

**INSTALLATION AND SERVICE DIVISION**  
**RCA MANUFACTURING CO., INC.**  
 CAMDEN, N. J.

<b>CLASSIFICATION</b> Technical - Photophone - Amplifiers	<b>DATE</b> Oct. 26, 1937
<b>SUBJECT:</b> MI-4237, MI-4230-X VOLTAGE AMPLIFIERS	<b>NUMBER</b> SL-2C3-3.10
<b>TO:</b> A-5, B-1, B-2, B-3, B-4, C-7, D-7, E-7, F-7, G-1, G-2, G-3, G-4, H-7	

*ELECTRICAL SPECIFICATIONS*

Line Voltage Rating .....	105-125 volts a.c.
Frequency .....	50-60 cycles
Power Consumption .....	76 watts
Over-all Gain .....	85 db
Power Output (2% harmonic distortion) .....	1,600 ohm load; 3.5 watts
Output Level (2% harmonic distortion) (.006 watt ref.) .....	27.4 db
..... (.0125 watt ref.) .....	24.4 db
Input Impedance .....	(Terminals 2-4) 250 ohms
.....	(Terminals 1-5) 500 ohms

*MECHANICAL SPECIFICATIONS*

Length .....	17-5/16 inches
Depth .....	18-1/2 inches
Height .....	10-1/2 inches
Weight .....	70 pounds

*RADIOTRON SOCKET VOLTAGES*  
 115 Volt A-C Line  
 (Voltages read on  
 1,000 ohms-per-volt Voltmeter)

RADIOTRON NO.	PLATE VOLTS	PLATE CURRENT M.A.	CATHODE VOLTAGE	SCREEN VOLTAGE	HEATER VOLTAGE
RCA-6C6	188*	2.5	1.62	47	6.1
RCA-76 (1)	128	2.95	5.85		6.1
RCA-76 (2)	246	5.	12.4		6.1
RCA-45 (1)	320	38.5	60. **		2.5
RCA-45 (2)	320	38.5	60. **		2.5

\* Booster short-circuited.  
 Booster open E<sub>p</sub> 136 volts.

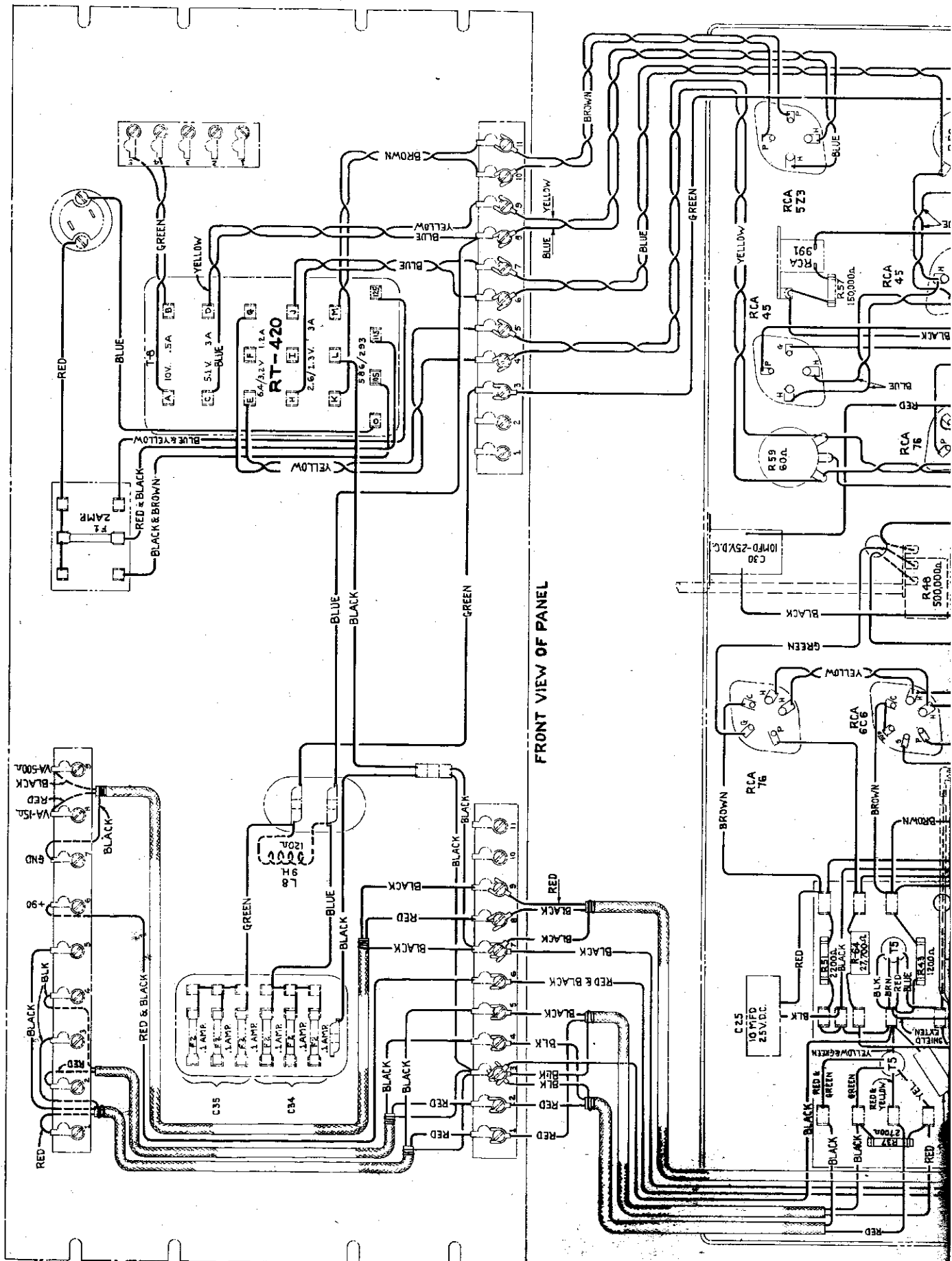
\*\* Filament to ground.

