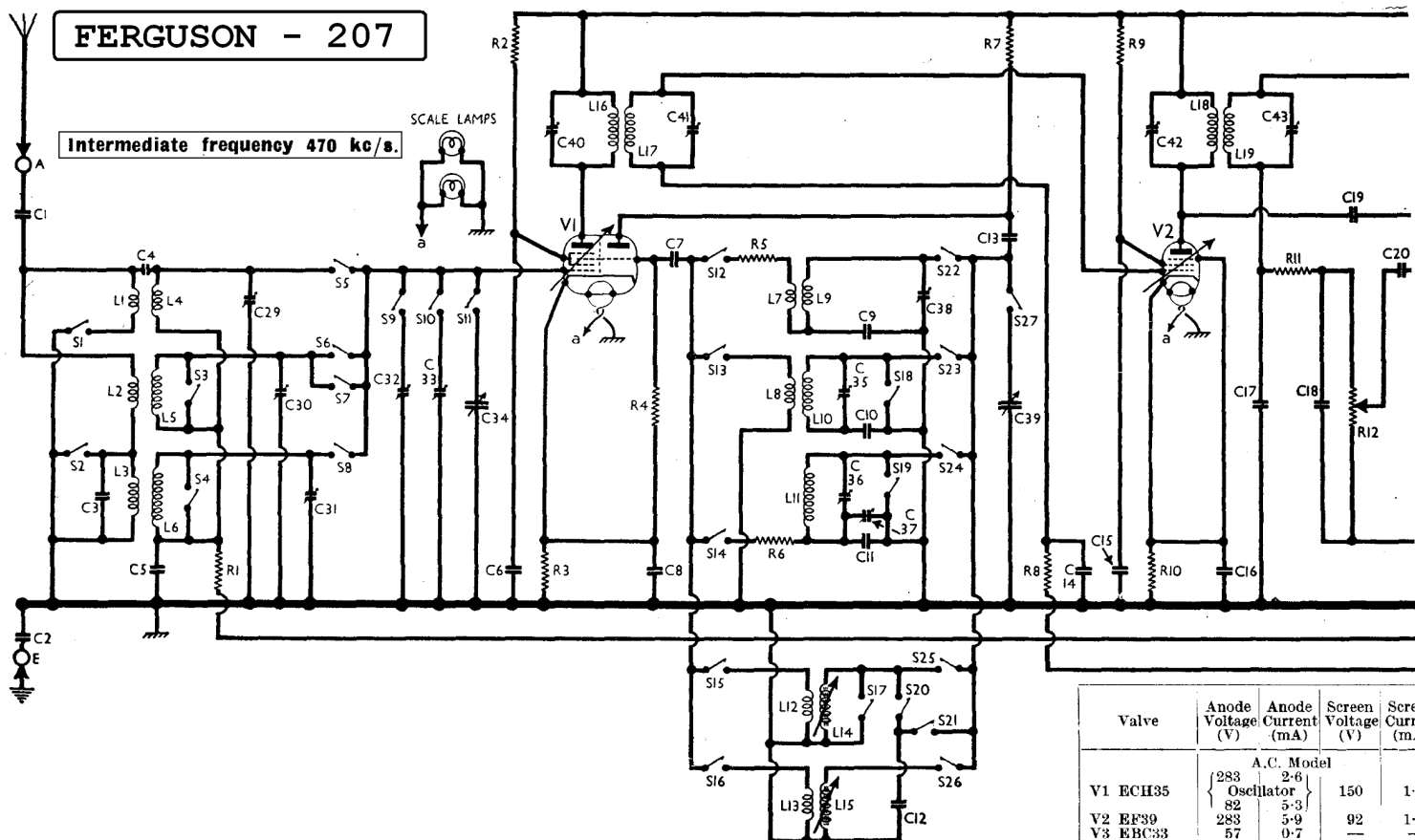


# FERGUSON - 207

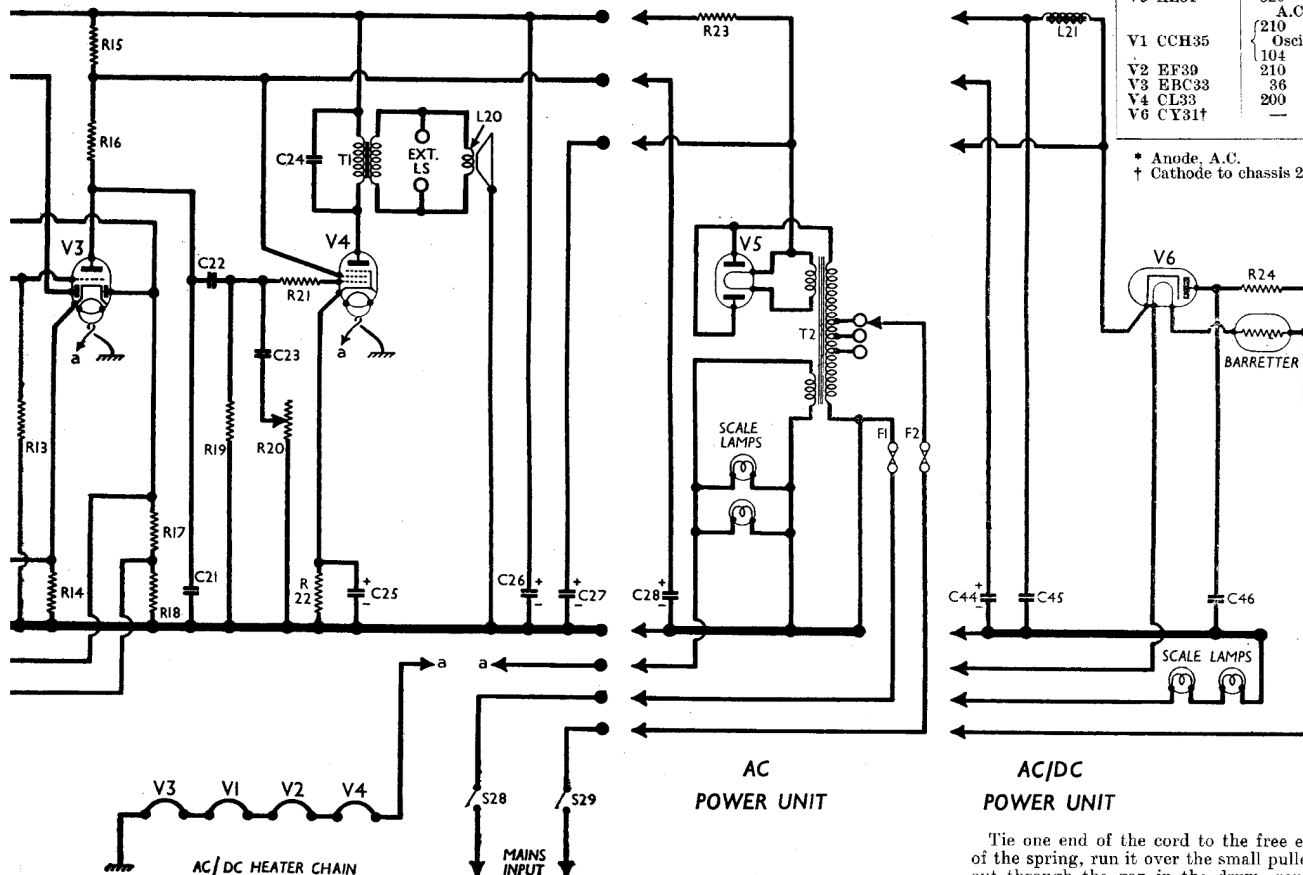
Intermediate frequency 470 kc/s.



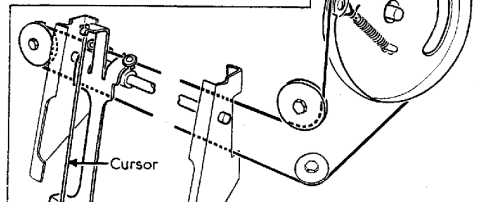
Valve	Anode Voltage (V)	Anode Current (mA)	Screen Voltage (V)	Screen Current (mA)
A.C. Model				
V1 ECH35	283	2-6	150	1-4
V2 EF30	82	5-3	92	1-6
V3 EBC33	283	5-9	230	3-6
V4 EL33	57	0-7	—	—
V5 AZ31	268	34-0	—	—
A.C./D.C. Model				
V1 CCH35	210	1-0	62	1-3
V2 EF30	104	3-9	62	1-2
V3 EBC33	210	4-0	160	3-5
V4 CL33	36	0-4	—	—
V6 CY31†	200	36-0	—	—

\* Anode, A.C.

† Cathode to chassis 223 V, D.C.



Sketch showing the tuning drive system, the centre of the front section being broken to reduce its length. It is viewed from the right-hand front corner, with the gang at minimum.



