

NAD

306

MODEL

SERVICE MANUAL

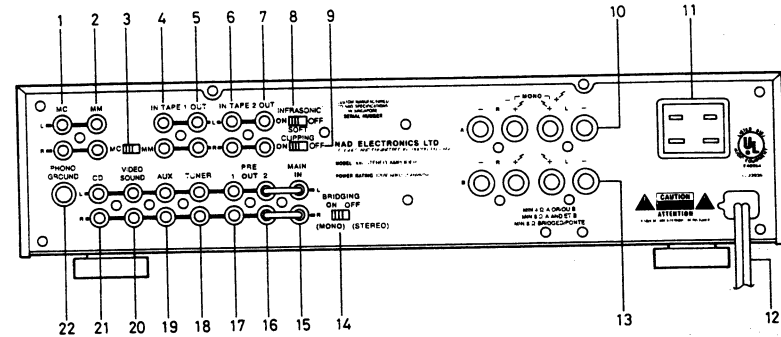
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SERVICE SAFETY PRECAUTIONS (UL)

1. Use exact replacement parts for critical locations, marked "▲".
2. Return lead dress to original position, and re-install protective covers.
3. Before returning to customer, test for shock hazard; use either method A or B:
 - A. Leakage test, "cold".
 1. Unplug AC cord; turn power switch ON.
 2. Connect one lead of High Voltage Insulation Tester to both prongs of AC plug.
 3. Touch other lead to all exposed metal parts.
 4. Impedance measurement must be 0.3-5.0 Megohms.
 - B. Leakage test, "live".
 1. Plug unit directly into AC outlet; do not use isolation transformer.
 2. Connect one lead of Leakage Current Tester to earth ground.
 3. Touch other lead to all exposed metal parts.
 4. Leakage measurement must be less than 0.5 milliamps.

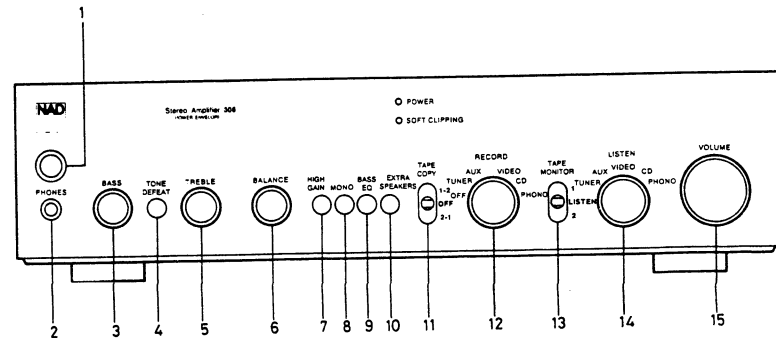
REAR PANEL

- | | |
|--------------------------|------------------------|
| 1. MC Input. | 12. AC Line Cord. |
| 2. MM Input | 13. Speakers B. |
| 3. MC/MM Selector. | 14. Bridging On/Off. |
| 4. Tape 1 Input. | 15. Main Amp Input. |
| 5. Tape 1 Output. | 16. Pre Amp Output 2. |
| 6. Tape 2 Input. | 17. Pre Amp Output 1. |
| 7. Tape 2 Output. | 18. Tuner Input. |
| 8. Infrasonic On/Off. | 19. Aux Input. |
| 9. Soft Clipping On/Off. | 20. Video Sound Input. |
| 10. Speakers A. | 21. CD Input. |
| 11. AC Outlet.(AH) | 22. Phono Ground. |



FRONT PANEL

- | | |
|-----------------|-----------------------------|
| 1. Power. | 8. Mono. |
| 2. Phones. | 9. Bass Equalizer |
| 3. Bass. | 10. Extra Speakers. |
| 4. Tone Defeat. | 11. Tape Copy. |
| 5. Treble. | 12. Record Output Selector. |
| 6. Balance. | 13. Tape Monitor. |
| 7. High Gain. | 14. Listen Input Selector. |
| | 15. Volume. |



Specifications

NAD 306 Stereo Amplifier

Power Amplifier Section

CONTINUOUS AVERAGE POWER

OUTPUT AT 8 OHMS (minimum RMS power per channels, both channels driven, with not more than the rated distortion)	50W (17dBW)
Rated distortion (THD) 20Hz-20kHz	0.03%
Clipping power, 1kHz (maximum continuous power per channel)	60W
Dynamic Headroom at 8 ohms	5dB
Dynamic power (maximum) 8 ohms	160W
short-term power per channel)	4 ohms 200W 2 ohms 250W
Damping factor	≥ 100
Slew rate	30V/ μ sec
T.H.D. and AMPTE.I.M. distortion from 250mV to rated output	<0.03%
Input Impedance	30kohm + 820P
Input sensitivity for 50Watts out	1V
Power amp gain	+26dB (20X)

Preamplifier Section

Phono Input	
Input Impedance	MM 47kohm + 200P MC 100ohm + 1 μ F
Input Sensitivity (1kHz)	MM 2.6mV MC 120 μ V
Signal-to-Noise Ratio with cartridge connected, A-weighted	MM 80dB MC 78dB
Input Overload at 1Hz	MM 230mV MC 10mV
RIAA Accuracy	± 0.5 dB

High-Level Inputs (CD, Video, Tape)

Input Impedance	R=10kohm, C=300pF
Input Sensitivity	170mV
Signal-to-Noise ratio, A-weighted	97dB re 1W out
Input Overload	>10V
Frequency Response	20Hz-20kHz ± 0.3 dB

Outputs

Preamp output impedance	220ohm
Tape output impedance	Source Z+2000ohm

Controls

Treble	± 7 dB at 10kHz
Bass	± 9.5 dB at 50Hz
Bass Equalization	+4.2dB at 37Hz

Infrasonic Filter

20Hz -0.15dB
12Hz -2.4dB
-12dB/octave

Physical Specifications

Width x Height x Depth	420 x 95 x 350mm
3/4 in	16 1/2 x 3 3/4 x 13
Net Weight	8.9kg
Power Consumption	50/60Hz at 110,115 220-240V 260VA

Specifications are those in effect at the time of printing. NAD reserves the right to change specifications or designs at any time without notice.

DISASSEMBLY INSTRUCTION

1. Remove six screws (A) holding the metal case.
2. Remove six knobs and eight screws (B) holding the front panel.

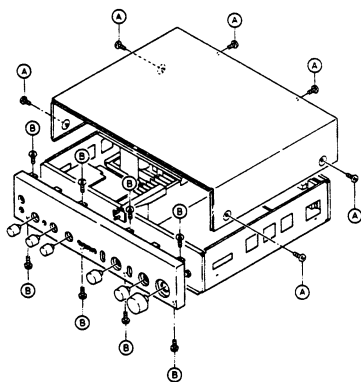


Figure 1

3. Remove three screws (C) and five screws (D) holding the front chassis.
4. Remove three screws (E) and two rotary switches nuts holding the switch PCB.
5. Remove three screws (F) holding the power supply PCB.
6. Remove six screws (G) holding the pre amplifier PCB.

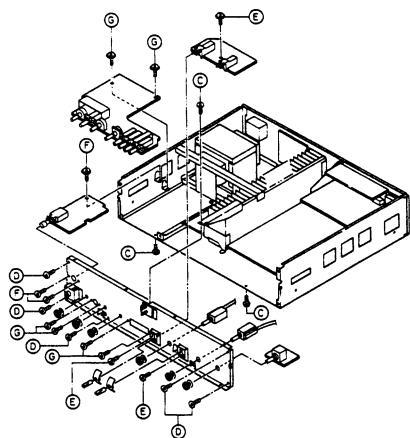


Figure 2

7. Remove two screws (H) holding the TRFM frame.
8. Remove four screws (I) holding the speaker PCB.
9. Remove four screw (J) holding the Rectifier PCB.
10. Remove five screws (K) holding the jack PCB and equalizer PCB.
11. Remove a screw (L) holding the PCB bracket.
12. Remove eight screws (M) holding the main amplifier PCB.

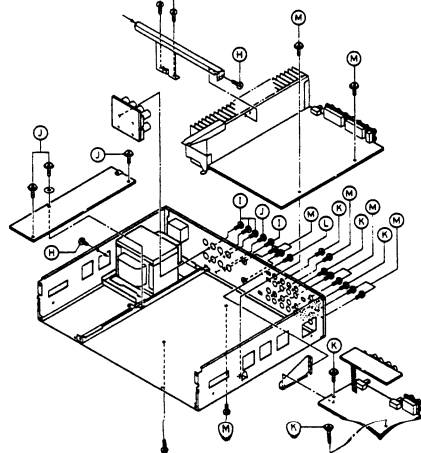


Figure 3

ALIGNMENT METHOD

MAIN AMPLIFIER ALIGNMENT

IMPORTANT NOTES:

- 1) After repair, it is recommended to use current limiter (40-80W lightbulb) in series with AC mains line, for initial turn-on.

A. IDLE CURRENT ADJUSTMENT

1. Connect DVM across R-479. (Between TP1 and TP3)
2. Turn on the adjust VR-401 for reading of $7\text{mV} \pm 1\text{mVDC}$.
3. Repeat, using R-480 (Between TP2 and TP4), adjust VR-402.

B. FINAL ADJUSTMENT

1. Leave power on minimum 10 minutes.
2. Repeat idle current adjustments.

C. THIS ADJUSTMENT SHOULD ONLY BE DONE AFTER REPLACEMENT OF R479/480 OR THE CURRENT SENSE TRANSISTORS

1. Set both VR403 and VR404 to MINIMUM resistance (fully clock wise).
2. Connect a 4 ohm loads to each speaker output.
3. Apply a signal to the CD input at 1kHz and adjust the level and volume settings in order to achieve an output signal of 60 to 64 Watts in the 4 ohm loads (15.5 to 16 Volts RMS).
4. Adjust VR403 (VR404) very slowly until the output signal is just clipped and the level drops by 0.25 to 0.5 Volts and stays stable at this level for at least 10 seconds.
The circuit has a time constant of a few seconds, so a fast adjustment may result in clipping at too low a level.

