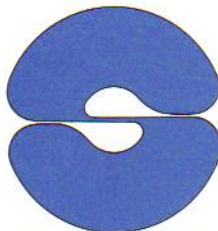


# SERVICE MANUAL

**AS 3300**



**SETTON**

TOWARDS PERFECTION

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## CAUTION

BEFORE OPERATING THIS UNIT PLEASE CHECK VOLTAGE CAREFULLY.

INCORRECT VOLTAGE SETTING MAY SERIOUSLY DAMAGE THE UNIT, WHEN CHANGING VOLTAGE SETTING, ALWAYS REMOVE THE POWER CORD PLUG FROM AC OUTLET.

# 1. SPECIFICATIONS

POWER OUTPUT	55 watts per channel at 8 ohms (RMS, 2 channels driven at 20 – 20,000 Hz, 0.1 % T.H.D.)
TOTAL HARMONIC DISTORTION	0.1% at rated output
INTERMODULATION DISTORTION	0.1% at rated output
FREQUENCY RESPONSE	20 – 20,000 Hz ± 0.5 dB
POWER BANDWIDTH (-3 dB)	5 – 40,000 Hz
HUM AND NOISE (IHF, short-circuited A network, rated power)	AUX: 90 dB TAPE PLAY: 90 dB MAG PHONO: 65 dB (High sensitivity) " : 70 dB (Low sensitivity)
INPUT SENSITIVITY (for rated output)	MAG PHONO: 3.5 mV (Hi) " : 5 mV (Lo) AUX: 150 mV TAPE PLAY A: 150 mV TAPE PLAY B: 150 mV TAPE B: 150 mV (DIN connector) MIC: 6 mV/10 k ohms
DAMPING FACTOR	35 (1 kHz, 8 ohms)
MAXIMUM INPUT VOLTAGE	MAG PHONO: 150 mV (Hi) : 300 mV (Lo)
TONE CONTROL RANGE	
BASS	±10 dB (62 Hz/125 Hz) Turnover frequency 250 Hz/500 Hz
MIDRANGE	±6 dB (1 kHz)
TREBLE	±10 dB (10 kHz/20 kHz) Turnover frequency 2.5 kHz/5 kHz
TONE CONTROL SWITCH	Switchable: flat and variable
LOUDNESS SWITCH (Volume control set at -30 dB position)	50 Hz: +12 dB 10 kHz: +3.5 dB
HIGH FREQUENCY FILTER	10 kHz: -10 dB
TAPE OUTPUT LEVEL	TAPE REC A: 150 mV TAPE REC B: 150 mV TAPE REC B: 30 mV (DIN connector) HEADPHONES: Low impedance
<b>GENERAL</b>	
SEMICONDUCTORS	ICs 5 Dual transistors 4 Transistors 33
POWER REQUIREMENT	110V/130V/220V/240V (Switchable)
POWER CONSUMPTION	360 watts (MAX. 4 ohms) 150 watts (UL) 240 watts (CSA)
DIMENSIONS	500(W) x 164(H) x 295(D) mm without legs and knobs
NET WEIGHT	without package: 14 kg with package: 18 kg

## 2. ALIGNMENT PROCEDURES

### 1. TEST EQUIPMENT

The Test equipment listed below are required to test and align the AS-3300 HI-FI Stereo Amplifier.

- |    |                         |  |
|----|-------------------------|--|
| a. | Audio Signal Generator: | Frequency; 20 Hz to 20 kHz variable<br>Output level; 0.5 mV to 1 V variable. |
| b. | Power Meter:            | Capable of measuring 0 – 100 watts.  |
| c. | Dummy Load:             | 8 ohm 200 watts.   |

### 2. POWER METER ALIGNMENT

- a) Connect the output of an Audio Signal Generator to the left "AUX-1" input jacks on the amplifier rear panel.

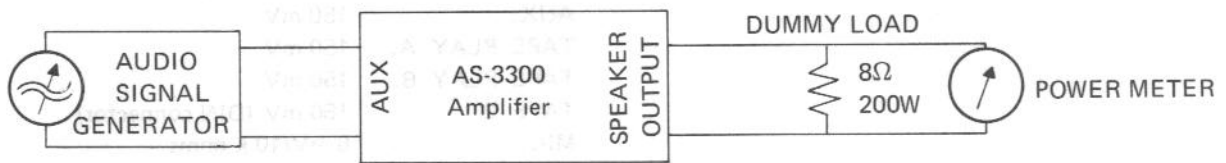


Figure 1. Test Set-Up

- b) Rotate the Selector Switch in the AUX 1 position.
- c) Place the Mode Switch in the STEREO position.
- d) Rotate the Speaker Mode Switch in the A position.
- e) Connect the 8 ohm resistive dummy load to the left A SPEAKERS output terminals.
- f) Connect a Power Meter across the 8 ohm resistive dummy load.
- g) Temporarily, set the Audio Signal Generator output to zero.
- h) Rotate the Volume Control to full clockwise position.
- i) Set the Signal Generator to 1 kHz and increase the signal generator output until Power Meter brings on the 5 watts of meter scale.
- j) Next, adjust RV1 on P.C Board PSPW023COX to bring the meter position on the 50 watts of Left channel output power meter on the front panel.
- k) For the right channel power meter alignment, connect the 8 ohm resistive dummy load to the right A SPEAKERS output terminals and Power Meter paralleled with it. Then, adjust RV2 in the same manner as step "j".

