

Rogers Majestic RG2020A - Philips F2C20A

ALIGNMENT

General

Connect an output meter across one of the amplifier outputs. An ac. voltmeter may be used as a substitute; connect the voltmeter across the external load (resistor or the speaker voice coil). The amplifier output should not be permitted to exceed 200 millivolts during alignment i. e., $E^2/R = 0.2$ watts. Decrease the signal generator output to maintain the amplifier output within the above limits as alignment progresses.

AM Alignment Procedure

1. Set LOUDNESS and TONE controls fully clockwise. Set FUNCTION switch to AM RADIO
2. Rotate the tuning control until the tuning cores are at the maximum inductance position, then adjust the dial pointer to the START LINE. (Alignment points are indicated by lines on the AM-FM dial; do not use the triangular markings).

STEP	TEST SIGNAL	SERIES CAPACITOR	RECEIVER CONNECTION	DIAL SETTING	ADJUST FOR MAX OUTPUT
3	455 Kc/s. direct	0.05 μ f.	test point TP1	MAXIMUM FREQUENCY	L16, L17, L23, L24
4	600 Kc/s. via dummy ant.	0.05 μ f.	ant. terminal (either)	600 Kc/s.	C35
5	1450 Kc/s. via dummy ant.	0.05 μ f.	ant. terminal	1450 Kc/s.	C22

FM. IF. Alignment Procedure

THE AUDIO OUTPUTS MUST BE LOADED and the AM section of the receiver correctly aligned before attempting FM alignment. For optimum results a sweep frequency generator and an oscilloscope should be used. When these test instruments are not available, the dc alignment should be carried out. Set FUNCTION switch to FM.

FM. IF. Alignment Procedure (Sweep Generator Method)

1. Connect the 10.7 Mc/s. output of a sweep frequency generator between the tube shield of V3 and B- (tuner frame), insulate the base of the tube shield from the tuner.
2. Disconnect the negative lead (body) of C45 from test point TP2.
3. Connect the oscilloscope input to test point TP2 via a 47K isolation resistor. Connect oscilloscope ground to test point TP3.
4. Adjust L12, L15, L18, L19 and L20 to obtain a bandpass pattern on the oscilloscope of approx. 1.0 Volt amplitude. Adjust sweep generator as required.
5. Re-connect C45 to test point TP2. Connect oscilloscope input to test point TP4 via the 47K. isolation resistor.
6. Adjust L21 to obtain a symmetrical and linear detection characteristic (S curve) on the oscilloscope with an approximate peak to peak amplitude of 0.15 volt. Reduce generator output as required. The important consideration, when adjusting L21, is the linearity and symmetry of the S curve, also look for symmetrical noise rejection at both sides of the 10.7 Mc/s. marker.

NOTE: The 10.7 Mc/s. marker does not necessarily have to coincide with the zero reference line.

DC Alignment (Alternative Method)

1. Connect the output of an unmodulated 10.7 Mc/s. generator between the tube shield of V3 and B- (tuner frame), insulate the base of the tube shield from the tuner.
2. Connect a DC. VTVM between test point TP2 and test point TP3 (VTVM ground to TP3, do not disconnect C45).
3. Adjust in the sequence given L12, L15, L18, L19, L20 and finally L21 for maximum negative indication on the VTVM. Adjust the generator output to provide a VTVM reading of -3.0 Volts.

NOTE: The adjustment to L21 will have a minor effect on the VTVM reading but it will be clearly recognizable if made with care.

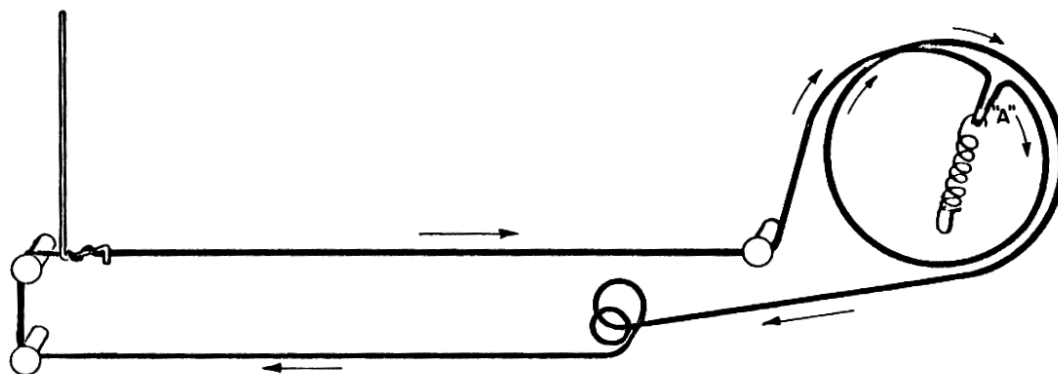
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FM. RF. Alignment

1. Connect the 96 Mc/s. unmodulated output of a signal generator, having a balanced 300 ohm output, to the antenna terminals. (If the generator available does not have a balanced output, an unbalanced output may be used and should be connected between either of the antenna terminals and the tuner frame).
2. Connect a DC. VTVM to test point TP2; connect VTVM ground to test point TP3. Rotate tuning control until the receiver dial pointer indicates 96 Mc/s. Adjust C9 and then C17 for a peak negative reading on the VTVM. Do not exceed 3 Volts; adjust generator output as required.

