

## Capacitors

C1	20pF	A1
C2	1,500pF	A1
C3	220pF	A1
C4	10pF	A1
C5	0.001μF	A1
C6	0.001μF	A1
C7	10pF	A1
C8	10pF	A1
C9 <sup>1</sup>	18.7pF	A1
C10	10pF	A1
C11	10pF	A1
C12	25pF	A1
C13	85pF	A1

C14	500pF	A1
C15	220pF	H3
C16	33pF	H3
C17	0.003μF	A1
C18	528pF	G3
C19	50pF	H2
C20	165pF	H3
C21	0.005μF	H3
C22	0.005μF	G3
C23	0.1μF	G3
C24	0.005μF	H2
C25	100pF	H3
C26	528pF	G3
C27	50pF	G2

C28	50pF	H2
C29	375pF	H2
C30	390pF	H2
C31	220pF	H3
C32	12pF	B1
C33	15pF	B1
C34	220pF	B1
C35	220pF	B1
C36	0.005μF	G3
C37	0.005μF	G3
C38	12pF	B1
C39	47pF	B1
C40	400pF	F3
C41	220pF	B1

C42	220pF	B1
C43	100pF	F3
C44	400pF	F3
C45	4μF	F2
C46	500pF	G2
C47	0.02μF	H2
C48 <sup>*</sup>	0.01μF	E2
C49	100pF	E2
C50	0.02μF	F3
C51	2,500pF	F3
C52	0.001μF	F3
C53	0.004μF	C1
C54	50μF	F3
C55	40μF	C1

