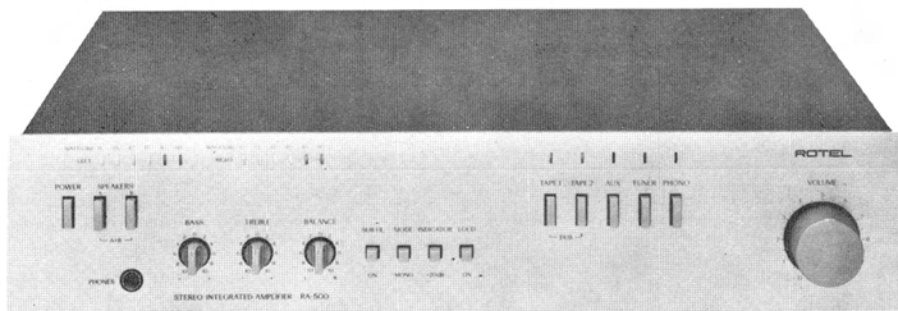


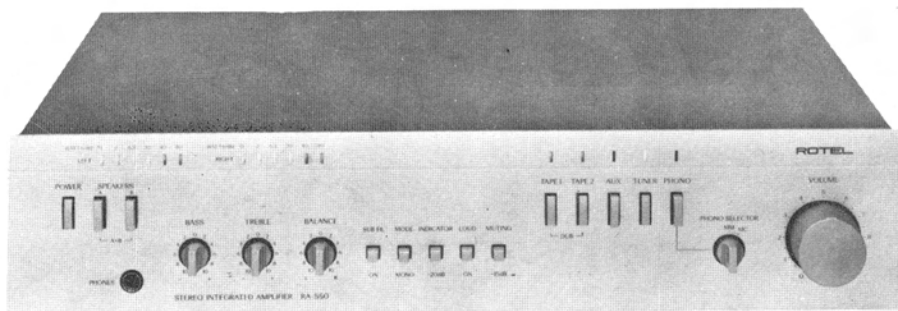
# ROTEL®

## Technical Manual



STEREO INTEGRATED AMPLIFIER

# RA-500



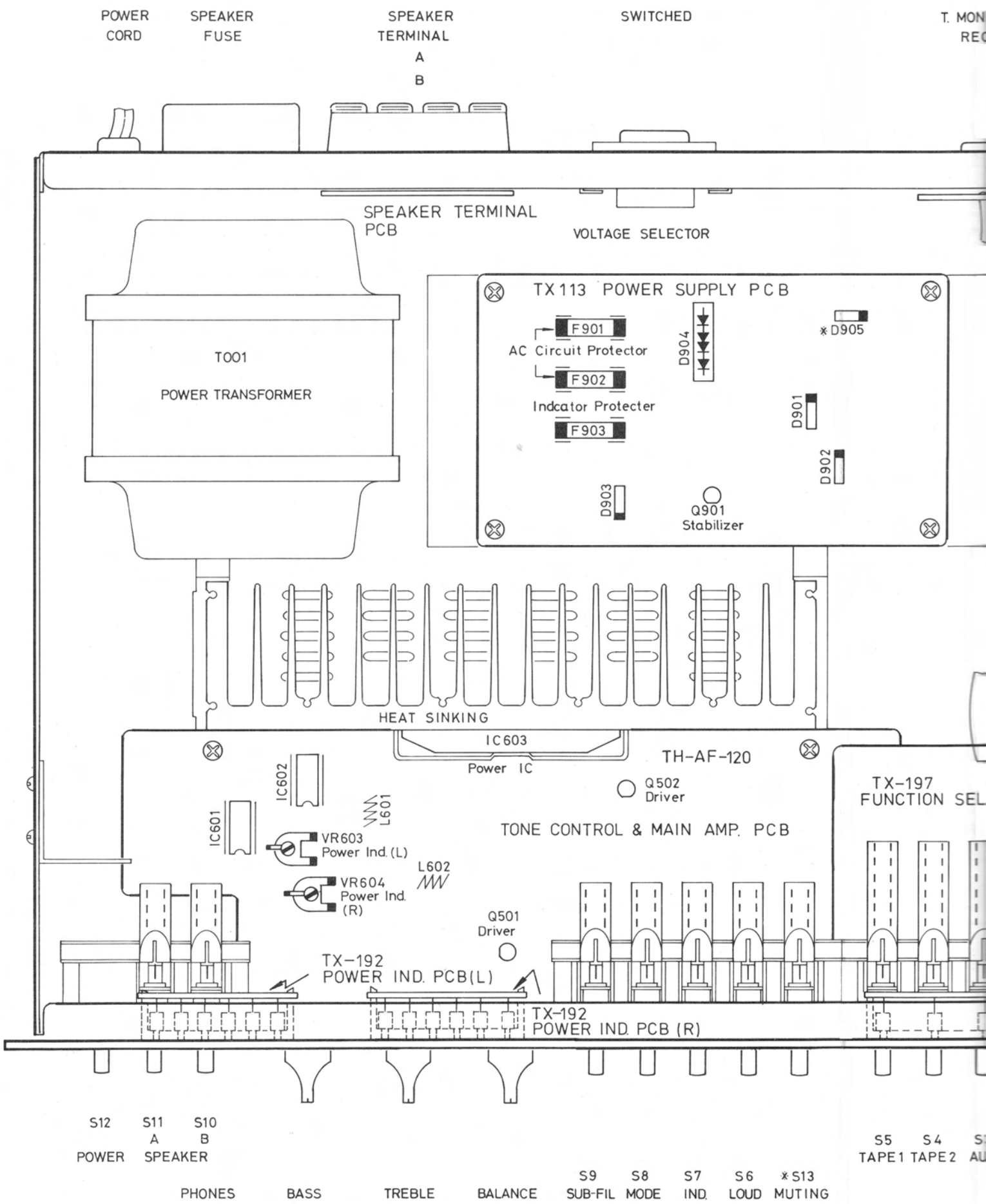
STEREO INTEGRATED AMPLIFIER

# RA-550

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# Chassis Layout



POWER  
CORD

SPEAKER  
FUSE