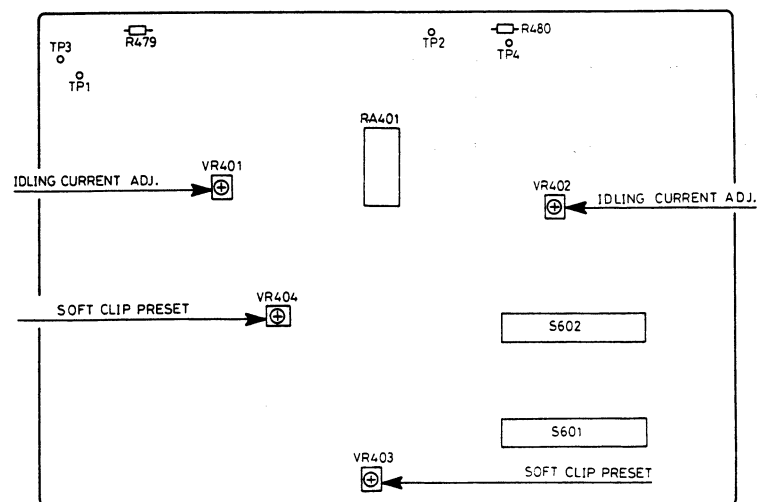
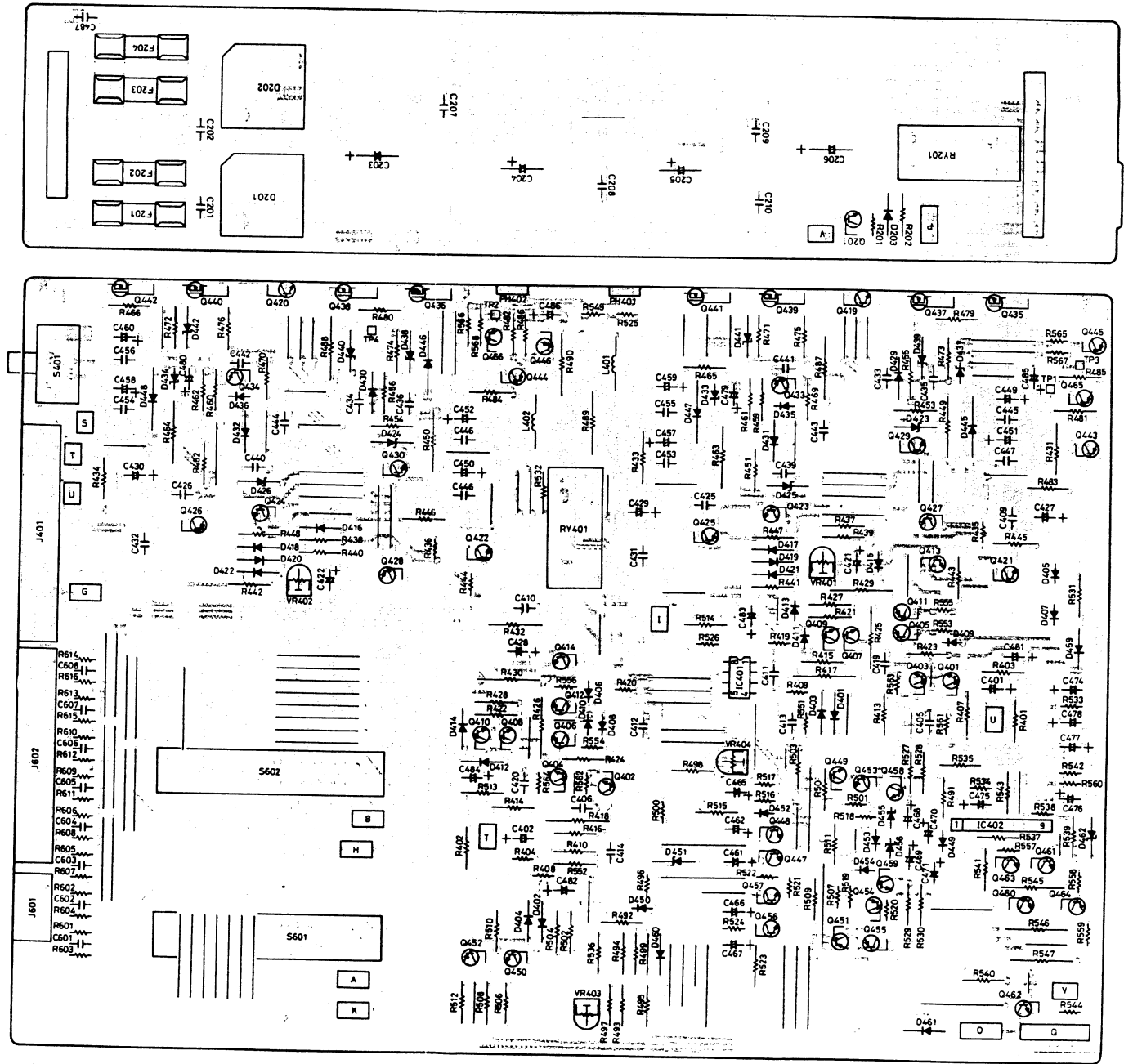
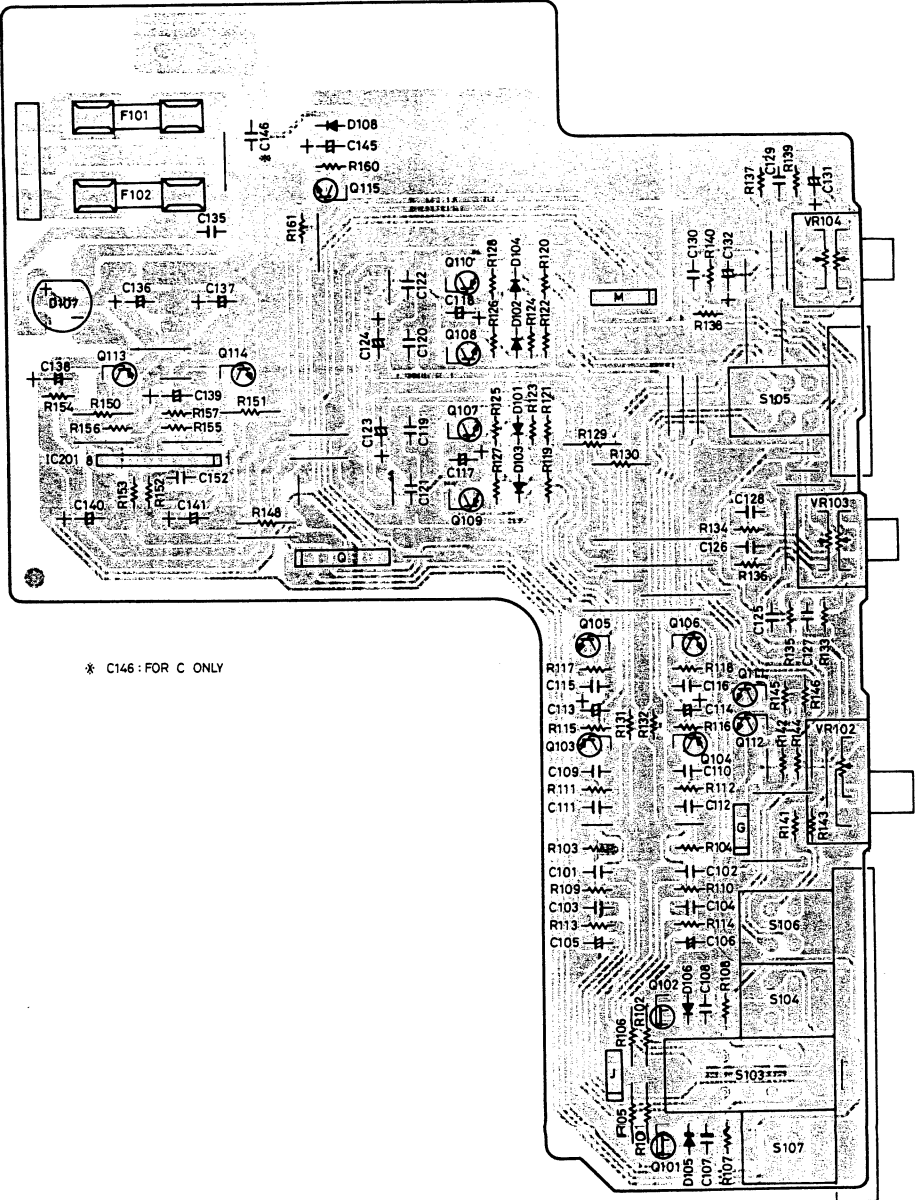


Figure 4 Amplifier Alignment Point

MAIN AMPLIFIER,
RECTIFIER PCB LAYOUT

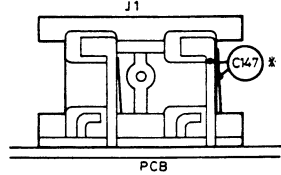
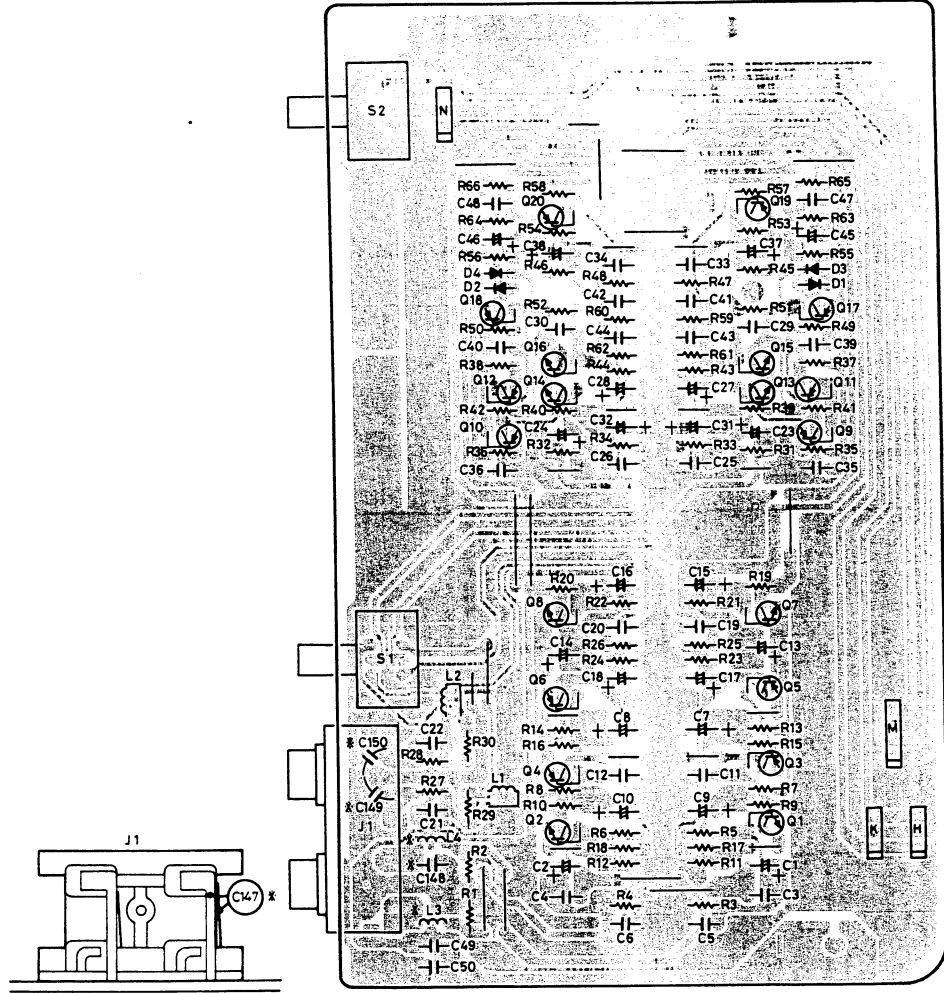


PREAMPLIFIER PCB LAYOUT



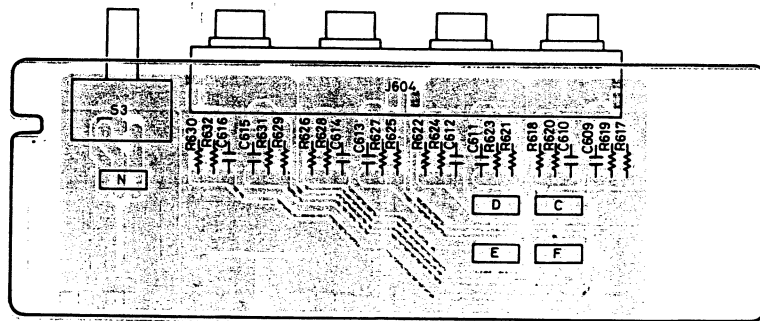
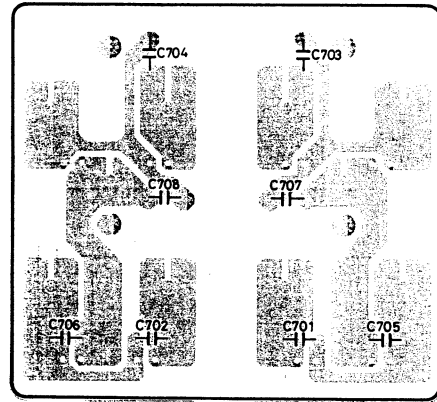
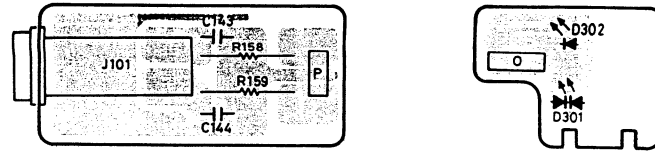
* C146: FOR C ONLY

