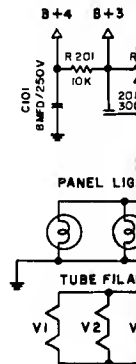
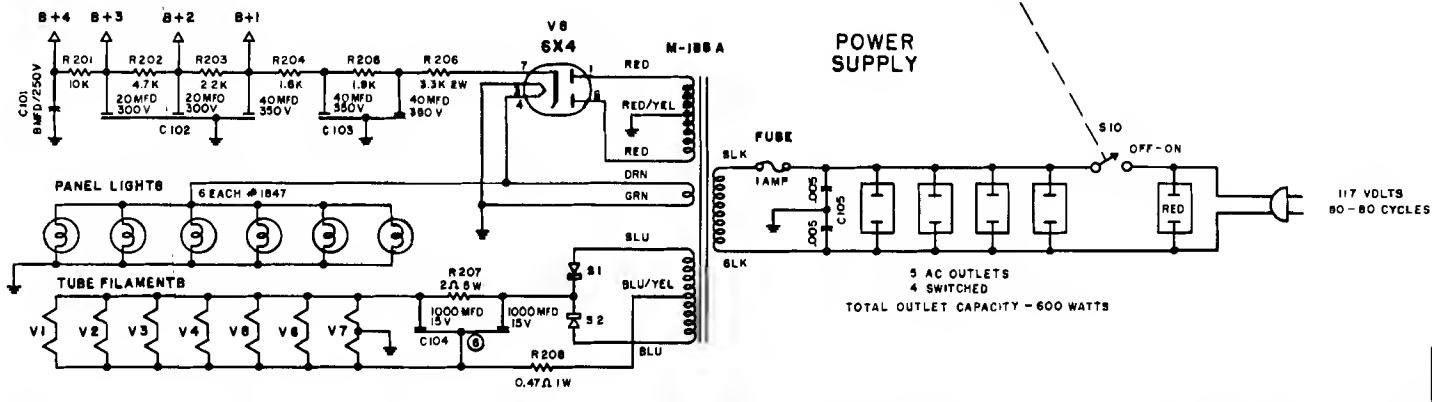
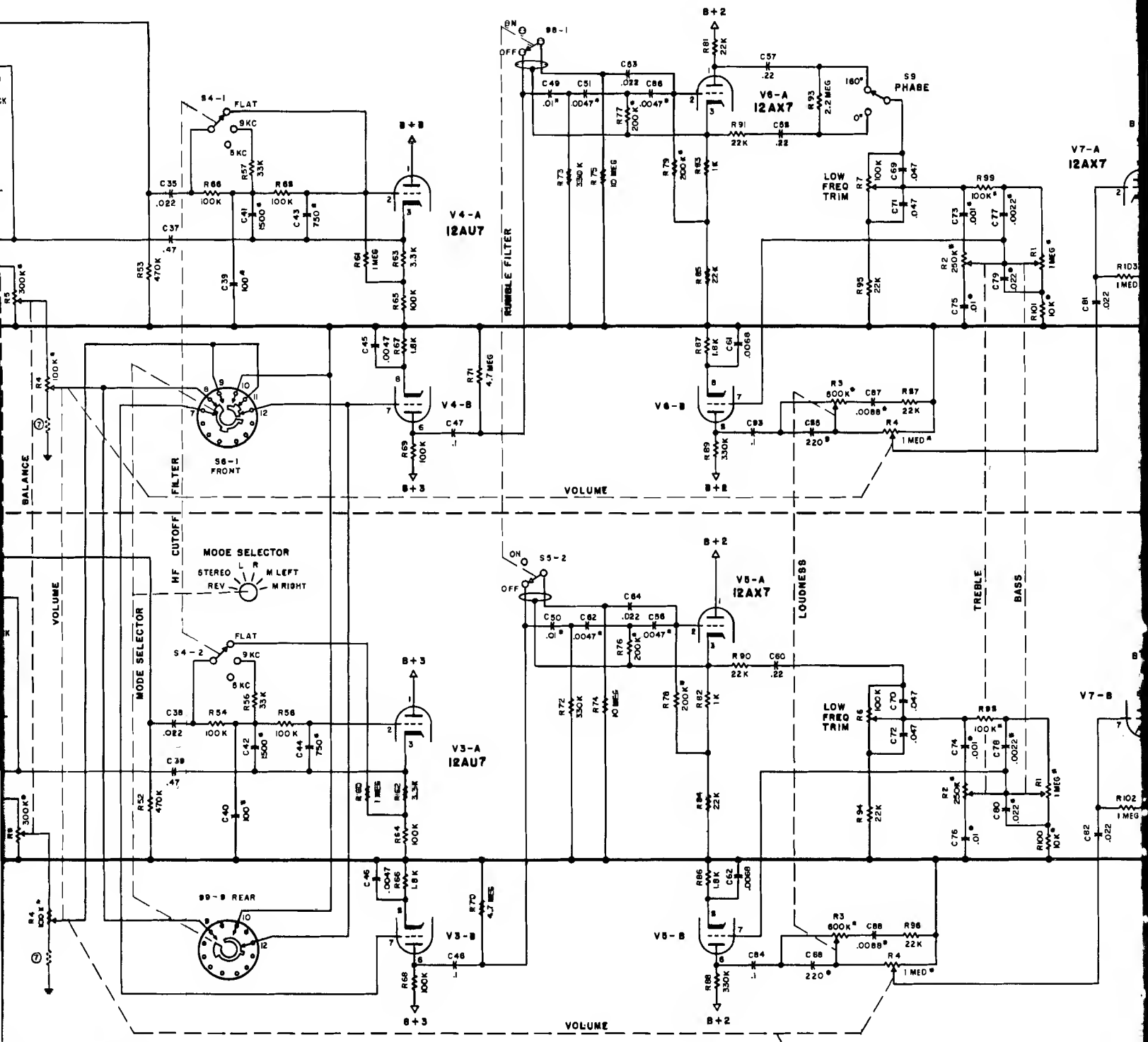