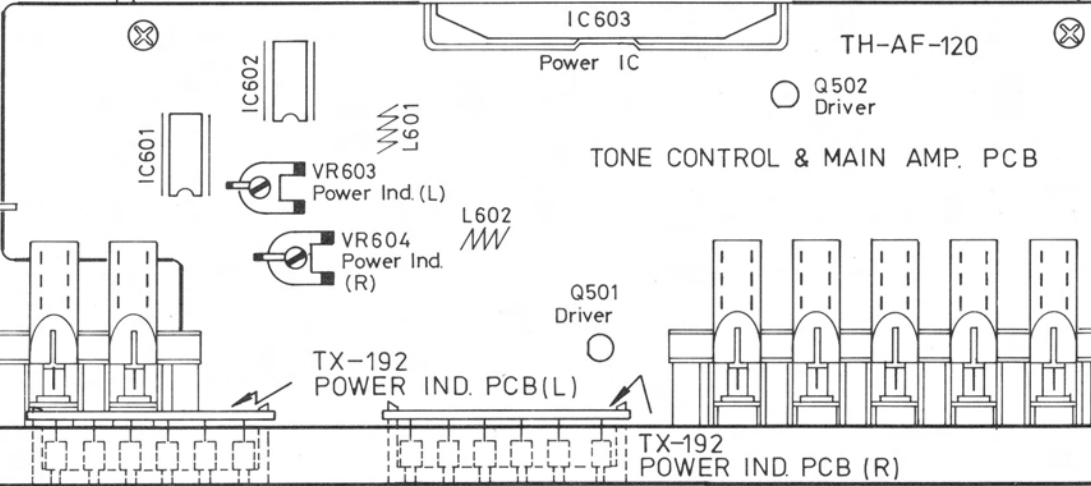
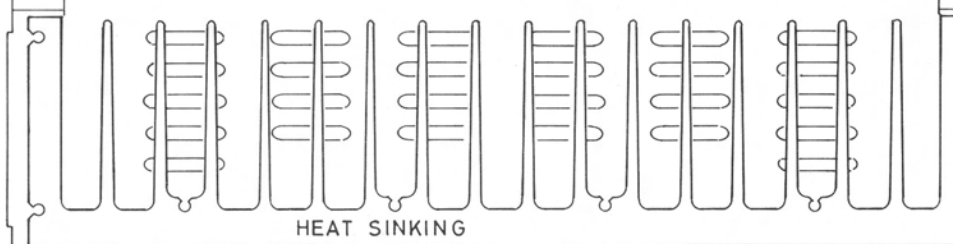
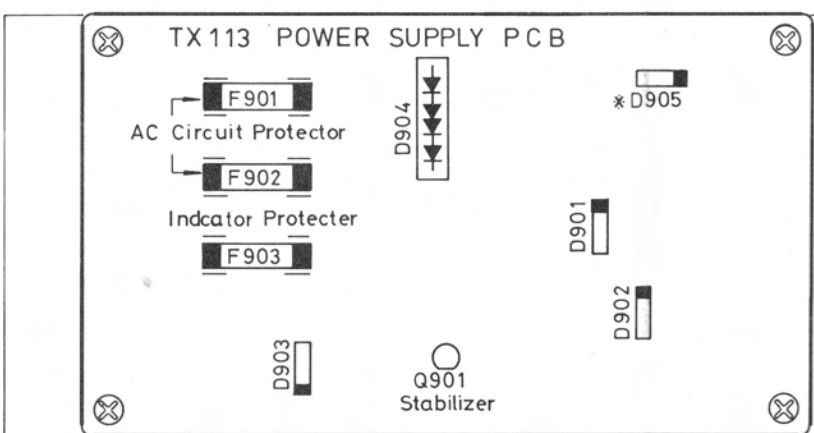
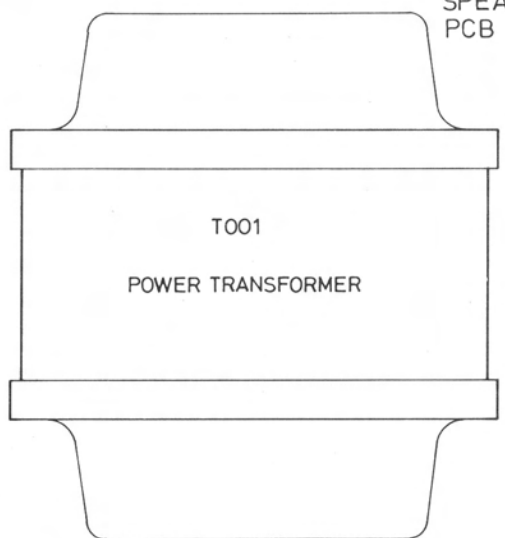
SPEAKER  
TERMINAL  
A  
B

SWITCHED

T. MON  
REC

SPEAKER TERMINAL  
PCB

VOLTAGE SELECTOR



S12  
POWER

S11  
A  
SPEAKER

S10  
B

PHONES

BASS

TREBLE

BALANCE

S9  
SUB-FIL

S8  
MODE

S7  
IND.