EQUALIZER PCB LAYOUT

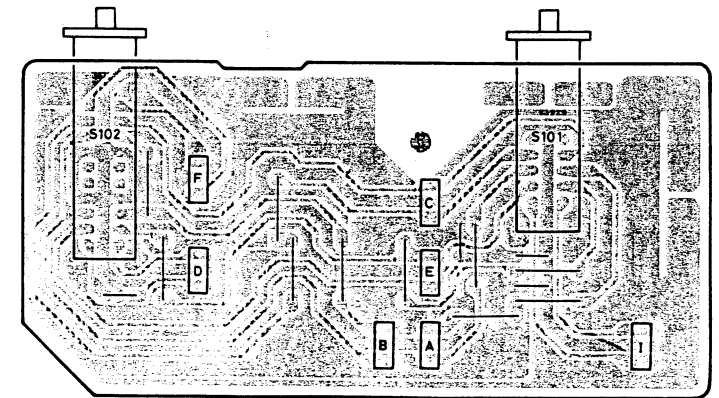
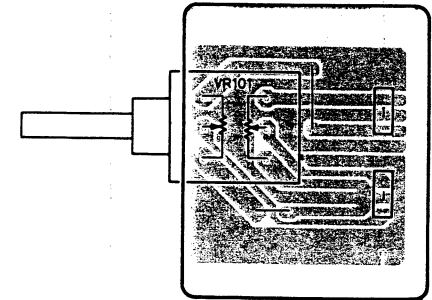
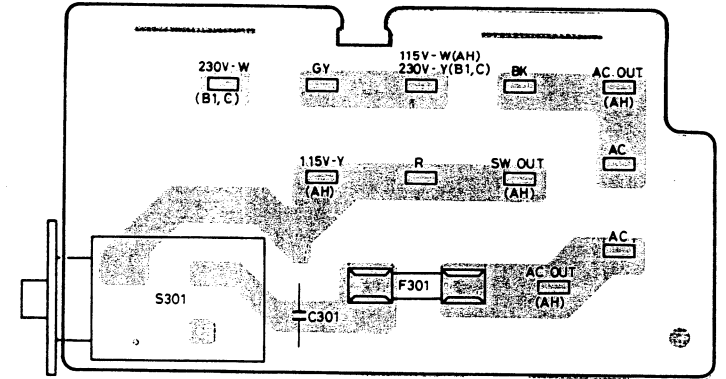


* L3, L4, C147-C150: FOR C ONLY

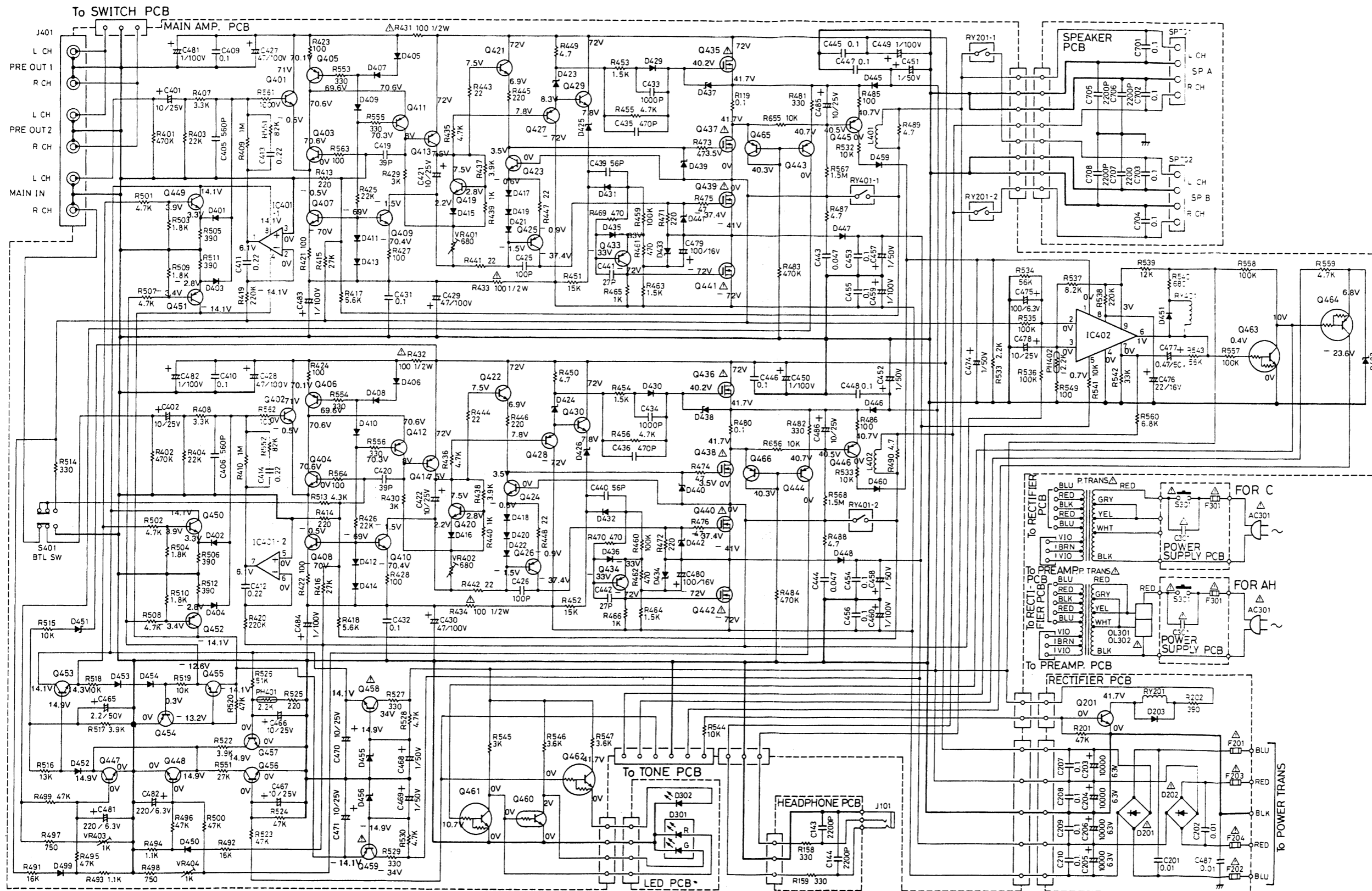
HEADPHONE, LED, SPEAKER, JACK PCB LAYOUT



POWER SUPPLY, VOLUME, SWITCH PCB LAYOUT



NAD306 POWER AMPLIFIER SCHEMATIC DIAGRAM



- IC401 NJM72BD
 IC402 TA737P
- Q401-404, 413, 414, 2SC2240-BL
 423, 424
 Q405, 406, 411, 412, 2SA970-BL
 443-446, 465, 466
 Q407-410 2SC3167-E
 Q419, 420 2SC4137-V
 Q421, 422, 429, 430, 458 2SD699A-C
 Q425-428, 459 2SB69A-C
 Q433, 434 2SA1170-E
 Q435-442 IRFP40
 Q451-453 DTC114E S
 Q460 DTC13T S
 Q464 DT114WS
- D201, 202 GBPC302
 D203, 401-422, 429-432, 1SS13
 435, 436, 449, 450, or 1SS176
 452-454, 459-461
- D301 TLSG26, LED
 D302 TLR14, LED
 D423, 424, 451, 455, 456 RD15SB2
 D425, 426 RD13SB2
 D433, 434 RD75SB2
 D437-442 RD12SB2
 D445-448 BY50C100
 D462 RD68SB2

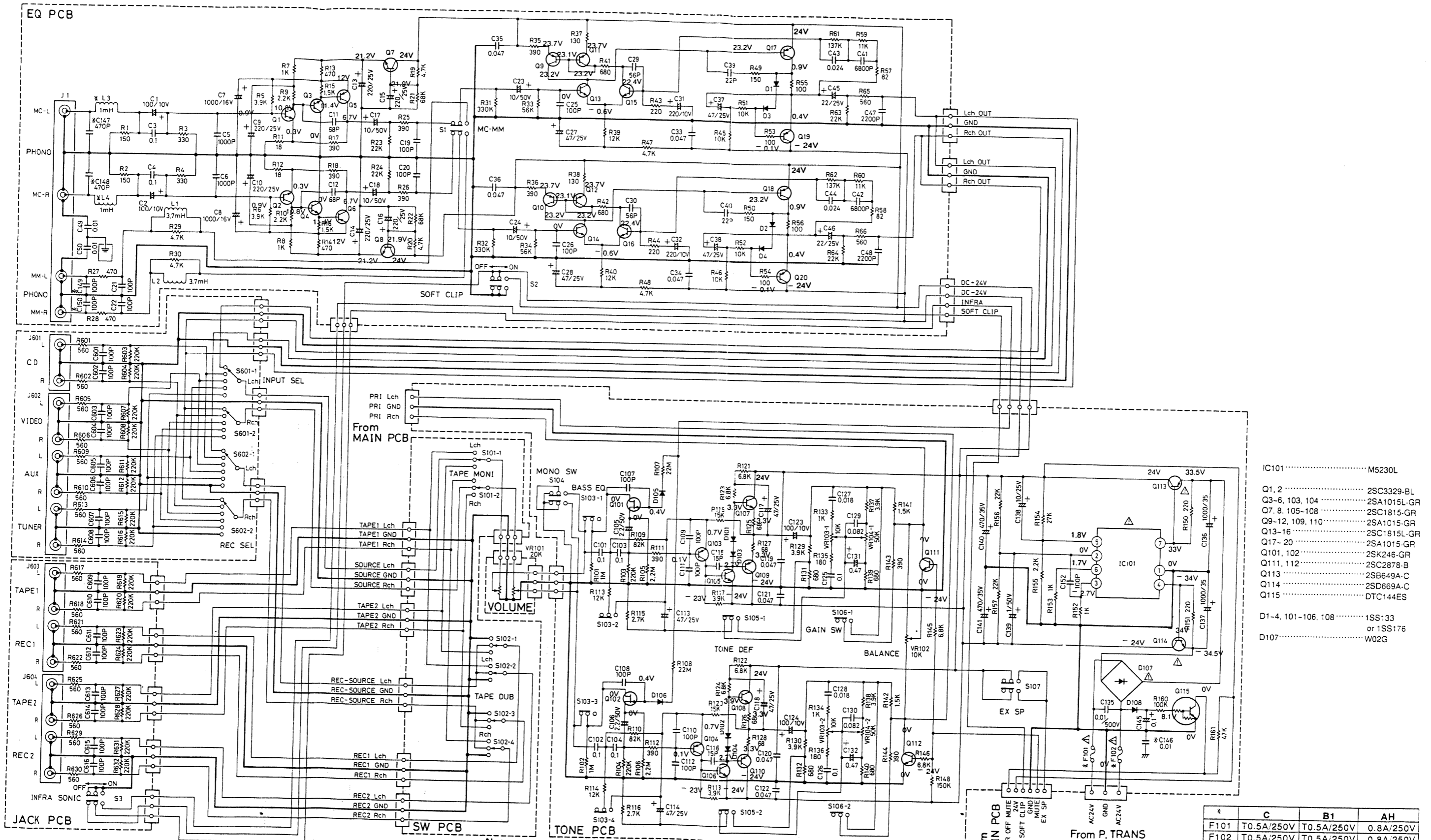
Notes:

- All resistance values are in Ω . k = 1000 Ω M = 1000K Ω
- All capacitance values are in μ F. P = 10⁻⁹ μ F
- All resistors are 1/8 watt, unless otherwise specified.
- Voltages measured from point indicator to chassis ground with VTVM at line volume control minimum and no signal.