### 3. BLOCK DIAGRAM

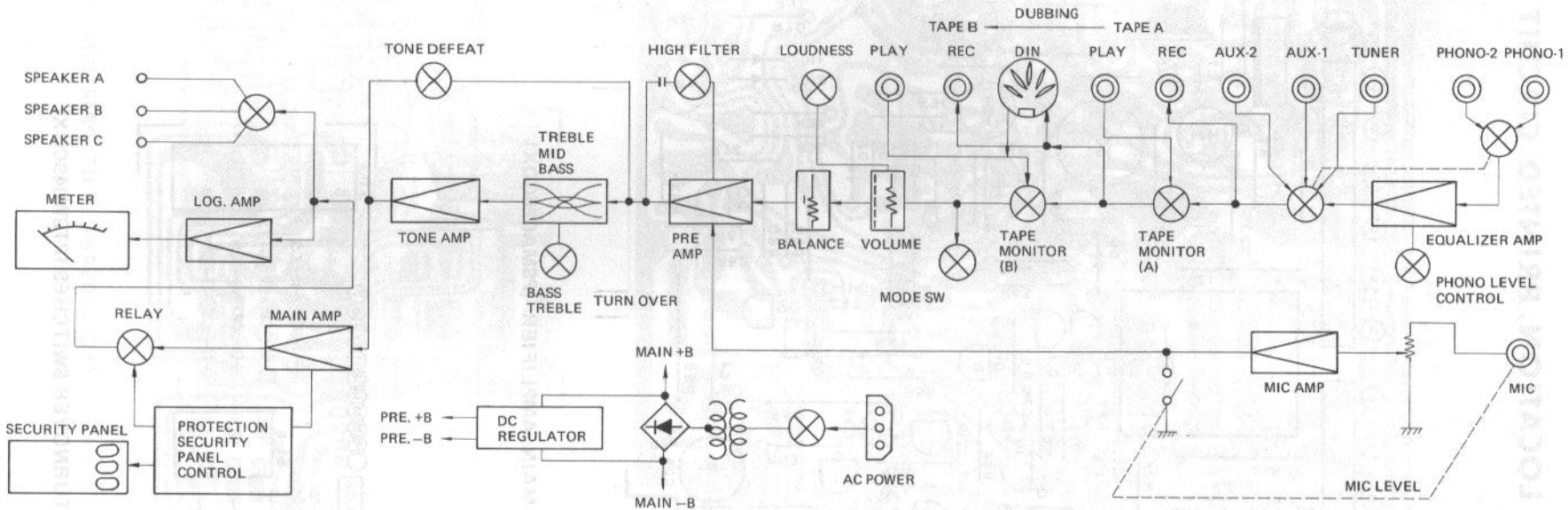


Figure 2.

## 4. ELECTRICAL PARTS LOCATION, PRINTED CIRCUIT BOARDS

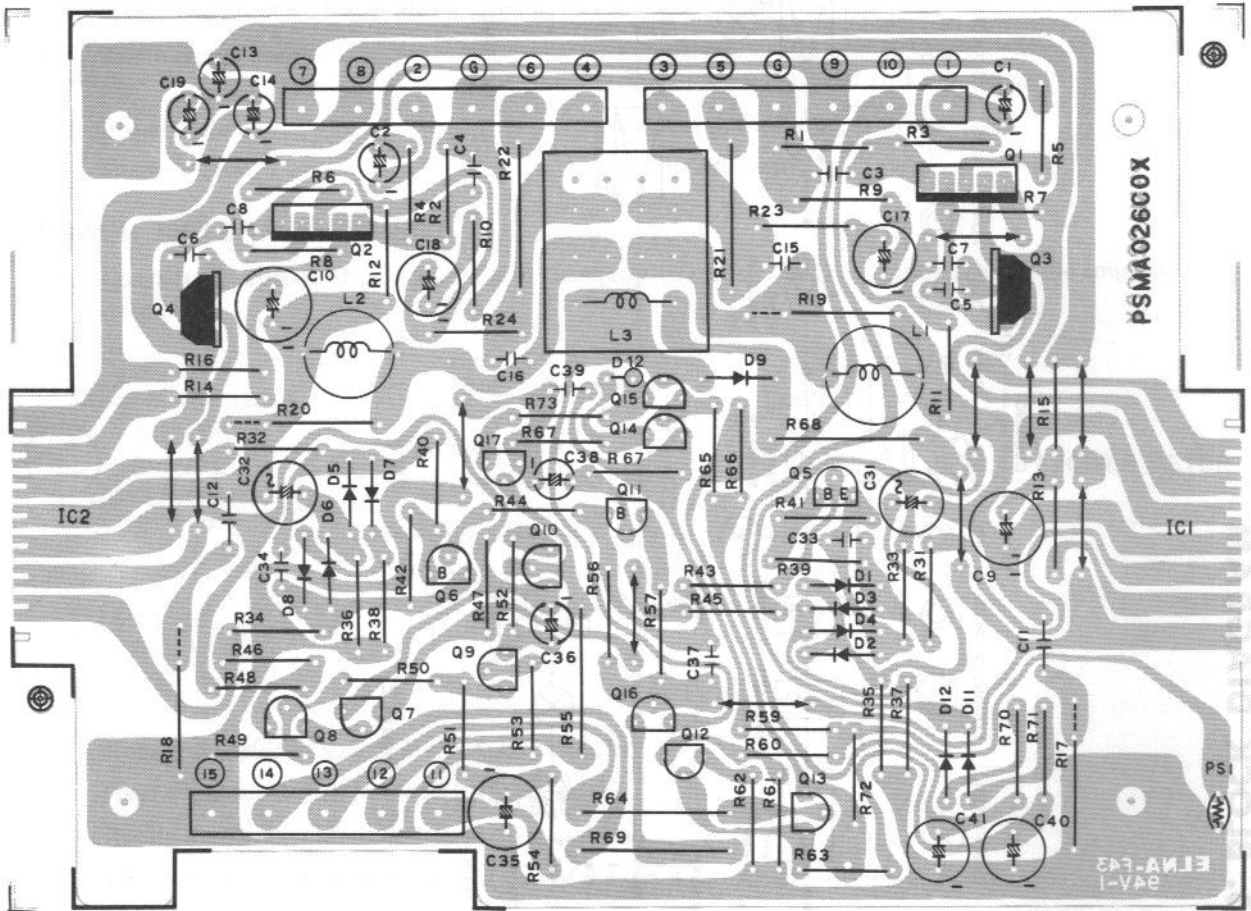


Figure 3. MAIN AMPLIFIER (PSMA026COX)

