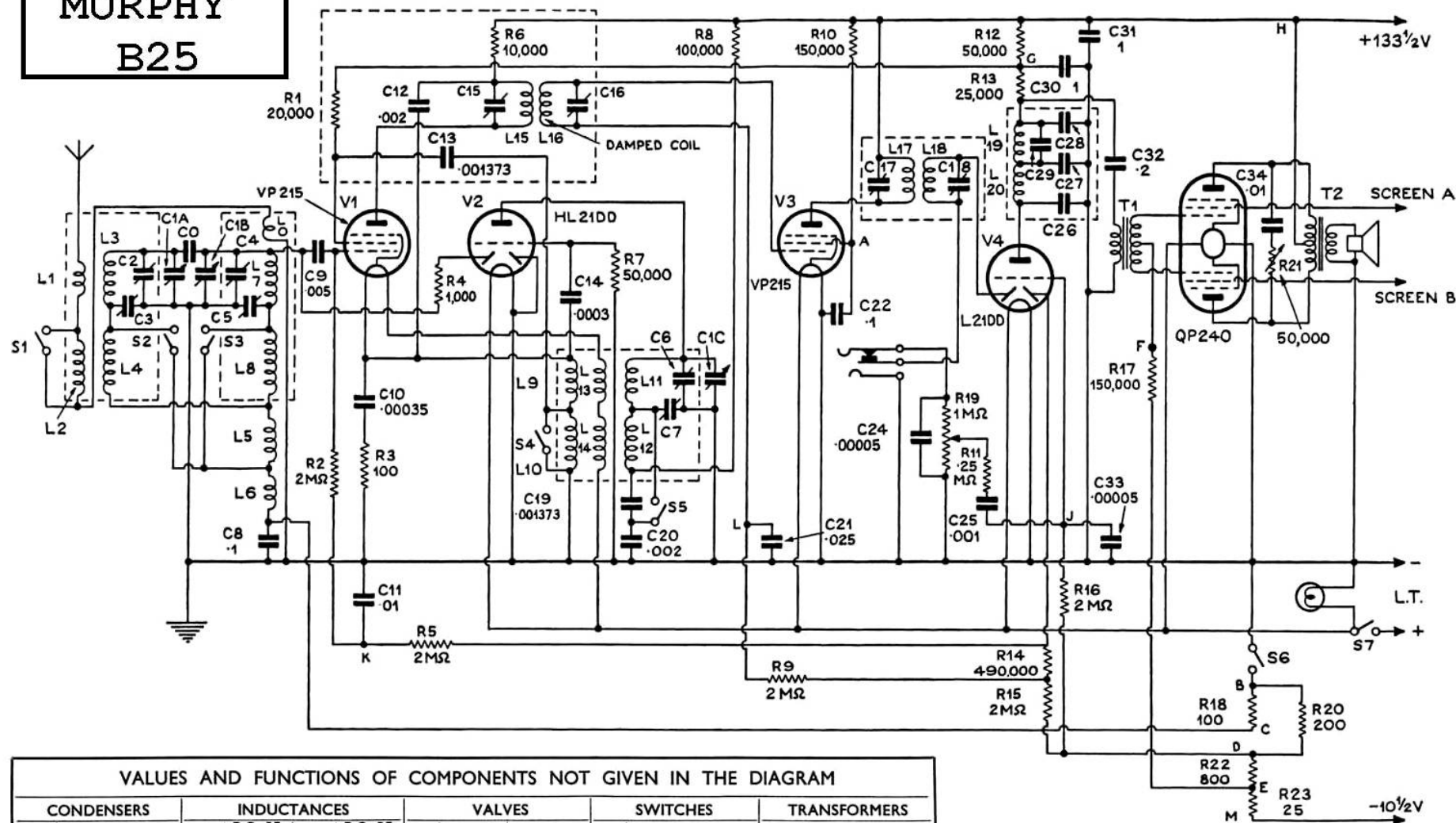


# MURPHY B25



VALUES AND FUNCTIONS OF COMPONENTS NOT GIVEN IN THE DIAGRAM

CONDENSERS		INDUCTANCES		VALVES		SWITCHES		TRANSFORMERS	
No.	CAPACITY	No.	D.C. RESISTANCES	No.	D.C. RESISTANCES	No.	FUNCTION	No.	VALUE
C0	2 M.MFDS.	L0	0.25 Ω	L10	.3 Ω	V1	1ST DET.	VP 215	T1
C1A	.0005 MFD.	L1	1.0 Ω	L11	4 Ω	V2	Osc.	HL21DD	
C1B	.0005 MFD.	L2	7 Ω	L12	8.5 Ω	V3	I.F.	VP 215	
C1C	.0005 MFD.	L3	5 Ω	L13	.6 Ω	V4	2ND DET	L21DD	
C2	10/50 M.MFDS.	L4	12 Ω	L14	40 Ω	V5	Output	QP240	T2
C3	10/80 M.MFDS.	L5	2.75 Ω	L15	40 Ω				
C4	10/50 M.MFDS.	L6	0.75 Ω	L16	40 Ω				
C5	10/80 M.MFDS.	L7	5 Ω	L17	40 Ω				
C6	10/50 M.MFDS.	L8	12 Ω	L18	40 Ω				
C7	10/80 M.MFDS.	L9	.2 Ω	L19	450 Ω				
C8	70/140 M.MFDS.			L20	370 Ω				
C9	70/140 M.MFDS.								
C10	70/140 M.MFDS.								
C11	.01								
C12	.002								
C13	.001373								
C14	.0003								
C15	.00035								
C16	.001373								
C17	.0003								
C18	.0003								
C19	.0003								
C20	.002								
C21	.025								
C22	.00005								
C23	.00005								
C24	.00005								
C25	.001								
C26	.002								
C27	.003								
C28	.001								
C29	.001								
C30	.001								
C31	.001								
C32	.002								
C33	.00005								
C34	.001								

All Resistances in ohms and capacities in microfarads unless otherwise stated.

