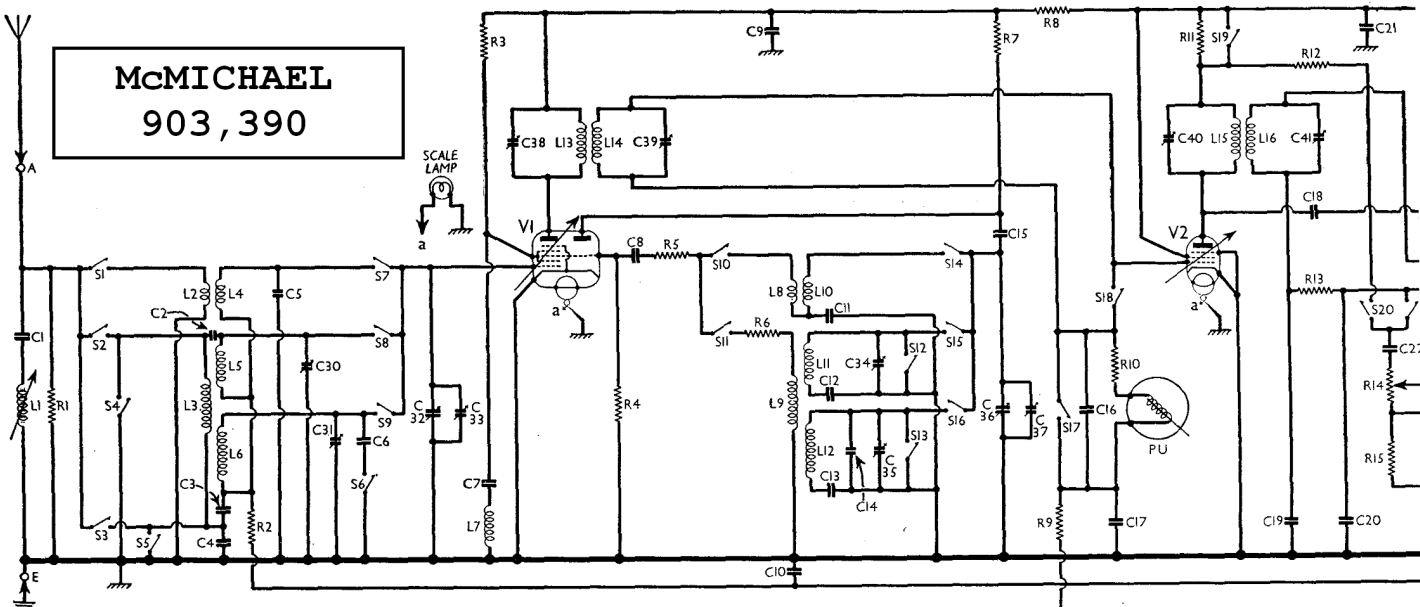


# McMICHAEL 903,390



RESISTANCES		Values (ohms)
R1	Aerial circuit shunt resistance	2,000
R2	V1 heptode CG decoupling	500,000
R3	V1 SG HT feed resistance	40,000
R4	V1 osc. CG resistance	50,000
R5	V1 osc. CG stabiliser	100
R6	V1 osc. MW and LW reaction stabiliser	2,000
R7	V1 osc. anode HT feed resistance	40,000
R8	V1 HT feed resistance	1,000
R9	V2 CG decoupling	500,000
R10	Pick-up series resistance	5,000
R11	V2 anode (gram.) load resistance	13,000*
R12	V2 output limiting resistance	250,000
R13	IF stopper resistance	50,000
R14	Manual volume control	1,000,000
R15	Negative feedback coupling resistance	25,000
R16	V3 tetrode grid stopper	100,000
R17	V3 signal diode load resistance	500,000
R18	V3 tetrode GB; AVC delay	180
R19	V3 tetrode anode stopper	350
R20	AVC line decoupling	500,000
R21	AVC diode load resistances	500,000
R22	Negative feedback feed	50,000
R23	Variable tone control	50,000
R24	V1, V2 fixed GB resistances	40

\* Two 26,000  $\Omega$  resistances in parallel.

CONDENSERS (Continued)		Values ( $\mu$ F)
C16	Gram. pick-up shunt	0.003
C17	V2 CG decoupling	0.1
C18	Coupling to V3 AVC diode	0.0001
C19	IF by-pass condensers	0.0001
C20	V2, V3 HT circuit RF by-pass	0.1
C21	AF coupling to V3 tetrode	0.002
C22	Fixed tone corrector	0.002
C23	V3 cathode by-pass	25.0
C24	Part of negative feed-back	0.005
C25	Part of variable tone control	0.03
C26	HT smoothing condensers	8.0
C27		16.0
C28		0.002
C29	Mains RF by-pass	—
C30	Aerial circuit MW trimmer	—
C31	Aerial circuit LW trimmer	—
C32	Aerial circuit tuning	—
C33	Aerial circuit SW trimmer	—
C34	Osc. circuit MW trimmer	—
C35	Osc. circuit LW trimmer	—
C36	Oscillator circuit tuning	—
C37	Osc. circuit SW trimmer	—
C38	1st IF trans. pri. tuning	—
C39	1st IF trans. sec. tuning	—
C40	2nd IF trans. pri. tuning	—
C41	2nd IF trans. sec. tuning	—