S6  
LOUD

\*S13  
MUTING

S5  
TAPE 1

S4  
TAPE 2

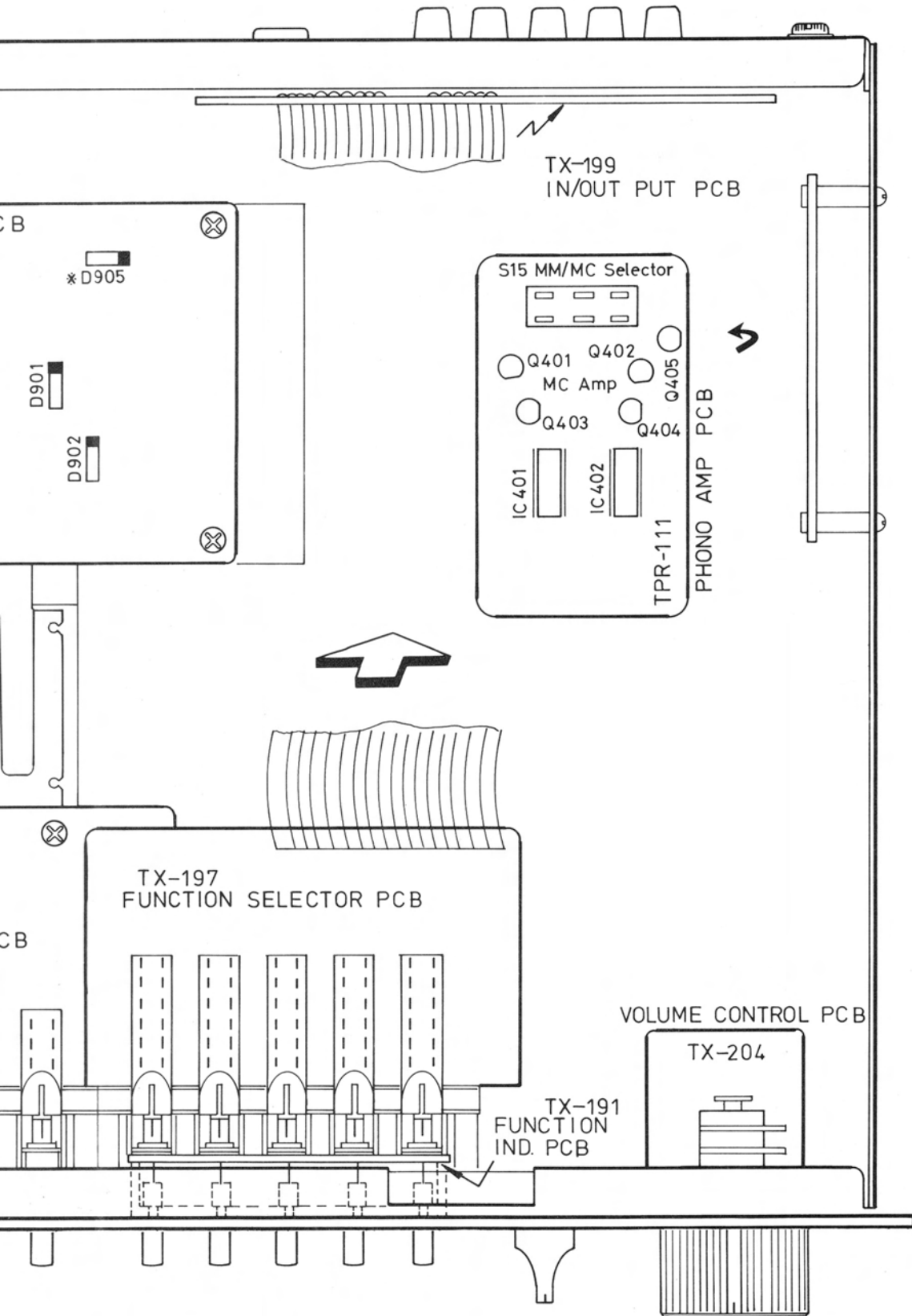
S3  
AU

T. MONITOR 2  
REC/PB

T. MONITOR 1 AUX TUNER PHONO  
OUT IN

GND

L  
R



S5 TAPE1 S4 TAPE2 S3 AUX S2 TUNER S1 PHONO

\*S13  
MUTING

\*S14  
MM/MC

VOLUME

# Power Indicator Calibration

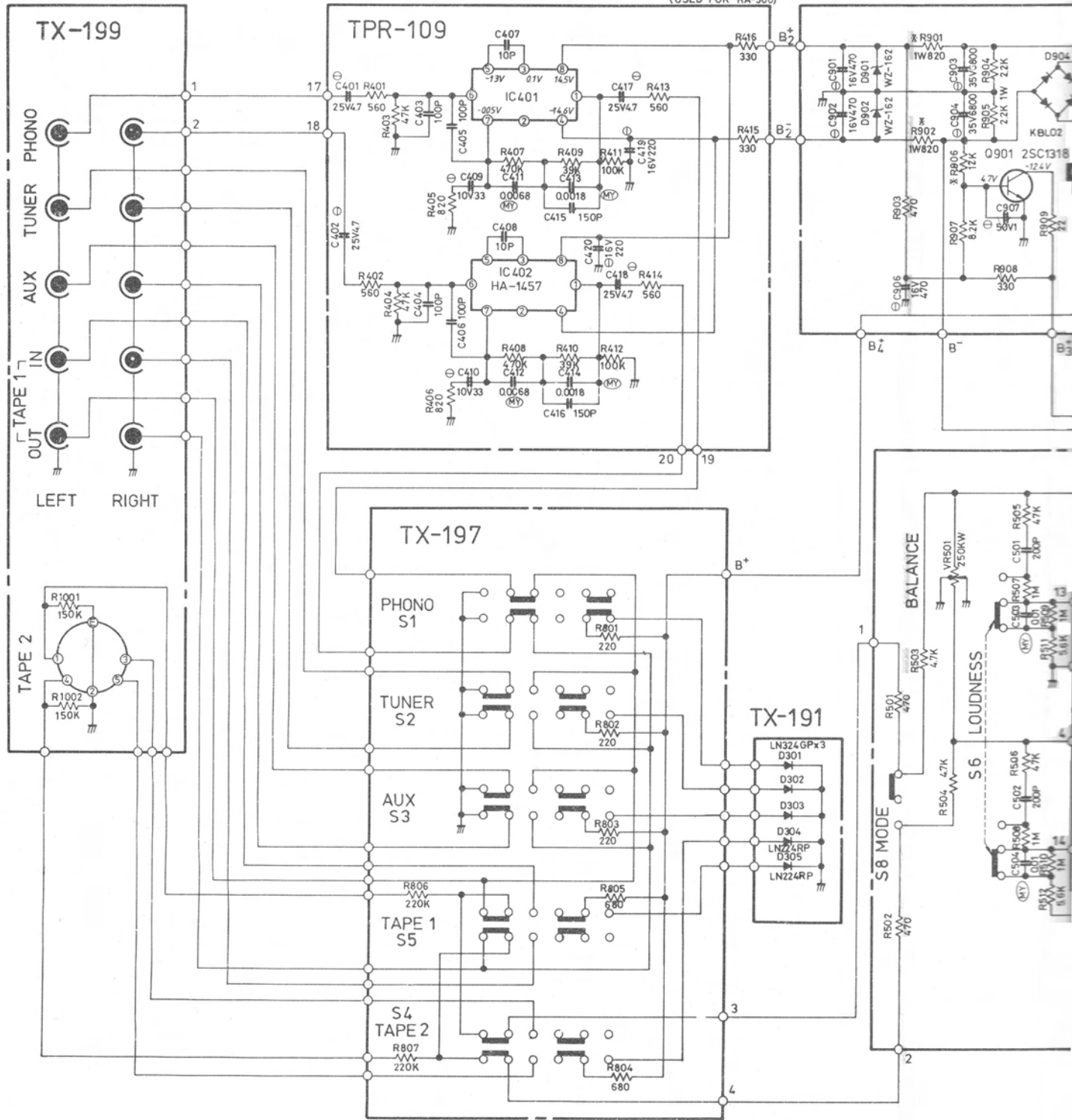
## **Instruments: Audio Generator and AC VTVM**