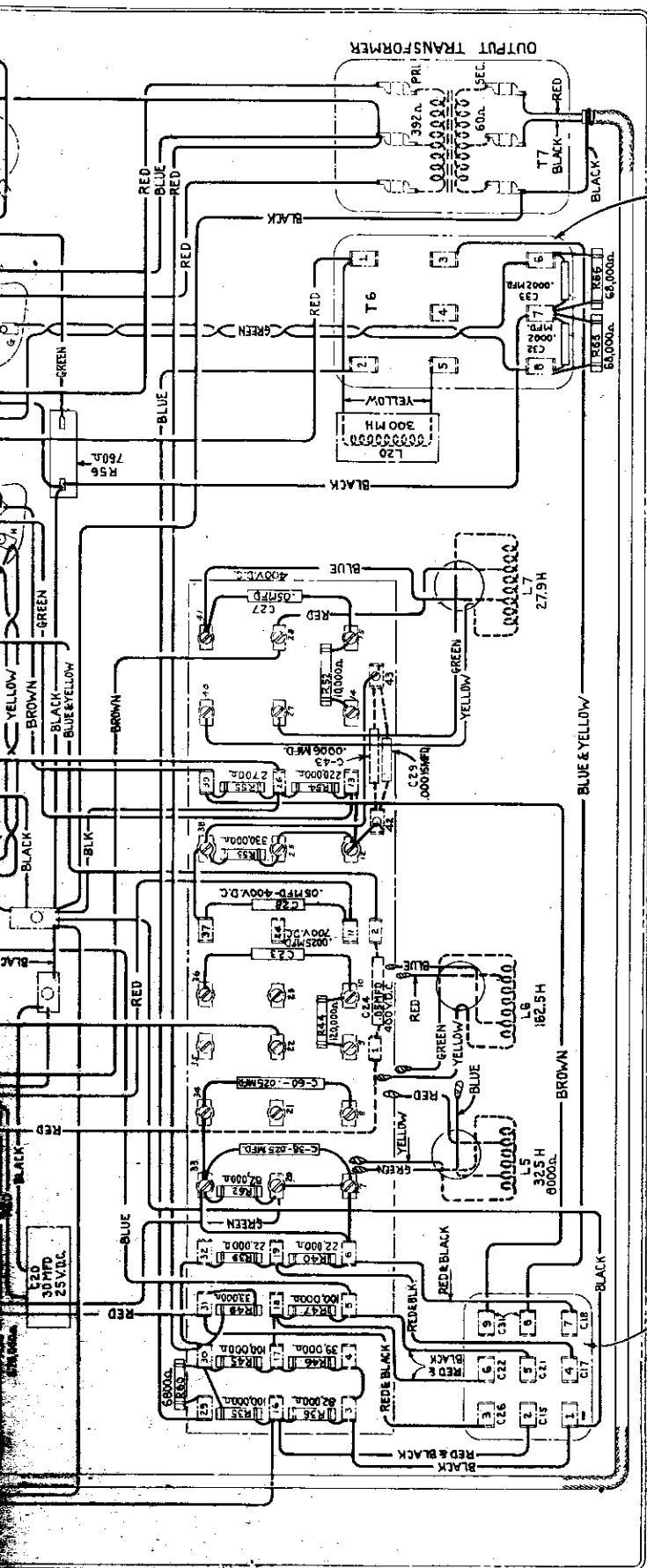
**Changes**

The MI-4237 voltage amplifier is similar electrically to the earlier type MI-4230 voltage amplifier with the following exceptions:

1. The low-frequency booster reactor, L-5, has been disconnected.
2. R-41 (100,000 ohms) is now R-62 (82,000 ohms).  
 R-62 and C-38 are shunted by a bus wire. (Terminals 6 & 7)
3. C-38 was a single .05 mfd. capacitor and now consists of two .025 mfd. capacitors, Stock No. 4870.
4. R-63 (27,000 ohms) was R-42 (120,000 ohms).