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

OTHER COMPONENTS		Approx. Values (ohms)
L1	Aerial IF filter coil	2.1
L2	Aerial SW coupling coil	0.3
L3	Aerial MW and LW coupling coil	18.5
L4	Aerial SW tuning coil	Very low
L5	Aerial MW tuning coil	2.0
L6	V1 stabilising choke	21.0
L7	V1 stabilising choke	Very low
L8	Oscillator SW reaction	0.4
L9	Oscillator MW and LW reaction	2.9
L10	Oscillator circuit SW tuning	Very low
L11	Oscillator circuit MW tuning	2.3
L12	Oscillator circuit LW tuning	9.0
L13	1st IF trans. Pri.	12.0
L14	1st IF trans. Sec.	12.0
L15	2nd IF trans. Pri.	12.0
L16	2nd IF trans. Sec.	12.0
L17	Speaker speech coil	2.2
L18	Hum neutralising coil	0.2
L19	Speaker field coil	1,000.0
T1	Speaker input trans. Pri.	290.0
	Sec.	0.25
	(Pri. total)	31.0
	Heater sec.	0.05
T2	Mains trans. Rect. heat. sec.	0.1
	HT sec. total	340.0
		1,800.0
PU	Gramophone pick-up winding	1,800.0
Collaro AC7A	total	800.0
Waveband switches		—
Radio/gram change switches		—
Gramophone motor switch		—
Mains switch, ganged R14		—

CONDENSERS		Values ( $\mu$ F)
C1	Aerial IF filter tuning	0.0004
C2	Part aerial MW coupling	0.000006
C3	Part aerial MW and LW coupling	0.004
C4	Aerial circuit SW fixed trimmer	0.00002
C5	L6 muting on MW	0.001
C6	V1 SG decoupling	0.1
C7	V1 osc. CG condenser	0.0001
C8	V1 HT circuit RF by-pass	0.1
C9	AVC line decoupling	0.01
C10	Osc. circuit SW tracker	0.0035
C11	Osc. circuit MW tracker	0.0005075
C12	Osc. circuit LW tracker	0.000168
C13	Osc. circuit LW fixed trimmer	0.00005
C14	V1 osc. anode coupling	0.0001

Continued in next column.

## CIRCUIT ALIGNMENT

**IF Stages.**—Connect signal generator between control grid (top cap) of V1 and chassis, and feed in a 465 KC/S signal. Adjust C38, C39 and C40, C41 in turn for maximum output. Re-check these settings.

Transfer signal generator leads to A and E clips, feed in a strong 465 KC/S signal, and adjust L1 core (model 903 only) for minimum output.

**RF and Oscillator Stages.**—See that the glass scale panel is firmly pressed into position in the scale assembly, then turn gang to maximum. The red line forming the pointer should now be beyond the calibrated extremities of the three tuning scales, leaving a small space (about 1/32 of an inch) between the line and the black border at the tops of the scales.

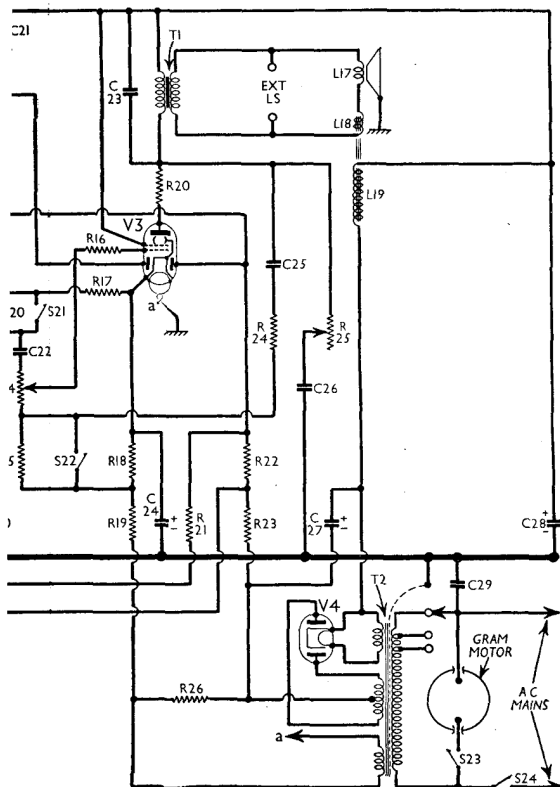
Connect the signal generator to the A and E clips, via a suitable dummy aerial.

**SW.**—Switch set to SW, turn gang to minimum, feed in an 18.1 m (16.2 MC/S) signal and adjust C37 for maximum output. Feed in a 19.6 m (15.3 MC/S) signal, tune to 19.6 m on scale, and adjust C33 for maximum output.

**MW.**—Switch set to MW, turn gang to minimum, feed in a 190 m (1,580 KC/S) signal, and adjust C34 for maximum output. Tune to 214 m on scale, feed in a 214 m (1,400 KC/S) signal, and adjust C30 for maximum output.

**LW.**—Switch set to LW, tune to 1,100 m, feed in a 1,100 m (273 KC/S) signal, and adjust C35, then C31 for maximum output.

There are no tracking adjustments, as tracking is fixed on all bands.



Switch	SW	MW	LW
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	—	—
S15	—	C	—
S16	—	—	C

Diagram of the switch units. Above, as seen in the direction of the arrow in the under-chassis view. Below, directly as seen in that view.