C56	32μF	C1
C57	40μF	C1
C58	0.02μF	E3

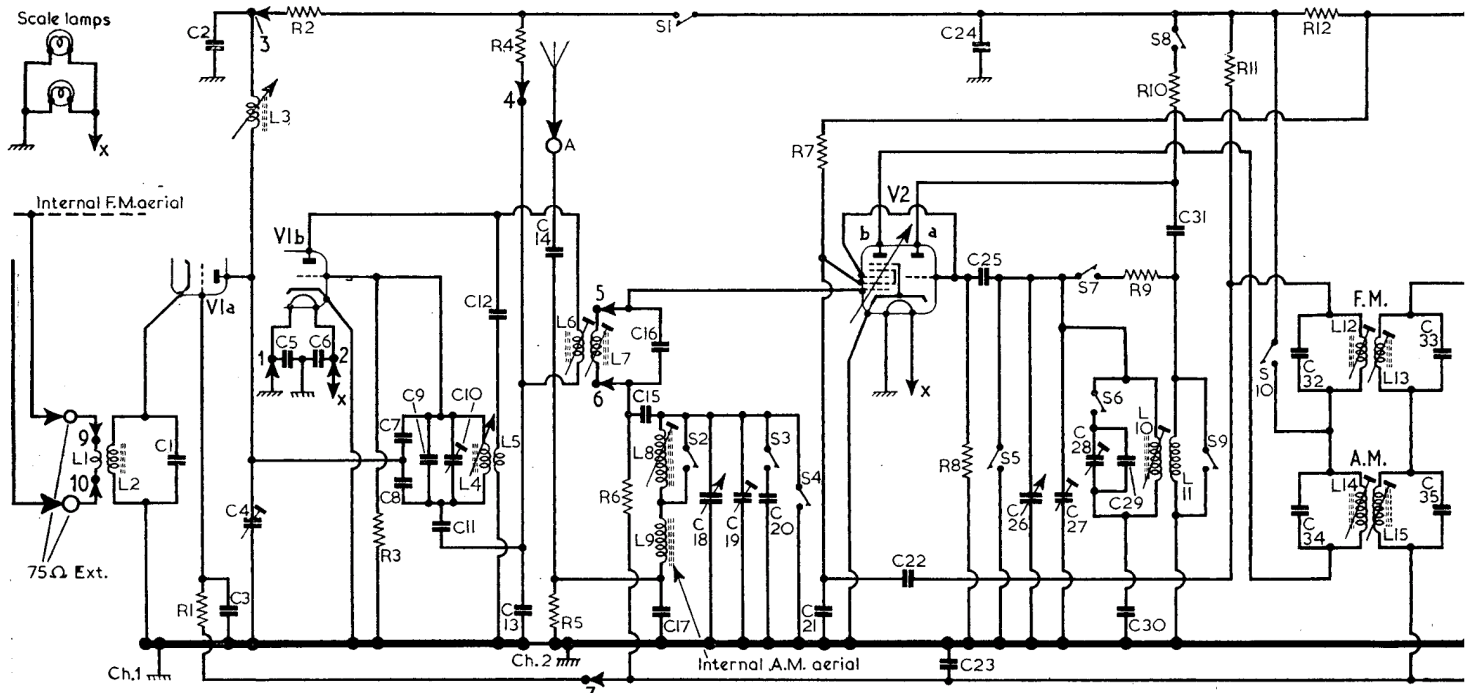
## Resistors

R1	680kΩ	A1
R2	10kΩ	H3
R3	680kΩ	A1
R4	15kΩ	H3
R5	3.3kΩ	A1
R6	2.2MΩ	H3
R7	47kΩ	G3
R8	47kΩ	H3
R9	68kΩ	H2

<sup>1</sup>Two capacitors, 4.7pF + 14pF, in parallel.

<sup>\*</sup>May be 0.003μF.

<sup>3</sup>Approximate D.C. resistances



R10	27kΩ	R24	6.8MΩ
R11	3.3kΩ	R25	220kΩ
R12	1kΩ	R26	470kΩ
R13	47kΩ	R27	4.7kΩ
R14	3.3kΩ	R28	150Ω
R15	68Ω	R29	680Ω
R16	100kΩ	R30	820Ω
R17	2.2MΩ	R31	3.9kΩ
R18	820Ω	R32	82Ω
R19	100kΩ		
R20	27kΩ		
R21 <sup>5</sup>	470kΩ		
R22	250kΩ		
R23	500kΩ		

## A.C. Models

Valve		Anode		Screen	
		V	mA	V	mA
V1	ECC85	135*	6.5*	—	—
V2	ECH81	148†	4.5*	—	—
V3	EF89	95	5.0	65	3.5
V4	EAB80	230	1.9	80	3.5
		215	9.7	—	—
V5	EL84†	—	—	—	—
MR1	B250C75	80	0.7	—	—
		258	38.0	238	4.5
		240§	—	—	—

\*Receiver switched to F.M.  
†Receiver switched F.M.; connect meter to V1b anode via 2MΩ resistor; switch meter to 100V range and multiply reading by two.  
‡Cathode voltage 6.8V.  
§A.C. reading measured across winding a on T2; total H.T. current 62mA (A.M.), 73mA (F.M.).

## A.C./D.C. Model

Valve		Anode		Screen	
		V	mA	V	mA
V1	UCC85	101*	5.0*	—	—
V2	UCH81	110†	3.0*	—	—
V3	UF89	94	5.3	—	—
V4	UAB80 (d)	169	3.1	85	6.7
V5	UL84†	188	8.4	70	2.5
V6	UY85	73	0.5	—	—
		205	47.0	180	2.4
		232§	—	—	—

\*Receiver switched to F.M.  
†Receiver switched to F.M.; connect meter to V1b anode via 2MΩ resistor; switch meter to 100V range and multiply reading by two.  
§A.C. reading; total cathode current 76mA (A.M.), 78mA (F.M.). ‡Cathode 13.7V

## CIRCUIT ALIGNMENT

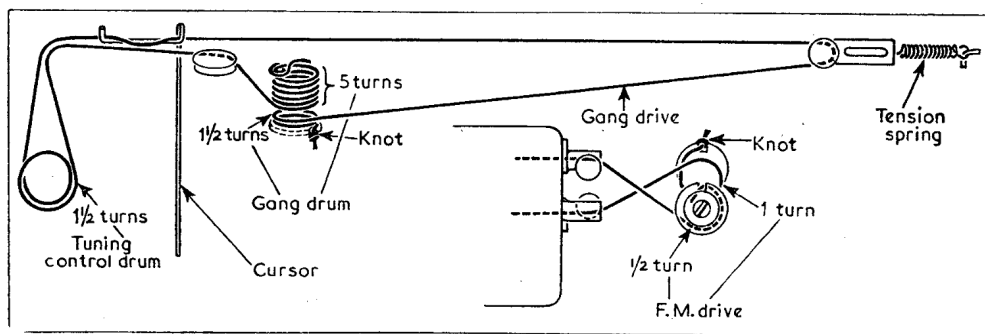
**Equipment Required.**—An accurately calibrated A.M./F.M. signal generator with an output impedance of 75Ω and covering the frequencies of 200-1,500kc/s (30% modulated), 10.7Mc/s (deviated by 25kc/s) and 91Mc/s (deviated by 25kc/s); an 0-250mW output meter; an 0.01μF capacitor; a 500pF capacitor.