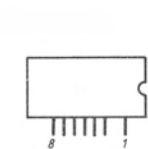
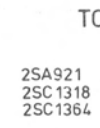
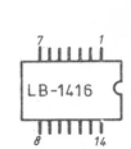
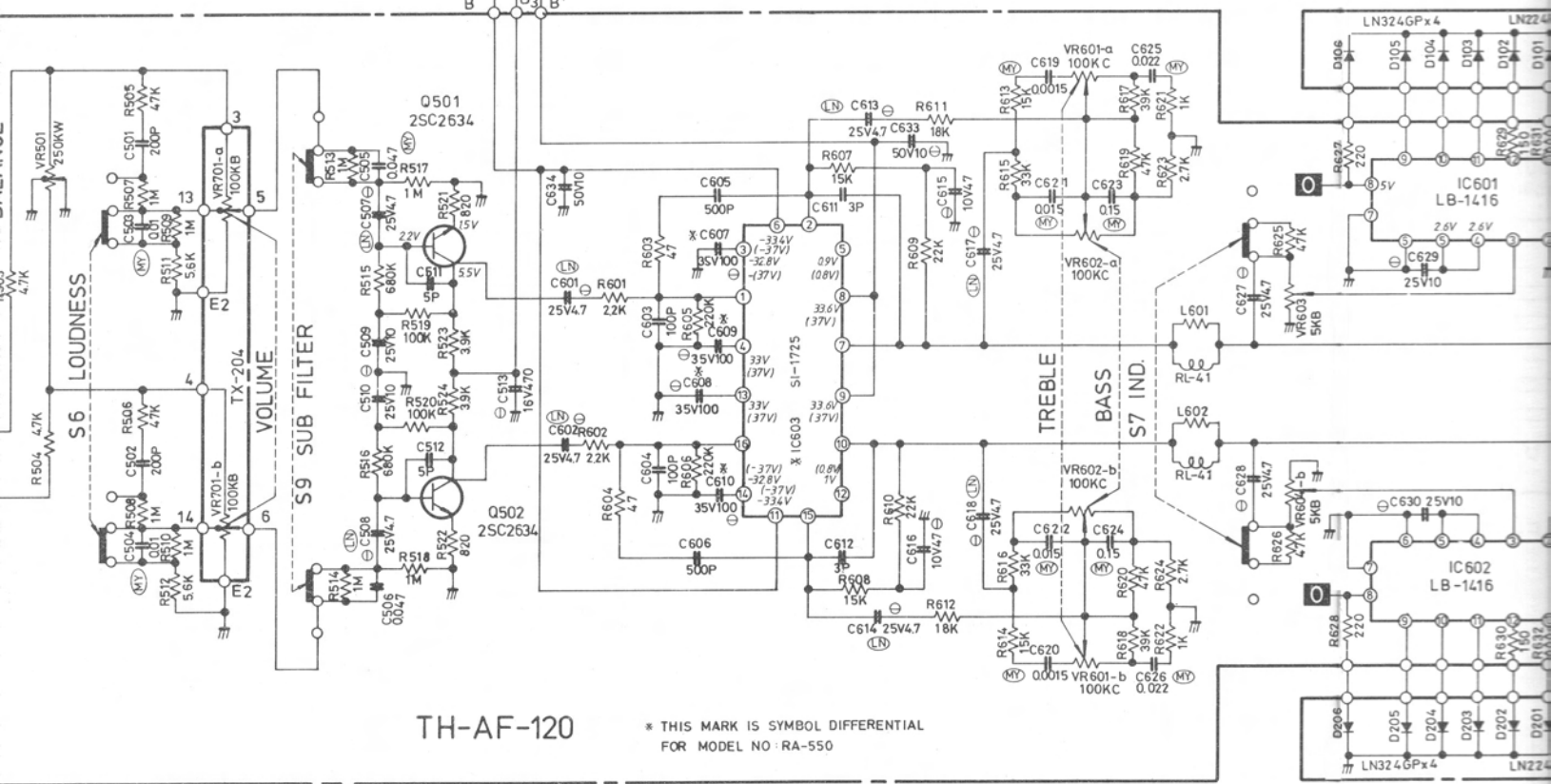
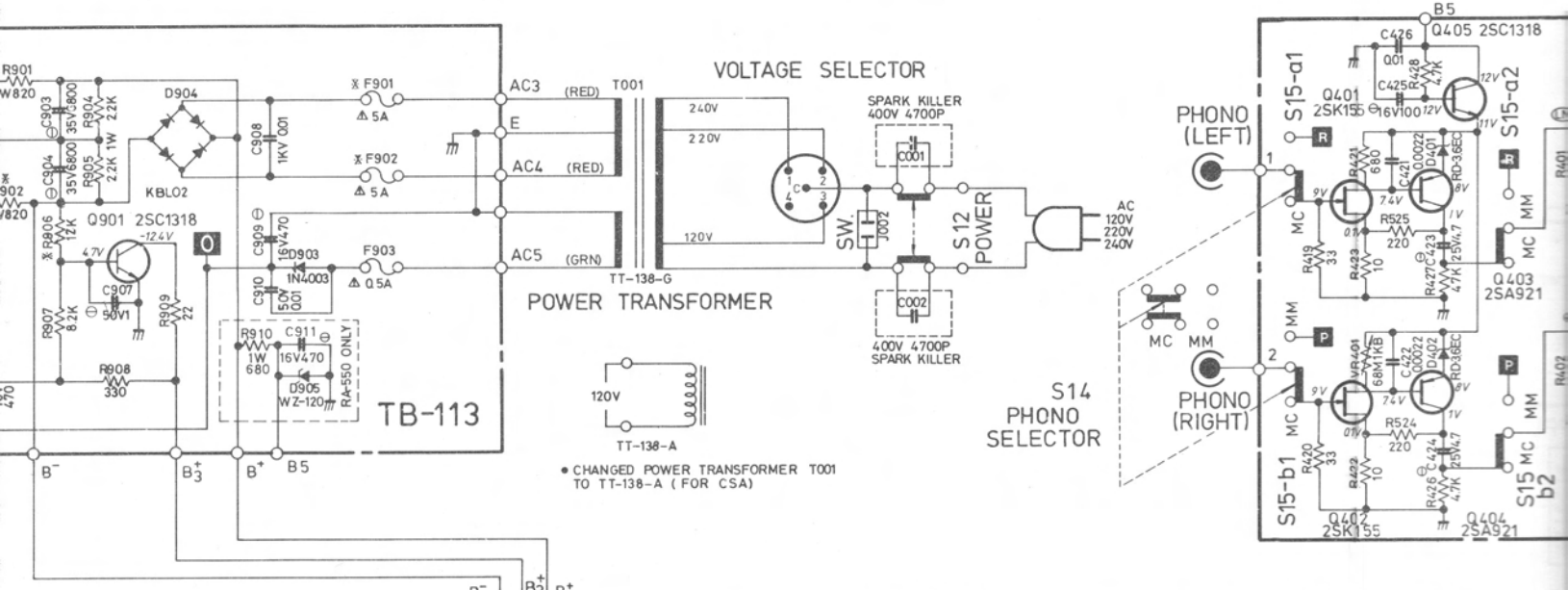
- Set AUX Switch to "ON" position.
  - Set VOLUME Control to Max. position.
  - Set Tone Control Switch to Defeat position.
1. Connect 8 ohm 50W resistor to R-ch and L-ch at Speaker-A terminals.
  2. Connect AC VTVM in parallel with this 8 ohm load of L-ch or R-ch.
  3. Connect Audio Generator to Input terminal of L-ch or R-ch, and apply 1KHz (sine wav signals. Adjust input level so that reading on AC VTVM is 15.5V 30W/8 ohm).
  4. Adjust Potentiometer VR603 (L-ch) or VR604 (R-ch) so that Power Indicator must be light up until fifth LED (30W)
  5. Reduce input level (-20dB) then set INDICATOR Switch to "ON" position. This Power Indicator will be restore as same as above step 4.