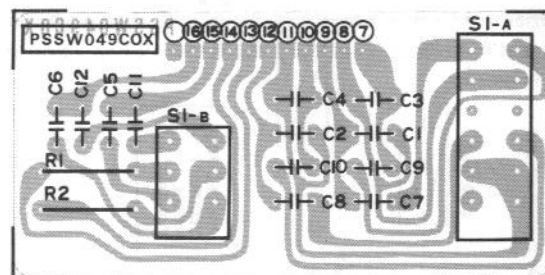


Figure 4. TURNOVER SWITCHES (PTSW049COX)

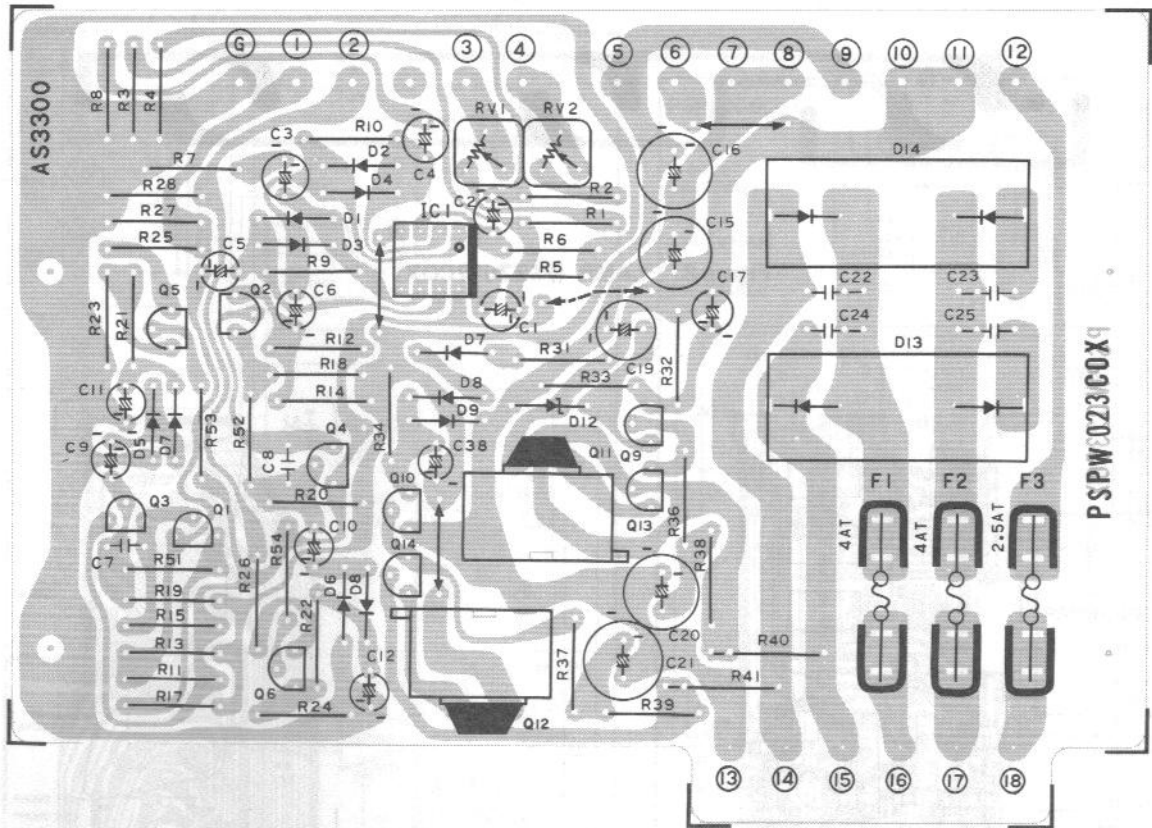


Figure 5. POWER SUPPLY AND METER CIRCUITS (PSPW023COX)

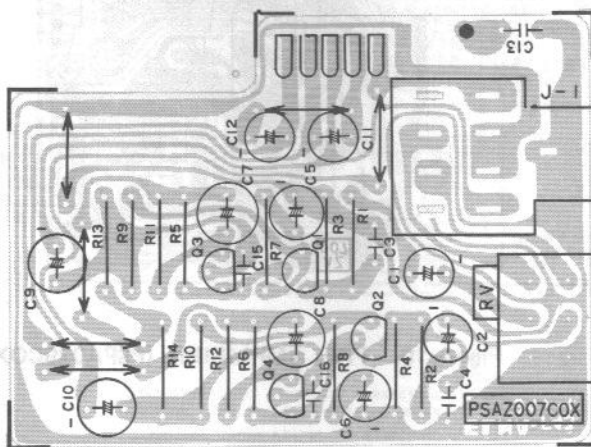


Figure 6. MIC AMPLIFIER (PSAZ007COX)

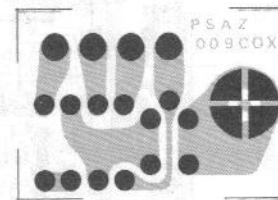


Figure 7. LAMP SWITCH (PSAZ009COX)



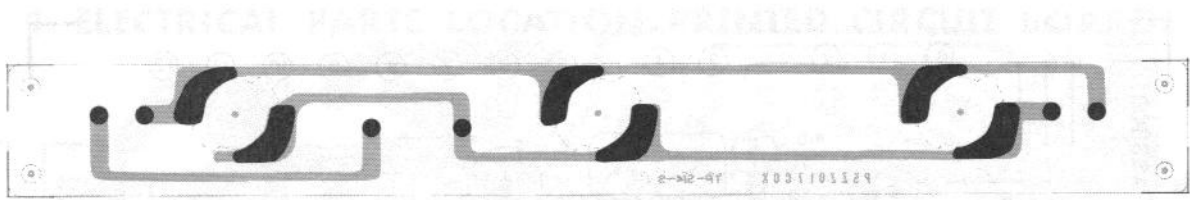


Figure 8. LAMP (PSZZ017COX)