## VALVE ANALYSIS

Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
V1 VP215	115	1.25	55	0.4
V2 HL21DD	50	0.5	—	—
V3 VP215	135	1.4	60	0.4
V4 L21DD	51	1.0	—	—
V5 QP240	135†	1.3†	*	0.3†

\* According to code letter. † Each half of valve.

Valve voltages and currents given in the table above are approximately correct for a receiver operating with a new battery reading 146V overall.

The volume control should be at maximum, but it is important that no signal should be permitted to enter the receiver, because, apart from AVC action, V5 anode current will vary according to the strength of the signal. The values given in the table are for quiescent conditions.

The meter used had a resistance of 1,000  $\Omega$  per volt, chassis being negative.

## CIRCUIT ALIGNMENT

**IF stages.**—Switch set to MW, and connect the junction of C6 and V1 filament to chassis. Connect signal generator to control grid (pin 1) of V3 via a dummy aerial. Feed in a 117 KC/S (2564.2 m) signal, and adjust C37 and C36 in turn for maximum output. Transfer signal generator leads to control grid (pin 1) of V1, and adjust C35 and C34 for maximum output. Remove short-circuit.

**RF and Oscillator Stages.**—Transfer signal generator leads to A and E sockets via a suitable dummy aerial. With the gang at maximum, the pointer should cover the line crossing the two scales at the high-wavelength ends of the scales.

**MW.**—Switch set to MW, tune to 220 m on scale, feed in a 220 m (1362 KC/S) signal, tune it in, and adjust C32 for maximum output. Now adjust C25, then C29, for maximum output, repeating these latter adjustments until no improvement can be obtained.

**LW.**—Switch set to LW, tune to 1100 m on scale, feed in a 1100 m (273 KC/S) signal, and adjust C31 for maximum output. Now adjust C26, then C28, for maximum output, repeating these two latter adjustments until no further improvement can be obtained.

## GENERAL NOTES

**Switches.**—S1-S5 are the waveband switches in a leaf-spring unit fitted beneath the chassis. All five switches close on MW, and open on LW.

S7, S8 are in a double-pole QMB unit, mounted beneath the chassis, near the control end of the S1-S5 unit. They are operated by the S1-S5 control spindle, which has three positions, and they open in the fully anti-clockwise (off) position of the control.

S6 is the radio muting switch, which forms part of the gramophone pick-up jack, and opens automatically when the plug is inserted.

**Coils.**—L1-L4; L5, L6, L9; and L10-L15 are in three screened units on the chassis deck. Their trimmers are in the same containers, but are reached from beneath the chassis.

L7, L8 are wound on a small flat bakelite bobbin which is bolted to the front chassis member. L7 is the large winding, in four banks wound round the middle of the bobbin; L8 is the small winding at the end near the chassis deck.

The IF transformers L16, L17 and L18, L19 are in two further screened units on the chassis deck with their associated trimmers, which also are reached from beneath the chassis.

L20, L21, in conjunction with condensers C18-C21, form a heterodyne filter in V4 triode anode circuit. The filter cuts off sharply above 5,000 C/S. All the components are contained in a metal can mounted on the chassis deck.

**Scale Lamp.**—This is a low-consumption Ediswan MES type, with a semi-mushroom type bulb. It is rated at 2.5 V, 0.2 A.

**Image Suppressor.**—Tune receiver to 450 m on scale. Feed in a strong 333 m (900 KC/S) signal, and adjust L9 (screw in top of L5, L6, L9 can) for minimum output. The makers recommend using the speaker as an indicator for this adjustment, instead of an output meter, as an aural indication is more satisfactory than a visual one.

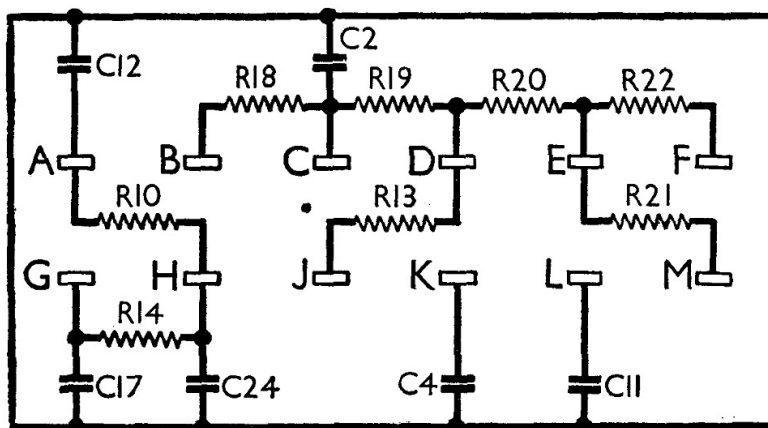


Diagram of the connections of the enclosed assembly, showing the internal components. The connecting panel, showing the tags, is drawn as seen when viewed in the direction of the arrow in our under-chassis view.