## DRIVE CORD REPLACEMENT

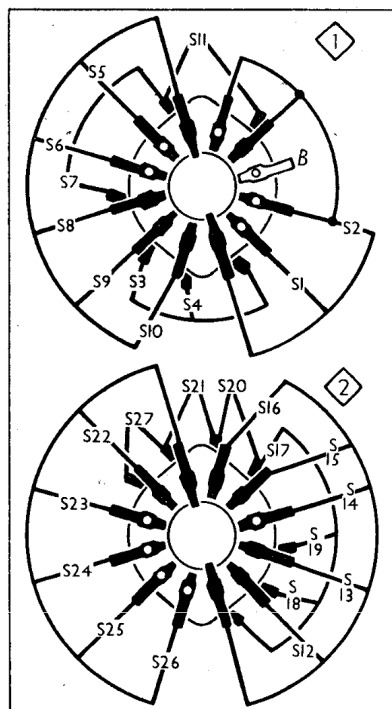
Five feet of cord is sufficient to replace the drive cord and leave ample length for tying off. To set drive drum correctly, slacken fixing screws in the boss, turn the gang to minimum, and turn the drum anti-clockwise (viewed from its open side) to its stop, and tighten up fixing screws. It will then be in the position shown in our sketch (above), where the scale has been removed.

Tie one end of the cord to the free end of the spring, run it over the small pulley, out through the gap in the drum, round the other three pulleys as shown in the sketch, round the drum, and return through the gap round the other side of the small pulley, tying off finally again on the free end of the spring, whose tension should be sufficient to prevent any slackness in the cord.

The cursor should be adjusted so that it covers the high wavelength ends of the scales when the gang is at maximum. If the two clamping screws on the carrier are slackened, it can be slid along the cord as required.

RESISTORS		Values (ohms)	Location
R1	V1 hex. C.G. decoup.	1,000,000	H7
R2	V1 S.G. feed	100,000	J8
R3	V1 fixed G.B.	500	K8
R4	V1 osc. C.G.	50,000	K8
R5	Osc. S.W. stab.	30	J7
R6	Osc. L.W. stab.	8,200	I6
R7	Osc. H.T. feed	25,000	J8
R8	V2 C.G. decoup.	1,000,000	H7
R9	V2 S.G. feed	100,000	H7
R10	V2 fixed G.B.	500	H8
R11	I.F. stopper	100,000	G7
R12	Volume control	500,000	D3
R13	V3 C.G. resistor	2,000,000	G7
R14	V3 G.B., A.V.C. delay	3,900	G7
R15	H.T. feed resistor	10,000	F6
R16	V3 triode load	250,000	F7
R17	A.V.C. diode load	680,000	H7
R18	resistors	680,000	H7
R19	V4 C.G. resistor	680,000	F7
R20	Tone control	100,000	E7
R21	V4 C.G. stopper	5,000	F7
R22	V4 G.B. resistor	150	F7
R23	H.T. smoothing	1,200	C1
R24	V6 surge limiter	100	—

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



Waveband Switch Unit Diagrams and Table

Diagrams of the two waveband switch units, drawn as seen when viewed from the power unit end of an inverted chassis. B indicates a blank tag. The associated table is on the right of the diagrams.

CAPACITORS		Values ( $\mu$ F)	Location
C1	Aerial series	0-00025	K6
C2	Earth isolator	0-005	L7
C3	Aerial L.W. shunt	0-0001	K6
C4	Aerial S.W. coup.	0-000005	K6
C5	V1 hex. C.G. decoup.	0-05	K6
C6	V1 S.G. decoupling	0-1	J7
C7	V1 osc. C.G.	0-0001	J7
C8	V1 cath. by-pass	0-1	K7
C9	Osc. S.W. tracker	0-005	J6
C10	Osc. M.W. tracker	0-000515	I6
C11	Osc. L.W. tracker	0-0001	I5
C12	Osc. P.S. tuning	0-00025	J7
C13	Osc. anode coup.	0-0001	J7
C14	V2 C.G. decoup.	0-05	H7
C15	V2 S.G. decoup.	0-1	H7
C16	V2 cath. by-pass	0-1	I8
C17	I.F. by-pass ca-	0-0001	G7
C18	pacitors	0-0001	G7
C19	A.V.C. coupling	0-0001	G8
C20	A.F. coupling	0-02	F7
C21	I.F. by-pass	0-0001	F8
C22	A.F. coupling	0-02	F7
C23	Tone control	0-005	F8
C24	Tone corrector	0-002	—
C25*	V4 cath. by-pass	25-0	F6
C26*	H.T. smoothing	16-0	F5
C27*	capacitors	16-0	F5
C28*	H.T. feed decoup.	4-0	G6
C29†	Aerial S.W. trim.	0-00005	K5
C30†	Aerial M.W. trim.	0-00005	K5
C31†	Aerial L.W. trim.	0-00005	J5
C32†	Aerial P.S.2 tune	0-00015	K8
C33†	Aerial P.S.1 tune	0-0004	K8
C34†	Aerial tuning	0-000483§	A3
C35†	Osc. M.W. trim.	0-00005	J5
C36†	Osc. L.W. trim.	0-00005	I5
C37†	Osc. L.W. track	0-00003	B2
C38†	Osc. S.W. trim.	0-00005	J5
C39†	Oscillator tuning	0-000483§	A3
C40†	1st I.F. transformer	0-00018	C4
C41†	tuning	0-00018	C4
C42†	2nd I.F. transformer	0-00018	C4
C43†	tuning	0-00018	D4
C44*	H.T. feed decoup.	4-0	—
C45	H.T. R.F. by-pass	0-1	—
C46	Mains R.F. by-pass	0-01	—