(Specifications and circuits subject to change without notice for improvement.)

	C	B1	AH
F201	T5A/250V	T5A/250V	5A/152V
F202	T5A/250V	T5A/250V	5A/152V
F203	T5A/250V	T5A/250V	5A/152V
F204	T5A/250V	T5A/250V	5A/152V
F301	T2.5A/250V	T2.5A/250V	6.3A/250V

NAD306 PREAMPLIFIER SCHEMATIC DIAGRAM



- IC101 M5230L
- Q1, 2 2SC3329-BL
- Q3-6, 103, 104 2SA1015L-GR
- Q7, 8, 105-108 2SC1815-GR
- Q9-12, 109, 110 2SA1015-GR
- Q13-16 2SC1815L-GR
- Q17-20 2SA1015-GR
- Q101, 102 2SK246-GR
- Q111, 112 2SC2878-B
- Q113 2SB649A-C
- Q114 2SD669A-C
- Q115 DTC144ES
- D1-4, 101-106, 108 1SS133
- or 1SS176
- D107 W02G

Notes:

1. All resistance values are in Ω . k=1000 Ω M=1000K Ω
2. All capacitance values are in μ F. P=10 \cdot μ F
3. All resistors are 1/8 watt, unless otherwise specified.
4. Voltages measured from point indicator to chassis ground with VTVM at line volume control minimum and no signal.

(Specifications and circuits subject to change without notice for improvement.)

#	C	B1	AH
F101	T0.5A/250V	T0.5A/250V	0.8A/250V
F102	T0.5A/250V	T0.5A/250V	0.8A/250V
L3	○	X	X
L4	○	X	X
C146	○	X	X
C147	○	X	X
C148	○	X	X
C149	○	X	X
C150	○	X	X

TRANSISTOR LEAD IDENTIFICATION

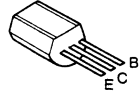
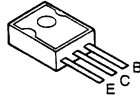
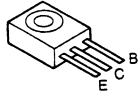
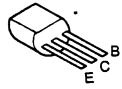
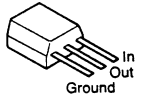
DTC144ES
DTC143TS
DTC144WS

2SA1015-GR
2SA1015L-GR
2SC1815-GR
2SC1815L-GR
2SC2878-R
2SC3329-BL

2SB649A-C
2SD669A-C

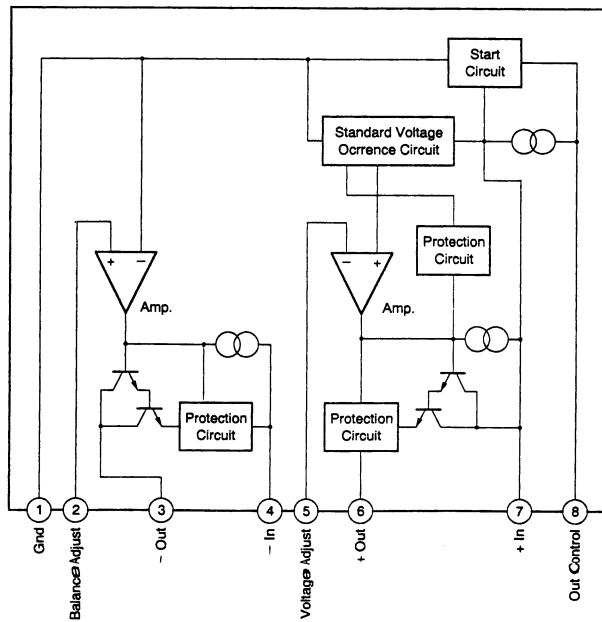
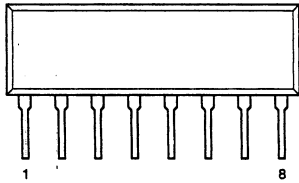
2SC4137-V

2SA1370-E
2SC3467-E

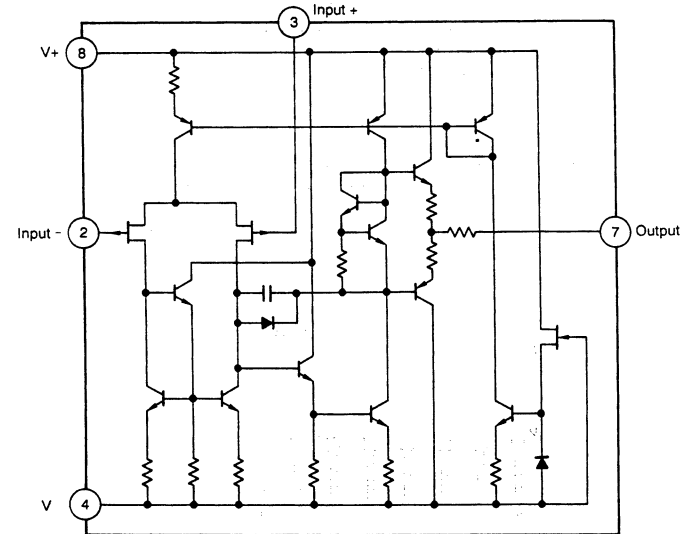
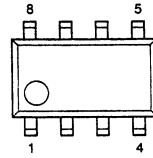


IC IDENTIFICATION AND INTERNAL CIRCUITRY

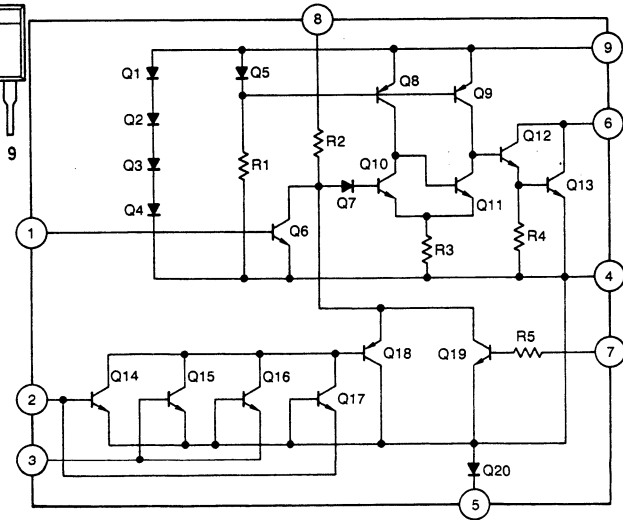
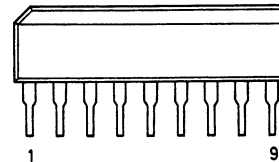
IC201 : M5230L