- NOTES:**
- ① THIS SCHEMATIC APPLIES TO C80 PREAMPLIFIERS WITH SERIAL NUMBERS 61700 AND ABOVE.
 - ② ALL ROTARY SWITCHES ARE SHOWN IN THE EXTREME COUNTERCLOCKWISE POSITION.
 - ③ ALL PUSHBUTTON SWITCHES ARE SHOWN IN THE "OUT" POSITION.
 - ④ RESISTOR VALUES ARE IN OHMS, $\pm 10\%$, $\frac{1}{2}$ WATT EXCEPT AS NOTED.
 - ⑤ CONDENSER VALUES ARE IN MFD FOR NUMBERS LESS THAN ONE, AND IN MMFD FOR NUMBERS GREATER THAN ONE.
 - ⑥ IN SOME UNITS C104 MAY BE FOUND AS TWO SEPARATE 2000 MFD/15V CONDENSERS.
 - ⑦ A RESISTOR IN SOME UNITS MAY BE USED AT THIS POINT TO ADJUST THE VOLUME CONTROL'S TRACKING CHARACTERISTIC. THE VALUE IS MATCHED TO THE PARTICULAR VOLUME CONTROL USED.

* THESE COMPONENTS HAVE A CLOSE TOLERANCE ON THEIR VALUE, OR HAVE SPECIAL CHARACTERISTICS SUCH AS LOW NOISE OR A SPECIAL RESISTANCE TAPER.



