

302

**INTEGRATED
AMPLIFIER**

SERVICE MANUAL


302
**INTEGRATED
AMPLIFIER**



CONTENTS

DESCRIPTION	PAGE
SPECIFICATIONS	3
REAR PANEL/FRONT PANEL VIEW	4
BLOCK DIAGRAM	5
WIRING DIAGRAM	6
AMPLIFIER ADJUSTMENT	7
TROUBLE SHOOTING GUIDE	8
SCHEMATIC DIAGRAM	9-10
PCB LAYOUT (PARTS SIDE)	11-12
EXPLODED VIEW	13
EXPLODED VIEW PARTS LIST	14
DISASSEMBLY INSTRUCTIONS	15
PARTS LIST	16-18
PACKING DIAGRAM	19

SERVICE SAFETY PRECAUTIONS

1. Use exact replacement parts for critical locations, marked “  ” on parts list.
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.

SPECIFICATION

POWER AMPLIFIER SECTION

Stereo Mode

CONTINUOUS AVERAGE POWER OUTPUT INTO 8 OHMS.....25W(14dBW)
(Min. power per channel, 20Hz-20kHz, both channels driven, with
no more than rated distortion)
Rated distortion (THD 20Hz-20kHz).....0.03%
Clipping power (maximum continuous power per channel).....40W
IHF dynamic headroom at 8 ohms.....+3dB
IHF dynamic power (maximum short term power per channel)
8 ohms:50W (17dBW)
4 ohms:60W (17.8dBW)
2 ohms:75W (18.7dBW)
Slew rate.....>20 V/usec
Damping factor (ref. 8 ohms 50Hz).....>60
Input impedance.....R=20K OHM
C=820pF
Input sensitivity (for rated power into 8 ohms).....1V
Voltage gain.....x14 (23 dB)
Frequency response.....20Hz to 20kHz +/-0.3dB
-3dB at 3Hz/70kHz
Signal/Noise ratio(A-weighted).....102dB ref. 1W
116 dB ref. rated power
THD.....<0.03%
(Total harmonic distortion, 20Hz-20kHz, from 250mW to rated output)
SMPTE I.M.<0.03%
(IM distortion, 60Hz+7kHz,4:1, from 250mW to rated output)
IHF I.M. (CCIF IM distortion, 19+20kHz at rated output).....<0.03%

PREAMPLIFIER SECTION

Phono Input

Input impedance (R and C).....47k ohm + 200pF
Input sensitivity (ref. rated power, 1kHz).....2.7mV
Input overload at 20Hz/1kHz/20kHz.....22mV/220mV/2V



THD (20Hz-20kHz) and I.M. distortion.....<0.1% at +30dB level
RIAA accuracy.....+/-0.5dB
Signal/Noise ratio (A-weighted with cartridge connected).....77dB ref. 5mV

Line Level Inputs (CD, Video, Tuner, Tape 1, Tape 2)

Input impedance (R and C).....20k ohm + 500pF
Input sensitivity (ref. rated power).....165mV
Maximum input signal.....>10V
Signal/Noise ratio (A-weighted).....90dB ref. 1W
104dB ref. rated power
Frequency response, 20Hz-20kHz.....+/-0.5dB
Infrasonic filter.....-3dB at 10Hz
12dB/octave

Line Level Output

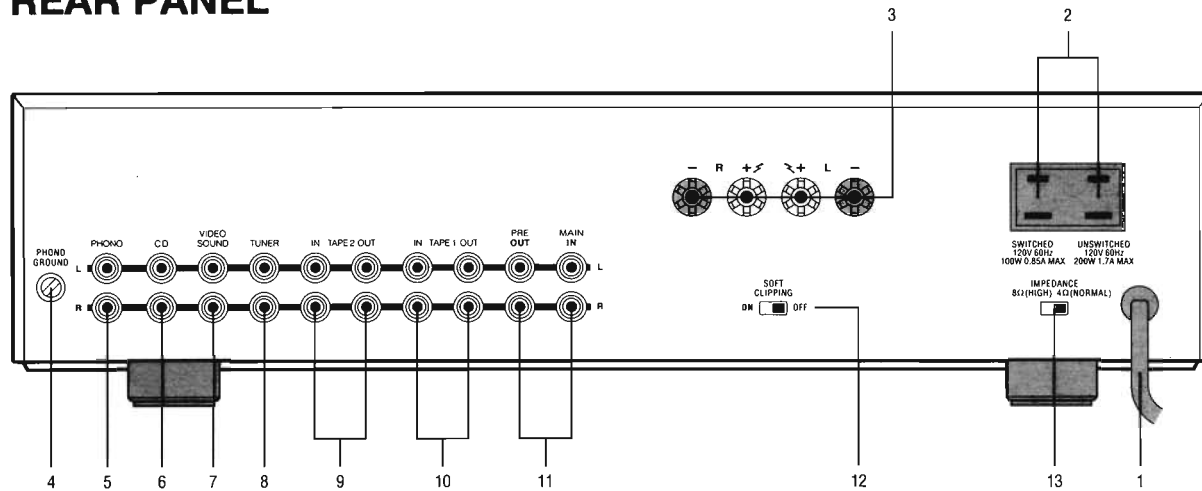
Preamp output impedance.....220 ohm
Tape output impedance.....Source Z + 2k ohm
Headphones output impedance.....220 ohm
Maximum output level
preamp out>12V
tape out>10V
headphones out>10V into 600 ohm
>500mV into 8 ohm