FM. Tuner Replacement

After FM. tuner replacement, L12 and L15 should be adjusted as described in FM. IF. Alignment, (Step 4 Sweep Alignment) or (Step 3 DC. Alignment).



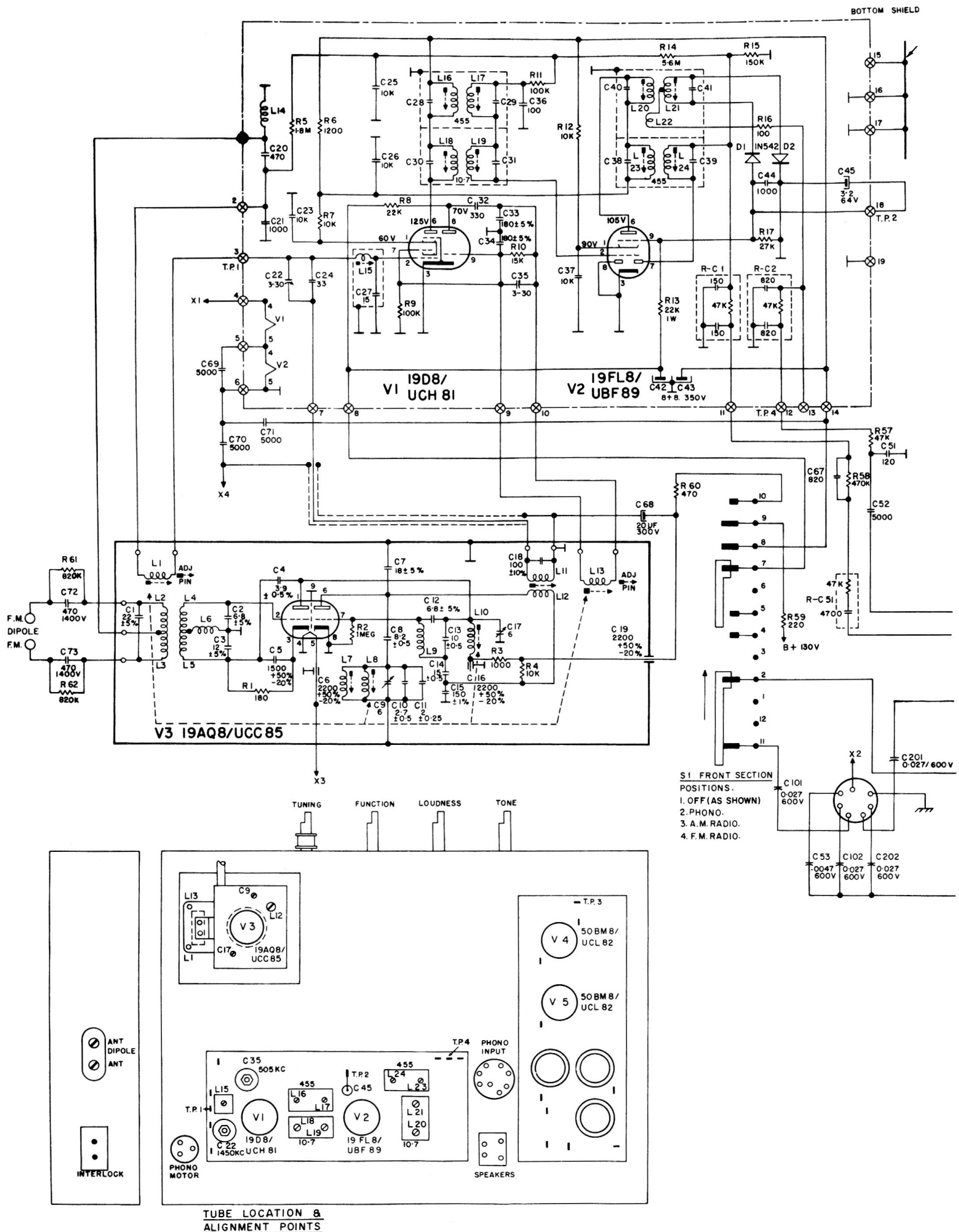
DRUM IN EXTREME COUNTER CLOCKWISE POSITION
STRINGING TO START AT "A" AND TO FOLLOW DIRECTION OF ARROWS
POINTER AT AM START, INDICATION MARK SHOWN ON
ALIGNMENT SCALE.

