

Valves	Anode		Screen	
	V	mA	V	mA
V1 DK91	60	0.8	44	1.5
V2 DF91	76	0.8	25	0.4
V3 DAF91	16	0.1	*	*
V4 DL92	74	4.5	60	1.0

\* Negligible readings.

OTHER COMPONENTS		Approx. Values (ohms)	Locations
L1	Frame aerial ...	1-8	—
L2	L.W. loading coil ...	27.0	B1
L3	M.W. osc. tuning ...	2.0	C1
L4	L.W. osc. tuning ...	0.5	C1
L5	Osc. reaction coil ...	9.5	C1
L6	1st I.F. trans. {	Pri. 12.0	C2
L7		Sec. 12.0	C2
L8	2nd I.F. trans. {	Pri. 12.0	B2
L9		Sec. 12.0	B2
L10	Speech coil ...	3.0	—
T1	O.P. trans. {	660.0	A1
S1-S5	Waveband and battery switches ...	Very low	F3

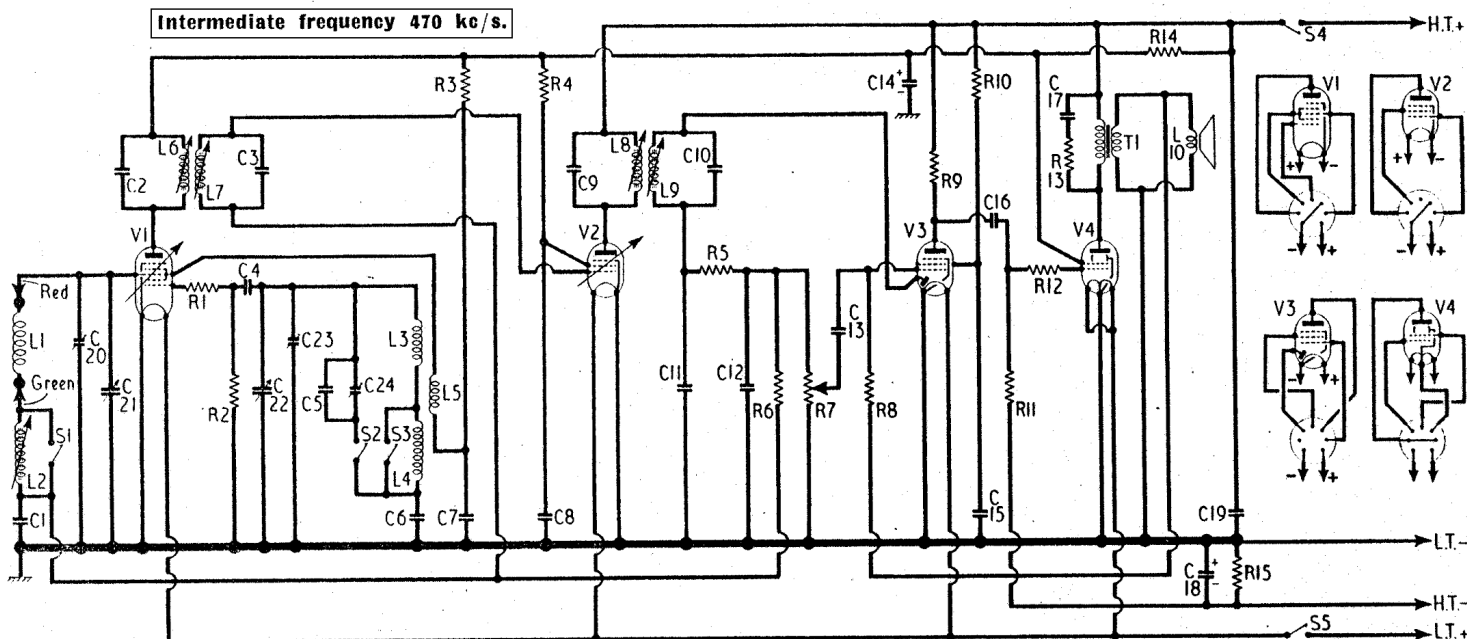
## INVICTA - 25

RESISTORS		Values	Locations
R1	Osc. C.G. stopper	10kΩ	F3
R2	V1 osc. C.G. ...	100kΩ	F3
R3	Osc. H.T. feed ...	10kΩ	F4
R4	V2 S.G. feed ...	100kΩ	G4
R5	I.F. stopper	47kΩ	G4
R6	A.G.C. decoup. ...	2.2MΩ	F3
R7	Volume control ...	1MΩ	E3
R8	V3 C.G. ...	4.7MΩ	G3
R9	V3 pentode load ...	330kΩ	G4
R10	V3 S.G. feed ...	3.3MΩ	G4
R11	V4 C.G. ...	1MΩ	H4
R12	V4 grid stopper ...	27kΩ	H4
R13	Tone corrector ...	27kΩ	A2
R14	H.T. decoupling	4.7kΩ	G4
R15*	V4 G.B. ...	910Ω	H4

\* Made up of 1,000Ω and 10,000Ω resistors, in parallel.