Controls

Treble.....+/-7dB at 10kHz
Bass.....+/-10dB at 50Hz

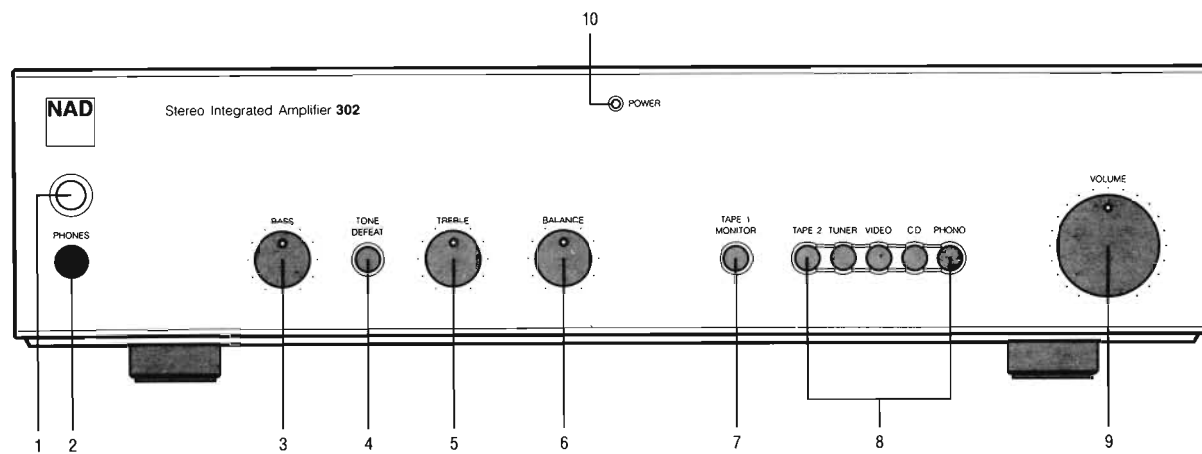
REAR PANEL/FRONT PANEL VIEW

REAR PANEL



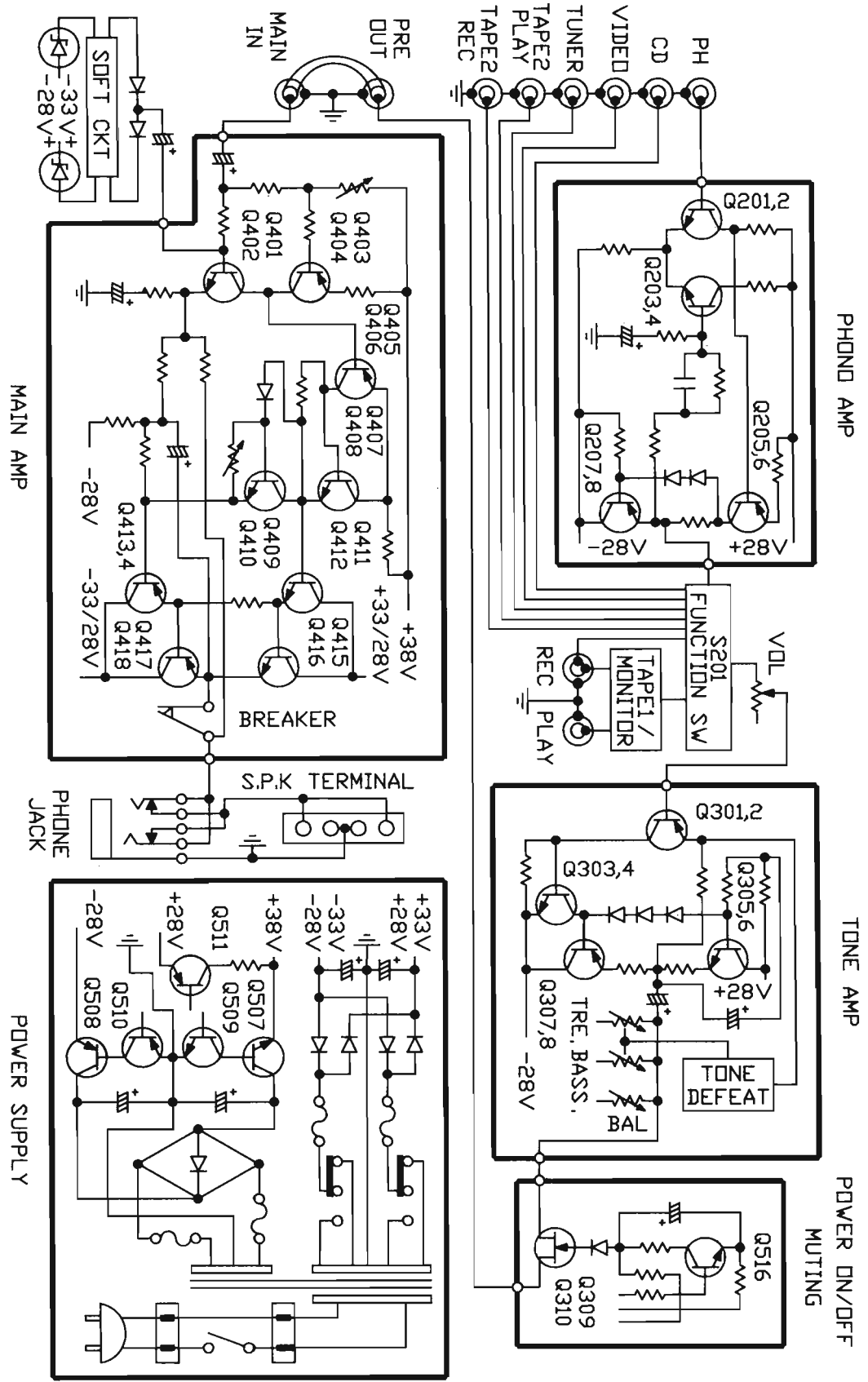
- | | |
|-----------------------------------|-----------------------------------|
| 1. AC LINE CORD | 8. TUNER INPUT |
| 2. AC OUTLETS(ONLY IN 120V MODEL) | 9. TAPE 2 INPUT/OUTPUT |
| 3. SPEAKER TERMINALS | 10. TAPE 1 INPUT/OUTPUT |
| 4. PHONO GROUND | 11. PRE-AMP OUTPUT/MAIN AMP INPUT |
| 5. PHONO INPUT | 12. SOFT CLIPPING |
| 6. CD INPUT | 13. IMPEDANCE SELECTOR |
| 7. VIDEO SOUND INPUT | |

FRONT PANEL

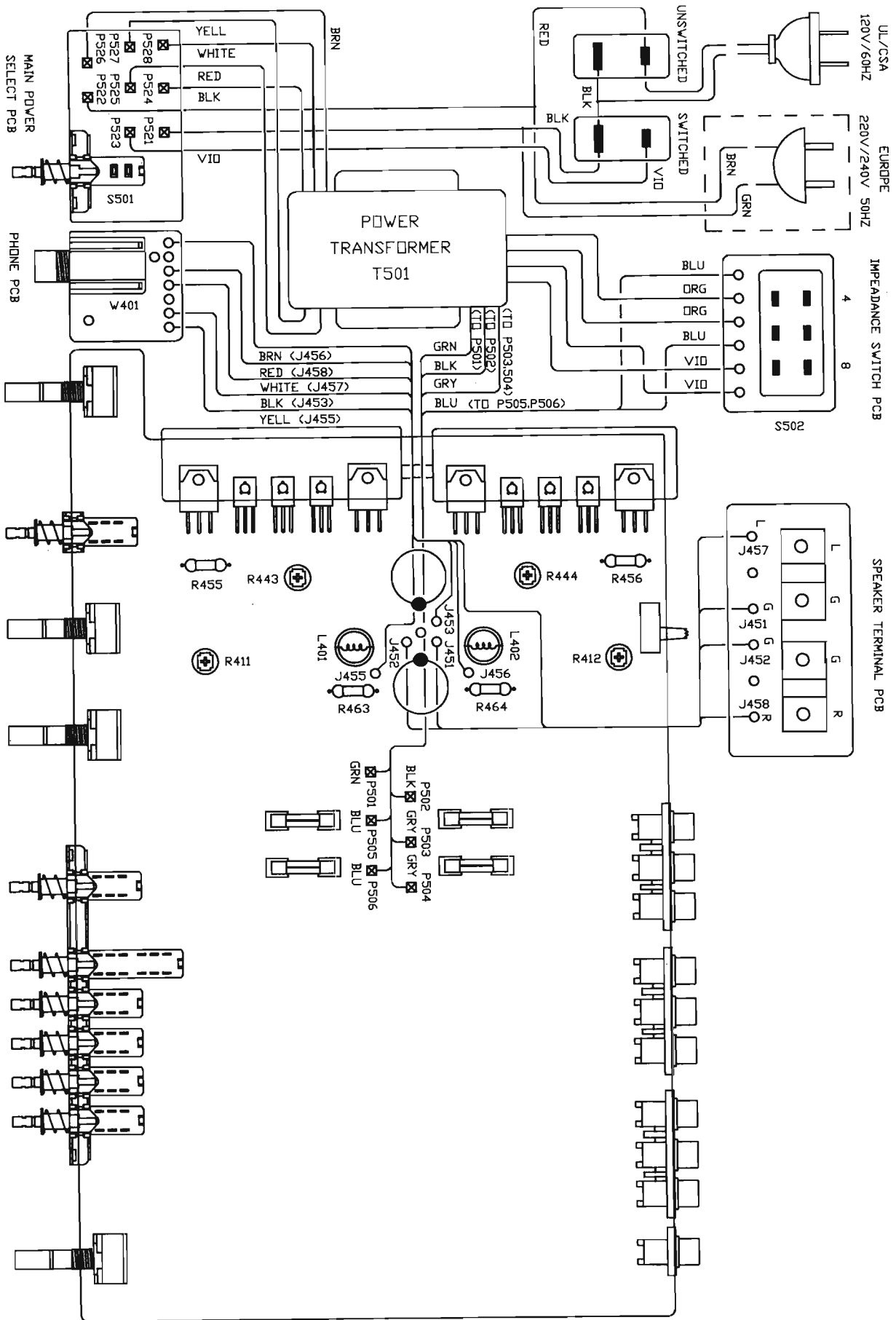


- | | |
|-------------------|--|
| 1. POWER SWITCH | 6. BALANCE CONTROL |
| 2. PHONES | 7. TAPE 1 MONITOR |
| 3. BASS CONTROL | 8. INPUT SELECTOR (TAPE 2, TUNER, VIDEO, CD, PHONO.) |
| 4. TONE DEFEAT | 9. VOLUME CONTROL |
| 5. TREBLE CONTROL | 10. POWER INDICATOR |

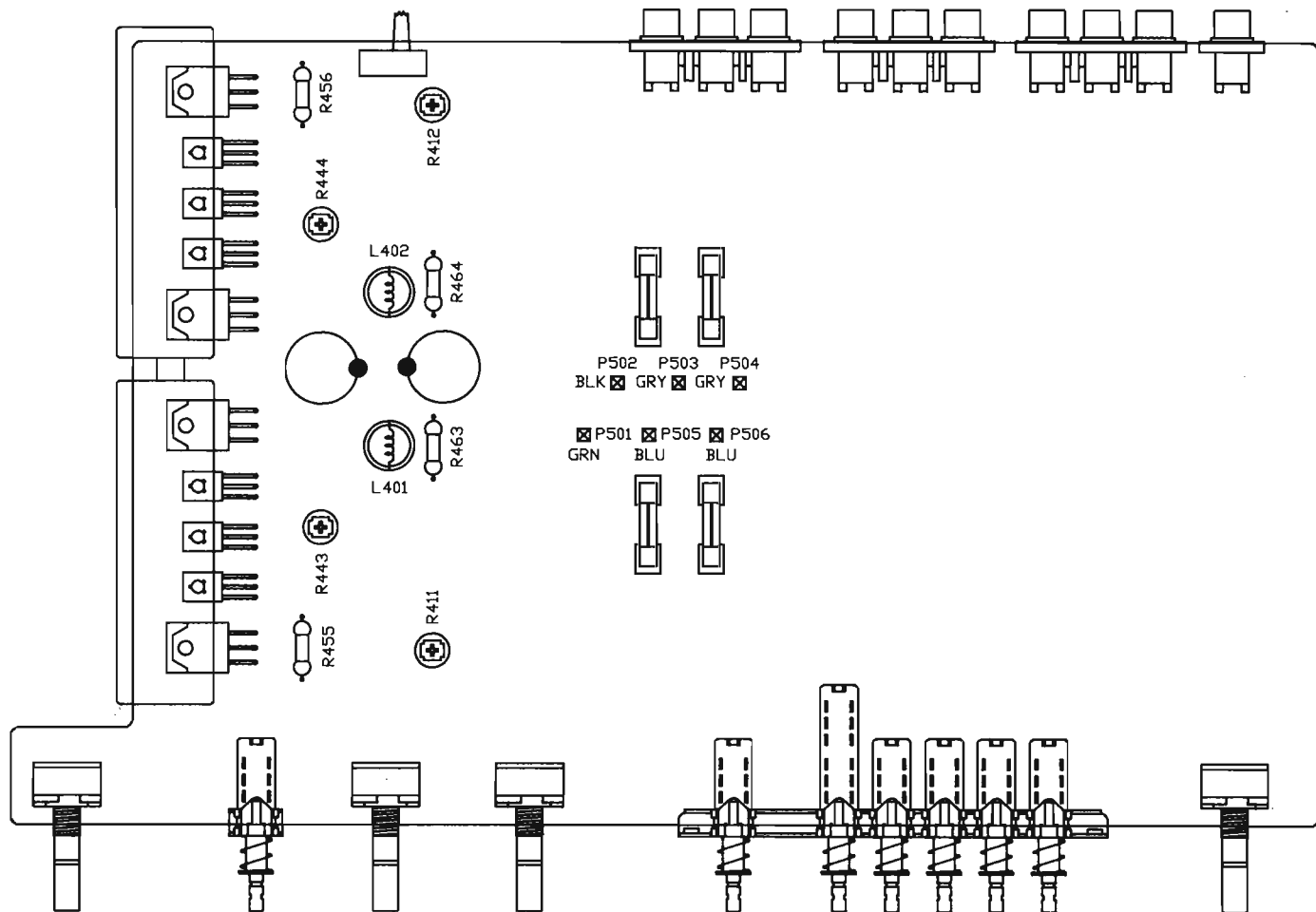
BLOCK DIAGRAM



WIRING DIAGRAM



AMPLIFIER ADJUSTMENT



IMPORTANT

Speaker impedance switch should be in 8 ohms position while adjust center voltage and idling current. Reset switch after adjustment procedure is completed.