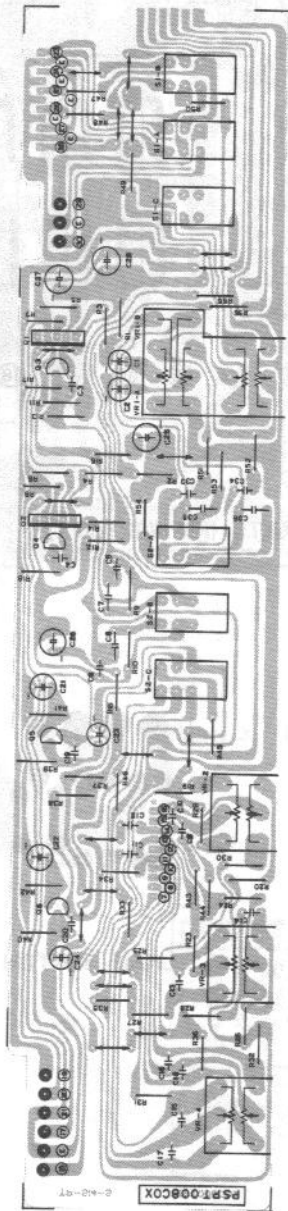


Figure 9. TONE CONTROL (PSPT008COX)

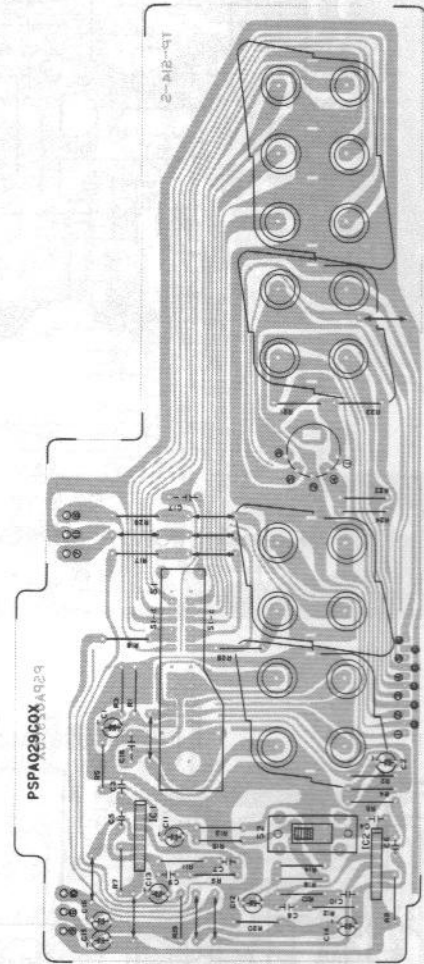
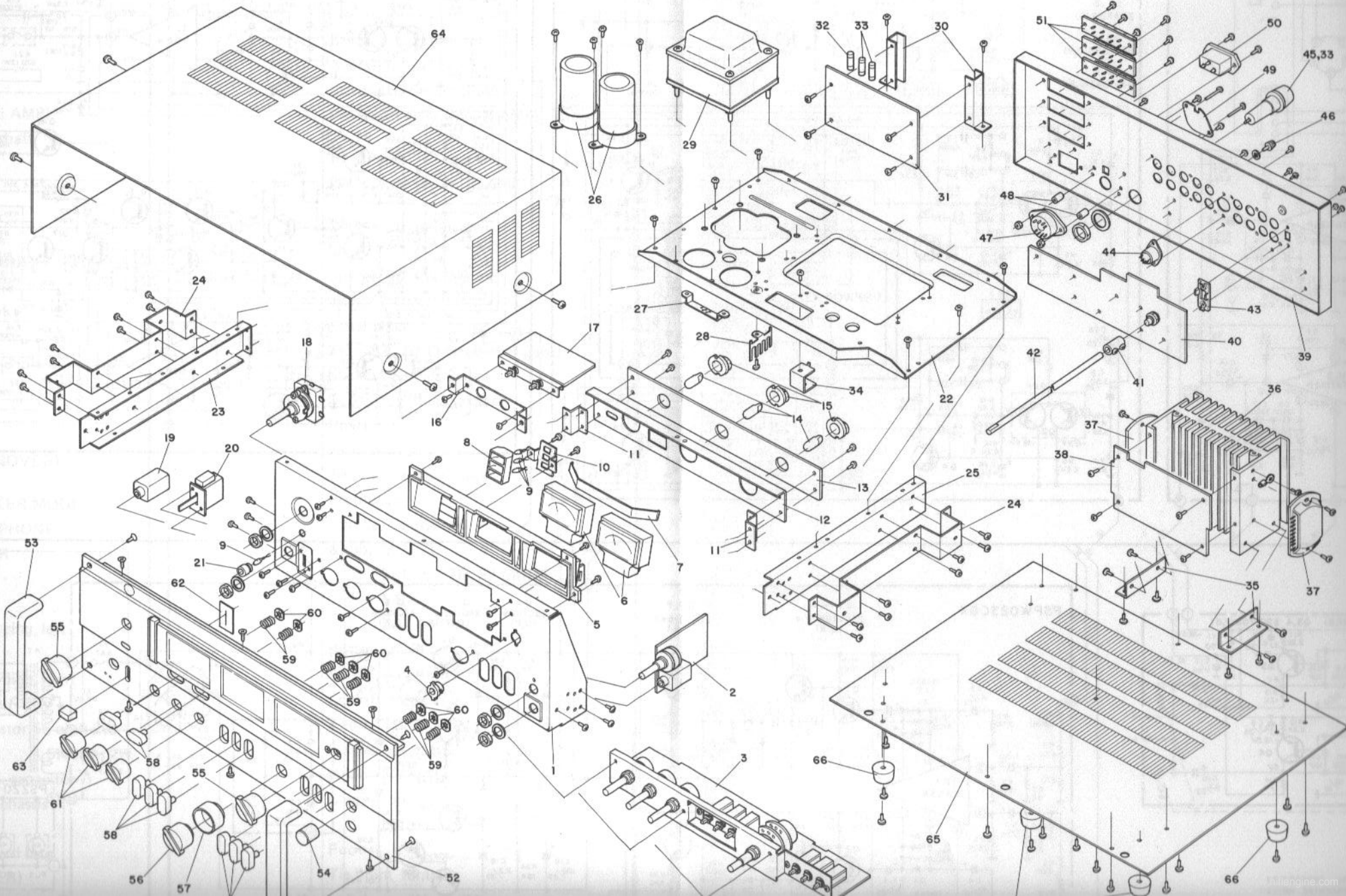


