

PROVISIONAL SERVICE INFORMATION * MODELS 4200 and 4201 *

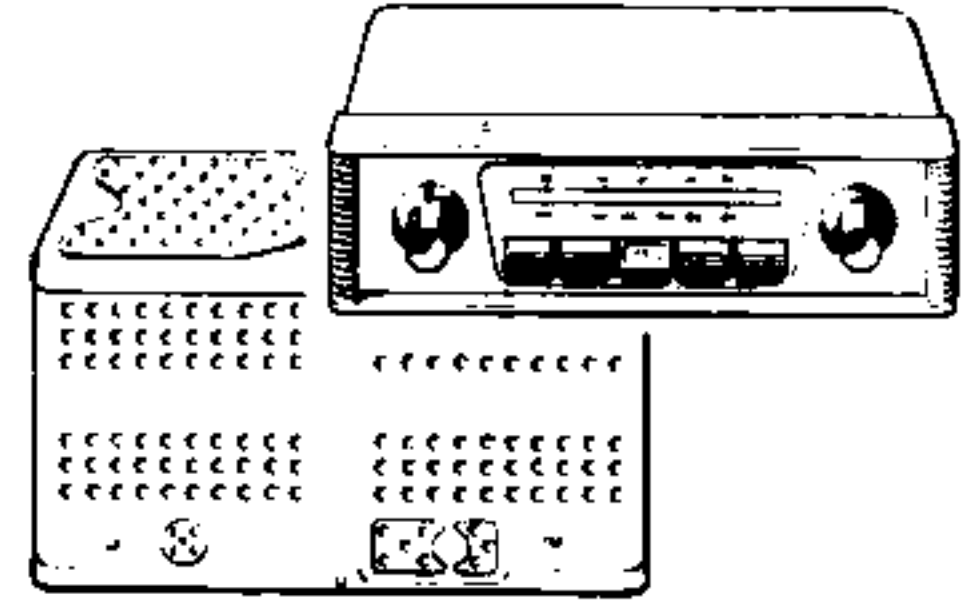


Met dank aan Eddy Bellinckx

“HIS MASTER’S VOICE” AUTOMOBILE RADIO

Models 4200 and 4201

12 Volt *6 Volt*
EIGHT VALVE RECEIVERS FOR 12 AND 6 VOLT BATTERIES RESPECTIVELY



SMITHS RADIOMOBILE

"In certain countries overseas, notably N. & S. America, this identical equipment is marketed as EMITRON CAR RADIO"

Ned. Ver. v. Hist

In view of similarities and for convenience of description, this Sheet deals with the above two models. Unless otherwise stated, all details apply to both.



SPECIFICATION

Radio Control Unit.

Height.	2 ³ / ₁₆ inches (5.6 cm.)	} Overall
Width.	7 ¹ / ₄ inches (18.4 cm.)	
Depth.	8 ¹ / ₈ inches (20.75 cm.)	
Weight.	4 ³ / ₄ lb. (2.2kg.)	

Amplifier and Power Unit.

Height.	4 ³ / ₈ inches (12.1 cm.)	} Overall
Width.	7 ¹ / ₁₆ inches (20.2 cm.)	
Depth.	6 ¹ / ₁₆ inches (15.4 cm.)	
Weight.	7 ¹ / ₂ lb. (3.3 kg.)	

Low Tension Supply.

Model 4200, 12 volt Battery	} Positive earthed supply*
Model 4201, 6 volt Battery	

* These models cannot be adapted for use with vehicles having a negative earthed supply, and on no account should the connections to electrolytic condensers be reversed.

High Tension Supply.

Non-synchronous vibrator with hard valve rectifier.

Power Consumption.

Model 4200, 3.5 amp. at 14 volts (approx.)
Model 4201, 4.5 to 5.5 amp. at 7 volts (approx.)

Fuse.

Model 4200, 5 amp.
Model 4201, 10 amp.

Scale Illumination Lamps.

Model 4200, 12 volt, 0.2 amp.
Model 4201, 7.5 volt, 0.2 amp.

Power Output.

7 watts maximum.
(5 watts at 5% distortion.)

Aerial Input Conditions.

The trimmer provided gives adjustment for a range of aerial capacities from 50 to 160 mmfd.

Valves.