INITIAL ADJUSTMENT (No load connected)

A. CENTER VOLTAGE

1. Connect DC millivoltmeter to L channel output terminal.
2. Turn on and adjust to $0V \pm 30mV$ with R411 (220 ohm). Connect DC millivoltmeter to R channel output terminal and adjust R412 to $0V \pm 30mV$.

B. IDLING CURRENT

1. Remove solder short across R455 and R456.
2. Connect DC millivoltmeter across R455 (1 ohm) (output transistor's collector resistor) and adjust R443 for 25-35mV reading on meter. Repeat adjustment with R444, connecting meter across R456 (1 ohm).
3. Leave power on for minimum 5 minutes.

FINAL ADJUSTMENT

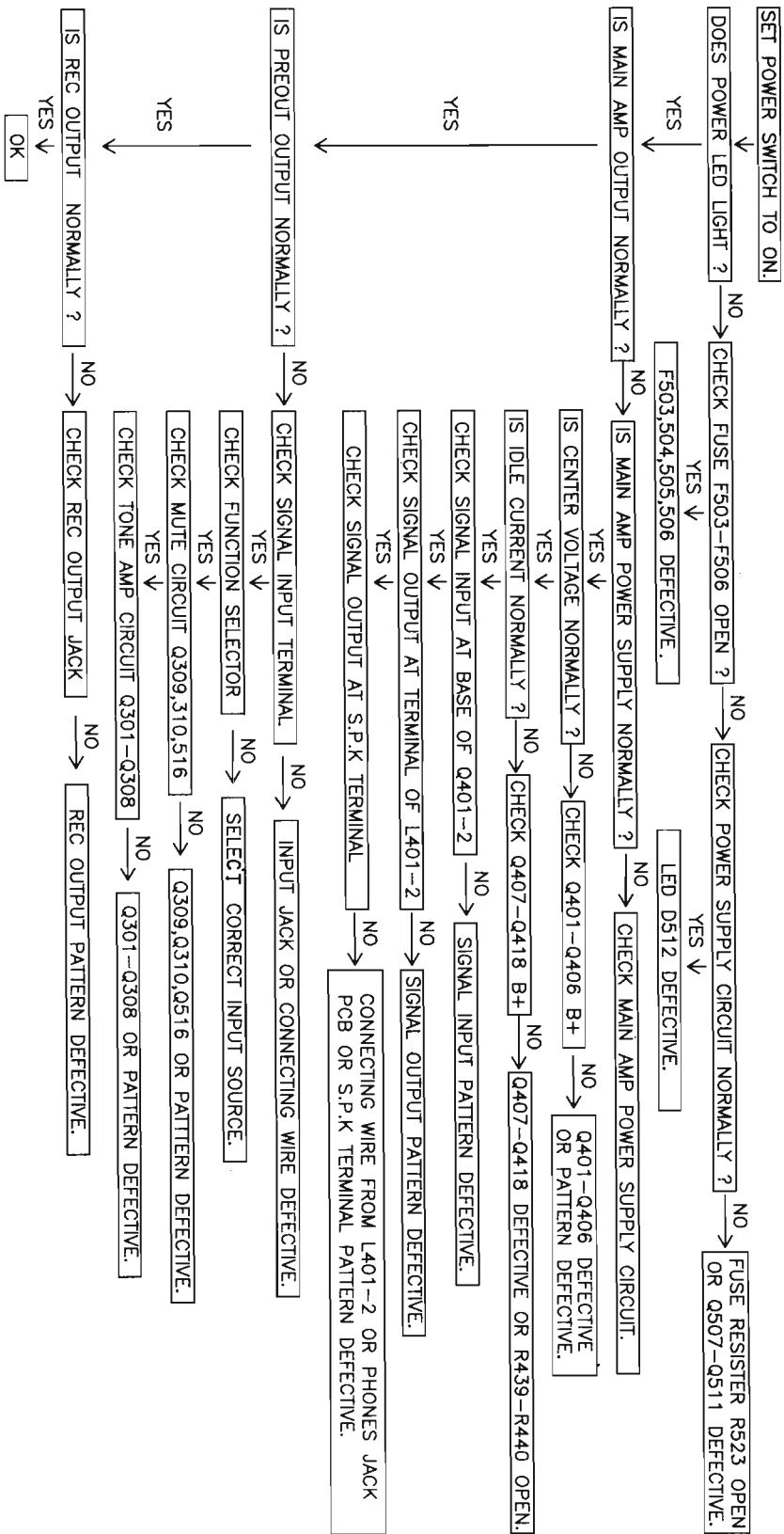
C. CENTER VOLTAGE

1. Repeat step A above.

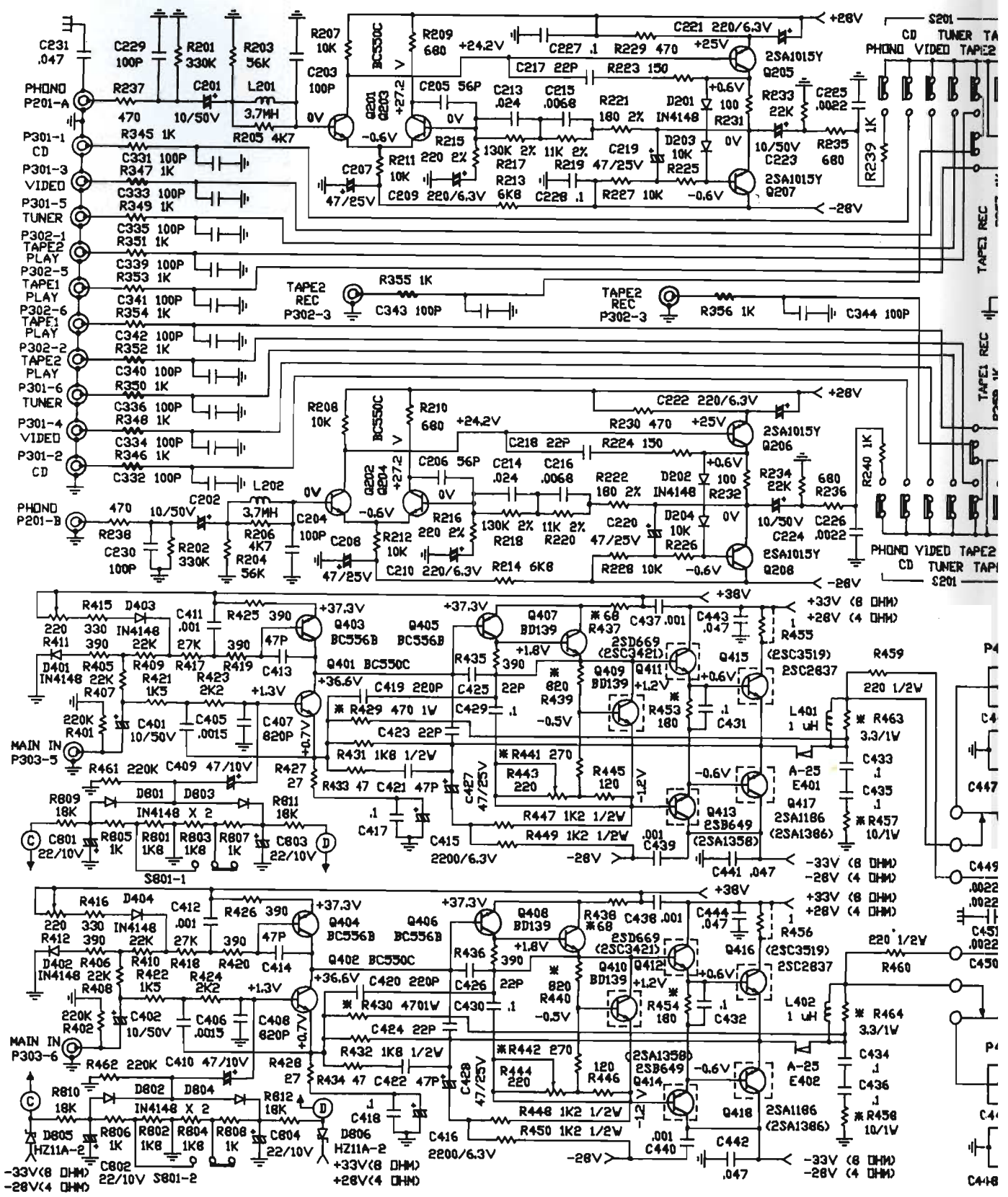
D. IDLING CURRENT

1. Repeat step B and adjust with R443, R444 for 25-35mV reading on meter.
2. After the alignment is finished, 1 ohm resistor R455, R456 is shorted by solder short.