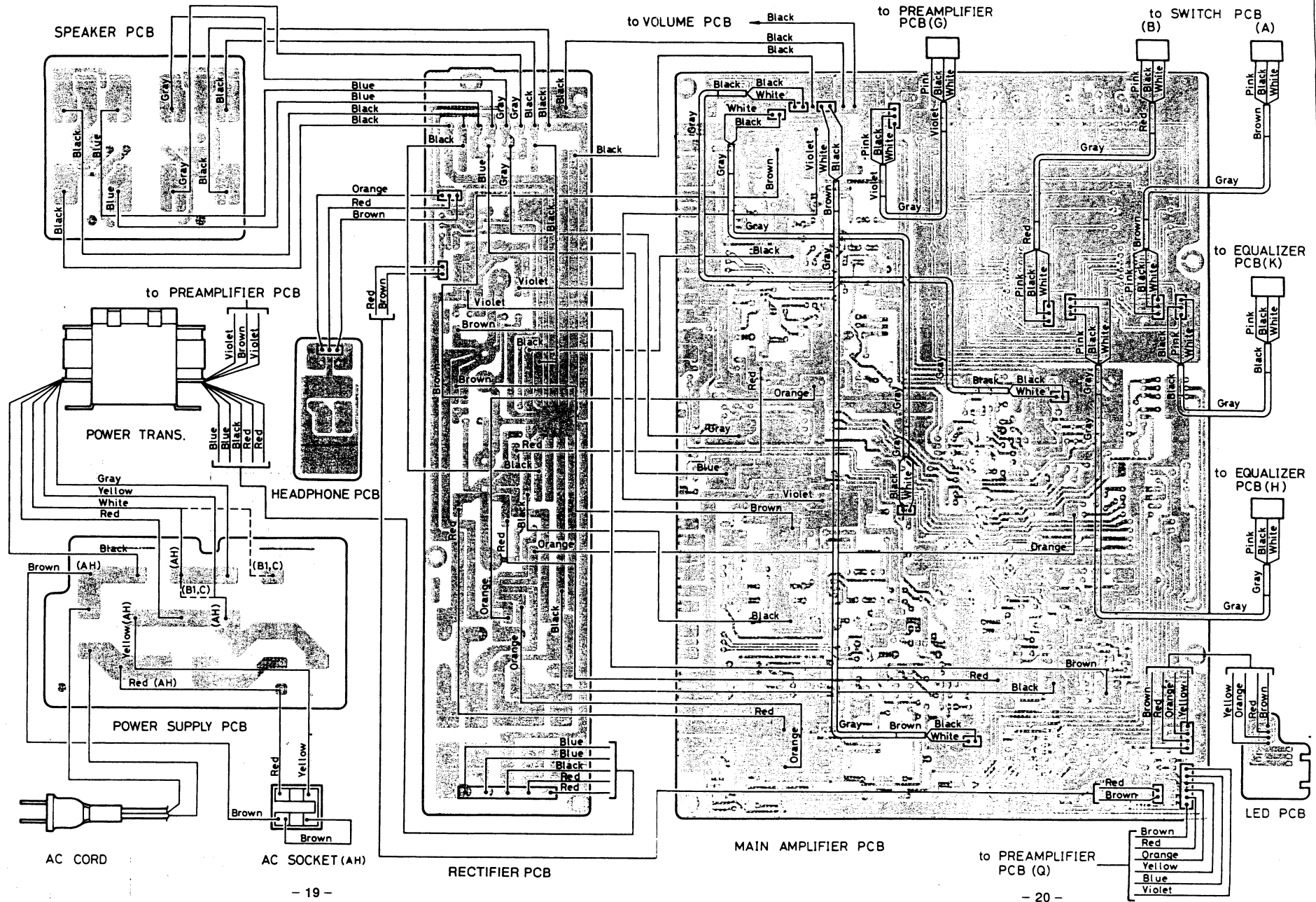
IC401 : NJM072BD



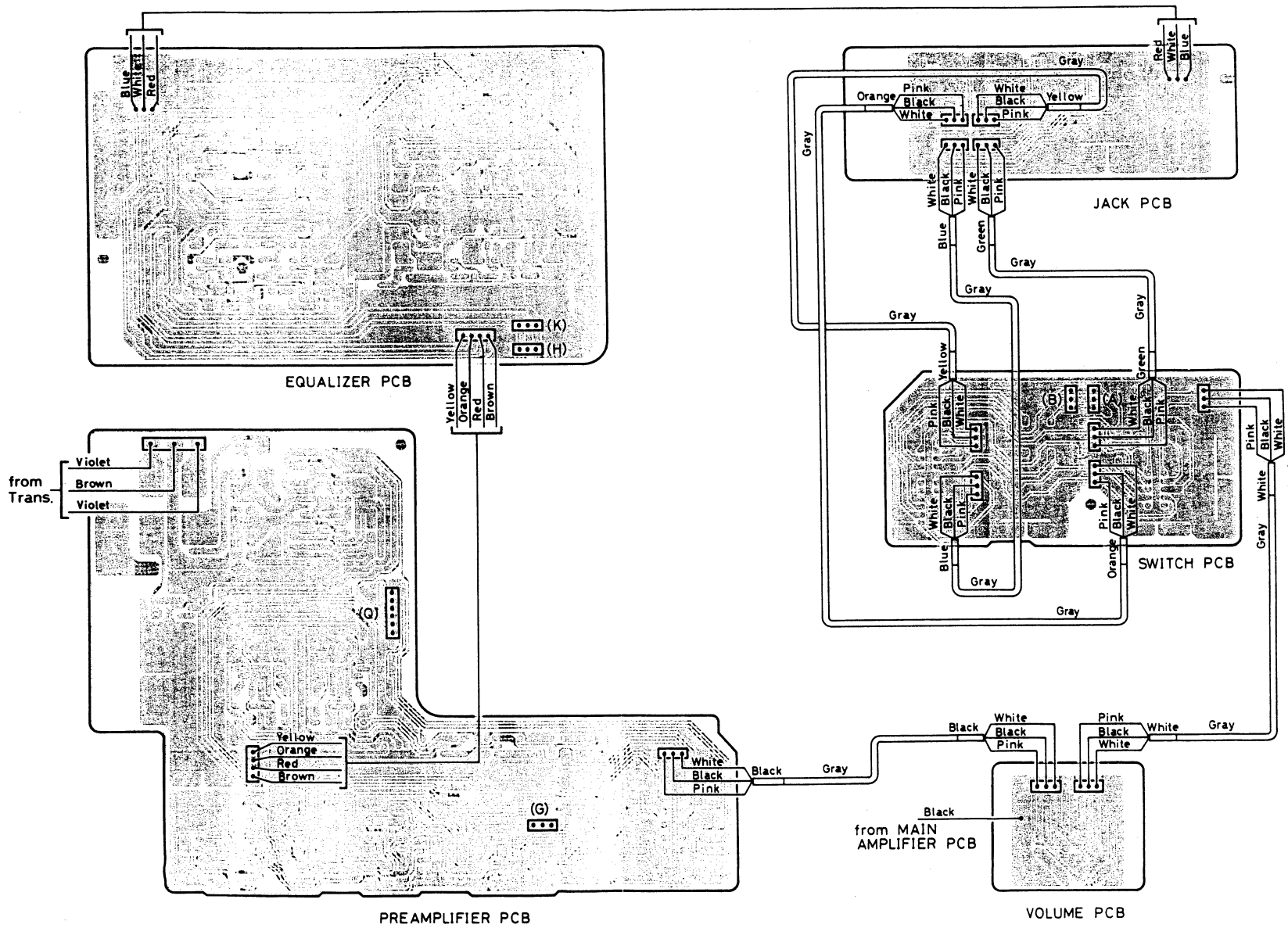
IC402 : TA7317P



WIRING DIAGRAM 1/2



WIRING DIAGRAM 2/2



ELECTRICAL PARTS LIST

Ref. No.	Part No.	Description
Diodes		
D1-4	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
D101-106	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
ΔD107	0913-011-0-00	W02G
D108	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
ΔD201, 202	0913-012-2-00	GBPC802
D203	0915-003-3-50	1SS176
or	0915-003-9-50	1SS133
D301	0916-028-8-00	TLSG126
D302	0916-030-4-00	SLR-34YY3F
D401-422	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
D423, 424	0915-010-7-52	RD15ESB2
D425, 426	0915-010-6-52	RD13ESB2
D429-432	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
D433, 434	0915-010-1-52	RD7.5ESB2
D435, 436	0915-003-9-50	1SS133
or	0915-003-3-50	1SS176
D437-442	0915-010-5-52	RD12ESB2
D445-448	0913-007-8-00	BY500-100
D449, 450	0915-003-3-50	1SS176
or	0915-003-9-50	1SS133
D451	0915-010-7-52	RD15ESB2
D452-454	0915-003-3-50	1SS176
or	0915-003-9-50	1SS133
D455, 456	0915-010-7-52	RD15ESB2
D459-461	0915-003-3-50	1SS176
or	0915-003-9-50	1SS133
D462	0915-010-0-52	RD6.8ESB2
IC's		
ΔIC201	0911-108-5-00	M5230L
IC401	0911-158-5-00	NJM072BD
IC402	0911-057-9-00	TA7317P
Transistors		
Q1, 2	0906-229-7-56	2SC3329-BL
Q3-8	0900-007-4-55	2SA1015L-GR
Q7, 8	0906-200-4-55	2SC1815-GR
Q9-12	0906-200-2-55	2SA1015-GR
Q13-16	0902-014-8-55	2SC1815L-GR
Q17-20	0906-200-2-55	2SA1015-GR
Q101, 102	0909-000-3-55	2SK246-GR
Q103, 104	0900-007-4-55	2SA1015L-GR
Q105-108	0906-200-4-55	2SC1815-GR
Q109, 110	0906-200-2-55	2SA1015-GR
Q111, 112	0906-203-5-02	2SC2878-B
Q113	0901-003-8-03	2SB849A-C
Q114	0903-006-3-03	2SD689A-C
Q115	0906-206-2-05	DTC144ESTP
Q201	0906-200-4-55	2SC1815-GR
Q401-404	0906-229-6-56	2SC2240-BL
Q405, 408	0906-207-7-56	2SA970-BL
Q407-410	0902-014-5-05	2SC3467-E
Q411, 412	0906-207-7-56	2SA970-BL
Q413, 414	0906-229-6-56	2SC2240-BL
Q419, 420	0902-014-4-22	2SC4137-V
Q421, 422	0903-006-3-03	2SD689A-C
Q423, 424	0906-229-6-56	2SC2240-BL
Q425-428	0901-003-8-03	2SB849A-C
Q429, 430	0903-006-3-03	2SD689A-C
Q433, 434	0900-007-3-05	2SA1370-E
ΔQ435-442	0909-003-0-00	IRFP240
Q443-446	0906-207-7-56	2SA970-BL
Q447-450	0906-200-4-55	2SC1815-GR
Q451, 452	0906-200-2-55	2SA1015-GR
Q453	0906-200-4-55	2SC1815-GR
Q454, 455	0906-200-2-55	2SA1015-GR

Ref. No.	Part No.	Description
Q456, 457	0906-200-4-55	2SC1815-GR
ΔQ458	0903-006-3-03	2SD689A-C
ΔQ459	0901-003-8-03	2SB849A-C
Q460	0906-202-9-00	DTC143TS
Q461-463	0906-208-9-00	DTC144ES
Q464	0906-229-8-00	DTA144VS
Q465, 466	0906-207-7-56	2SA970-BL
Jacks		
J1	0033-261-0-34	Pin, 4P
J101	0033-871-0-00	6.3, LGR4502-5000
J601	0033-264-0-00	Pin, 6P
J602	0033-209-0-34	Pin, 2P
J602	0033-264-0-00	Pin, 6P
J603, 604	0033-265-0-00	Pin, 4P
Indicators		
L1, 2	0014-817-0-00	Inductor TC-3.7mH
L3, L4	0014-822-0-00	Inductor TC-1mH
L401, 402	0013-064-0-00	Coil
Variable Resistors		
VR101	0031-603-2-03	Rotary Potentiometer, Volume
VR102	0031-604-1-03	Rotary Potentiometer, Balance
VR103	0031-605-1-03	Rotary Potentiometer, Bass
VR104	0031-606-5-03	Rotary Potentiometer, Treble
VR401, 402	0031-884-8-81	Trimmer Potentiometer
VR403, 404	0031-884-1-02	Trimmer Potentiometer
Switches		
S1-3	0028-246-0-00	Slide Switch
S101	0028-864-1-00	Lever Switch, 00230744
S102	0028-865-1-00	Lever Switch, 00431049
S103, 104	0028-038-0-00	Push Switch Set, XR21K30K
S105	0028-006-0-00	Push Switch
S106, 107	0028-038-0-00	Push Switch Set, XR21K30K
ΔS301	0028-044-0-00	Push Switch
S401	0028-246-0-00	Slide Switch
S601, 602	0028-354-0-00	Slide Switch, SSSR22
Fuses		
ΔF101, 102	0045-074-0-21	800mA/250V
ΔF101A, 102A	0045-002-1-41	T. 500mA/250V
ΔF201-204	0045-079-0-21	5A/125V
ΔF201A-F204A		
ΔF301	0045-207-0-41	T. 5A/250V-41
ΔF301A	0045-080-0-21	6.3A/125V
ΔF301A	0045-023-0-41	T. 2.5A/250V
Thermistors		
PH401	0918-003-7-00	PTH9M-BD222
PH402	0918-003-5-00	PTH9M-BC222
Speaker Terminals		
SP701, 702	0033-262-0-00	Speaker Terminal
Relays		
RY201	0026-085-0-00	Relay
RY401	0026-085-0-00	Relay
AC Socket		
ΔOL301, 302	0033-038-0-00	Socket