Emitron W77	R.F. Amplifier.
" X78	Frequency Changer.
" W77	I.F. Amplifier.
" DH77	Detector, A.G.C. and L.F. Amplifier.
" DH77	Phase Splitter.
" N78	Push-pull Output.
" N78	
" U78	Full-wave Rectifier.

Intermediate Frequency. 465 kc/s.

Wave Ranges.

Medium Waves. 187-572 metres
(1,604-524.4 kc/s.)
Long Waves. 1,000-2,000 metres
(300-150 kc/s.)

Loudspeaker.

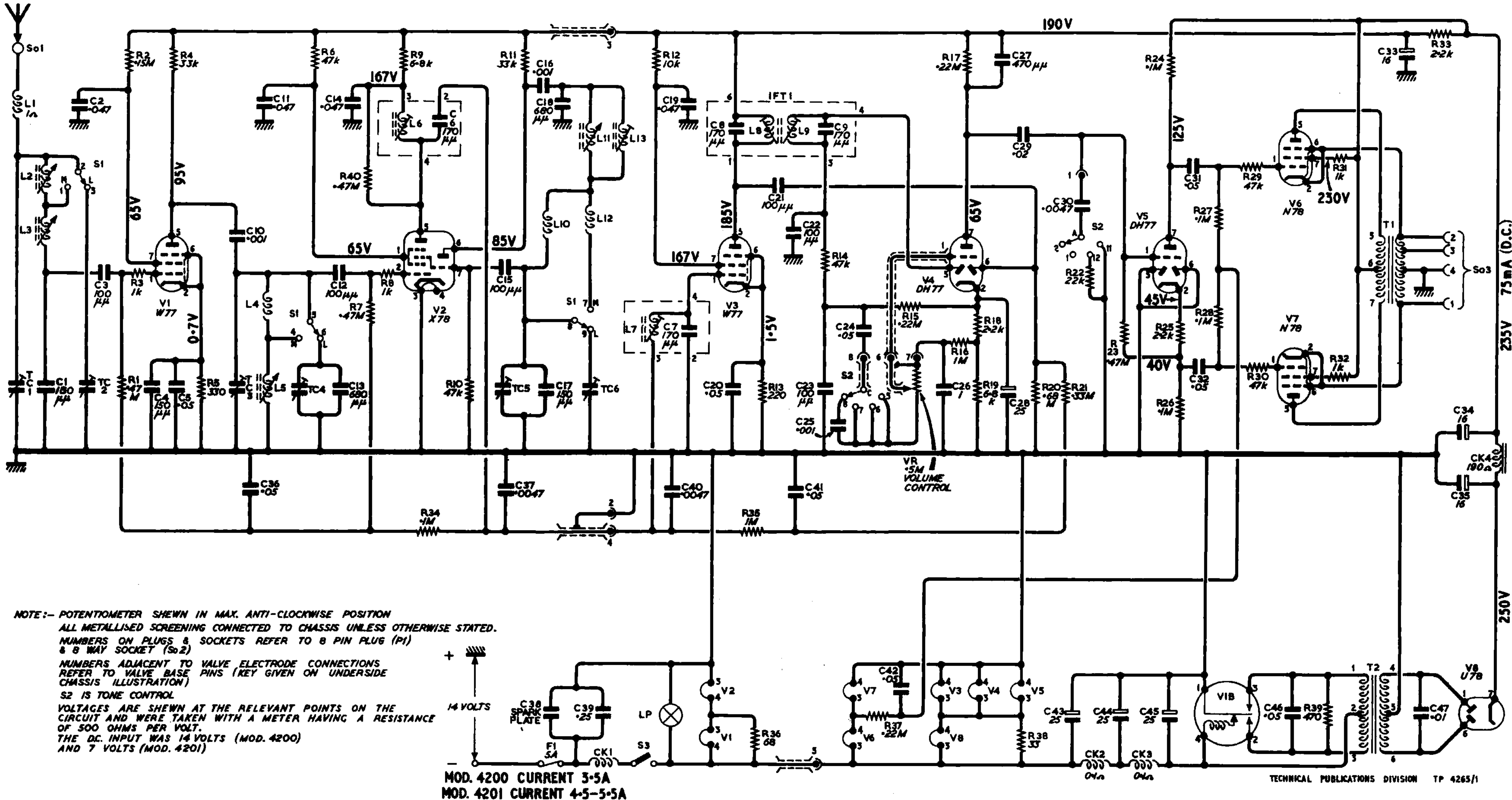
Various loudspeakers may be used to suit the particular installation; it is stressed however, that only loudspeaker units having either of the following impedance ranges may be used:-

(a) 2-3 ohms at 1,000 cycles connected to taps 1 and 3 of T1 (normally two E.M.I. speakers in parallel or 1 proprietary speaker.)