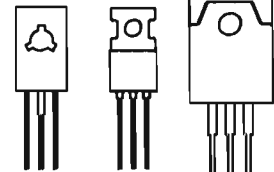
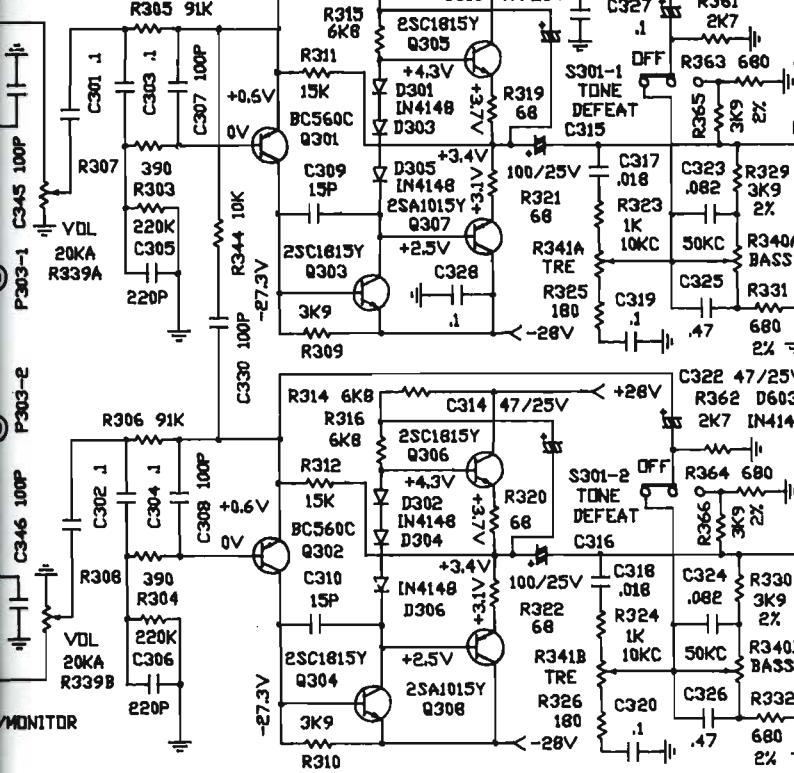
TROUBLE SHOOTING GUIDE



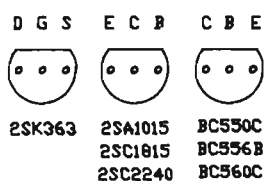
SCHEMATIC DIAGRAM



/MONITOR

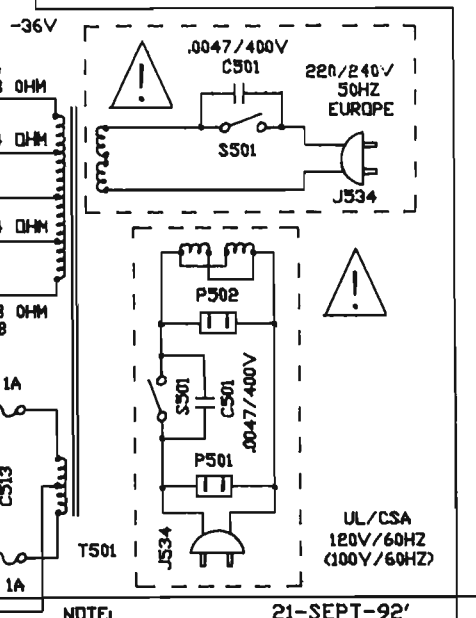
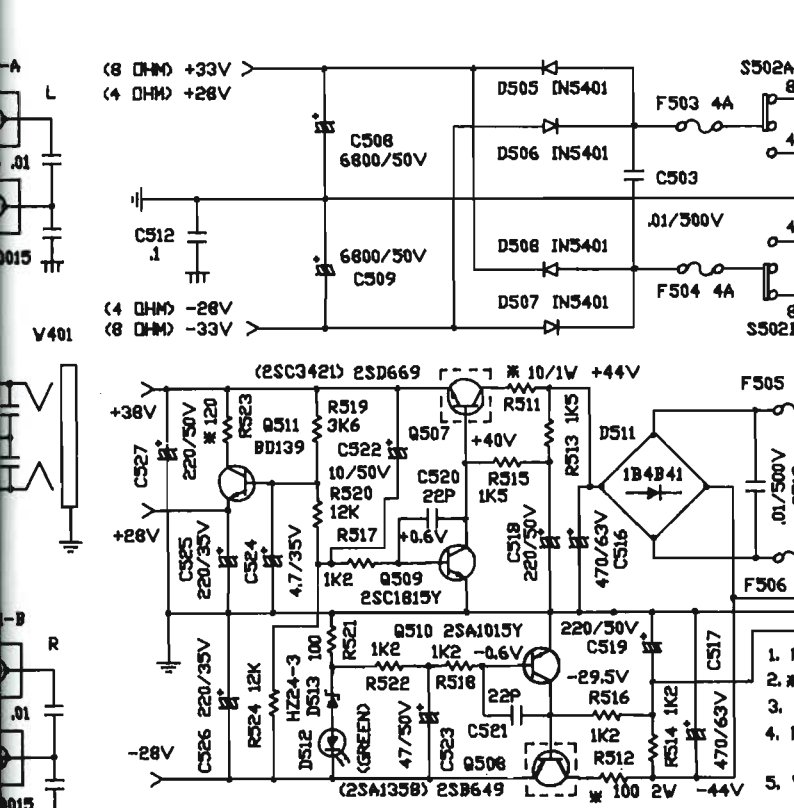


ECB	BCE	BCE
8D139	2SA968	2SA1186
2SB649	2SC2388	2SC2837
2SD669	2SA1011	2SA1386
2SA1358	2SC2344	2SC3519
2SC3421		

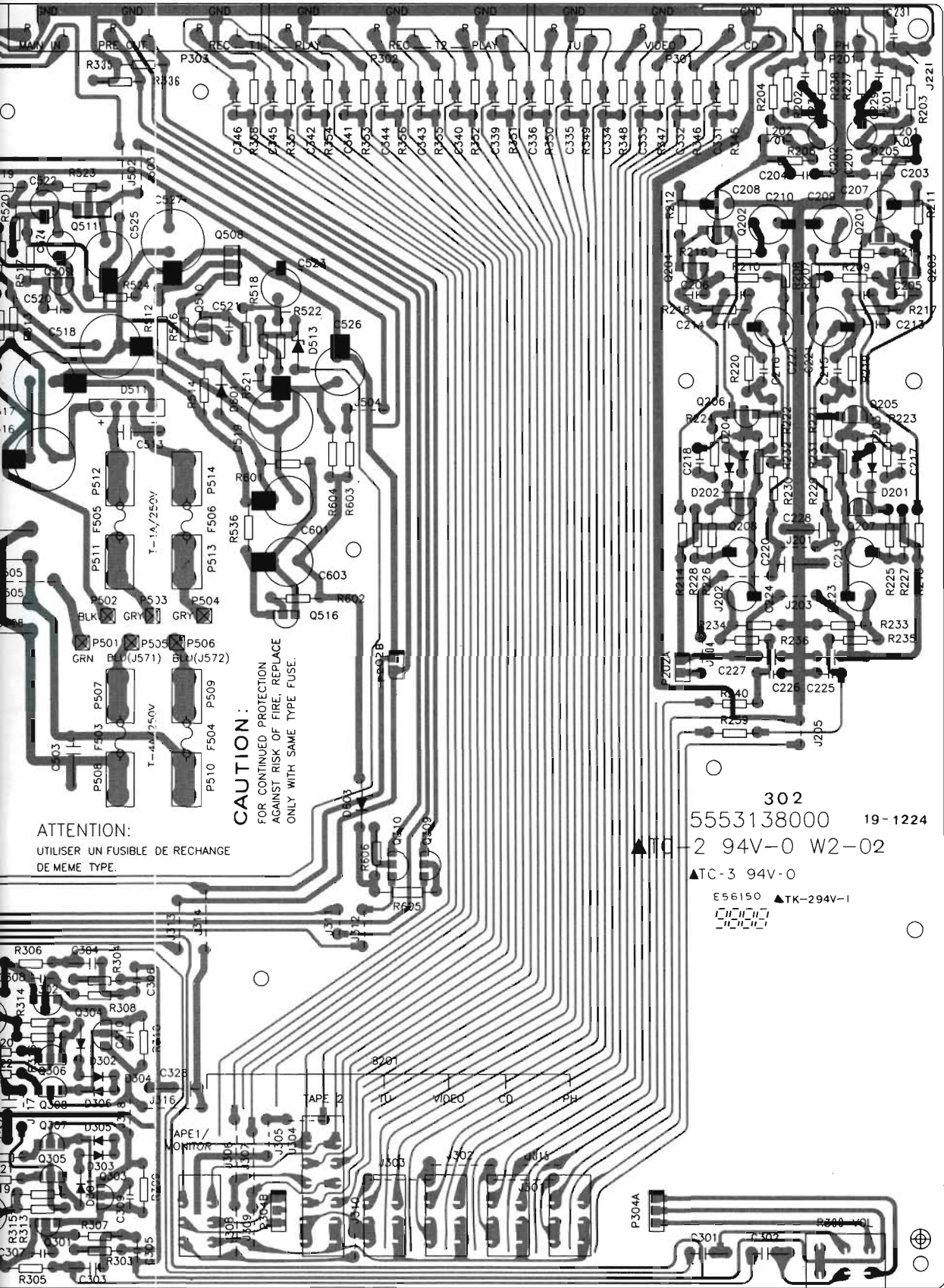


DGS	ECB	CBE
2SK363	2SA1015	BC550C
	2SC1815	BC556B
	2SC2240	BC560C

/MONITOR



- NOTE: 21-SEPT-92'
1. RESISTOR ARE 1/4W 5% UNLESS OTHER SPECIFIED.
 2. * DENOTES RESISTORS MOUNTED UP FROM P.C.B.
 3. □ DENOTES PARTS MOUNTED ON MAIN HEATSINK.
 4. R455 AND R456 USED FOR IDLING CURRENT ADJUST ONLY MUST BE SHORTED IN NORMAL OPERATION.
 5. VOLTAGE SHOWN ARE MEASURED WITH NO SIGNAL APPLIED.