CAPACITORS		Values	Locations
C1	A.G.C. decoupling	0.05μF	F3
C2	1st I.F. trans. tun. {	100pF	C2
C3		100pF	C2
C4	V1 osc. C.G. ...	150pF	C2
C5	Osc. fixed trim. ...	300pF	D1
C6	Oscillator tracker ...	500pF	D1
C7	Osc. H.T. decoup.	0.002μF	C1
C8	V2 S.G. decoupling	0.05μF	F4
C9	2nd I.F. trans. tun. {	100pF	B2
C10		100pF	B2
C11	I.F. by-passes ... {	100pF	G4
C12		100pF	G4
C13	A.F. coupling ...	0.01μF	G3
C14*	H.T. decoupling ...	8μF	G3
C15	V3 S.G. decoup. ...	0.01μF	H4
C16	A.F. coupling ...	0.002μF	H4
C17	Part tone correction	0.01μF	A1
C18*	V4 G.B. by-pass ...	25μF	H4
C19	Battery by-pass ...	0.01μF	A1
C20†	M.W. aerial trim...	30pF	D1
C21†	Aerial tuning ...	—	D2
C22†	Oscillator tuning ...	—	D2
C23†	M.W. osc. trimmer	30pF	D1
C24†	L.W. osc. trimmer	170pF	C1

\* Electrolytic. † Variable. ‡ Pre-set.



### CIRCUIT ALIGNMENT

R.F. and oscillator adjustments can be made with the chassis in its carrying case, but for I.F. adjustments the chassis should be withdrawn and placed, resting on its transformer end, on the bench. The frame aerial should be connected with the leads lengthened to give greater freedom to the chassis.

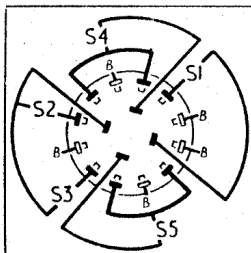
**I.F. Stages.**—Switch set to M.W., turn gang to minimum capacitance and volume control to maximum and connect signal generator, via a 0.01 μF capacitor in the "live" lead, to control grid (pin 6) of V1. Feed in a 470 kc/s signal (638.3 m) signal and adjust the cores of L9 (location reference B2), L8 (G4), L7 (C2) and L6 (F4) for maximum output, reducing the input as the circuits come into line to avoid A.G.C. action. Repeat these adjustments until no improvement results.

**R.F. and Oscillator Stages.**—As the tuning scale remains fixed in the carrying case, the chassis should be replaced in the case before making these adjustments. Check that at the maximum and minimum capacitance settings of the gang, the cursor is obscured by the high and low wavelength ends, respectively, of the tuning scale. The cursor may be adjusted by sliding it along the drive cord. Connect signal generator to a loop of wire placed approximately 12in from the frame aerial.

**M.W.**—Switch set to M.W., tune to 210 m on scale, feed in a 210 m (1,429 kc/s) signal and adjust C23 (D1) and C20 (D1) for maximum output. Tune to 500 m on scale, feed in a 500 m (600 kc/s) signal and check calibration.

**L.W.**—Switch set to L.W., tune to 1,250 m on scale, feed in a 1,250 m (240 kc/s) signal and adjust C24 (C1) for maximum output. Tune to 1,800 m on scale, feed in a 1,800 m (166.7 kc/s) signal and adjust the core of L2 (B1) for maximum output. Repeat these adjustments until no improvement results.

The switch unit as seen from below the front side of the chassis.



### DRIVE CORD REPLACEMENT

About three feet of fine gauge nylon braided glass yarn is required for a new drive cord, whose course is shown in our front view of the chassis, where the drive drum and the cursor are shown with the gang at maximum.

To run the cord, one end is tied to a drum boss screw as shown in our photograph, then the run is made, pulling the gang against its stop to hold the cord in position.