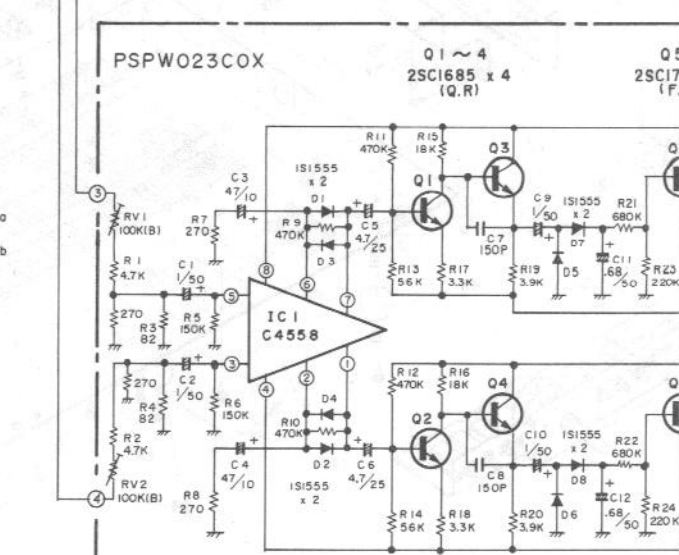
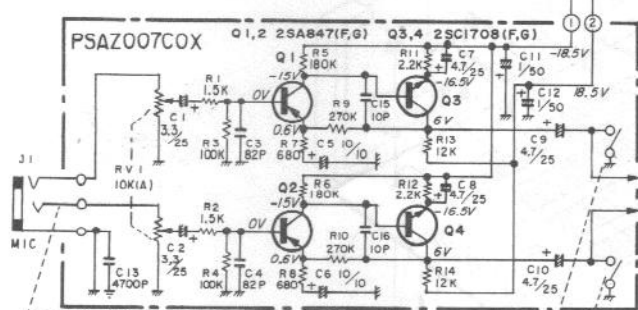
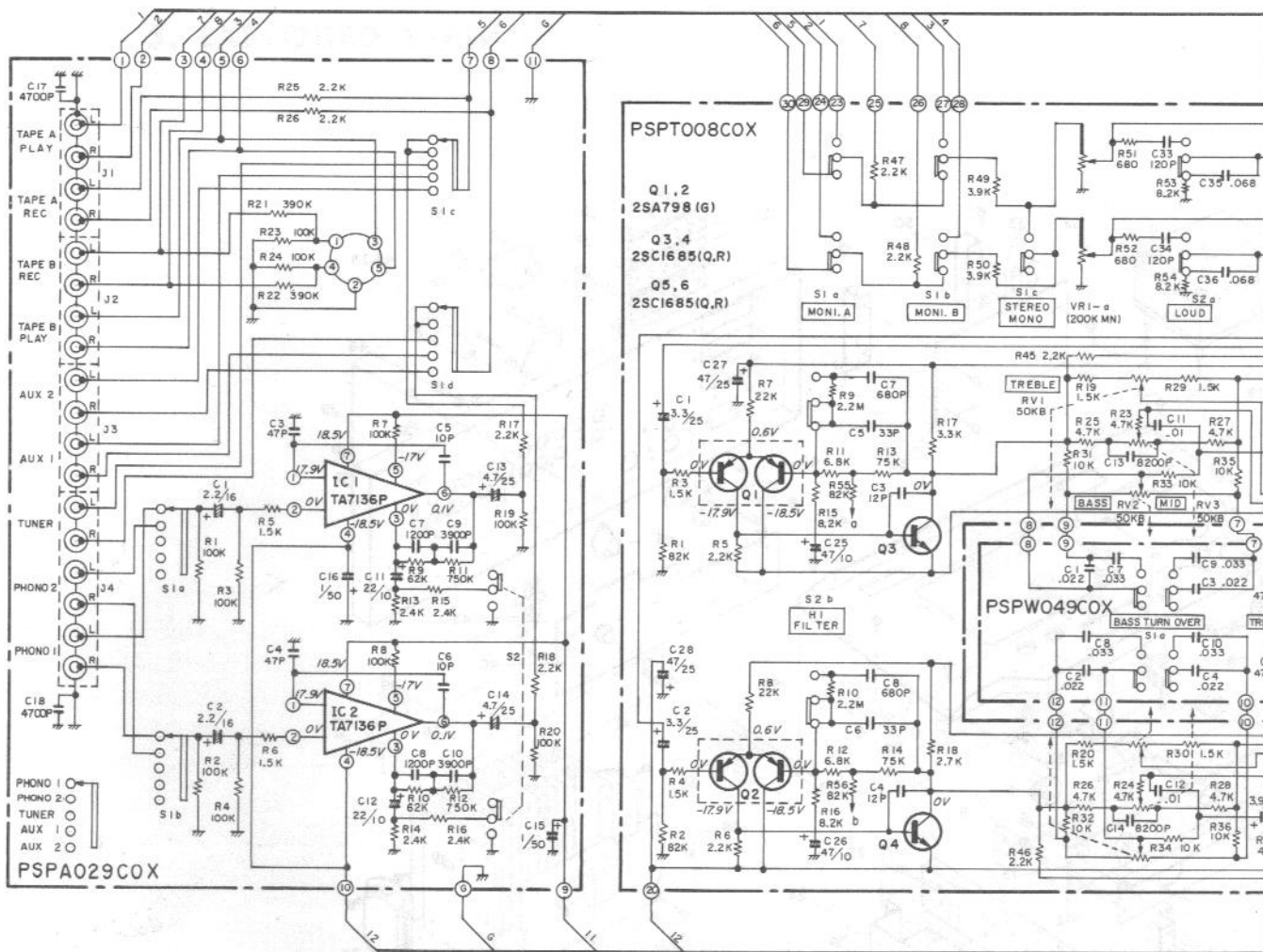
Figure 10. PRE AMPLIFIER (PSPA029COX)