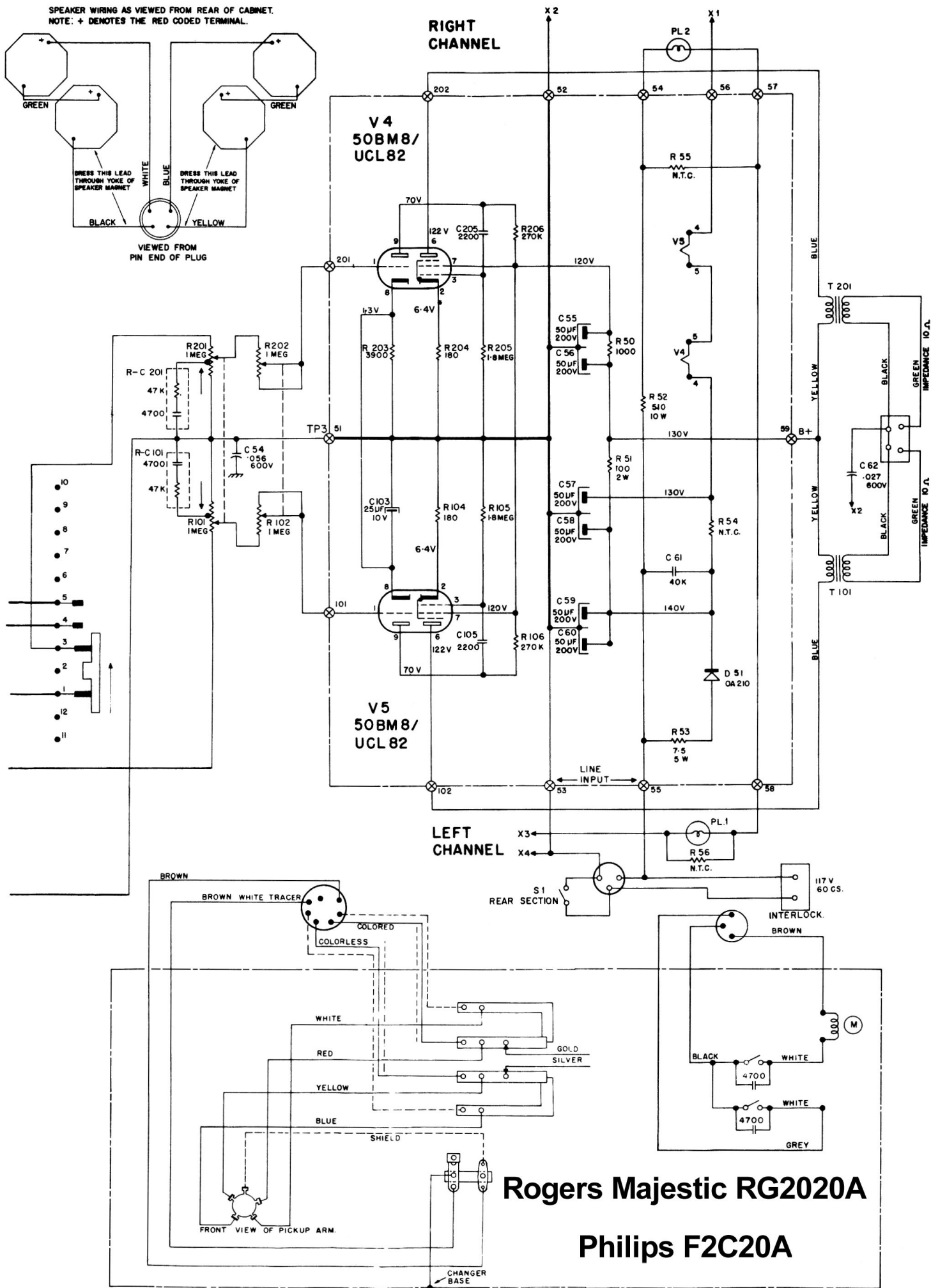
DIAL CORD STRINGING DIAGRAM

NOTES: SUFFIX "K" = 1000, MEG = 1,000,000
RESISTORS ARE $\frac{1}{2}$ WATT $\pm 10\%$ UNLESS OTHERWISE SHOWN.
—→ INDICATES CLOCKWISE ROTATION OF SHAFTS.
—|— VALUES IN MICRO FARADS $\pm 10\%$, 400V, UNLESS OTHERWISE SHOWN.
—||— VALUES IN MICRO-MICROFARADS $\pm 10\%$, 400V, UNLESS OTHERWISE SHOWN.
D.C. VOLTAGES MEASURED TO CHASSIS WITH A 20,000 Ω/V METER OR VTVM, S.1
IN A.M. POSITION, NO SIGNAL.
PLUGS & SOCKETS VIEWED FROM PIN END

TUBE FUNCTIONS:
V1 A.M. MIXER & OSCILLATOR
V2 A.M. I.F. AMPLIFIER & DETECTOR
V3 F.M. MIXER & OSCILLATOR
V4, V5 A.F. AMPLIFIER & POWER OUTPUT.

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