(b) 4-5 ohms at 1,000 cycles connected to taps 1 and 2 of T1 (normally one E.M.I. speaker or two proprietary speakers in series).

1-2 lead de spanning kempot P
1-3 min. ohm

C	1	2,3	4	5	10	36,11	14,12,13	6	15	37,38,16,18,17	59	19,7	40,20,8	21	25,23,22,21,24,9	42	26	27,28,29	43,30	44	45	51,32	46	33	47,34,35	C					
R		1,2,3	4	5			6	40,7	8	9	54	10		12		35	36,13	14	37	15	17,16	18,19	38	20,21,22	23	24,25,26	27,28	29,30	31,32	33	R
L	L23				4	5						6																			L
MISC.	So1, TC1	SI, TC2	V1	TC3	SI, TC4			V2	TC5	FI, SI, CK1, TC6	SS, LP		V3	IFT1	S2	VR	V4		S2, CK2	CK3, V5	V1B	V6, V7		T2, T1	So3, CK4, V8	MISC.					



See page 4 for 6 volt circuit details.

H.F. ADJUSTMENTS.

All H.F. tests should be carried out with the Radio Control Unit and Amplifier and Power Unit removed from the car. To obtain access to the valves, trimmers etc., remove cover from the Radio Control Unit and covers from the Amplifier and Power Unit.

A 12-volt battery supply is required for Model 4200 and a 6-volt battery supply for Model 4201.

With a suitable test oscillator connected to the aerial socket, via the dummy aerial supplied by S. SMITH & SONS (RADIOMOBILE) LTD., and the appropriate battery supply connected (the negative to the battery lead, and the positive to the chassis of the Receiver), the Set is ready for complete ganging and voltage measurements.

For expeditious and accurate servicing, the test equipment and the complete set of trimming tools supplied by S. SMITH & SONS (RADIOMOBILE) LTD., should be used.

The All-Wave Service Generator, directly calibrated, covering the frequency range, 100 kc/s. to 120 Mc/s. and including a special Car Radio Dummy Aerial is particularly recommended. If any I.F. circuits have been disturbed complete I.F. and R.F. alignment must be carried out.

In carrying out ganging operations, the input from the test oscillator to the Receiver must be kept low and progressively reduced as

the circuits are brought into line so that the output does not exceed 200mW. (1 volt) across a 5 ohm non-inductive load. An A.C. rectifier type voltmeter (and 5 ohm load) plugged into socket So. 3 may be used as an output indicator, using a low scale range (0-5v.).

IMPORTANT.-

Although adjustment of the aerial trimmer (TC1) is carried out on the bench with a suitable Car Radio Dummy Aerial, it is essential that final adjustment of the aerial trimmer be made in the car.

I.F. Ganging.

1. Set waveband switch to M.W. by depressing a M.W. push-button, volume control fully clockwise, tone control fully anti-clockwise and tuning carriage right out, i.e., towards the front panel.
2. Inject a modulated signal at 465 kc/s. (modulated at 400 cycles to 30 per cent) between the grid of V1 and chassis, leaving grid connection made.
3. Adjust cores of L9, L8, L7 and L6 in that order for maximum output. When adjusting any coil its companion coil must be damped with a 47,000 ohm resistance, e.g., when L6 is adjusted, L7 must be damped.
4. Repeat the procedure outlined above until no further increase in output is obtained.

R.F. Ganging - Medium Waves.

Set controls as in operation 1 of "I.F. Ganging" and connect the test oscillator to the aerial socket and chassis via the dummy aerial.