## A.M. Stages

1.—Switch receiver to M.W. and turn gang to minimum capacitance. Connect sound output meter across external speaker sockets. Connect signal generator output, via the 0.01μF capacitor, to the live lead, between chassis and control grid (pin 2) of V2b.

2.—Feed in a modulated 470kc/s signal and adjust the cores of L20 (location reference G3), L19 (B1), L15 (G3) and L14 (B1) for maximum output, reducing the output of the signal generator as the circuits come into line to prevent A.G.C. operation.

3.—As the tuning scale is fixed to the cabinet, calibration points are marked on the scale backing by means of a series of notches on the backing plate itself. These calibration notches are identified in the plan illustration of the chassis (location references B1, C1). Check that with the gang at maximum capacitance the cursor coincides with the datum point on the scale backing plate.



Sketch of A.M. and F.M. tuning drive systems as seen from rear of upright chassis.

Switch Table and Diagram

Switch	Gram	F.M.	M.W.	L.W.
S1	—	C	—	—
S2	—	C	—	—
S3	—	C	—	—
S4	—	C	—	—
S5	—	C	—	—
S6	—	C	—	—
S7	—	C	—	—
S8	—	C	—	—
S9	—	C	—	—
S10	—	C	—	—
S11	—	C	—	—
S12	—	C	—	—
S13	—	C	—	—
S14	—	C	—	—

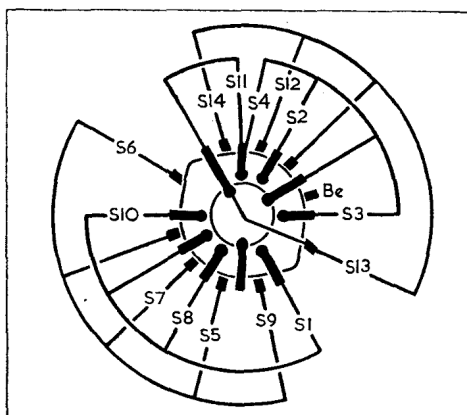


Diagram of band/gram switch unit.

**FERGUSON - 383A**

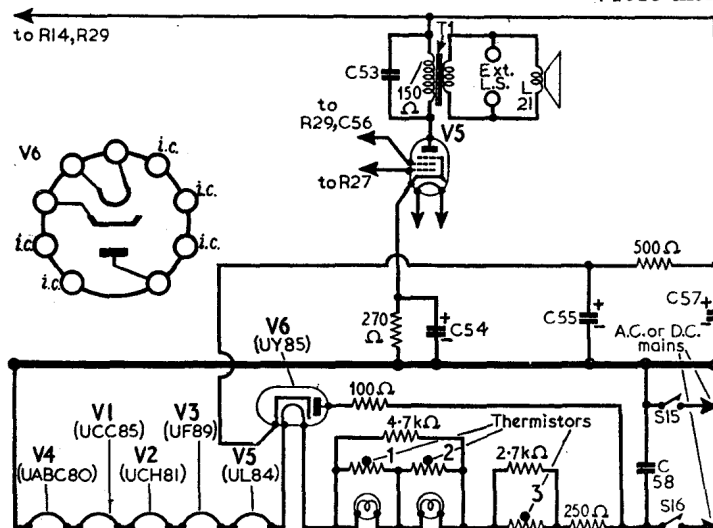
4.—Switch receiver to M.W. and loosely couple output of signal generator via a loop of wire to ferrite rod aerial L9.

5.—Tune receiver to 1,400kc/s, feed in a 1,400kc/s signal and adjust C27 (G2) and C19 (H2) for maximum output.

6.—Tune receiver to 580kc/s, feed in a 580kc/s signal and adjust the core of L10 (B1) for maximum output. In receivers fitted with a M.W. only ferrite rod aerial the inductance of L9 should be adjusted for maximum output by sliding the grommet carrying a short-circuited turn along the ferrite rod. In receivers fitted with a M.W. and L.W. winding on the ferrite rod aerial, the core of L8 (A1) should be adjusted for maximum output instead of the ferrite rod aerial inductance.