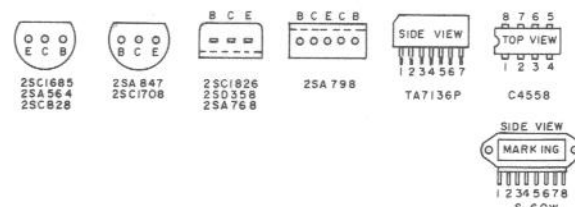
# 5. EXPLODED VIEW

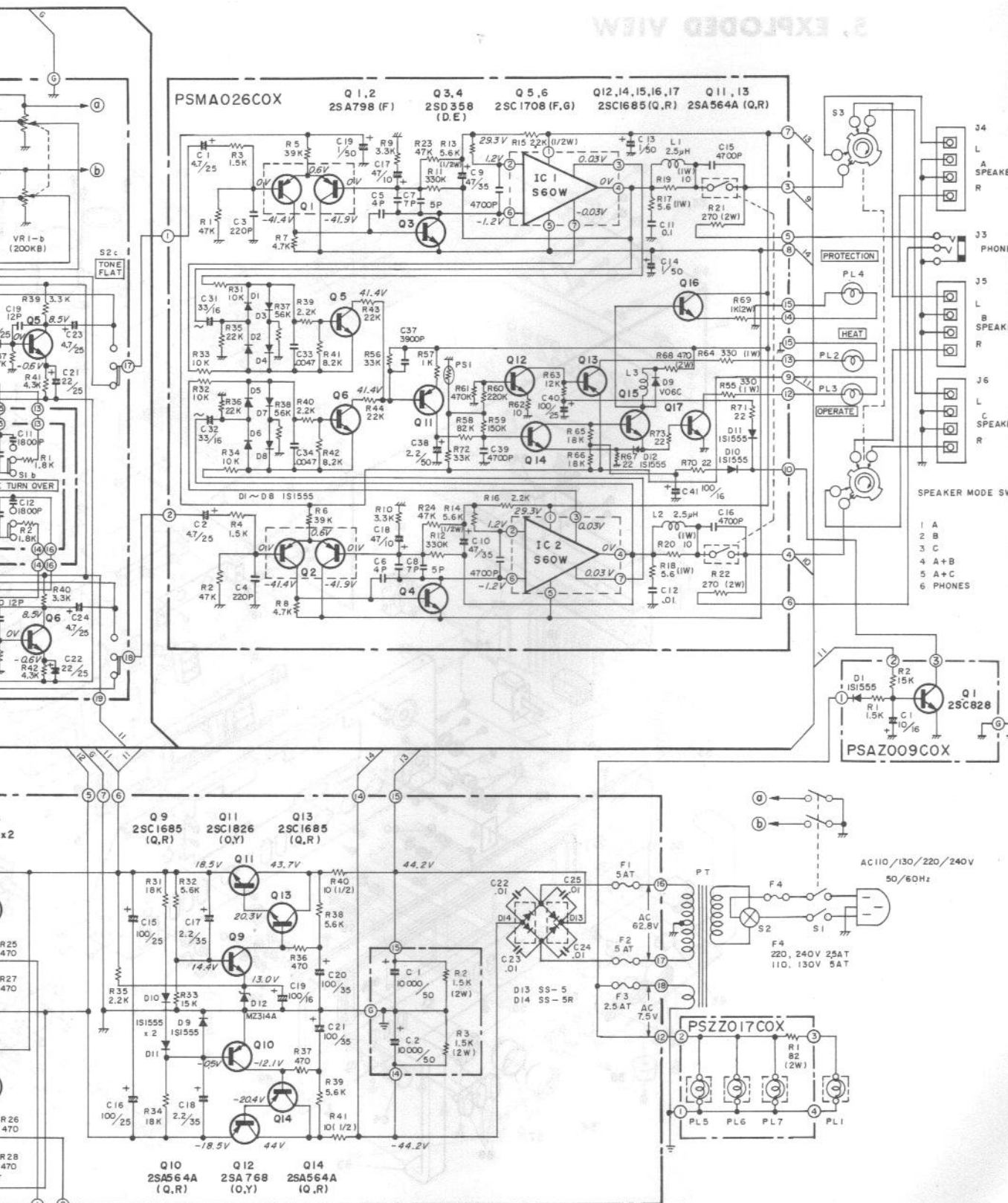


# 6. SCHEMATIC DIAGRAM



SEMICONDUCTOR TERMINAL CONNECTION  
(BOTTOM VIEW UNLESS OTHERWISE NOTED)  
E: EMITTER C: COLLECTOR B: BASE





NOTE :

1. ALL VOLTAGES MEASURED FROM COMMON NEGATIVE CHASSIS GROUND WITH VTVM AT NO SIGNAL.
2. CAPACITORS VALUES ARE IN  $\mu$ F UNLESS OTHERWISE NOTED P= PICO FARAD
3. RESISTORS VALUES ARE IN OHM. K=K OHM.