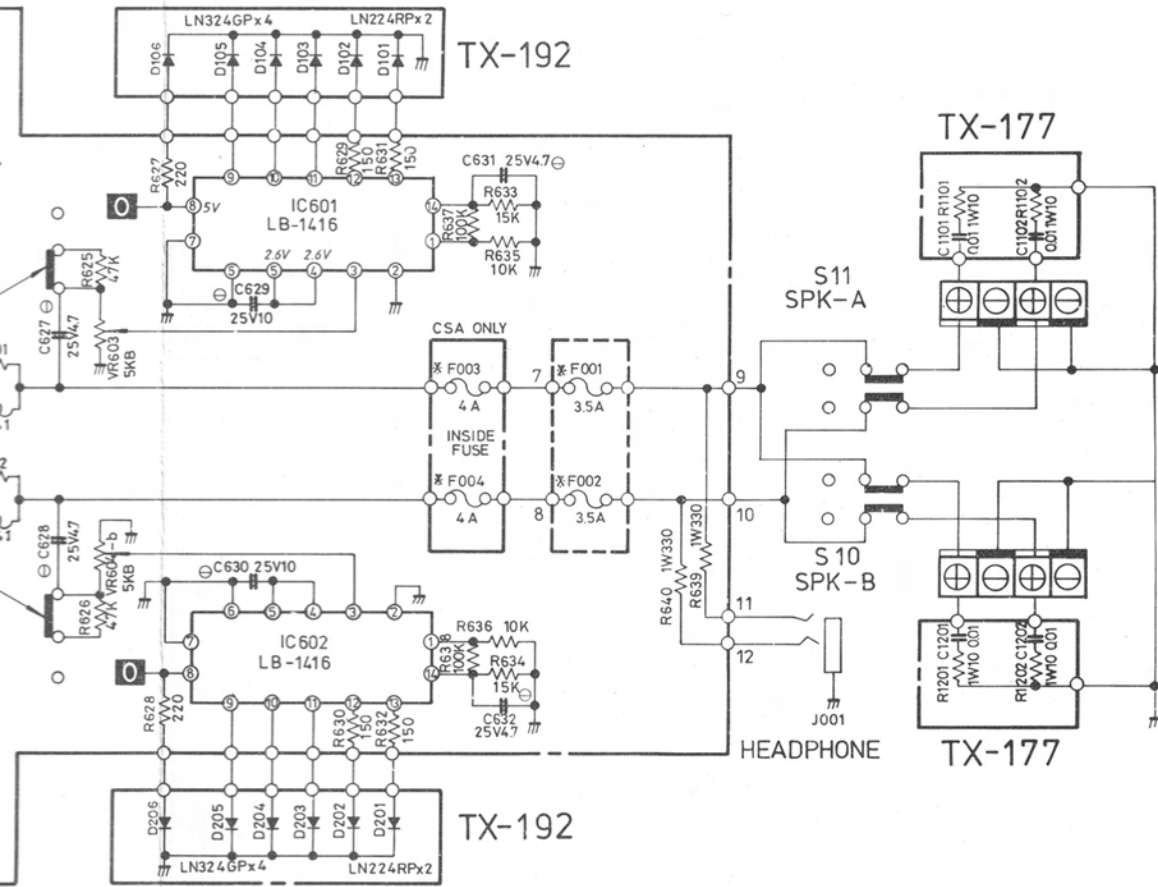
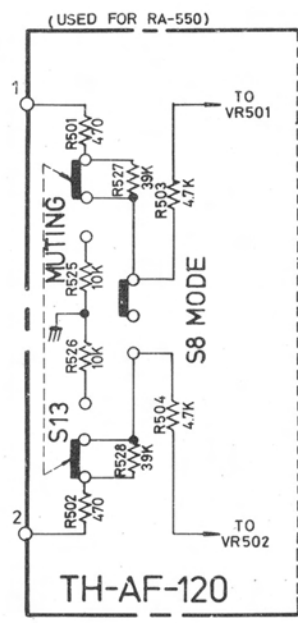
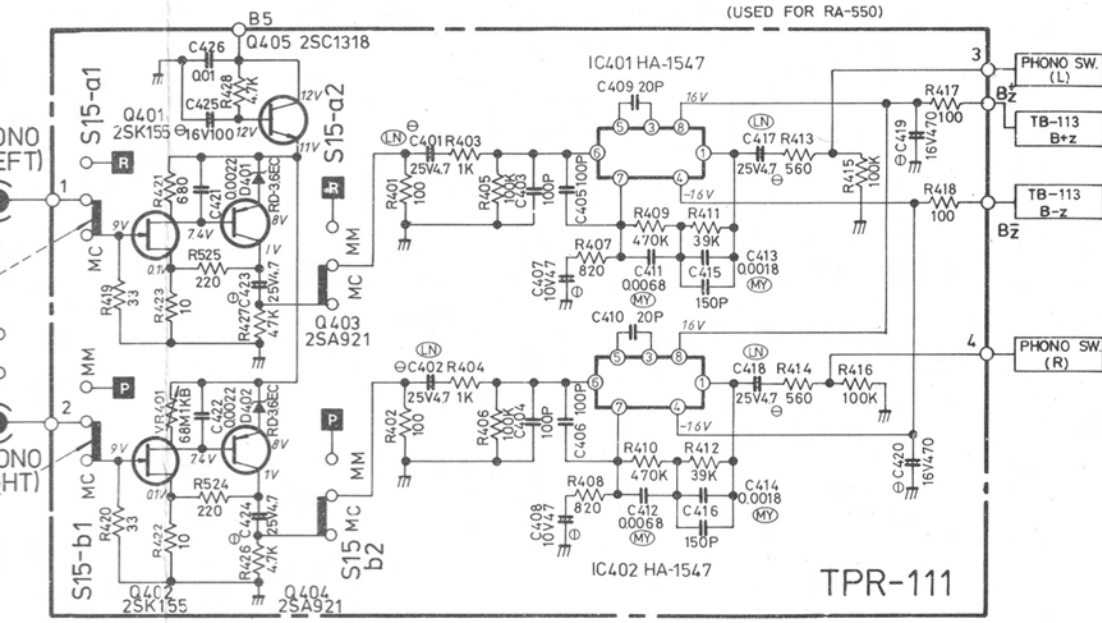
# Schematic Diagram

NOTE: PARTS AND CIRCUIT SUBJECT TO CHANGE FOR IMPROVEMENT WITHOUT PRIOR NOTICE

(USED FOR RA-500)







	RA-500	RA-550
C903,904	35V6800	50V6800
R901 902	1W820	1W 1K
R906	12K	15K
F 901, 902	5A	6A
C607-8,609-10	35V100	50V100
IC 603	SI-1725HD	SI-1735HD
F001,002	3.5A	4A
F003,004	4A	4.5A

ITEM	SCHEMATIC LOCATION(LAST)	
PHONO AMP (RA500)	R416	C420
PHONO AMP (RA550)	R428	C426
TONE CONTROL (RA500)	R524	C513
TONE CONTROL (RA550)	R528	C513
MAIN AMP	R640	C634
FUNCTION SELECTOR	R807	—
POWER SUPPLY (RA500)	R909	C910
POWER SUPPLY (RA550)	R910	C911
IN OUT PUT	R1002	—
SPEAKER TERMINAL (L)	R1102	C1102
SPEAKER TERMINAL (R)	R1202	C1202

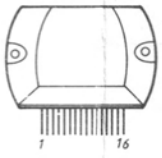
NO	SI-1725HD	SI-1735HD
3	-33.4V	-37V
4	33V	37V
5	0.9V	0.8V
6	-33.4V	-37V
8	33.6V	37V
9	33.6V	37V
11	-33.4V	-37V
12	1V	0.8V
13	33V	37V
14	-33.4V	-37V

CAPACITORS

- MY --- MYLAR FILM CAPACITORS
- M --- ELECTROLYTIC CAPACITORS
- LN --- LOW NOISE TYPE CAPACITORS
- UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED IN MFD