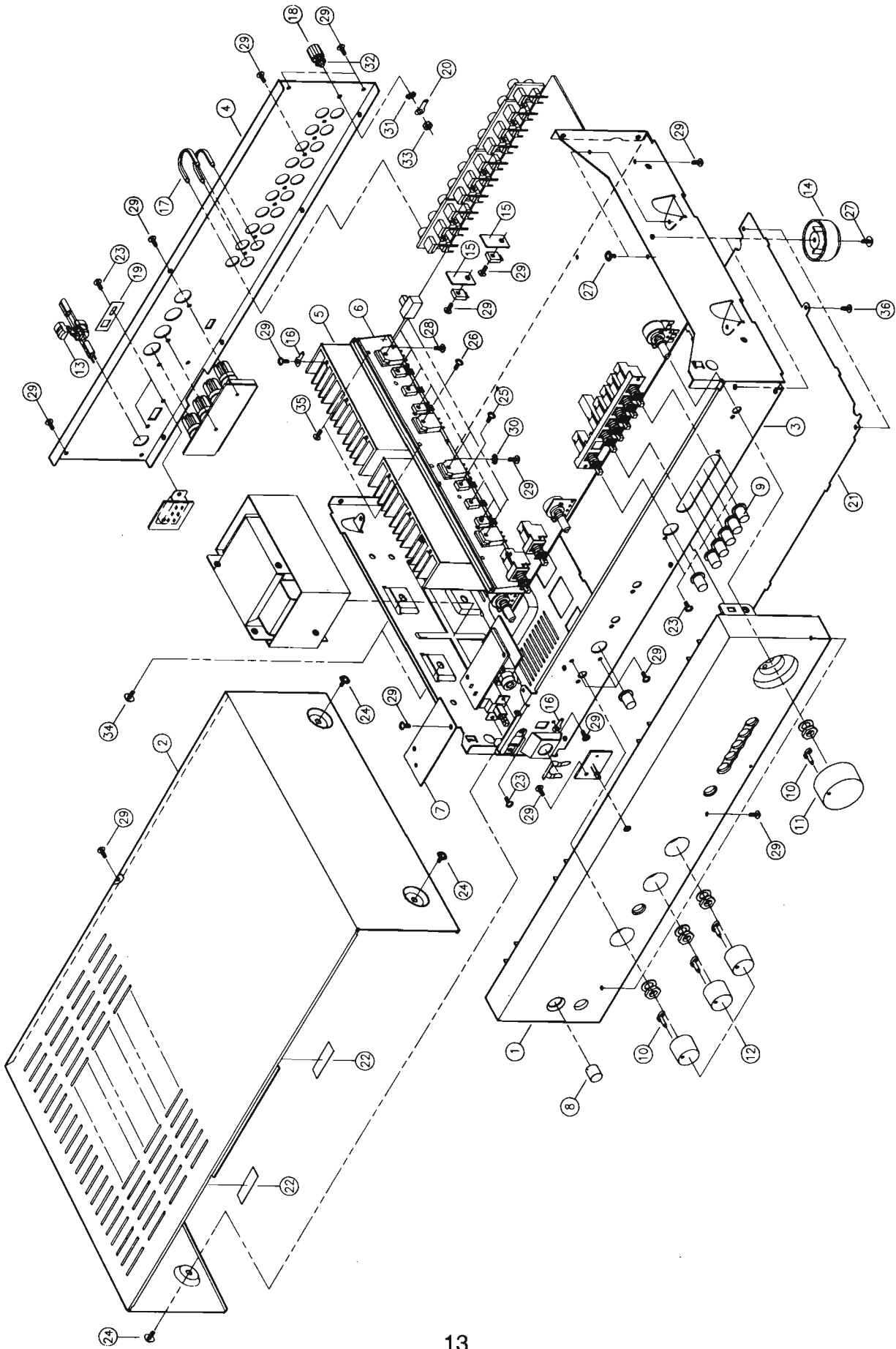


ATTENTION:
 UTILISER UN FUSIBLE DE RECHANGE
 DE MEME TYPE.

CAUTION:
 FOR CONTINUED PROTECTION
 AGAINST RISK OF FIRE, REPLACE
 ONLY WITH SAME TYPE FUSE.

302
 5553138000 19-1224
 2 94V-0 W2-02
 ▲TK-3 94V-0
 E56150 ▲TK-294V-1

EXPLODED VIEW



EXPLODED VIEW PARTS LIST

ITEM	PARTS NO.	DESCRIPTION	Q'TY
1	5541309000	FRONT PANEL	1
2	5541003600	TOP COVER	1
3	5547139600	CHASSIS	1
4*AH	5547139700	BACK PLATE (120V/50Hz)	1
4*B1,C	5547139710	BACK PLATE (220-240V/50Hz)	1
5	5545310200	HEAT SINK	2
6	5545310500	TRANSISTOR HEAT SINK	1
7	5547534200	POWER SW. SHIELD	1
8	5541548700	POWER BUTTON	1
9	5541546900	PUSH BUTTON	7
10	5547612600	POINTER	4
11	5541547100	VOL. KNOB	1
12	5541547000	CONTROL KNOB	3
13	5547501200	POWER CORD BUSHING	1
14	5542234500	FOOT	4
15	5547024210	LOCK BRACKET	2
16	5556200800	LUG (3.1)	2
17	5547033610	TERMINAL CONNECTOR A	2
18	5546121400	TERMINAL	1
19	5547528400	SWITCH LOCK PLATE	1
20	5556200810	LUG (4.1)	1
21	5547139610	CHASSIS A	1
22	5542001700	HEMELON C	2
23	7001170616	SCREW (PAN M3.0x6) BLACK	6
24	7190550003	SCREW (BID M4.0x6 WASHER)	4
25	7134161152	SCREW (M3.0x8 S TITE)	6
26	7134161452	SCREW (BRZ M3.0x10 S TITE)	4
27	7000305012	SCREW (RUD M3.0x8 WASHER)	6
28	7033160652	SCREW (RUD M3.0x6 TS)	2
29	7033161156	SCREW (RUD M3.0x8 TS) BLACK	37
30	7101200302	GEAR WASHER 3.0	1
31	7101200352	GEAR WASHER 3.5	1
32	7096210006	WASHER 3.5 BLACK	1
33	7076210012	NUT M3.5	1
34	7033251152	SCREW (RUD M4.0x6 TS)	4
35	7033161452	SCREW (RUD M3.0x10 TS)	8
36	7033160656	SCREW (RUD M3.0x6 TS BLACK)	5

DISASSEMBLY INSTRUCTIONS

TOP COVER REMOVAL

1. Remove parts in order of disassembly as numbered.
 - a. ①-④ Machine screw M 4.0x6.0 (See Fig. 1.)
 - b. ⑤ Tapping screw M 3.0x8.0 (See Fig. 1.)

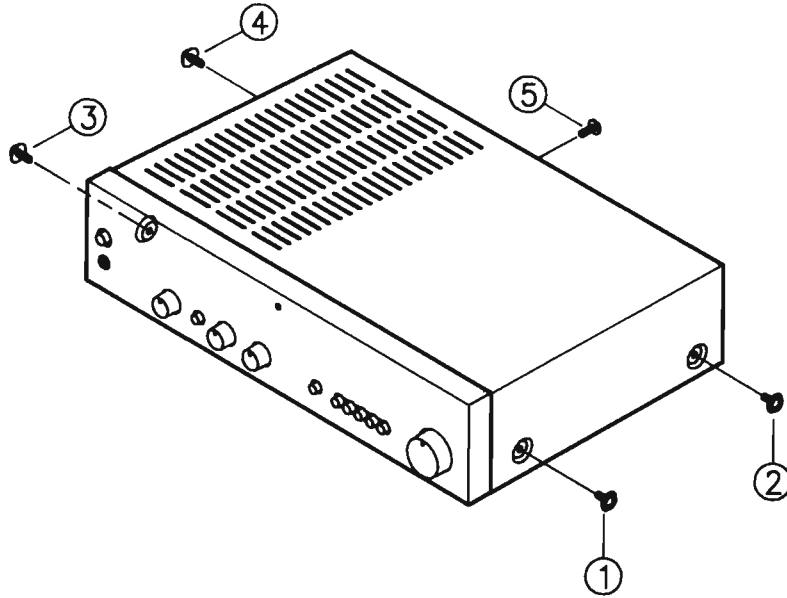


Fig. 1.

2. Pull both sides of TOP COVER outward and turning about 35° (shown as arrow ⑥) then remove as arrow ⑦ shown. (See Fig. 2.)