Switch	S.W.	M.W.	L.W.	P.S.2	P.S.1
S1	o	—	—	—	—
S2	o	o	—	o	o
S3	o	—	—	—	—
S4	o	o	—	—	—
S5	o	—	—	—	—
S6	—	o	—	—	—
S7	—	—	—	—	—
S8	—	—	o	o	o
S9	—	—	—	o	—
S10	—	—	—	—	o
S11	o	o	o	—	—
S12	o	—	—	—	—
S13	—	o	—	—	—
S14	—	—	o	—	—
S15	—	—	—	o	—
S16	—	—	—	—	o
S17	—	—	o	—	—
S18	o	—	—	—	—
S19	o	o	—	—	—
S20	—	—	—	o	—
S21	—	—	—	—	o
S22	o	—	—	—	—
S23	—	o	—	—	—
S24	—	—	o	—	—
S25	—	—	—	o	—
S26	—	—	—	—	o
S27	o	o	o	—	—

OTHER COMPONENTS		Approx. Values (ohms)	Loca- tions
L1	Aerial coupling coils	2-2	K6
L2		17-5	K6
L3		26-5	K6
L4	Aerial tuning coils	Very low	K6
L5		3-5	K6
L6		22-0	K6
L7	Oscillator reaction coils	0-1	J6
L8		1-5	J6
L9		Very low	J6
L10	Oscillator tuning coils	2-0	J6
L11		6-0	J6
L12		2-0	J8
L13	P.S.2 react. coil	1-4	J7
L14	P.S.2 tuning coil	1-8	J8
L15	P.S.1 tuning coil	1-4	J7
L16	1st I.F. { Pri. trans. } Sec.	8-0	C4
L17		8-0	C4
L18		8-0	D4
L19	2nd I.F. { Pri. trans. } Sec.	8-0	D4
L20		2-0	—
L21		130-0	—
T1	Speech coil	245-0	—
	H.T. choke	—	—
	Speaker { Pri. trans. } Sec.	0-3	—
	Pri., total	85-0	C2
T2	Mains { Htr. sec. trans. } Rect. heat. sec.	0-15	C2
	0-1	—	—
S1-S27	W/band switches	—	K7
S28,	Mains switches,	—	—
S29	ganged R20	—	F7
F1, F2	Mains fuses, 1-0 A.	—	D2

## CIRCUIT ALIGNMENT

**I.F. Stages.**—Connect signal generator, via an 0.1  $\mu$ F capacitor in each lead, to control grid (top cap) of **V1** and chassis, removing the original top cap connector, but connecting a 500,000  $\Omega$  resistor between the top cap of the valve and chassis.

Switch set to M.W., turn the volume control to maximum, and tune to 197 m on scale. Feed in a 470 kc/s (638.3 m) signal, and adjust **C40**, **C41**, **C42** and **C43** (chassis locations **C4**, **D4**) for maximum output, keeping the input small to avoid A.V.C. action. Finally, remove the 500,000  $\Omega$  resistor and replace top cap.

**R.F. and Oscillator Stages.**—With the gang at maximum capacitance check that the cursor is vertical and that it coincides with the high wavelength ends of the three scales. If any error exists, slacken the two screws clamping the cursor carriage to the drive cord, adjust the carriage, and tighten the clamping screws.

**S.W.**—Switch set to S.W., tune to 18 Mc/s on scale, feed in an 18 Mc/s (16.67 m) signal, and adjust **C38** (B2) and **C29** (A2) for maximum output. If two peaks are found for **C38**, choose the one involving the lesser capacitance.

**M.W.**—Switch set to M.W., tune to 200 m on scale, feed in a 200 m (1,500 kc/s) signal, and adjust **C35** (B2) and **C30** (A2) for maximum output. Check calibration at 500 m.

**L.W.**—Switch set to L.W., tune to 750 m on scale, feed in a 750 m (450 kc/s) signal, and adjust **C36** (B2) and **C31** (A2) for maximum output. Tune to 1,875 m on scale, feed in an 1,875 m (160 kc/s) signal, and adjust **C37** (B2) for maximum output. Repeat these adjustments until no improvement can be obtained.