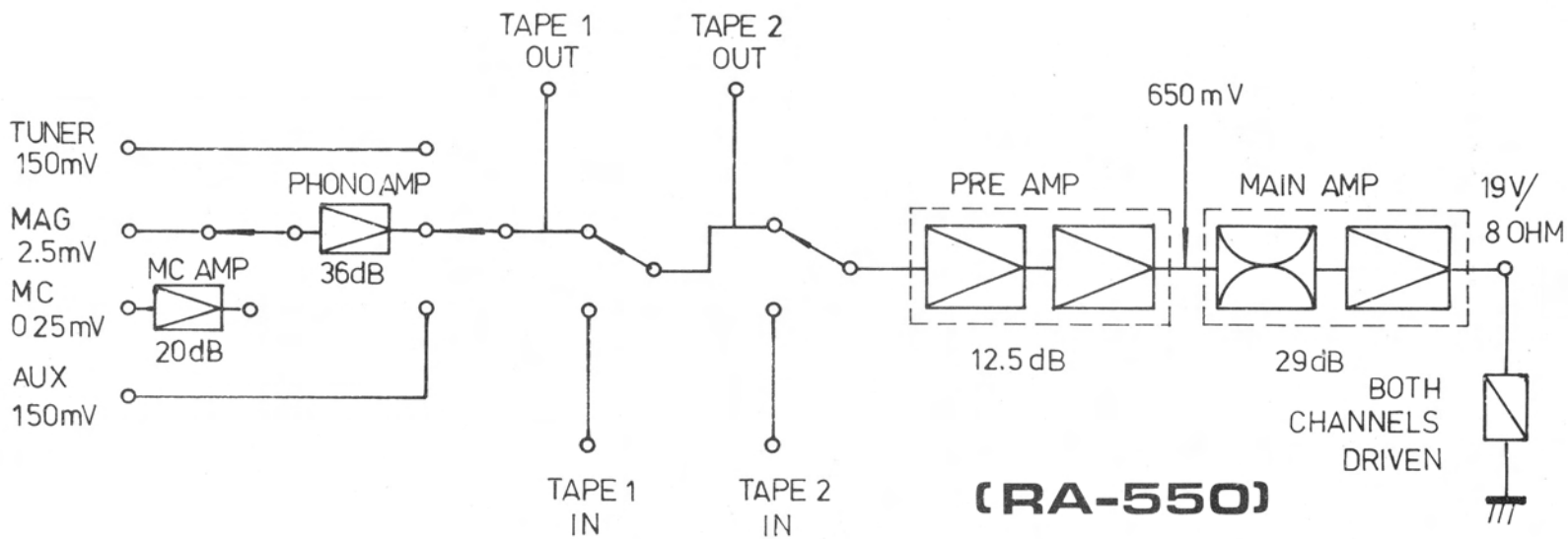
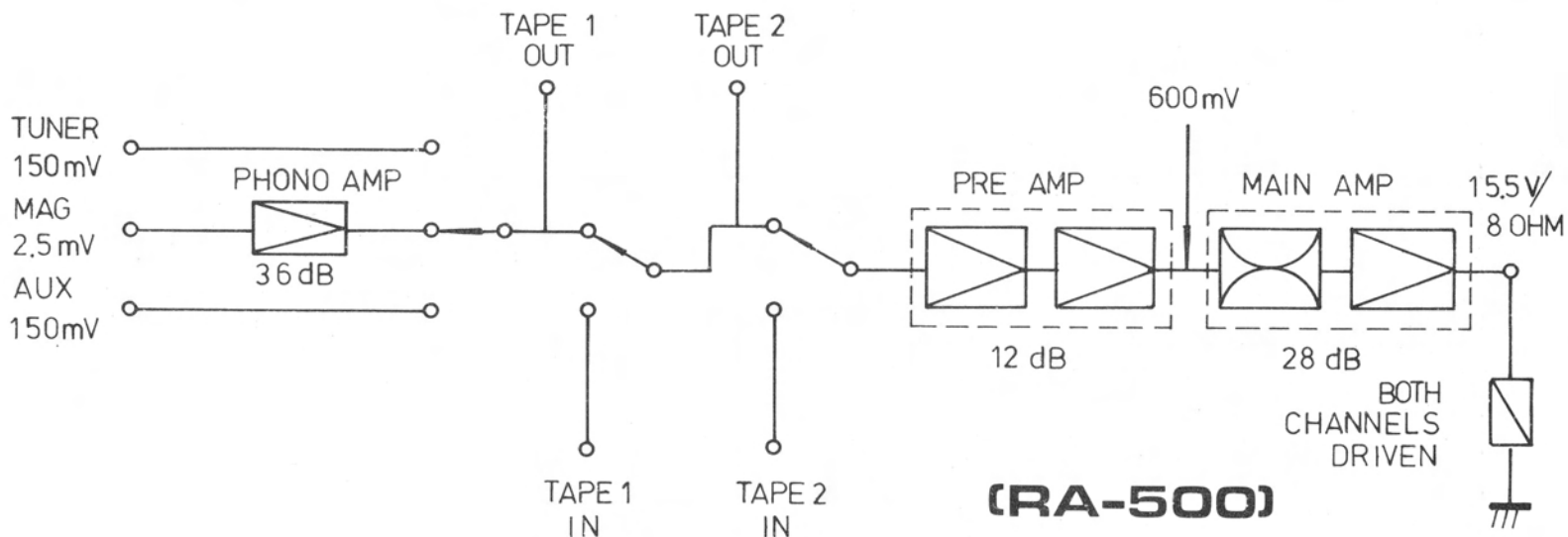
RESISTORS

- K --- KILO OHM
- M --- MEGA OHM
- NON MARK --- LOW NOISE CARBON RESISTORS 1/4 WATT.