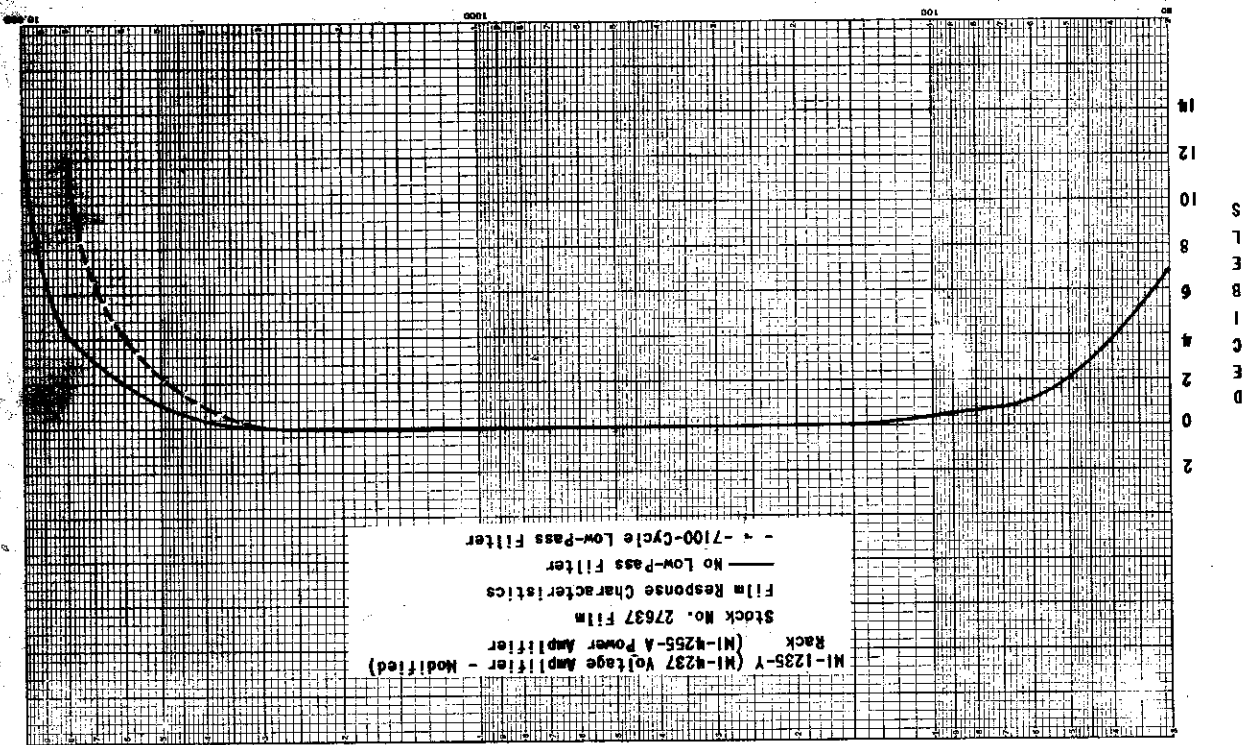
**BOTTOM VIEW OF BASE**

W382048

**Figure 2 - Wiring Diagram - MI-4237 and MI-4230-X**

Figure 3 - Film Response Characteristics with Recommended Circuit Modifications

FREQUENCY RESPONSE - CYCLES PER SECOND



MI-1235-Y (MI-4237 Voltage Amplifier - Modified)  
 Rack (MI-4255-A Power Amplifier - Modified)  
 Stock No. 27637 Film  
 Film Response Characteristics  
 — No Low-Pass Filter  
 - - -7100-Cycle Low-Pass Filter

NOTE: The MI-4230-X is the same as the MI-4237 electrically excepting for the volume controls (R-48). MI-4230-X changes in 2.5 db steps and MI-4237 in 2 db steps.

4. Change R-63 to 82,000 ohms.
  2. Change R-62 to 50,000-ohm, 1/2-watt resistor.
  3. Change C-38 to .003 mfd. capacitor, Stock No. 42952.
  4. Add a 4 H reactor, Stock No. 6442, in parallel with the new R-62/C-38 combination.
  5. Disconnect the .0006 mfd. capacitor, C-29, leaving C-43 in the circuit.
  6. Remove R-65 and R-66.
  7. Shunt out L-20 with a bus across terminals 4 and 5 on T-6.
- A few slight modifications from the MI-4237 circuit are recommended if it is desired to obtain over-all film response characteristics shown in figure 3.

### Recommended Circuit Modification

5. R-64 (27,700 ohms) was R-50 (33,000 ohms).
6. C-29 (.00075 mfd.) consists of two capacitors, one (.0006 mfd.) Stock No. 42537 and one (.00015 mfd.) Stock No. 43024.
7. The 300 MH reactor, L-20, Stock No. 6442, has been added in the plate circuit of the second RCA-76 stage.
8. The first stage RCA-6C6 was an RCA-24 tube.
9. Second and third stages RCA-76 were RCA-56 tubes.
10. R-65 and R-66 (68,000 ohms each) have been added from each RCA-45 grid to ground.
11. The power transformer (T-8) is now RT-420 to supply 6-volt filaments.
12. The volume control R-48 is now in 2 db steps instead of 2.5 db steps.