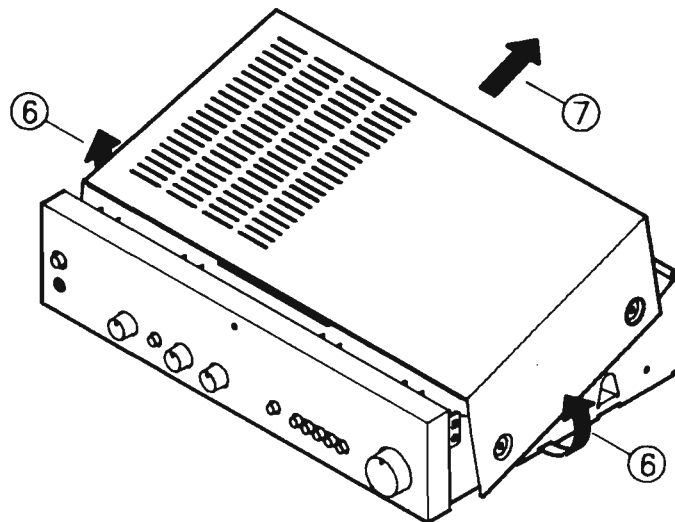


Fig. 2.

PARTS LIST

NAD-302 PARTS LIST

SYMBOL NO	REF. NO.	PART NO.	DESCRIPTION	Q'TY
MAIN PCB ASS'Y		(5090406078)	NAD-302	1
MAIN AMP. PCB BLOCK		(5090906192)	NAD-302	1
PC BOARD B201	5553138000	5553138000	MAIN PCB. NO COMPONENTS	1
CAPACITORS				
C201, C202	5213610091	5213610091	CAP. EL. 10uFM +/-20% 50V	2
C203, C204	5247010191	5247010191	CAP. CER. 100PFJ +/-5% 50V	2
C205, C206	5247056091	5247056091	CAP. CER. 56PFJ +/-5% 50V	2
C207, C208	5213447091	5213447091	CAP. EL. 47uFM +/-20% 25V	2
C209, C210	5213122191	5213122191	CAP. EL. 220uFM +/-20% 6.3V	2
C213, C214	5225324391	5225324391	CAP. POLY. 24000PFJ +/-5% 50V	2
C215, C216	5225368291	5225368291	CAP. POLY. 6800PFJ +/-5% 50V	2
C217, C218	5247022091	5247022091	CAP. CER. 22PFJ +/-5% 50V	2
C219, C220	5213447091	5213447091	CAP. EL. 47uFM +/-20% 25V	2
C221, C222	5213122191	5213122191	CAP. EL. 220uFM +/-20% 6.3V	2
C223, C224	5213610091	5213610091	CAP. EL. 10uFM +/-20% 50V	2
C225, C226	5222122291	5222122291	CAP. POLY. 2200PFJ +/-5% 50V	2
C227, C228	5231810400	5231810400	CAP. CER. 0.1uFZ +80-20% 50V	2
C229, C230	5247010191	5247010191	CAP. CER. 100PFJ +/-5% 50V	2
C231	5231847391	5231847391	CAP. CER. 47000PFZ +80-20% 50V	1
C301-C304	5222110491	5222110491	CAP. POLY. 0.1MFJ +/-5% 50V	4
C305, C306	5247122191	5247122191	CAP. CER. 220PFK +/-10% 50V	2
C307, C308	5247010191	5247010191	CAP. CER. 100PFJ +/-5% 50V	2
C309, C310	5247015091	5247015091	CAP. CER. 15PFJ +/-5% 50V	2
C313, C314	5213447091	5213447091	CAP. EL. 47uFM +/-20% 25V	2
C315, C316	5213410191	5213410191	CAP. EL. 100uFM +/-20% 25V	2
C317, C318	5222118391	5222118391	CAP. POLY. 18000PFJ +/-5% 50V	2
C319, C320	5222110491	5222110491	CAP. POLY. 0.1MFJ +/-5% 50V	2
C321, C322	5213447091	5213447091	CAP. EL. 47uFM +/-20% 25V	2
C323, C324	5222182391	5222182391	CAP. POLY. 82000PFJ +/-5% 50V	2
C325, C326	5270203101	5270203101	CAP. META. 0.47MFJ +/-5% 50V	2
C327, C328	5231810400	5231810400	CAP. CER. 0.1uFZ +80-20% 50V	2
C330-C336	5247010191	5247010191	CAP. CER. 100PFJ +/-5% 50V	7
C339-C346	5247010191	5247010191	CAP. CER. 100PFJ +/-5% 50V	8
C401, C402	5213610091	5213610091	CAP. EL. 10uFM +/-20% 50V	2
C405, C406	5222115291	5222115291	CAP. POLY. 1500PFJ +/-5% 50V	2
C407, C408	5231382191	5231382191	CAP. CER. 820PFK +/-10% 50V	2
C409, C410	5213247091	5213247091	CAP. EL. 47uFM +/-20% 10V	2
C411, C412	5222110291	5222110291	CAP. POLY. 1000PFJ +/-5% 50V	2
C413, C414	5247047091	5247047091	CAP. CER. 47PFJ +/-5% 50V	2
C415, C416	5213122212	5213122212	CAP. EL. 2200uFM +/-20% 6.3V	2
C417, C418	5222110491	5222110491	CAP. POLY. 0.1MFJ +/-5% 50V	2
C419, C420	5247122191	5247122191	CAP. CER. 220PFK +/-10% 50V	2
C421, C422	5247047091	5247047091	CAP. CER. 47PFJ +/-5% 50V	2
C423-C426	5247022091	5247022091	CAP. CER. 22PFJ +/-5% 50V	4
C427, C428	5213447091	5213447091	CAP. EL. 47uFM +/-20% 25V	2
C429-C432	5222110491	5222110491	CAP. POLY. 0.1MFJ +/-5% 50V	4
C433-C436	5231810400	5231810400	CAP. CER. 0.1uFZ +80-20% 50V	4
C437-C440	5231510291	5231510291	CAP. CER. 1000PFM +/-20% 50V	4
C441-C444	5231847391	5231847391	CAP. CER. 47000PFZ +80-20% 50V	4
C503	5232710301	5232710301	CAP. CER. 10000PFM +/-20% 50V	2
C508, C509	5210308100	5210308100	CAP. EL. 6800uFM +/-20% 50V	2
C512	5231810400	5231810400	CAP. CER. 0.1uFZ +80-20% 50V	1
C513	5232710301	5232710301	CAP. CER. 10000PFM +/-20% 50V	2
C516, C517	5213747113	5213747113	CAP. EL. 470uFM +/-20% 63V	2
C518, C519	5213622112	5213622112	CAP. EL. 220uFM +/-20% 50V	2
C520, C521	5247022091	5247022091	CAP. CER. 22PFJ +/-5% 50V	2
C522	5213610091	5213610091	CAP. EL. 10uFM +/-20% 50V	1
C523	5213647091	5213647091	CAP. EL. 47uFM +/-20% 50V	1
C524	5213647991	5213647991	CAP. EL. 4.7uFM +/-20% 50V	1
C525, C526	5213522112	5213522112	CAP. EL. 220uFM +/-20% 35V	2
C527	5213622112	5213622112	CAP. EL. 220uFM +/-20% 50V	1
C601, C603	5214122012	5214122012	CAP. EL. 22uFM +/-20% 100V	2
C801-C804	5213222091	5213222091	CAP. EL. 22uFM +/-20% 10V	4
DIODES				
D201-D204	1N4148	6613003030	DIODE SWITCHING 1N4148	5
D301-D306	1N4148	6613003030	DIODE SWITCHING 1N4148	6
D401-D404	1N4148	6613003030	DIODE SWITCHING 1N4148	4
D505-D508	1N5401	6611000800	DIODE RECTIFIER 1N5401 100V 3.0A G	4
D511	1B4B41	6611012400	DIODE RECTIFIER 1B4B41 100V 1.0A G	1
D513	HZ-24-3	6615016100	DIODE ZENER HZ-24-3 24.3-25.5V	1
D601, D603	1N4148	6613003030	DIODE SWITCHING 1N4148	2
D801-D804	1N4148	6613003030	DIODE SWITCHING 1N4148	4
D805, D806	HZ-11A-2	6615007900	DIODE ZENER HZ-11A-2 9.7-10.1V 0.5W	2
CIRCUIT BREAKER				
E401, E402	5554432230	5554432230	CIRCUIT BREAKER SWITCH A-25 2.5A	2
FUSES				
F503*AH	5554309800	5554309800	FUSE, UL/CSA 5MT4 125V 4A 5.2x20	1
F503*B1	5554307400	5554307400	FUSE, T51 250V 4A 5.2x20	1
F503*C	5554307400	5554307400	FUSE, T51 250V 4A 5.2x20	1
F504*AH	5554309800	5554309800	FUSE, UL/CSA 5MT4 125V 4A 5.2x20	1