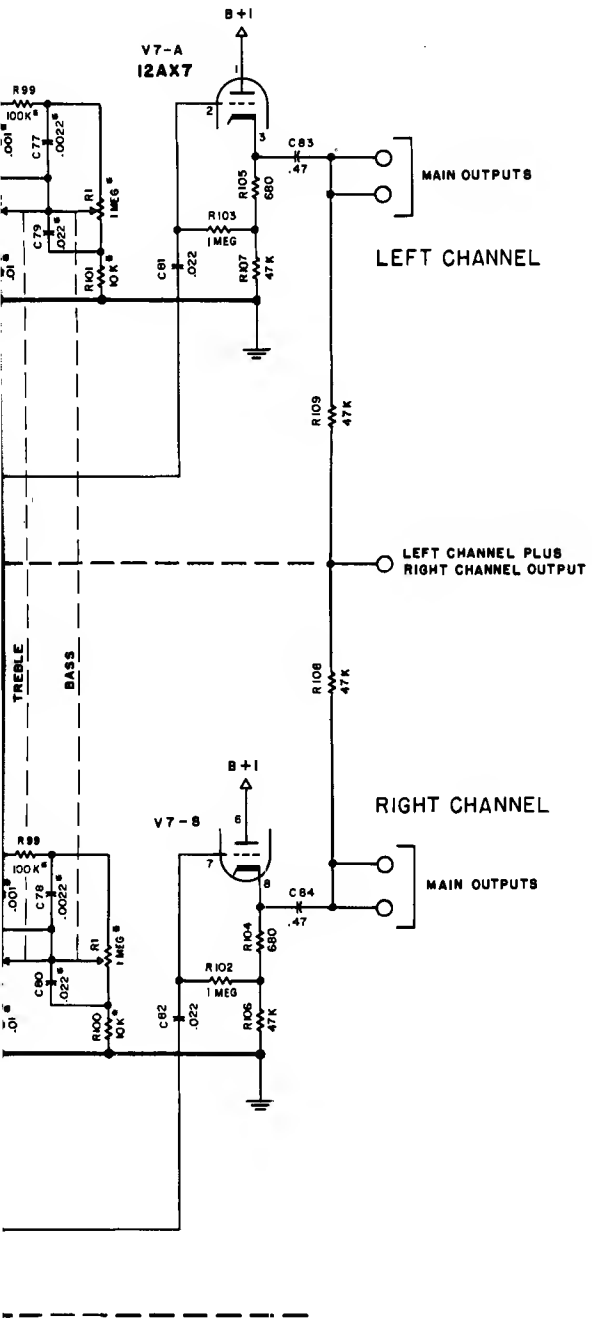


MATERIAL

FINISH

TOLERANCES - Unless otherwise specified
1/4" Angles, R 1/4"
5 985 Series

Table 1. C20 VOLTAGE AND RESISTANCE CHART
(Schematic No. SC117-201)



Tube	Pin No.	DC Volts No. Signal	Resistance in Ohms Unit Off
12AX7 (V1)	1	146	130K*
	2	0	1M
	3	1.0	2.2K
	4	5.6	5
	5	-5.6	5
	6	110	360K*
	7	0	56K
	8	1.0	4K
	9	—	—
12AX7 (V2)	1	146	130K*
	2	0	1M
	3	1.0	2.2K
	4	5.6	5
	5	-5.6	5
	6	110	360K*
	7	0	56K
	8	1.0	4K
	9	—	—
12AU7 (V3)	1	64	120K*
	2	0	< 50
	3	2.4	1.8K
	4	5.6	5
	5	-5.6	5
	6	198	14K*
	7	62	1.1M
	8	120	100K
	9	—	—
12AU7 (V4)	1	64	120K*
	2	0	< 50
	3	2.4	1.8K
	4	5.6	5
	5	-5.6	5
	6	198	14K*
	7	62	1.1M
	8	120	100K
	9	—	—
12AX7 (V5)	1	104	330K*
	2	0	110K
	3	.7	1.8K
	4	5.6	5
	5	-5.6	5
	6	230	9K
	7	22	222K
	8	29	22K
	9	—	—
12AX7 (V6)	1	104	330K*
	2	0	110K
	3	.7	1.8K
	4	5.6	5
	5	-5.6	5
	6	200	31K*
	7	22	222K
	8	29	22K
	9	—	—
12AX7 (V7)	1	250	7K*
	2	20	1M
	3	70	47K
	4	5.6	5
	5	-5.6	5
	6	250	7K*
	7	20	1M
	8	70	47K
	9	0	0
6X4 (V8)	1	315 AC	580
	2	—	—
	3	6.3 AC	.1
	4	0	0
	5	—	—
	6	315 AC	560
	7	335	*

NOTES: 1. High impedance VTVM is used to measure operating voltages.
2. Resistance measured to gnd. (chassis)
3. * Denotes pin 7 of V8 grounded for this test.
4. Control positions for tests are as follows:

MODE SELECTOR	STEREO
BALANCE	0
PHASE	0
H.F. FILTER	FLAT
LOUDNESS	FLAT
INPUT SELECTOR	TAPE HO 2
BASS COMPENSATOR	0
TREBLE COMPENSATOR	TAPE
BASS	0
TREBLE	0
RUMBLE FILTER,	}
TAPE JACK,	
TAPE COMPARE	OUT
VOLUME	ON, CCW
LOW FREQUENCY TRIM	0

117 VOLTS
60-80 CYCLES

DATE	REV	SCHEMATIC	PART NO
		117	C20
MITSUBISHI LABORATORY INC. 2 Chambers St., Bldg. 20, N.Y.			
TOLERANCES - Unless otherwise specified	SCALE	DATE	DWG NO.
1/2" = 1"	1/8"	5.7.62	SC117-201
DESIGNER	APP'D	BY	CHK'D
TAR	SAC	A	