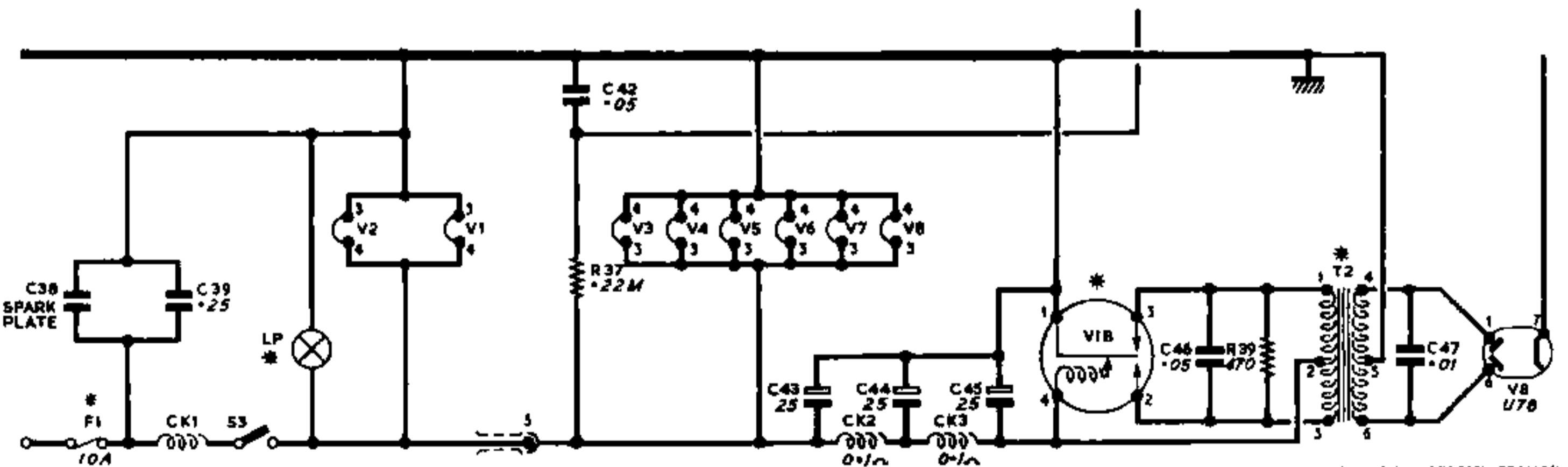
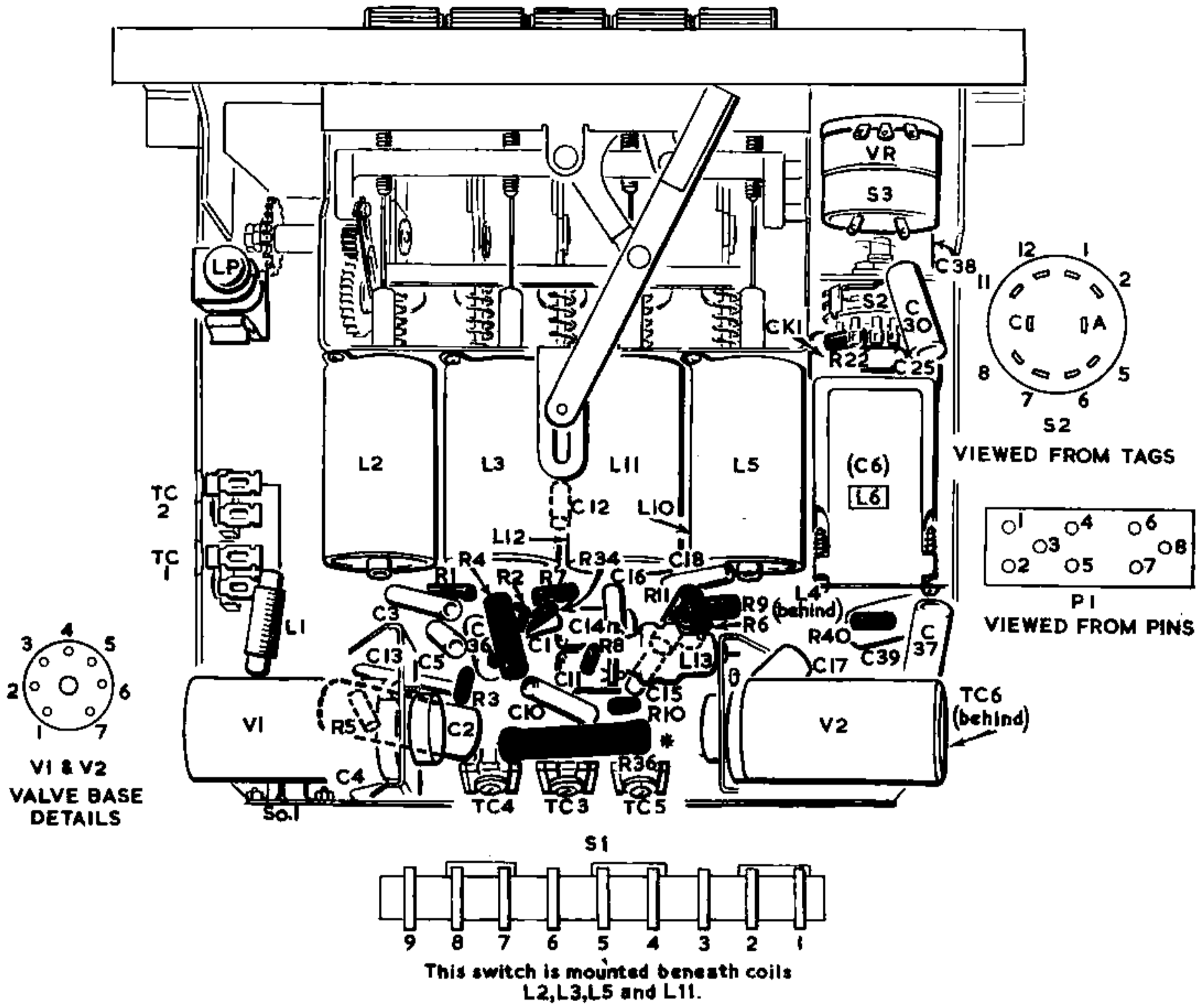
Op. No.	Ganged Inductances or Tuning Pointer Setting.	Tune Test Oscillator to		Operation.
		m.	kc/s.	
1	182.6 m.	182.6	1,643	Adjust TC5 for maximum output. Adjust core of L13 for maximum output. Repeat operations 1 and 2 then reseal TC5. Adjust TC1 and TC3 for maximum output and reseal.
2	500 m.	500	600	
3	—	—	—	
4	250 m.	250	1,200	