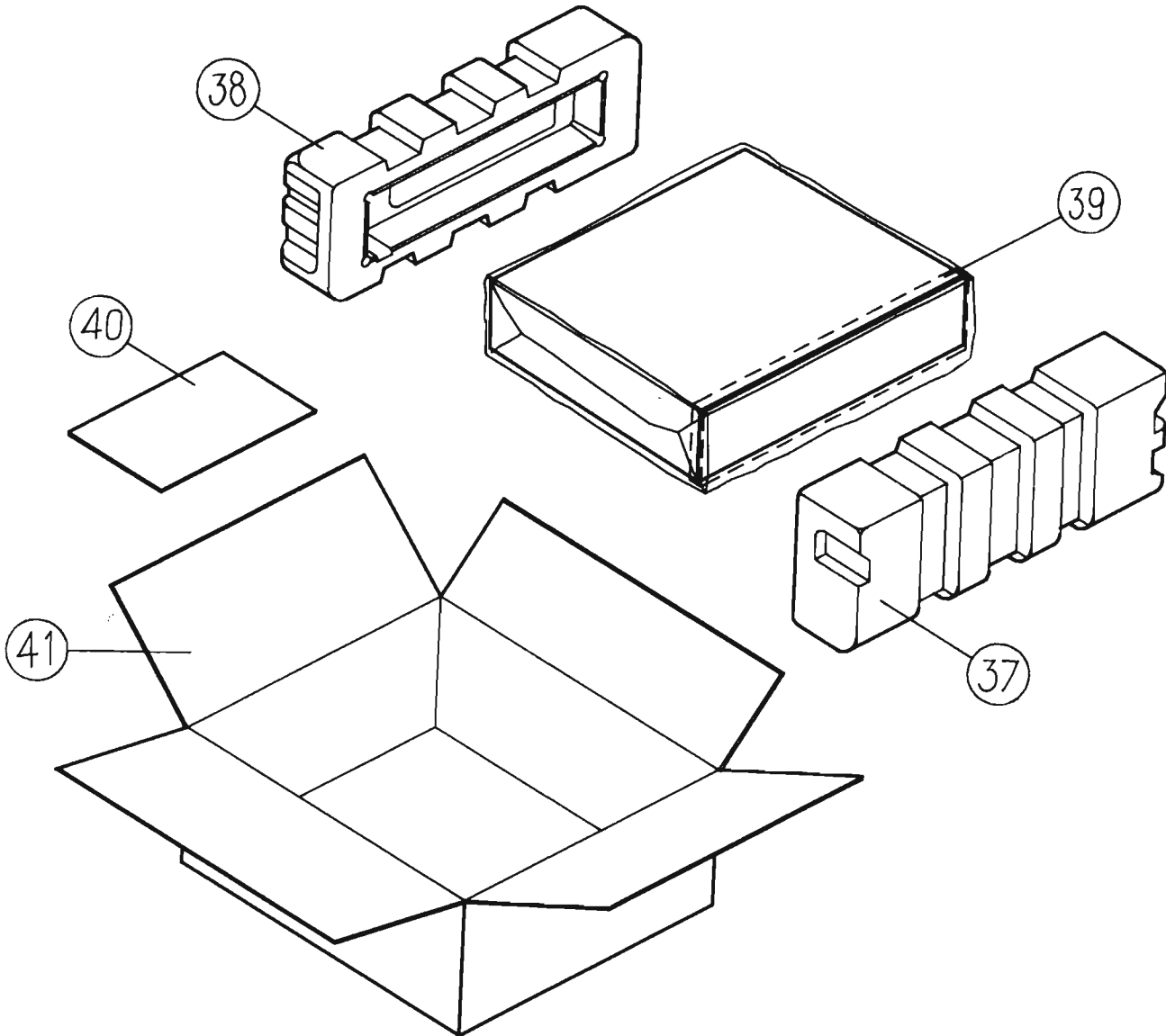
NAD-302 PARTS LIST

SYMBOL NO	REF. NO.	PART NO.	DESCRIPTION	Q'TY
F504*B1	5554307400	5554307400	FUSE, T51	250V 4A 5.2x20 1
F504*C	5554307400	5554307400	FUSE, T51	250V 4A 5.2x20 1
F505*AH	5554309810	5554309810	FUSE, UL/CSA 5MT1	125V 1A 5.2x20 1
F505*B1	5554306800	5554306800	FUSE, T51	250V 1A 5.2x20 1
F505*C	5554306800	5554306800	FUSE, T51	250V 1A 5.2x20 1
F506*AH	5554309810	5554309810	FUSE, UL/CSA 5MT1	125V 1A 5.2x20 1
F506*B1	5554306800	5554306800	FUSE, T51	250V 1A 5.2x20 1
F506*C	5554306800	5554306800	FUSE, T51	250V 1A 5.2x20 1
COILS				
L201, L202	5564401300	5564401300	TRAP COIL	TWS-384-407 L=3.7MH+-30%10KHz 2
L401, L402	5562001200	5562001200	COIL SPRING	9.5#Px1.0#Px13Z1T 2
TRANSISTORS				
Q201-Q204	BC550C	6621029500	TR. NPN HF	BC550C 4
Q205-Q208	2SA1015-Y	6623002050	TR. PNP HF	2SA1015-Y TPE2 TAPING 4
Q301, Q302	BC560C	6623009700	TR. PNP HF	BC560C 2
Q303, Q306	2SC1815-Y	6221015332	TR. NPN HF	2SC1815-Y TPE2 4
Q307, Q308	2SA1015-Y	6623002050	TR. PNP HF	2SA1015-Y TPE2 TAPING 2
Q309, Q310	2SK363GR	6625003730	TR. FET	2SK363GR VGDS=-40 TAPING 2
Q401, Q402	BC550C	6621029500	TR. NPN HF	BC550C 2
Q403-Q406	BC556B	6623005200	TR. PNP HF	BC556B 4
Q407-Q410	BD139	6622016700	TR. NPN LF	BD139 W/ACC TO-126 4
Q411*A	2SD669AC	6622012802	TR. NPN LF	2SD669AC W/ACC TO-126 1
Q411*B	2SC3421Y	6621002600	TR. NPN HF	2SC3421Y 1
Q412*A	2SD669AC	6622012802	TR. NPN LF	2SD669AC W/ACC TO-126 1
Q412*B	2SC3421Y	6621002600	TR. NPN HF	2SC3421Y 1
Q413*A	2SB649A-C	6624009401	TR. PNP LF	2SB649A-C 1W 160V 1
Q413*B	2SA1358Y	6623001700	TR. PNP HF	2SA1358Y 1
Q414*A	2SB649A-C	6624009401	TR. PNP LF	2SB649A-C 1W 160V 1
Q414*B	2SA1358Y	6623001700	TR. PNP HF	2SA1358Y 1
Q415*A	2SC2837	6621008000	TR. NPN HF	2SC2837 W/ACC TO-3PB 1
Q415*B	2SC3519Y	6621037000	TR. NPN HF	2SC3519Y W/ACC TO-3PB 1
Q416*A	2SC2837	6621008000	TR. NPN HF	2SC2837 W/ACC TO-3PB 1
Q416*B	2SC3519Y	6621037000	TR. NPN HF	2SC3519Y W/ACC TO-3PB 1
Q417*A	2SA1186	6623003500	TR. PNP HF	2SA1186 W/ACC TO-3PB 1
Q417*B	2SA1386Y	6623012600	TR. PNP HF	2SA1386Y W/ACC TO-3PB 1
Q418*A	2SA1186	6623003500	TR. PNP HF	2SA1186 W/ACC TO-3PB 1
Q418*B	2SA1386Y	6623012600	TR. PNP HF	2SA1386Y W/ACC TO-3PB 1
Q507*A	2SD669AC	6622012802	TR. NPN LF	2SD669AC W/ACC TO-126 1
Q507*B	2SC3421Y	6621002600	TR. NPN HF	2SC3421Y 1
Q507*C	5547024210	5547024210	HEAT SINK	NAD-7220/3220 1
Q508*A	2SB649A-C	6624009401	TR. PNP LF	2SB649A-C 1W 160V 1
Q508*B	2SA1358Y	6623001700	TR. PNP HF	2SA1358Y 1
Q508*C	5547024210	5547024210	HEAT SINK	NAD-7220/3220 1
Q509	2SC1815-Y	6621015332	TR. NPN HF	2SC1815-Y TPE2 1
Q510	2SA1015-Y	5563002050	TR. PNP HF	2SA1015-Y TPE2 TAPING 1
Q511	BD139	6622016700	TR. NPN LF	BD139 W/ACC TO-126 1
Q516	2SC2240-GR	6621016701	TR. NPN HF	2SC2240-GR LOW NOISE 1
RESISTORS				
R201, R202	5142833490	5142833490	RES. CARBON FILM	330KJ +/-5% 1/4W 2
R203, R204	5142856390	5142856390	RES. CARBON FILM	56KJ +/-5% 1/4W 2
R205, R206	5142847290	5142847290	RES. CARBON FILM	4.7KJ +/-5% 1/4W 2
R207, R208	5142810390	5142810390	RES. CARBON FILM	10KJ +/-5% 1/4W 2
R209, R210	5142868190	5142868190	RES. CARBON FILM	680J +/-5% 1/4W 2
R211, R212	5142810390	5142810390	RES. CARBON FILM	10KJ +/-5% 1/4W 2
R213, R214	5142868290	5142868290	RES. CARBON FILM	6.8KJ +/-5% 1/4W 2
R215, R216	5141822190	5141822190	RES. CARBON FILM	220G +/-2% 1/4W 2
R217, R218	5141813490	5141813490	RES. CARBON FILM	130KG +/-2% 1/4W 2
R219, R220	5141811390	5141811390	RES. CARBON FILM	11KG +/-2% 1/4W 2
R221, R222	5141818190	5141818190	RES. CARBON FILM	180G +/-2% 1/4W 2
R223, R224	5142822390	5142822390	RES. CARBON FILM	22KJ +/-5% 1/4W 2
R225, R228	5142810390	5142810390	RES. CARBON FILM	10KJ +/-5% 1/4W 4
R229, R230	5142847190	5142847190	RES. CARBON FILM	470J +/-5% 1/4W 2
R231, R232	5142810190	5142810190	RES. CARBON FILM	100J +/-5% 1/4W 2
R223, R224	5142815190	5142815190	RES. CARBON FILM	150J +/-5% 1/4W 2
R235, R236	5142868190	5142868190	RES. CARBON FILM	680J +/-5% 1/4W 2
R237, R238	5142847190	5142847190	RES. CARBON FILM	470J +/-5% 1/4W 2
R239, R240	5142810290	5142810290	RES. CARBON FILM	1.0KJ +/-5% 1/4W 2
R303, R304	5142822490	5142822490	RES. CARBON FILM	220KJ +/-5% 1/4W 2
R305, R306	5142891390	5142891390	RES. CARBON FILM	91KJ +/-5% 1/4W 2
R307, R308	5142839190	5142839190	RES. CARBON FILM	390J +/-5% 1/4W 2
R309, R310	5142839290	5142839290	RES. CARBON FILM	3.9KJ +/-5% 1/4W 2
R311, R312	5142815390	5142815390	RES. CARBON FILM	15KJ +/-5% 1/4W 2
R313, R316	5142868290	5142868290	RES. CARBON FILM	6.8KJ +/-5% 1/4W 4
R319, R322	5142868090	5142868090	RES. CARBON FILM	68J +/-5% 1/4W 4
R323, R324	5142810290	5142810290	RES. CARBON FILM	1.0KJ +/-5% 1/4W 2
R325, R326	5142818190	5142818190	RES. CARBON FILM	180J +/-5% 1/4W 2
R329, R330	5141839290	5141839290	RES. CARBON FILM	3.9KG +/-2% 1/4W 2
R331, R332	5141868190	5141868190	RES. CARBON FILM	680G +/-2% 1/4W 2
R333, R334	5142822190	5142822190	RES. CARBON FILM	220J +/-5% 1/4W 2
R335, R336	5142810490	5142810490	RES. CARBON FILM	100KJ +/-5% 1/4W 2
VAR. RES.				
R339	RK16312AR294	5169020482	VAR. RES.	20KAx2 VOLUME 1