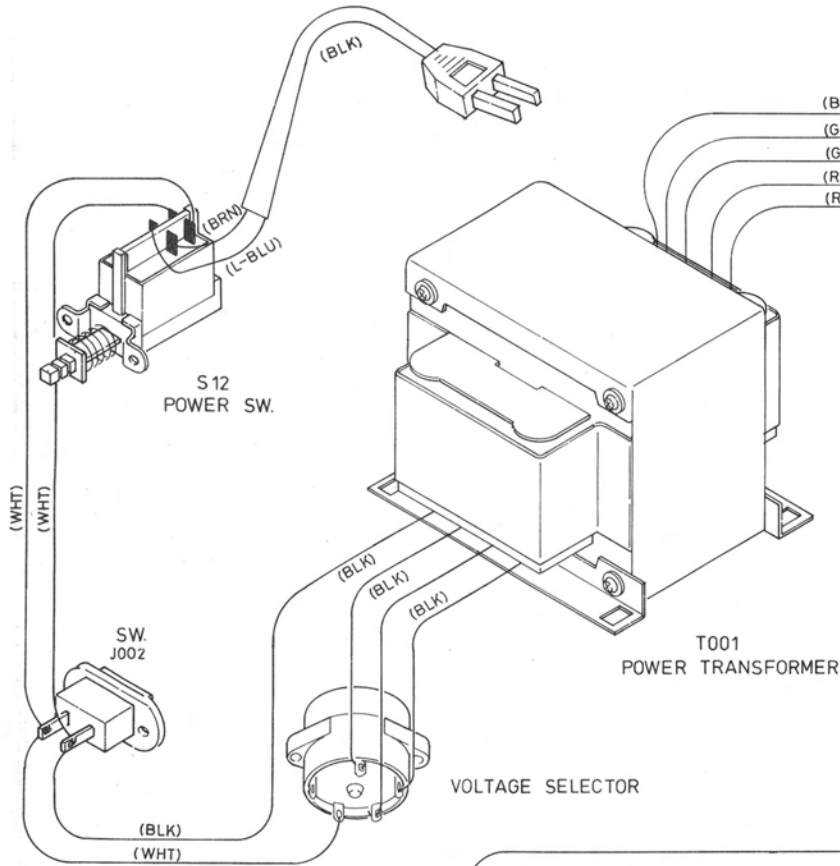
SI-1725  
SI-1735HD

# Gain Diagram

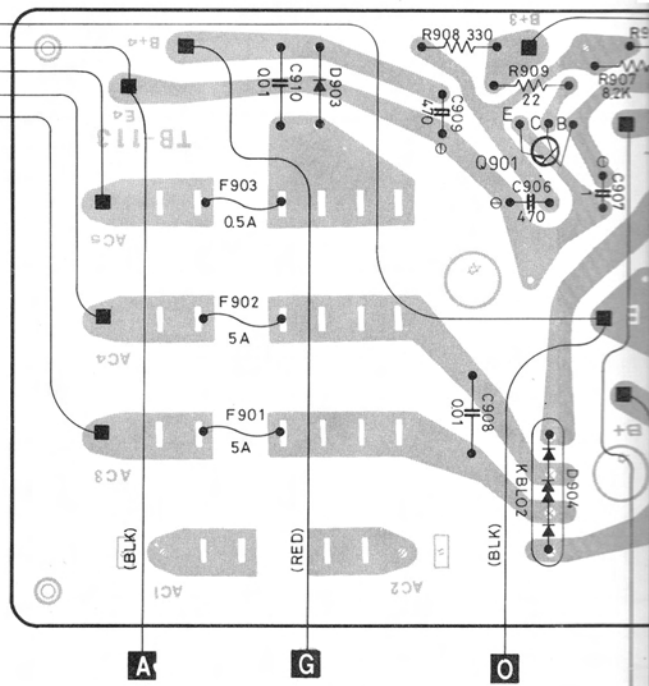




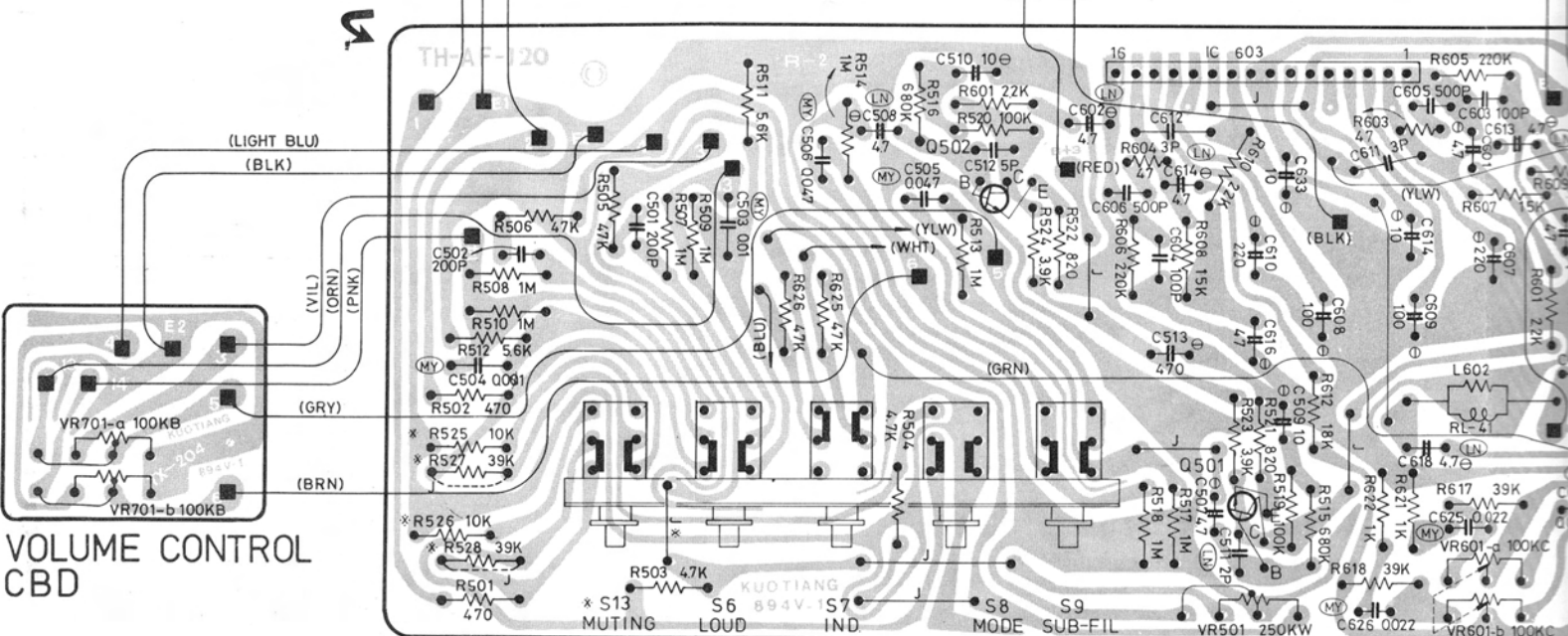
# Wiring Diagram



## POWER SUPPLY CIRCUIT BOARD

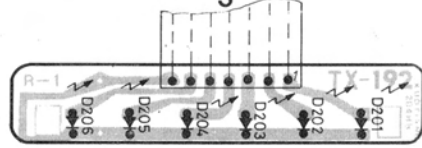
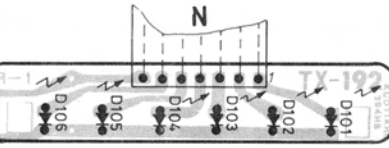