## 7. PARTS LIST FOR AS-3300

SYMBOL NO.	DESCRIPTION
	Fuse 2.5AT (spare)
	Front Panel
	PW Board ass'y (MIC)
	"    (TONE AMP)
	Bushing, function sw. shaft
	Frame, meter
M1, 2	Meter, power
	Spring Board, meter
	Bushing, security lamp
PL1 - 4	Lamp, 6.3V 35mA SECURITY, POWER
	Bracket, security lamp
	"    lamp board brkt
	"    lamp board
	PW Board, (LAMP)
PL5 - 7	Lamp, 8V 0.3A blue
	Socket, lamp
	Bracket, turnover sw.
	PW Board ass'y (TURNOVER)
S3	Rotary Switch, SPEAKER MODE
J3	Jack, 3P HEADPHONE
S1	Switch, lever POWER
	Cover, power lamp
	Chassis
	Bracket, chassis reinforcing, left
	"    case fixing
	"    chassis reinforcing, right
C1, 2	Elyt. Capacitor 10000 $\mu$ F 50V
R1	Metal Oxide Film Resistor 56 ohm 2W
R2, 3	"    1.5K ohm 2W
	Connecting Plate, Elyt. capacitor
	Terminal, GND earth, chassis
PT	Power Transformer
	Bracket, power pw board mtg.
	PW Board ass'y (POWER)
F1, 2	Fuse 5AT
F3, 4	"    2.5AT
	Bracket, bottom case fixing

SYMBOL NO.	DESCRIPTION
	Bracket, heat sink mtg.
	Heat Sink
IC1, 2	Integrated Circuit S-60W
	PW Board ass'y (MAIN AMP)
	Rear Panel
	PW Board ass'y (PRE AMP)
	Coupler, function sw.
	Shaft, " "
	Spacer, MAG SENS sw.
	Jack, 5P DIN
	Fuseholder
	Terminal, GND earth, rear panel
S2	Socket, Voltage Select
	Support, voltage selector
	Cover, " "
	Jack, AC
	Terminal, speaker jack
	Escutcheon
	Handle, escutcheon
	Knob, MIC VR
	"    SELECTOR, SP MODE
	"    VR
	"    BALANCE
	Button, push sw.
	Spring, push button
	Lock Ring, push button
	Knob, TURNOVER
	Buffer, power sw.
	Knob, POWER
	Case, top
	"    bottom
	Foot
	Tie point 16mm
	Label
	Screw, tapping, rear panel etc. M3x8
	"    pan tapping, pin jack M3x8
	"    semus, power sw. tone board etc. M3x6



SYMBOL NO.	DESCRIPTION
	Screw, flat head, escutcheon M3x8
	" pan head, slide sw. M2.6x8
	" flat head, handle M4x10
	" tapping, chassis, front panel etc. M3x8
	" inside toothed, main board etc. M3x8
	" tapping, meter cover M3x6
	" " foot M3x14
	" pan head, Din jack M3x6
	" flat head, AC jack M3x8
	" pan head, voltage selector M3x16
	Hexa Nut, AC jack, voltage selector
	Washer, inside toothed, AC jack, voltage selector
	Screw, bind head case M5x10
	Washer, flat, foot
	" case
	Earth Lug, egg type
	Instruction Book - Eng. - French version
	" - Ger. - Swedish version
	PW Board
Q1, 2	Transistor 2SA847 (F.G)
Q3, 4	" 2SC1708 (F.G)
J1	Jack, MIC
VR1	Control, 10K
	Short jumper, 12.5mm
C1, 2	Elyt. Capacitor 3.3μFμF 25V
C3, 4	Ceramic Capacitor 82 pF 50V
C5, 6	Elyt. Capacitor 10 μF 16V
C7 - 10	" 4.7 μF 25V
C11, 12	" 1 μF 50V
C13	Ceramic Capacitor 4700 pF 50V
C15, 16	" 10 pF 50V
R1, 2	Carbon Resistor 1.5K ohm 1/4W
R3, 4	" 100K " "
R5, 6	" 180K " "
R7, 8	" 680 " "
R9, 10	" 270K " "
R11, 12	" 2.2K " "
R13, 14	" 12K " "
	PW Board
Q1, 2	Transistor 2SA798 (G)

SYMBOL NO.	DESCRIPTION
Q3 - 6	Transistor 2SC1685 (Q. R)
VR1	Control 200KMN/200KB
VR2 - 4	" 50KB
	Terminal, 3P
	" 6P
	Bracket, control mtg.
	Screw, semus M3x6
	Short jumper 10mm
C1, 2	Elyt. Capacitor 3.3 μF 25V
C <sup>3, 4</sup> C <sub>19, 20</sub>	Ceramic Capacitor 12 pF 50V
C5, 6	" 33 pF 50V
C7, 8	" 680 pF 50V
C11, 12	Mylar Capacitor .01 μF 50V
C13, 14	" 8200 pF 50V
C21, 22	Elyt. Capacitor 22 μF 25V
C23, 24	" 4.7 μF 25V
C25, 26	" 47 μF 10V
C27, 28	" 47 μF 25V
C33, 34	Ceramic Capacitor 120 pF 50V
C35, 36	Mylar Capacitor .068 μF 50V
R <sup>1, 2</sup> R <sub>55, 56</sub>	Carbon Resistor 82K ohm 1/4W
R <sup>3, 4, 19</sup> R <sub>20, 29, 30</sub>	" 1.5K " "
R <sup>5, 6</sup> R <sub>45 - 48</sub>	" 2.2K " "
R7, 8	" 22K " "
R9, 10	" 2.2M " "
R11, 12	" 6.8K " "
R13, 14	" 75K " "
R <sup>15, 16</sup> R <sub>53, 54</sub>	" 8.2K " "
R <sup>17, 18</sup> R <sub>39, 40</sub>	" 3.3K " "
R23 - 28	" 4.7K " "
R <sup>31, 32</sup> R <sub>33 - 36</sub>	" 10K " "
R37, 38	" 47K " "
R41, 42	" 4.3K " "
R49, 50	" 3.9K " "
R51, 52	" 680 " "
	PW Board
	Push Switch