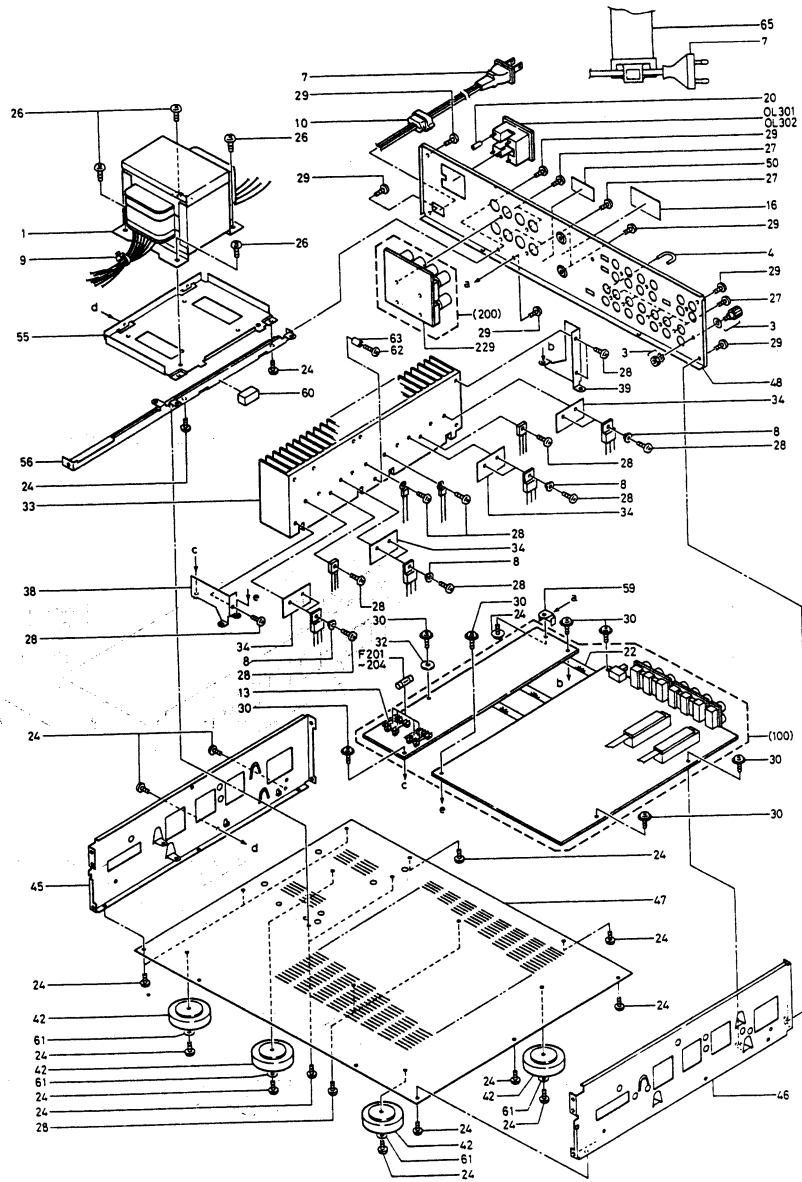
Ref. No.	Part No.	Description
Capacitors		
CC: Ceramic Capacitor CF: Metallized Film Capacitor EL: Electrolytic Capacitor CQ: Plastic Film Capacitor		
C1, 2	0937-811-0-16	100 mfd, 10V, ±20%
C3, 4	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
C5, 8	9305-451-0-24	CC, 1000 pfd, 50V, ±5%
C7, 9	0938-921-0-26	EL, 1000 mfd, 16V, ±20%
C9, 10	0937-832-2-16	EL, 220 mfd, 25V, ±20%
C11, 12	9303-206-8-04	CC, 68 pfd, 50V, ±5%
C13-16	0937-832-2-16	EL, 220 mfd, 25V, ±20%
C17, 18	0937-851-0-06	EL, 10 mfd, 50V, ±20%
C19-22	9303-201-0-14	CC, 100 pfd, 50V, ±5%
C23, 24	0937-851-0-06	EL, 10 mfd, 50V, ±20%
C25, 26	9303-201-0-14	CC, 100 pfd, 50V, ±5%
C27, 28	0937-834-7-06	EL, 47 mfd, 25V, ±20%
C29, 30	9303-205-6-04	CC, 56 pfd, 50V, ±5%
C31, 32	0937-812-2-16	EL, 220 mfd, 10V, ±20%
C33-36	0933-454-7-34	CF, 0.047 mfd, 50V, ±5%
C37, 38	0937-834-7-06	EL, 47 mfd, 25V, ±20%
C39, 40	9303-202-2-04	CC, 22 pfd, 50V, ±5%
C41, 42	9335-456-8-24	CQ, 6800 pfd, 50V, ±5%
C43, 44	9330-872-4-34	CO, 0.024 mfd, 100V, ±5%
C45, 46	0937-832-2-06	EL, 22 mfd, 25V, ±20%
C47, 48	9335-452-2-24	CO, 2200 pfd, 50V, ±5%
C49, 50	0931-551-0-39	CC, 0.01 mfd, 50V, +80%, -20%
C101-104	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
C105, 106	9363-252-8-88	EL, 2.2 mfd, 50V, ±20%
C107-112	9303-201-0-14	CC, 100 pfd, 50V, ±5%
C113, 114	0937-834-7-06	EL, 47 mfd, 25V, ±20%
C115, 116	9303-201-5-04	CC, 15 pfd, 50V, ±5%
C117, 118	0937-834-7-06	EL, 47 mfd, 25V, ±20%
C119-122	0933-454-7-34	CF, 0.047 mfd, 50V, ±5%
C123, 124	0937-811-0-16	EL, 100 mfd, 10V, ±20%
C125, 126	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
C127, 128	9335-451-8-34	CQ, 0.018 mfd, 50V, ±5%
C129, 130	0933-458-2-34	CF, 0.082 mfd, 50V, ±5%
C131, 132	0937-854-7-96	EL, 0.47 mfd, 50V, ±20%
C135	0931-481-0-39	CC, 0.01 mfd, 500V, +80%, -20%
C136, 137	0938-941-0-26	EL, 1000 mfd, 35V, ±20%
C138	0937-851-0-06	EL, 10 mfd, 50V, ±20%
C139	0937-850-1-06	EL, 1 mfd, 50V, ±20%
C140, 141	0938-944-7-16	EL, 470 mfd, 35V, ±20%
C143, 144	0931-552-2-29	CC, 2200 pfd, 50V, +80%, -20%
C145	0937-851-0-06	EL, 0.1 mfd, 50V, ±20%
C146	0931-551-0-39	CC, 0.01 mfd, 50V, +80%, -20% C
C147	0931-154-7-15	CC, 470 pfd, 50V, ±10% C
C148	9302-454-7-15	CC, 470 pfd, 50V, ±5% C
C149, 150	0930-001-0-14	CC, 100 pfd, 50V, ±5% C
C152	9303-201-0-14	CC, 100 pfd, 50V, ±5%
C201, 202	0931-481-0-39	CC, 0.01 mfd, 250V, +80%, -20%
C203-206	0938-928-8-00	EL, 10000 mfd, 63V, ±20%
C207-210	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
ΔC301	0039-922-0-00	Spark Killer
C401, 402	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C405, 406	9330-875-6-14	CQ, 580 pfd, 100V, ±5%
C409, 410	0933-471-0-44	CF, 0.1 mfd, 100V, ±5%
C411-414	0933-452-2-24	CF, 0.22 mfd, 50V, ±5%
C419, 420	9303-243-9-04	CC, 39 mfd, 50V, ±5%
C421, 422	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C425, 426	9303-201-0-14	CC, 100 pfd, 50V, ±5%
C427-430	0938-974-7-06	EL, 47 mfd, 100V, ±20%
C431, 432	0933-471-0-44	CF, 0.1 mfd, 100V, ±5%

Ref. No.	Part No.	Description
C433, 434	9310-451-0-29	CC, 1000 pfd, 50V, +80%, -20%
C435, 436	9303-204-7-14	CC, 470 pfd, 50V, ±5%
C439, 440	9303-205-6-04	CC, 56 pfd, 50V, ±5%
C441, 442	9303-242-7-04	CC, 27 pfd, 50V, ±5%
C443, 444	9333-454-7-34	CF, 0.047 mfd, 50V, ±5%
C445, 446	0933-471-0-44	CF, 0.1 mfd, 100V, ±5%
C447, 448	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
C449, 450	0937-870-1-06	EL, 1 mfd, 100V, ±20%
C451, 452	0937-850-1-06	EL, 1 mfd, 50V, ±20%
C453, 454	0933-451-0-44	CF, 0.1 mfd, 50V, ±5%
C455, 456	0933-471-0-44	CF, 0.1 mfd, 100V, ±5%
C457, 458	0937-850-1-06	EL, 1 mfd, 50V, ±20%
C459, 460	0937-870-1-06	EL, 1 mfd, 100V, ±20%
C461, 462	0937-802-2-16	EL, 220 mfd, 6.3V ±20%
C465	0937-852-2-86	EL, 2.2 mfd, 50V, ±20%
C466, 467	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C468, 469	0937-850-1-06	EL, 1 mfd, 50V, ±20%
C470, 471	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C474	0937-850-1-06	EL, 1 mfd, 50V, ±20%
C475	0937-801-0-16	EL, 100 mfd, 6.3V ±20%
C476	0937-829-2-06	EL, 22 mfd, 16V, ±20%
C477	0937-854-7-96	EL, 0.47 mfd, 50V, ±20%
C478	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C479, 480	0937-821-0-16	EL, 100 mfd, 16V, ±20%
C481-484	0937-870-1-06	EL, 1 mfd, 100V, ±20%
C485, 486	0937-831-0-06	EL, 10 mfd, 25V, ±20%
C487	9310-451-0-29	CC, 0.01 pfd, 50V, +80%, -20%
C601-616	9302-451-0-15	CC, 100 pfd, 50V, ±10%
C701-704	0931-551-0-39	CC, 0.01 mfd, 50V, +80%, -20%
C705-708	0931-552-2-29	CC, 2200 pfd, 50V, +80%, -20%
Resistors		
RDF: Fusible (Carbon Film) RN: Metal Film RS: Oxide Metal Film		
R1, 2	0926-611-5-12	RN, 150 ohm, 1/4W, ±1%
R3, 4	0926-613-3-12	RN, 330 ohm, 1/4W, ±1%
R5, 6	0926-613-9-22	RN, 3.9k ohm, 1/4W, ±1%
R7, 8	0926-861-0-24	RD, 1k ohm, 1/6W, ±5%
R9, 10	0926-862-2-23	RD, 2.2k ohm, 1/6W, ±2%
R11, 12	0926-611-8-02	RN, 18 ohm, 1/4W, ±1%
R13, 14	0926-864-7-14	RD, 470 ohm, 1/6W, ±5%
R15, 16	0926-861-5-24	RD, 1.5k ohm, 1/6W, ±5%
R17, 18	0926-613-9-12	RD, 390 ohm, 1/4W, ±1%
R19, 20	0926-864-7-24	RD, 4.7k ohm, 1/6W