NAD-302 PARTS LIST

SYMBOL NO	REF. NO.	PART NO.	DESCRIPTION	Q'TY
R340	RK163121A144	5169020492	VAR. RES. 50KCx2 BASS	1
R341	RK163121A161	5169020502	VAR. RES. 10KCx2 TREBLE	1
R342	RK163111E293	5169010612	VAR. RES. 10KW BALANCE	1
R411, R412	PN06FB221AR	5162160420	VAR. RES. 220 F5x5	2
R443, R444	PN06FB221AR	5162160420	VAR. RES. 220 F5x5	2
RESISTORS				
R344	5142810390	5142810390	RES. CARBON FILM 10KJ +/-5% 1/4W	1
R345-R358	5142810290	5142810290	RES. CARBON FILM 1.0KJ +/-5% 1/4W	14
R361, R362	5142827290	5142827290	RES. CARBON FILM 2.7KJ +/-5% 1/4W	2
R363, R364	5141868190	5141868190	RES. CARBON FILM 680G +/-2% 1/4W	2
R365, R366	5141839290	5141839290	RES. CARBON FILM 3.9KG +/-2% 1/4W	2
R401, R402	5142822490	5142822490	RES. CARBON FILM 220KJ +/-5% 1/4W	2
R405, R406	5142839190	5142839190	RES. CARBON FILM 390J +/-5% 1/4W	2
R407-R410	5142822390	5142822390	RES. CARBON FILM 22KJ +/-5% 1/4W	4
R415, R416	5142833190	5142833190	RES. CARBON FILM 330J +/-5% 1/4W	2
R417, R418	5142827390	5142827390	RES. CARBON FILM 27KJ +/-5% 1/4W	2
R419, R420	5142839190	5142839190	RES. CARBON FILM 390J +/-5% 1/4W	2
R421, R422	5142815290	5142815290	RES. CARBON FILM 1.5KJ +/-5% 1/4W	2
R423, R424	5142822290	5142822290	RES. CARBON FILM 2.2KJ +/-5% 1/4W	2
R425, R426	5142839190	5142839190	RES. CARBON FILM 390J +/-5% 1/4W	2
R427, R428	5142827090	5142827090	RES. CARBON FILM 27J +/-5% 1/4W	2
R429, R430	5130347103	5130347103	RES. METAL OXIDE FILM MINI 470J +/-5% 1W	2
R431, R432	5142418290	5142418290	RES. CARBON FILM 1.8KJ +/-5% 1/2W	2
R433, R434	5142847090	5142847090	RES. CARBON FILM 47J +/-5% 1/4W	2
R435, R436	5142839190	5142839190	RES. CARBON FILM 390J +/-5% 1/4W	2
R437, R438	5133868003	5133868003	RES. FUSIBLE 68J +/-5% 1/4W 14A	2
R439, R440	5133882103	5133882103	RES. FUSIBLE 820J +/-5% 1/4W 14A	2
R441, R442	5133827103	5133827103	RES. FUSIBLE 270J +/-5% 1/4W 14A	2
R445, R446	5142812190	5142812190	RES. CARBON FILM 120J +/-5% 1/4W	2
R447-R450	5142412290	5142412290	RES. CARBON FILM 1.2KJ +/-5% 1/2W	4
R453, R454	5133818103	5133818103	RES. FUSIBLE 180J +/-5% 1/4W 14A	2
R455, R456	5142801090	5142801090	RES. CARBON FILM 1.0J +/-5% 1/4W	2
R457, R458	5130310003	5130310003	RES. METAL OXIDE FILM MINI 10J +/-5% 1W	1
R461, R462	5142822490	5142822490	RES. CARBON FILM 220KJ +/-5% 1/4W	2
R463, R464	5130333903	5130333903	RES. METAL OXIDE FILM MINI 3.3J +/-5% 1W	2
R511	5130310003	5130310003	RES. METAL OXIDE FILM MINI 10J +/-5% 1W	1
R512	5130410103	5130410103	RES. METAL OXIDE FILM MINI 100J +/-5% 2W	1
R513	5142815290	5142815290	RES. CARBON FILM 1.5KJ +/-5% 1/4W	1
R514	5142812290	5142812290	RES. CARBON FILM 1.2KJ +/-5% 1/4W	1
R515	5142815290	5142815290	RES. CARBON FILM 1.5KJ +/-5% 1/4W	1
R516-R518	5142812290	5142812290	RES. CARBON FILM 1.2KJ +/-5% 1/4W	3
R519	5142836290	5142836290	RES. CARBON FILM 3.6KJ +/-5% 1/4W	1
R520	5142812390	5142812390	RES. CARBON FILM 12KJ +/-5% 1/4W	1
R521	5142810190	5142810190	RES. CARBON FILM 100J +/-5% 1/4W	1
R522	5142812290	5142812290	RES. CARBON FILM 1.2KJ +/-5% 1/4W	1
R523	5133812103	5133812103	RES. FUSIBLE 120J +/-5% 1/4W 14A	1
R524	5142812390	5142812390	RES. CARBON FILM 12KJ +/-5% 1/4W	1
R536	5142847390	5142847390	RES. CARBON FILM 47KJ +/-5% 1/4W	1
R601	5142812290	5142812290	RES. CARBON FILM 1.2KJ +/-5% 1/4W	1
R602	5142839190	5142839190	RES. CARBON FILM 390J +/-5% 1/4W	1
R603, R604	5142815490	5142815490	RES. CARBON FILM 150KJ +/-5% 1/4W	2
R605, R606	5142822690	5142822690	RES. CARBON FILM 22MJ +/-5% 1/4W	2
R801-R804	5142818290	5142818290	RES. CARBON FILM 1.8KJ +/-5% 1/4W	4
R805-R808	5142810290	5142810290	RES. CARBON FILM 1.0KJ +/-5% 1/4W	4
R809-R812	5142818390	5142818390	RES. CARBON FILM 18KJ +/-5% 1/4W	4
SWITCHES				
S201	SPUN61K004	5554441100	6P PUSH SWITCH INPUT SELECTOR	1
S301	SPUN12K801	5554440700	1P PUSH SWITCH TONE DEFEAT	1
S801	FZUB22-10	5554431800	SLIDE SWITCH SOFT CLIPPING	1
=====				
SPEAKER TERMINAL PCB BLOCK (5090906193) NAD-302				
C445, C446	5231810391	5231810391	CAP. CER. 10000PFZ +80-20% 50V	2
C447, C448	5231515291	5231515291	CAP. CER. 1500PFM +/-20% 50V	2
P401	5556207301	5556207301	SPEAKER TERMINAL NAD-302	1
=====				
PHONES PCB BLOCK (5090906194) NAD-302				
C449-C451	5231522291	5231522291	CAP. CER. 2200PFM +/-20% 50V	2
R459, R460	5142422190	5142422190	RES. CARBON FILM 220J +/-5% 1/2W	2
W401	5556307000	5556307000	JACK EARPHONE S-G3338 & JY-062-1-D 6.3MM	1
=====				
MAINS POWER SELECT PCB BLOCK (5090906195) NAD-302				
C501	5230102701	5230102701	CAP. CER. 4700PFM +/-20% 400V	1
P521-P528	5547034400	5547034400	FLAT PIN 1.7x1.7x9.4 NAD-7100/2100	8
S501	SDDL81007U	5554436100	PUSH SWITCH POWER UL/CSA	1
S502	SBN22-09	5554432400	SLIDE SWITCH IMPEDANCE	1
T501	5561321600	5561321600	POWER TRANSFORMER NAD-302	1
=====				
LED PCB BLOCK (5090906196) NAD-302				
D512	L-424GDT	6618015700	DIODE LED GREEN	1

PACKING DIAGRAM



ITEM	PARTS NO.	DESCRIPTION	Q'TY
37	9520980155	EPS PAD-R	1
38	9520980255	EPS PAD-L	1
39	9530700155	EPE BAG	1
40	5535122577	OWNERS MANUAL	1
41	9510980155	RS CARTON	1

Proprietary information for servicing purposes only. The information herein may not be used commercially without the prior written agreement of NAD Electronics Ltd., London, England.