Long Waves.

Set controls as before, but with waveband switch set to L.W. (depressing "L.W." push-button).

Op. No.	Ganged Inductances or Tuning Pointer Setting.	Tune Test Oscillator to		Operation.
		m.	kc/s.	
1	1,400 m.	1,400	214	Adjust TC6 for maximum output.
2	1,620 m.	1,620	185	Adjust TC2 and TC4 for maximum output.
3	—	—	—	Repeat operations 1 and 2 then reseal TC6, TC2 and TC4,

* R36 IS USED ONLY IN MODEL 4200

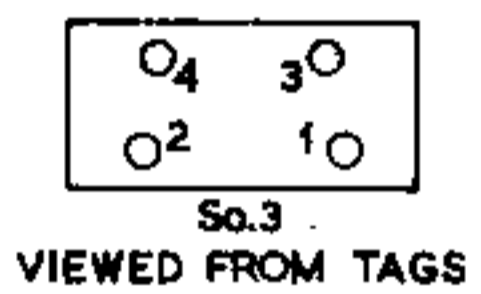
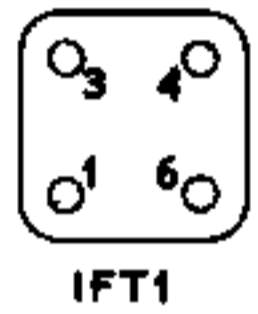
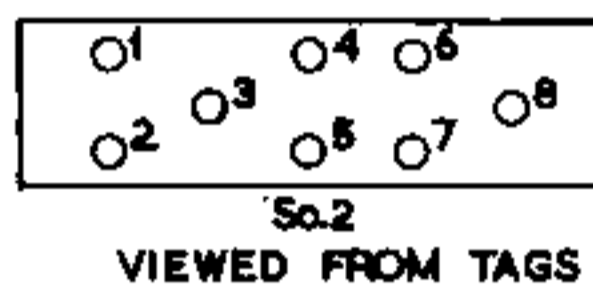