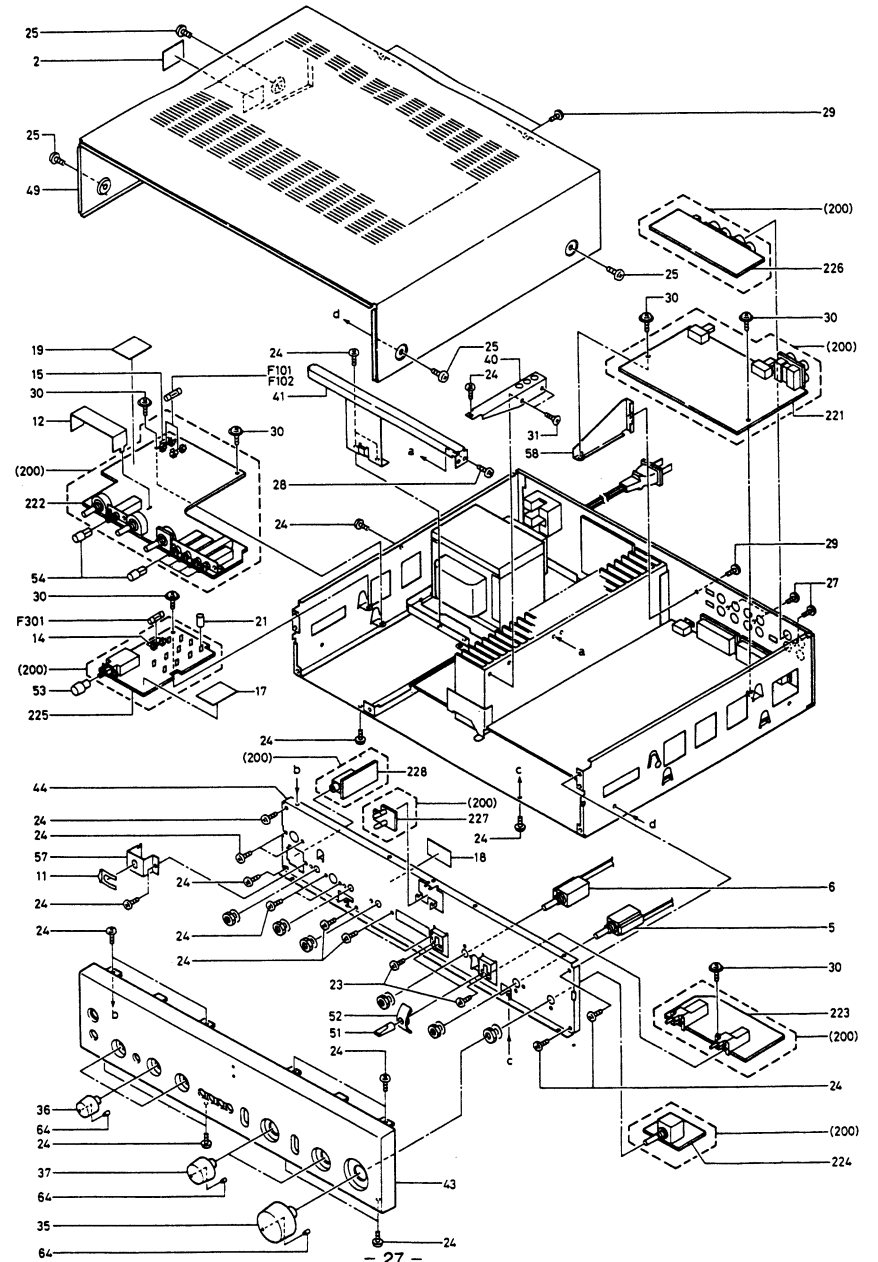
Ref. No.	Part No.	Description		
R103, 104	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R105, 106	0928-862-2-54	RD, 2.2M ohm, 1/6W,	= 5%	
R107, 108	0928-913-9-00	RD 22M ohm, 1/4W,	= 5%	
R109, 110	0928-862-2-34	RD, 32k ohm, 1/8W,	= 5%	
R111, 112	0928-863-9-14	RD, 390 ohm, 1/8W,	= 5%	
R113, 114	0928-861-2-34	RD, 12k ohm, 1/8W,	= 5%	
R115, 116	0928-862-7-23	RD, 2.7k ohm, 1/8W,	= 2%	
R117, 118	0928-863-9-24	RD, 3.9k ohm, 1/8W,	= 5%	
R119, 120	0928-861-5-33	RD, 15k ohm, 1/6W,	= 2%	
R121-124	0928-866-2-04	RD, 6.8k ohm, 1/6W,	= 5%	
R125-128	0928-866-8-04	RD, 68 ohm, 1/6W,	= 5%	
R129, 130	0928-863-9-23	RD, 3.9k ohm, 1/6W,	= 2%	
R131, 132	0928-866-8-13	RD, 680 ohm, 1/6W,	= 2%	
R133, 134	0928-861-0-24	RD, 1k ohm, 1/6W,	= 5%	
R135, 136	0928-861-8-14	RD, 180 ohm, 1/6W,	= 5%	
R137, 138	0928-863-9-23	RD, 3.9k ohm, 1/6W,	= 2%	
R139, 140	0928-866-8-14	RD, 680 ohm, 1/6W,	= 5%	
R141, 142	0928-861-5-23	RD, 1.5k ohm, 1/6W,	= 2%	
R143, 144	0928-863-9-13	RD, 390 ohm, 1/6W,	= 2%	
R145, 146	0928-866-8-24	RD, 6.8k ohm, 1/6W,	= 5%	
R148	0928-861-5-44	RD, 150k ohm, 1/6W,	= 5%	
R150, 151	0925-422-2-14	RS, 220 ohm, 1/2W,	= 5%	
R152, 153	0928-861-0-24	RD, 1k ohm, 1/6W,	= 5%	
R154	0928-862-7-33	RD, 27k ohm, 1/6W,	= 2%	
R155	0928-862-2-23	RD, 2.2k ohm, 1/6W,	= 2%	
R156, 157	0928-862-2-33	RD, 22k ohm, 1/6W,	= 2%	
R158, 159	0925-433-3-14	RS, 30k ohm, 1W,	= 5%	
R160	0928-861-0-44	RD, 100k ohm, 1/6W,	= 5%	
R161	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R201	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R202	0925-423-9-14	RS, 390 ohm, 1/2W,	= 5%	
R401, 402	0928-864-7-44	RD, 470k ohm, 1/6W,	= 5%	
R403, 404	0928-862-2-34	RD, 22k ohm, 1/6W,	= 5%	
R407, 408	0928-863-3-24	RD, 3.3k ohm, 1/6W,	= 5%	
R409, 410	0928-861-0-54	RD, 1M ohm, 1/6W,	= 5%	
R413, 414	0928-812-2-13	RD, 220 ohm, 1/4W,	= 2%	
R415, 416	0925-422-7-33	RS, 27k ohm, 1/2W,	= 2%	
R417, 418	0925-435-6-23	RS, 5.6k ohm, 1W,	= 2%	
R419, 420	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R421, 422	0928-861-0-14	RD, 100 ohm, 1/6W,	= 5%	
R423, 424	0928-811-0-14	RD, 100 ohm, 1/4W,	= 5%	
R425, 426	0925-442-2-34	RS, 22k ohm, 2W,	= 5%	
R427, 428	0928-861-0-14	RD, 100 ohm, 1/6W,	= 5%	
R429, 430	0925-443-0-24	RS, 3k ohm, 2W,	= 5%	
ΔR431-434	0926-221-0-14	RN, 100 ohm, 1/2W,	= 5%	
R435, 436	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R437, 438	0928-863-9-24	RD, 3.9k ohm, 1/6W,	= 5%	
R439, 440	0928-861-0-24	RD, 1k ohm, 1/6W,	= 5%	
R441-444	0928-862-2-04	RD, 22 ohm, 1/6W,	= 5%	
R445, 446	0928-812-2-14	RD, 220 ohm, 1/4W,	= 5%	
R447, 448	0928-812-2-04	RD, 22 ohm, 1/4W,	= 5%	
R449, 450	0925-434-7-24	RS, 4.7k ohm, 1W,	= 5%	
R451, 452	0928-861-5-34	RD, 15k ohm, 1/6W,	= 5%	
R453, 454	0928-861-5-24	RD, 1.5k ohm, 1/6W,	= 5%	
R455, 456	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R459, 460	0928-861-0-44	RD, 100k ohm, 1/6W,	= 5%	
R461, 462	0928-864-7-14	RD, 470 ohm, 1/6W,	= 5%	
R463, 464	0925-431-5-24	RS, 1.5k ohm, 1W,	= 5%	
R465, 466	0928-861-0-24	RD, 1k ohm, 1/6W,	= 5%	
R469, 470	0928-864-7-14	RD, 470 ohm, 1/6W,	= 5%	
R471, 472	0928-812-2-14	RD, 220 ohm, 1/4W,	= 5%	
R473-476	0925-424-7-04	RS, 47 ohm, 1/2W,	= 5%	
R479, 480	0928-914-6-00	RD, 0.1 ohm, 2W,	= 5%	
R481, 482	0926-613-3-12	RN, 330 ohm, 1/4W,	= 1%	
R483, 484	0928-864-7-44	RD, 470k ohm, 1/6W,	= 5%	
R485, 486	0928-861-0-14	RD, 100 ohm, 1/6W,	= 5%	

Ref. No.	Part No.	Description		
R487-490	0925-444-7-84	RS, 4.7 ohm, 2W,	= 5%	
R491, 492	0926-611-6-32	RN, 16k ohm, 1/4W,	= 1%	
R493, 494	0926-611-1-22	RN, 1.1k ohm, 1/4W,	= 1%	
R495, 496	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R497, 498	0928-867-5-14	RD, 750 ohm, 1/6W,	= 5%	
R499, 500	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R501, 502	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R503, 504	0928-861-8-24	RD, 1.8k ohm, 1/6W,	= 5%	
R505, 506	0928-863-9-14	RD, 390 ohm, 1/6W,	= 5%	
R507, 508	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R509, 510	0928-861-8-24	RD, 1.8k ohm, 1/6W,	= 5%	
R511, 512	0928-863-9-14	RD, 390 ohm, 1/6W,	= 5%	
R513	0925-424-3-23	RS, 4.3k ohm, 1/2W,	= 2%	
R514	0928-863-3-13	RD, 330 ohm, 1/6W,	= 2%	
R515	0925-421-0-34	RS, 10k ohm, 1/2W,	= 5%	
R516	0928-861-3-34	RD, 13k ohm, 1/6W,	= 5%	
R517	0928-863-9-24	RD, 3.9k ohm, 1/6W,	= 5%	
R518, 519	0928-861-0-34	RD, 10k ohm, 1/6W,	= 5%	
R520	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R521	0928-862-7-34	RD, 27k ohm, 1/6W,	= 5%	
R522	0928-863-9-24	RD, 3.9k ohm, 1/6W,	= 5%	
R523, 524	0928-864-7-34	RD, 47k ohm, 1/6W,	= 5%	
R525	0928-862-2-14	RD, 220 ohm, 1/6W,	= 5%	
R526	0928-865-1-34	RD, 51k ohm, 1/6W,	= 5%	
R527	0928-813-3-14	RD, 330 ohm, 1/4W,	= 5%	
R528	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R529	0928-813-3-14	RD, 330 ohm, 1/4W,	= 5%	
R530	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R531, 532	0928-861-0-34	RD, 10k ohm, 1/6W,	= 5%	
R533	0928-862-2-24	RD, 2.2k ohm, 1/6W,	= 5%	
R534	0928-865-6-34	RD, 56k ohm, 1/6W,	= 5%	
R535, 536	0928-861-0-44	RD, 100k ohm, 1/6W,	= 5%	
R537	0928-868-2-24	RD, 8.2k ohm, 1/6W,	= 5%	
R538	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R539	0928-861-2-34	RD, 12k ohm, 1/6W,	= 5%	
R540	0925-426-8-14	RS, 680 ohm, 1/2W,	= 5%	
R541	0928-861-0-34	RD, 10k ohm, 1/6W,	= 5%	
R542	0928-863-3-34	RD, 33k ohm, 1/6W,	= 5%	
R543	0928-865-6-34	RD, 56k ohm, 1/6W,	= 5%	
R544	0928-861-0-34	RD, 10k ohm, 1/6W,	= 5%	
R545	0925-433-0-24	RS, 3k ohm, 1W,	= 5%	
R546, 547	0925-433-6-24	RS, 3.6k ohm, 1W,	= 5%	
R549	0928-861-0-14	RD, 100 ohm, 1/6W,	= 5%	
R551, 552	0928-868-2-34	RD, 82k ohm, 1/6W,	= 5%	
R553-556	0928-863-3-14	RD, 330 ohm, 1/6W,	= 5%	
R557, 558	0928-861-0-44	RD, 100k ohm, 1/6W,	= 5%	
R559	0928-864-7-24	RD, 4.7k ohm, 1/6W,	= 5%	
R560	0928-866-8-24	RD, 6.8k ohm, 1/6W,	= 5%	
R561-564	0928-861-0-14	RD, 100 ohm, 1/6W,	= 5%	
R565, 566	0928-861-0-34	RD, 10k ohm, 1/6W,	= 5%	
R567, 568	0928-861-5-54	RD, 1.5M ohm, 1/6W,	= 5%	
R601, 602	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R603, 604	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R605, 606	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R607, 608	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R609, 610	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R611, 612	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R613, 614	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R615, 616	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R617, 618	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R619, 620	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R621, 622	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R623, 624	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R625, 626	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R627, 628	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	
R629, 630	0928-865-6-14	RD, 560 ohm, 1/6W,	= 5%	
R631, 632	0928-862-2-44	RD, 220k ohm, 1/6W,	= 5%	