SYMBOL NO.	DESCRIPTION
	PW board joint wire, 11P
C1 - 4	Mylar Capacitor .022 $\mu$ F 50V
C5, 6	" .0047 $\mu$ F 50V
C7 - 10	" .033 $\mu$ F 50V
C11, 12	" .0018 $\mu$ F 50V
R1, 2	Carbon Resistor 1.8K ohm 1/4W
	PW Board
IC1	Integrated Circuit NJM4558D
Q <sup>1-4</sup> Q <sub>9, 13</sub>	Transistor 2SC1685 (Q.R)
Q5, 6	" 2SC1708 (F.G)
Q10, 14	" 2SA564A (Q.R)
Q11	" 2SC1826 (Q.Y)
Q12	" 2SA768 (Q.Y)
D1 - 11	Diode 1S1555
D12	Diode zener MZ314
D12	" SS-5
D13	" SS-5R
RV1, 2	Resistor semi-fixed 100K
	Fuseholder
	Heat Sink
	Short jumper 12.5mm
	Terminal, 6P 7.5mm
	" 4P "
	Screw, tapping M3x8
	Lead Wire, solid type 40mm
C1, 2, 9, 10	Elyt. Capacitor 1 $\mu$ F 50V
C3, 4	" 47 $\mu$ F 10V
C5, 6	" 4.7 $\mu$ F 25V
C7, 8	Ceramic Capacitor 150 pF 50V
C11, 12	Elyt. Capacitor .68 $\mu$ F 50V
C15, 16	" 100 $\mu$ F 25V
C17, 18	" 2.2 $\mu$ F 35V
C19	" 47 $\mu$ F 16V
C20, 21	" 100 $\mu$ F 35V
C22 - 25	Ceramic Capacitor .01 $\mu$ F 500V
R1, 2	Carbon Resistor 4.7K ohm 1/4W
R3, 4	" 82 " "
R5, 6	" 150K " "
R7, 8	" 220 " "
R9 - 12	" 470K " "
R13, 14	" 56K " "

SYMBOL NO.	DESCRIPTION
R15, 16	Carbon Resistor 18K ohm 1/4W
R17, 18	" 3.3K " "
R19, 20	" 3.9K " "
R21, 22	" 680K " "
R23, 24	" 220K " "
R25 - 28	" 470 " "
R31, 34	" 18K " "
R32, 38, 39	" 5.6K " "
R33	" 15K " "
R35	" 2.2K " "
R36, 37	" 470 " "
R40, 41	Metal Oxide Film Re. 10 " 1/2W
	PW Board
Q1, 2	Transistor 2SA798 (G)
Q3, 4	" 2SD358 (D.E)
Q5, 6	" 2SC1708 (F.G)
Q11, 13	" 2SA564A (Q.R)
Q12, 14-17	" 2SC1685 (Q.R)
D1 - 8	Diode 1S1553
D9	" V06C
D10 - 12	" 1S1555
PS	Posistor (Thermistor of positive character) PTH487A03BE302TS
L1, 2	Choke Coil 2.5 $\mu$ H
L3	Relay
	Terminal, 6P 7.5mm
	" 5P "
	Short jumper 12.5mm
C1, 2	Elyt. Capacitor 4.7 $\mu$ F 25V
C3, 4	Ceramic Capacitor 220 pF 50V
C5, 6	" 4 pF 50V
C7, 8	" 12 pF 50V
C9, 10	Elyt. Capacitor 47 $\mu$ F 35V
C11, 12	Mylar Capacitor .1 $\mu$ F 50V
C13, 14, 19	Elyt. Capacitor 1 $\mu$ F 50V
C <sup>15, 16, 21</sup> C <sub>22, 33, 34</sub>	Ceramic Capacitor 4700 pF 50V
C17, 18	Elyt. Capacitor 47 $\mu$ F 10V
C31, 32	" 33 $\mu$ F 16V
C37	Mylar Capacitor 3900 pF 50V
C38	Elyt. Capacitor 2.2 $\mu$ F 50V
C40	" 33 $\mu$ F 25V



SYMBOL NO.	DESCRIPTION			
C41	Elyt. Capacitor	100	μF	16V
R1, 2	Carbon Resistor	47K	ohm	1/4W
R3, 4	"	1.5K	"	"
R7, 8	"	4.7K	"	"
R9, 10	"	3.3K	"	"
R11, 12	"	43K	"	"
R13, 14	Metal Oxide Film Re.	5.6K	"	1/2W
R15, 16	"	2.2K	"	"
R17, 18	"	5.6	"	1W
R19, 20	"	10	"	1W
R21, 22	"	270	"	2W
R31 - 34	Carbon Resistor	10K	"	1/4W
R <sup>35, 36</sup> R <sup>43, 44</sup>	"	22K	"	"
R37, 38	"	56K	"	"
R5, 6	"	39K	"	"
R39, 40	"	2.2K	"	"
R41, 42	"	8.2K	"	"
R43, 44	"	22K	"	"
R56, 72	"	33K	"	"
R57	"	1K	"	"
R58	"	82K	"	"
R59	"	150K	"	"
R60	"	220K	"	"
R61	"	470K	"	"
R62	"	10	"	"
R63	"	12K	"	"
R55, 64	Metal Oxide Film Re.	330	"	1W
R65, 66	Carbon Resistor	18K	"	1/4W
R <sup>67, 70</sup> R <sup>71, 73</sup>	"	22	"	"
R68	Metal Oxide Film Re.	470	"	2W
R69	"	1K	"	"
	PW Board			
IC1, 2	Integrated Circuit	TA7136P		
S1	Slide Rotary Switch	PHONO1-AUX2		
S2	Slide Switch			
J1 - 3	Pin Jack, 4P			
J4	" 6P			
	Terminal, 3P 5mm			
	PW board joint wire, 11P			

SYMBOL NO.	DESCRIPTION			
	Short jumper			
C1, 2	Tantalum Capacitor	2.2	μF	16V
C3, 4	Ceramic Capacitor	47	pF	50V
C5, 6	"	10	pF	50V
C7, 8	Mylar Capacitor	1200	pF	50V
C9, 10	"	3900	pF	50V
C11, 12	Elyt. Capacitor	22	μF	10V
C13, 14	"	4.7	μF	25V
C15, 16	"	1	μF	50V
C17, 18	Ceramic Capacitor	4700	pF	50V
R <sup>1-4, 7, 8</sup> R <sup>19, 20</sup>	Carbon Resistor	100K	ohm	1/4W
R5, 6	"	1.5K	"	"
R9, 10	"	62K	"	"
R11, 12	"	750K	"	"
R13 - 16	"	2.4K	"	"
R <sup>17, 18</sup> R <sup>25, 26</sup>	"	2.2K	"	"
R21, 22	"	390K	"	"