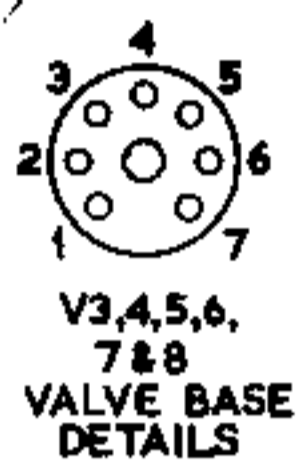
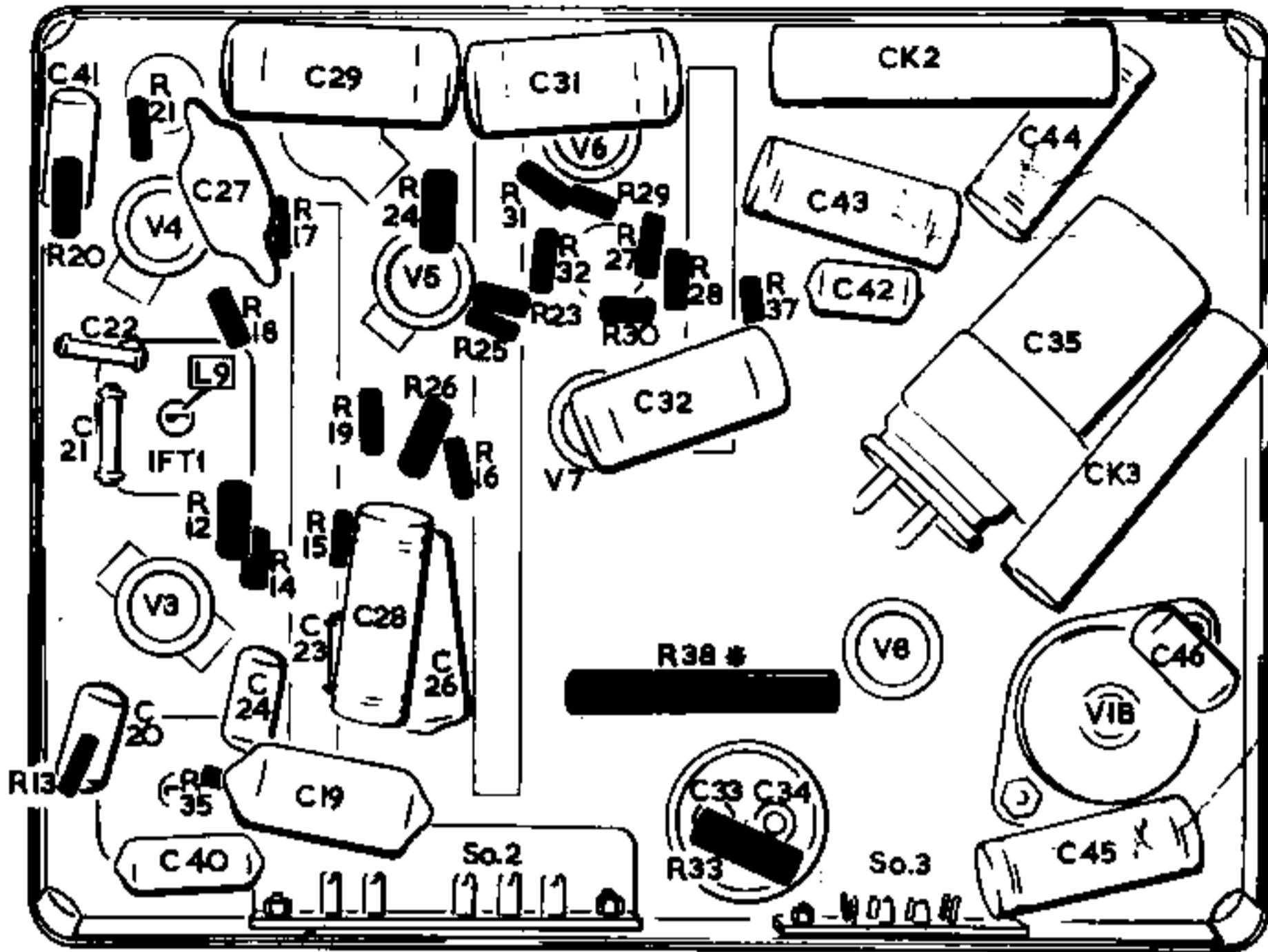


TECHNICAL PUBLICATIONS DIVISION TP4619/1

The circuit shewn above illustrates the valve heater arrangement for Model 4201; the remainder of this circuit remains the same as that for Model 4200. Components marked with an asterisk differ from their counterparts in Model 4200.

* R38 IS USED ONLY IN MODEL 4200

7-14
 Rev 6 1' 131
 V4 DH-77



5-14
 7-14
 W 77
 5-14

HP

HP

2x25.0
 1 5
 2 4
 3 6
 4 7
 5 8
 2x25.0
 1 5
 2 4
 3 6
 4 7
 5 8

test via connecting HP idenf.

