



DRAWN	JME	REVISION
DN DATE	1/23/89	PRODUCT: SA-12
COUNTERPOINT		

CIRCUIT BOARD COMPONENTS

R6, 106	1.00M
R1, 101	1.00M(Domestic U.S.A.) 100K (Foreign)
R2, 102	2.21K
R4, 8, 13, 14, 15, 16, 17, 18, 54, 104, 108, 113, 114, 115, 116, 117, 118	100K
R3, 103	100K (Domestic U.S.A.) NOTHING (Foreign)
R5, 9, 105, 109	127R
R7, 107	3.48K (Domestic U.S.A.) 1.00K (Foreign)
R10, 110	30K 2W METAL (Domestic U.S.A.) NOTHING (Foreign)
R11, 12, 111, 112	51.1R
R19, 119	22K 2W METAL
R20, 120	681R
R29	4.02M
R31	475R
R30, 32	1.00K
R33	332R
R52	2.7K 2W METAL
R51	1R 5W WW
R53, 153	499R
R55	4.12K
R56	6.04K
R62, 63, 162, 163	470R 1W METAL
R60, 160	5.11K
R61, 161	23.4K
C7, 107	3/210 ULTRA (Domestic U.S.A.) R0 (Foreign)
C3, 4, 57, 103, 104, 157	1/250 WIMA MKP-10PP
C5, 6, 58, 105, 106	1/63 WIMA MKS-3PE
CP, CP	3PF DIPPED MICA
C8, 108	39PF DIPPED MICA
C51, 52	6800/10 ELECTROLYTIC
C53, 54, 55, 56, 155, 156	33/350 ELECTROLYTIC
C30	10/50 —C10/16 TANTALUM
C60, 61, 160, 161	10/50 RL
D60, 61, 160, 161	1N5365B
D30, 31	1N4007
D40	1N4007 (Domestic U.S.A.) NOTHING (Foreign)
D62, 63, 162, 163	1N5368B
BR1, 2	DBPC610 100V 6A F.W.B.
IC1	LM555
VR2, 102	VR50KPT10V PIHER
VR1, 101	VR253
K1, 101	RELAY 5V DPDT
Q1, 101	2N2222

HEATSINK ASSEMBLY

HEATSINK (MAIN)	12-2-HSK
MOSFETS, N-CHANNEL	RFM10W12 R.C.A.
MOSFETS, P-CHANNEL	RFM12P10 R.C.A.
D22, 23, 20, 21	1N4740A
R21, 22	165R
R23, 24	422R

CHASSIS MOUNTED COMPONENTS

MAIN RECTIFIER	KPBC2504 400V., 25A
MAIN FILTER CAPACITORS	16K/50 CG
POWER SWITCH	SW-SPDT-ROCK
TRANSFORMER	12-4-TRN
CIRCUIT WITH NO PARTS	12-3-PCB
ASSEMBLED AND TESTED CIRCUIT BOARD	PW8 12-3-PCB

REVISIONS

Older SA-12 units lack certain refinements shown in the included schematics and descriptions.

1. Bias decoupling networks. D60, D61, R62, R63, C60 and C61 are relatively new. They were added to reduce the sensitivity of the bias currents to AC Mains voltage variations.
2. Mounting Q1 and Q101 to the output stage heatsinks. Earlier SA-12 units had these devices mounted on the circuit boards. Thermal coupling to heatsinks added for increased bias stability.
3. R60. Earlier units used two forward-biased diodes in this location.
4. D100, D101. Used to protect V2 and V102 from excessively high grid-to-cathode voltages. A few very early pieces did not have these parts. Beginning with the second run, these parts were added to the board undersides. Newer units have them mounted on the PCB topside.

If an SA-12 shows signs of arcing inside tubes V2 or V102 at turn-on it is suggested that Item 4, above, be added. Do not attempt any other modifications.