7.—Repeat the adjustments in operations 5 and 6.

8.—Switch receiver to L.W., tune to 223kc/s, feed in a 223kc/s signal and adjust C28 (H2) for maximum output. In receivers fitted with C59 (H2) this should also be adjusted for maximum output. In receivers not fitted with C59, the core of L8 (A1) should be adjusted for maximum output.



A.C. Models

Valve		Anode		Screen	
		V	mA	V	mA
V1	ECC85 { a ..	135*	6.5*	—	—
	{ b ..	148†	4.5*	—	—
V2	ECH81 { a ..	95	5.0	—	—
	{ b ..	230	1.9	65	3.5
V3	EF89 .....	215	9.7	80	3.5
V4	EABC80 { a-c ..	—	—	—	—
	{ d ..	80	0.7	—	—
V5	EL84† ..	258	38.0	238	4.5
MR1	B250C75 ..	240§	—	—	—

\*Receiver switched to F.M.

†Receiver switched F.M.; connect meter to V1b anode via 2MΩ resistor; switch meter to 100V range and multiply reading by two.

‡Cathode voltage 6.8V.

§A.C. reading measured across winding a on T2; total H.T. current 62mA (A.M.), 73mA (F.M.).

### F.M. Stages

9.—Switch receiver to F.M. and turn gang to minimum capacitance. Connect output of signal generator, via the 0.01μF capacitor in the live lead, between chassis and control grid (pin 2) of V3. When making following adjustments, adjust output of signal generator to maintain 100mW on output meter.

10.—Feed in a 10.7Mc/s signal deviated by ±25kc/s and adjust the cores of L17 (G3), L16 (B1) for maximum audio output.

11.—Transfer live signal generator lead with 0.01μF capacitor to control grid (pin 2) of V2b. Adjust the cores of L13 (G3) and L12 (B1) for maximum audio output.

12.—Transfer live signal generator lead, via the 500pF capacitor, to tuner unit connection 3 (H2). Adjust the cores of L7 (H3) and L6 (A1) for maximum audio output.

\*Receiver switched to F.M.

†Receiver switched to F.M.; connect meter to V1b anode via 2MΩ resistor; switch meter to 100V range and multiply reading by two.

‡A.C. reading; total cathode current 76mA (A.M.), 78mA (F.M.). †Cathode 13.7V

A.C./D.C. Model

Valve		Anode		Screen	
		V	mA	V	mA
V1	UCC85 { a ..	101*	5.0*	—	—
	{ b ..	110†	3.0*	—	—
V2	UCH81 { a ..	94	5.3	—	—
	{ b ..	169	3.1	85	6.7
V3	UF89 ..	188	8.4	70	2.5
V4	UABC80 (d) ..	73	0.5	—	—
V5	UL84† ..	205	47.0	180	2.4
V6	UY85 ..	232§	—	—	—

13.—Transfer signal generator leads, discarding 500pF capacitor, to F.M. aerial sockets. Tune receiver to calibration point A (centre notch) on plate (C1), and holding the tuning drive in this position, slacken the securing screw on the F.M. tuner drive drum (B1) and turn the drum fully anti-clockwise.

14.—Tighten securing screw, making sure that F.M. drive cord is still secured under screw washer and that the F.M. drive cord tension is maintained.

15.—Turn gang to maximum capacitance, feed in a 91Mc/s signal, deviated by ±25kc/s, and adjust C10 (A1) for maximum audio output. Do not subsequently readjust C10 unless operations 14, 15, 16 and 17 are repeated in full.

16.—Slacken securing screw on the F.M. tuner drive drum and rotate tuning control until cursor coincides with 91Mc/s calibration point on scale backing plate.

17.—Rotate F.M. tuner drive drum by hand until the 91Mc/s is received and then tighten securing screw, checking drive cord tension as in operation 14. Finally, adjust C4 (A1) for maximum audio output at 91Mc/s.

Section of circuit showing differences in the power supply section of the 382U as compared with the 383A. Thermistors 1, 2 and 3 are Varite type V1010. Scale lamps are rated at 22V, 0.1A. In some models the lamps are rated at 12V, 0.1A and are shunted by a 4.7kΩ resistor and a single V1010 thermistor.