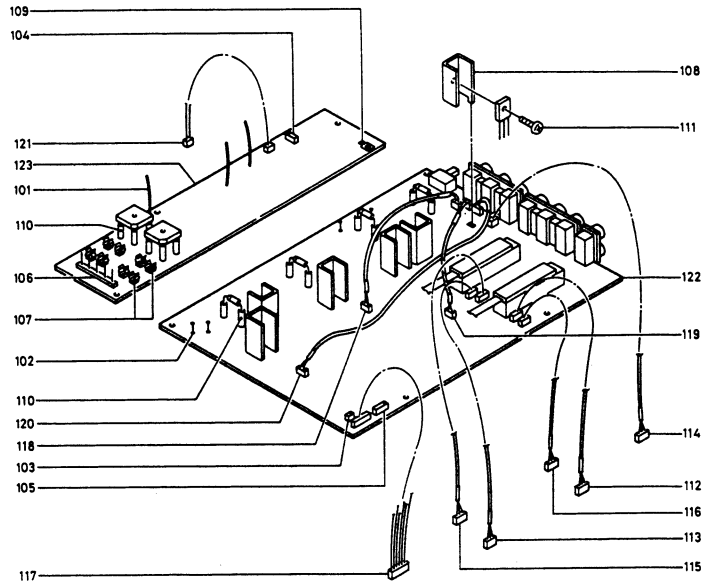
EXPLODED VIEW 1



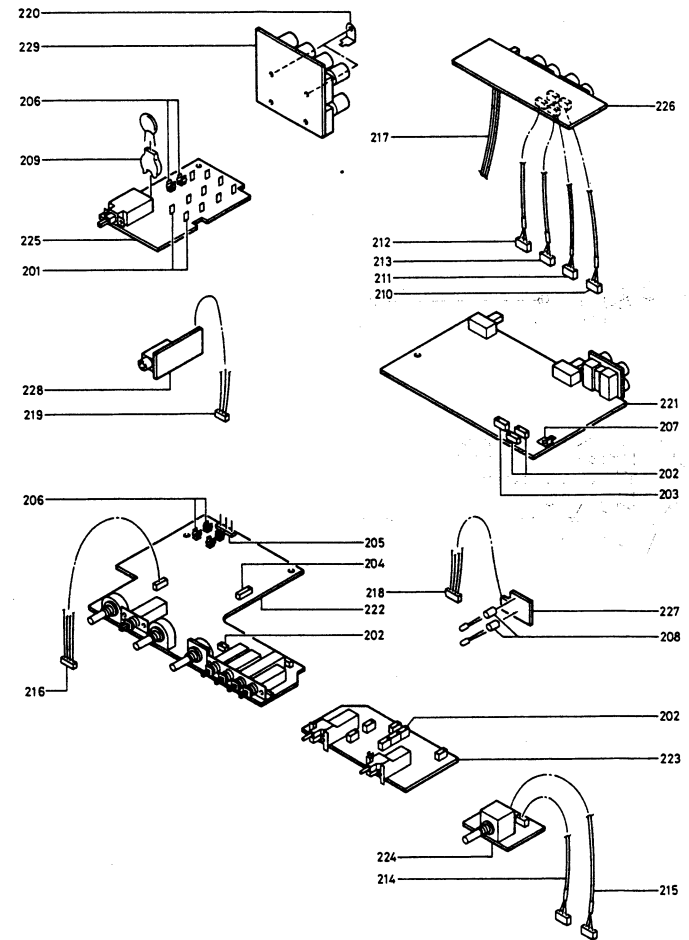
EXPLODED VIEW 2



EXPLODED VIEW 3



EXPLODED VIEW 4

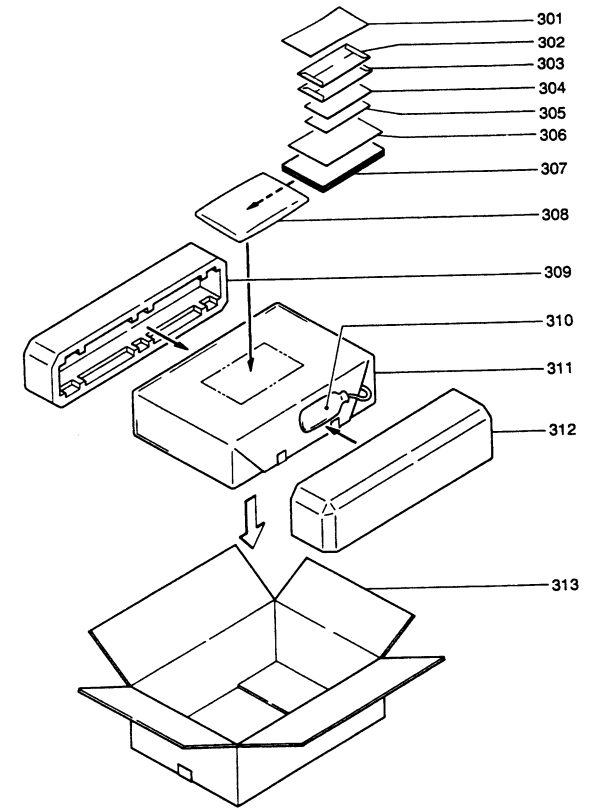


EXPLODED VIEWS PARTS LIST

Ref. No.	Part No.	Description	Q'ty	Ref. No.	Part No.	Description	Q'ty
1	0019-915-0-00	Power Trans, E165 x 60	1	61	0987-005-0-00	W303070050SN	4
2	0074-129-0-00	Caution Label	AH 2	62	0673-230-1-25	BT Screw B3 x 12-SK	1
3	0033-216-0-00	Earth Terminal	1	63	0061-278-0-00	Spacer	1
4	0034-485-0-00	Short Pin	2	64	1417-873-0-01	Pointer	6
5	0036-039-0-00	Rotary Switch	1	65	1417-859-0-00	AC Cord Sheet	C 1
6	0036-040-0-00	Rotary Switch	1				
7	0047-166-1-20	AC Cord with Plug	AH 1	100	1417-001-0-00	Main Amp Unit	1
7a	0047-284-0-00	AC Cord with Plug	B1 1	101	0034-474-0-00	Wire Clamper 45	3
7b	0047-231-1-21	AC Cord	C 1	102	0034-476-0-00	Check Pin	4
8	0064-522-0-00	Insulation Collar	8	103	0034-734-0-02	Connector Pin, 2 Pin	1
9	0064-831-0-50	Bar Lock Cable Tie	AH 37	104	0034-734-0-03	Connector Pin, 3 Pin	1
9a	0064-831-0-50	Bar Lock Cable Tie	B1, C 39	105	0034-734-0-04	Connector Pin, 4 Pin	1
10	0064-865-0-00	Cord Bushing	1	106	0034-739-0-05	Connector Pin, 5 Pin	1
11	0065-370-0-00	Mount Plate J	1	107	0045-507-0-00	Fuse Holder	8
12	1417-727-0-00	Shield Cover	1	108	0049-034-1-00	Heat Sink	6
13	0074-005-1-80	Fuse Label (5A/125V)	AH 4	109	0061-263-0-00	Earth Plate	1
14	0074-005-1-81	Fuse Label (6.3A/125V)	AH 1	110	0955-301-5-15	GT-HG4E 1.5 x 5 (Tube)	16
15	0074-005-1-84	Fuse Label (800mA/250V)	AH 2	111	0973-230-0-85	BT Screw B3 x 8-SK	6
16	0074-058-0-00	CSA Label	AH 1	112	1417-510-0-00	Wire Connector 3 Pin	1
17	0074-094-0-14	Fuse Caution Label (6.3A)	AH 1	113	1417-511-0-00	Wire Connector 3 Pin	1
18	0074-094-0-17	Fuse Caution Label	AH 1	114	1417-516-0-00	Wire Connector 3 Pin	1
19	0074-094-0-15	Fuse Caution Label (800mA)	AH 1	115	1417-517-0-00	Wire Connector 3 Pin	1
20	0852-500-0-15	PT-AWG3 x 15	AH 8	116	1417-520-0-00	Wire Connector 3 Pin	1
21	0852-600-0-15	PT-AWG3 x 15	AH 10	117	1417-526-0-00	Wire Connector 6 Pin	1
21a	0852-600-0-15	PT-AWG3 x 15	B1, C 7	118	1417-527-0-00	Wire Connector 2 Pin	1
22	0855-310-0-70	GT-HG4E 10 x 70	3	119	1417-528-0-00	Wire Connector 2 Pin	1
23	0871-830-0-65	P3 x 6-SK-S (Screw)	2	120	1417-529-0-00	Wire Connector 2 Pin	1
24	0872-730-0-65	ST Screw B3 x 6-SK	45	121	1417-530-0-00	Wire Connector 2 Pin	1
25	0872-740-0-63	ST Screw B4 x 6-SBK	4	122	1417-500-0-91	Main Amp PCB	1
26	0872-740-0-65	ST Screw B4 x 6-SK	4	123	1417-500-0-92	Rectifier PCB	1
27	0873-230-0-83	BT Screw B3 x 8-SBK	12				
28	0873-230-0-85	BT Screw B3 x 8-SK	18				
29	0875-030-0-63	CT Screw B3 x 6-SBK	11	200	1417-020-0-00	Pre Amp Unit	AH 1
30	0875-130-0-65	ST Screw PF3 x 6-SK	13	200a	1417-022-0-00	Pre Amp Unit	B1 1
31	0977-630-0-65	ST Screw L3 x 6-SK	2	200b	1317-021-0-00	Pre Amp Unit	C 1
32	0987-001-7-00	W3032100080SN (Washer)	1	201	0034-473-0-00	Pin Terminal	10
33	1417-728-0-00	Heat Sink	1	202	0034-734-0-03	Connector Pin, 3 Pin	11
34	1417-730-0-00	Silicone Sheet	4	203	0034-734-0-04	Connector Pin, 4 Pin	1
35	1417-867-0-01	VR Knob	1	204	0034-734-0-06	Connector Pin, 6 Pin	1
36	1417-868-0-01	Tone Knob	3	205	0034-739-0-03	Connector Pin, 3 Pin	1
37	1417-869-0-01	Selector Knob	2	206	0045-507-0-00	Fuse Holder	6
38	1417-790-0-00	HS Bracket F	1	207	0061-263-0-00	Earth Plate	1
39	1417-791-0-00	HS Bracket R	1	208	0064-521-0-00	LED Spacer (LH-5-6)	2
40	1417-792-0-00	HS Angle	1	209	0064-644-0-00	Cover, Spark Killer	1
41	1417-796-0-00	T RFM Frame	1	210	1417-512-0-00	Wire Connector 3 Pin	1
42	1417-798-0-01	Foot	4	211	1417-513-0-00	Wire Connector 3 Pin	1
43	1417-802-0-01	Front Panel Set	1	212	1417-514-0-00	Wire Connector 3 Pin	1
44	1417-807-0-00	Front Chassis	1	213	1417-515-0-00	Wire Connector 3 Pin	1
45	1417-808-0-00	Side Chassis L	1	214	1417-518-0-00	Wire Connector 3 Pin	1
46	1417-809-0-00	Side Chassis R	1	215	1417-519-0-00	Wire Connector 3 Pin	1
47	1417-816-0-00	Bottom Plate	1	216	1417-522-0-00	Wire Connector 4 Pin	1
48	1417-817-0-01	Rear Panel	AH 1	217	1417-523-0-00	Flat Cable 3 Pin	1
48a	1417-818-0-01	Rear Panel	B1, C 1	218	1417-524-0-00	Wire Connector 4 Pin	1
49	1417-819-0-01	Metal Case	1	219	1417-525-0-00	Wire Connector 3 Pin	1
50	1417-856-0-00	Serial No Label	1	220	1417-793-0-00	Earth Plate	2
51	1417-863-0-01	Lever Knob	2	221	1417-501-0-00	EQ PCB	1
52	1417-864-0-01	Blind Cover	2	222	1417-501-0-92	Tone PCB	1
53	1417-865-0-01	Power Knob	1	223	1417-501-0-93	SW PCB	1
54	1417-866-0-01	Push Knob	5	224	1417-501-0-94	VR PCB	1
55	1417-883-0-00	Trans Chassis	1	225	1417-501-0-95	PS PCB	1
56	1417-884-0-00	Trans Frame	1	226	1417-501-0-96	Jack PCB	1
57	1417-886-0-00	P Jack Holder	1	227	1417-501-0-97	LED PCB	1
58	1417-888-0-00	PCB Bracket	1	228	1417-501-0-98	Head Phone PCB	1
59	1802-831-0-00	PCB Holder B	1	229	1417-501-0-99	SP PCB	1
60	0062-880-0-00	Cushion	1				

Product Safety Note: Products marked with a Δ have special characteristics important to safety. Before replacing any of these components read carefully the product safety notice of this Service Manual. Don't degrade the safety of the product.

PACKING DIAGRAM



Parts List

Ref. No.	Part No.	Description	Q'ty
301	1493-850-0-00	Congratulation Card	AH 1
302	1493-930-0-01	Envelope	AH 1
303	1493-930-0-02	Envelope	AH 1
304	1493-921-0-02	Guarantee Card	AH 1
305	1493-921-0-03	Guarantee Card	AH 1
306	0074-233-0-00	Safety Instruction	AH 1
307	1417-920-0-01	Instruction	1
308	0998-000-6-00	PS-24 x 36 (Poly. Bag)	1
309	1417-900-0-00	Styrofoam F	1
310	0998-103-6-00	HS-10 x 20.3-3 (Poly. Bag)	1
311	0998-101-7-00	HS-58 x 55.5 (Poly. Bag)	1
312	1417-901-0-00	Styrofoam R	1
313	1417-910-0-01	Gift Box	1