## tone control and main amp circuit board diagram

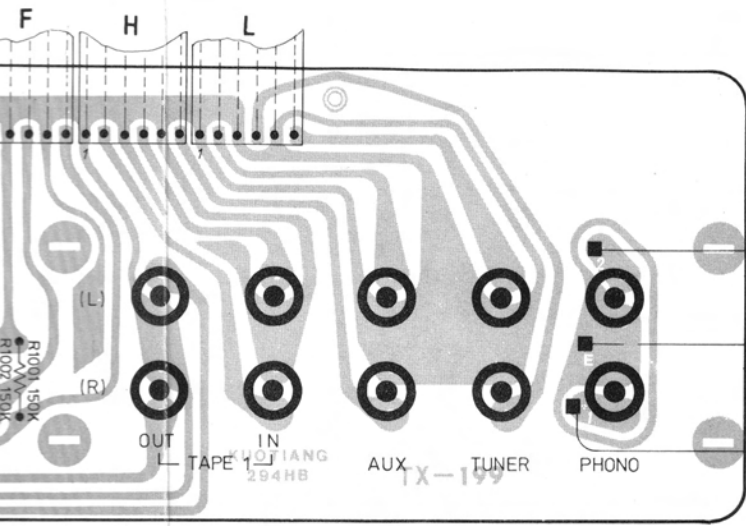


## POWER INDICATOR CBD (LEFT)

## POWER INDICATOR CBD (RIGHT)

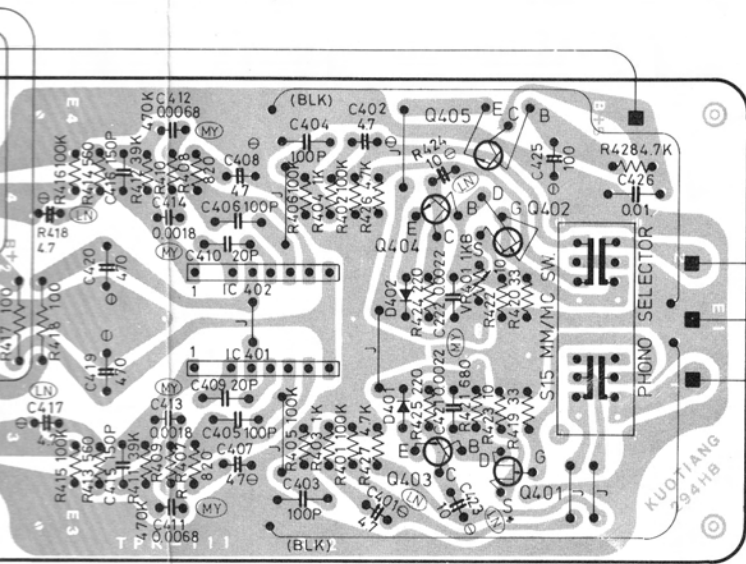






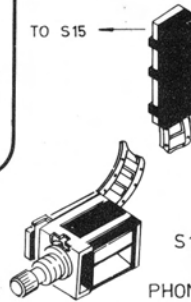
FOR RA-500

1. CANCELED SW 13, 14, AND 15
2. CANCELED MARK \* SYMBOL
3. ADDED JOINER J1 J2 J3 AND DOT LINE
4. CHANGED PHONO PCB FROM TPR-111 TO TPR-109

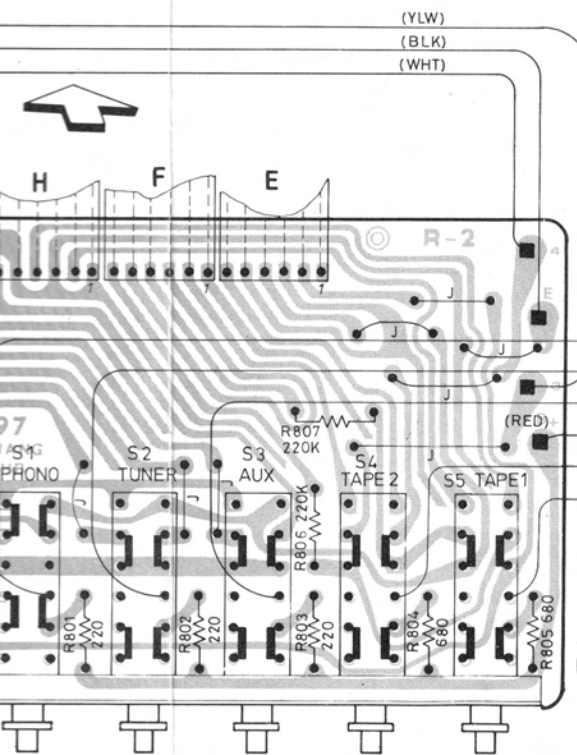


(WHT)  
(BLK)  
(YLW)

TO S15



S14  
PHONO SELECTOR



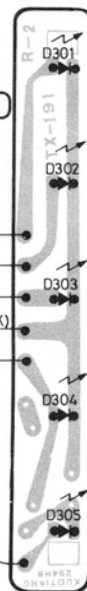
(YLW)  
(BLK)  
(WHT)

FUNCTION SELECTOR CIRCUIT BOARD DIAGRAM









(YLW)  
(WHT)  
(YLW)  
(RED) G A (BLK)  
(WHT)  
(YLW)

FUNCTION IND. CBD

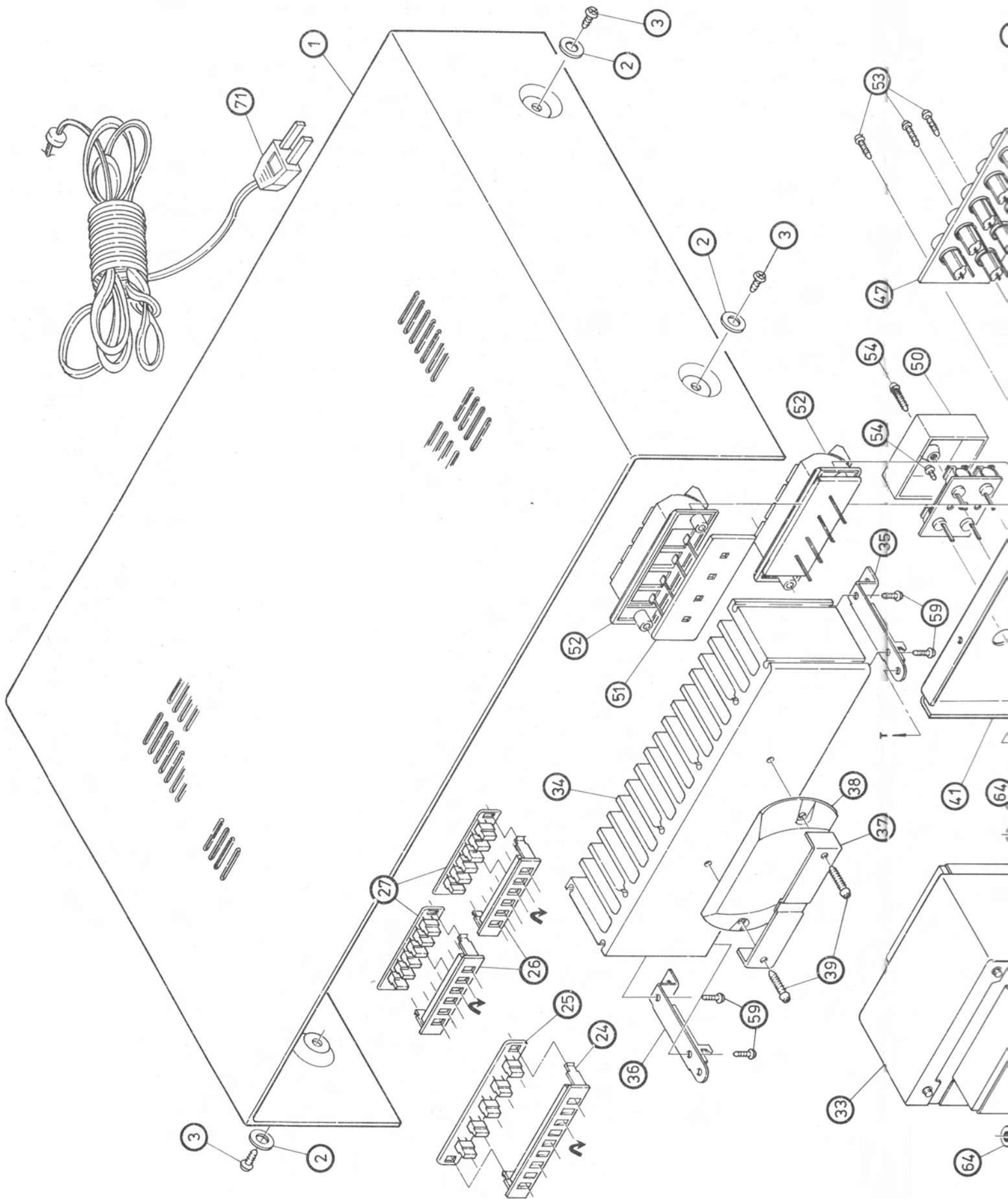


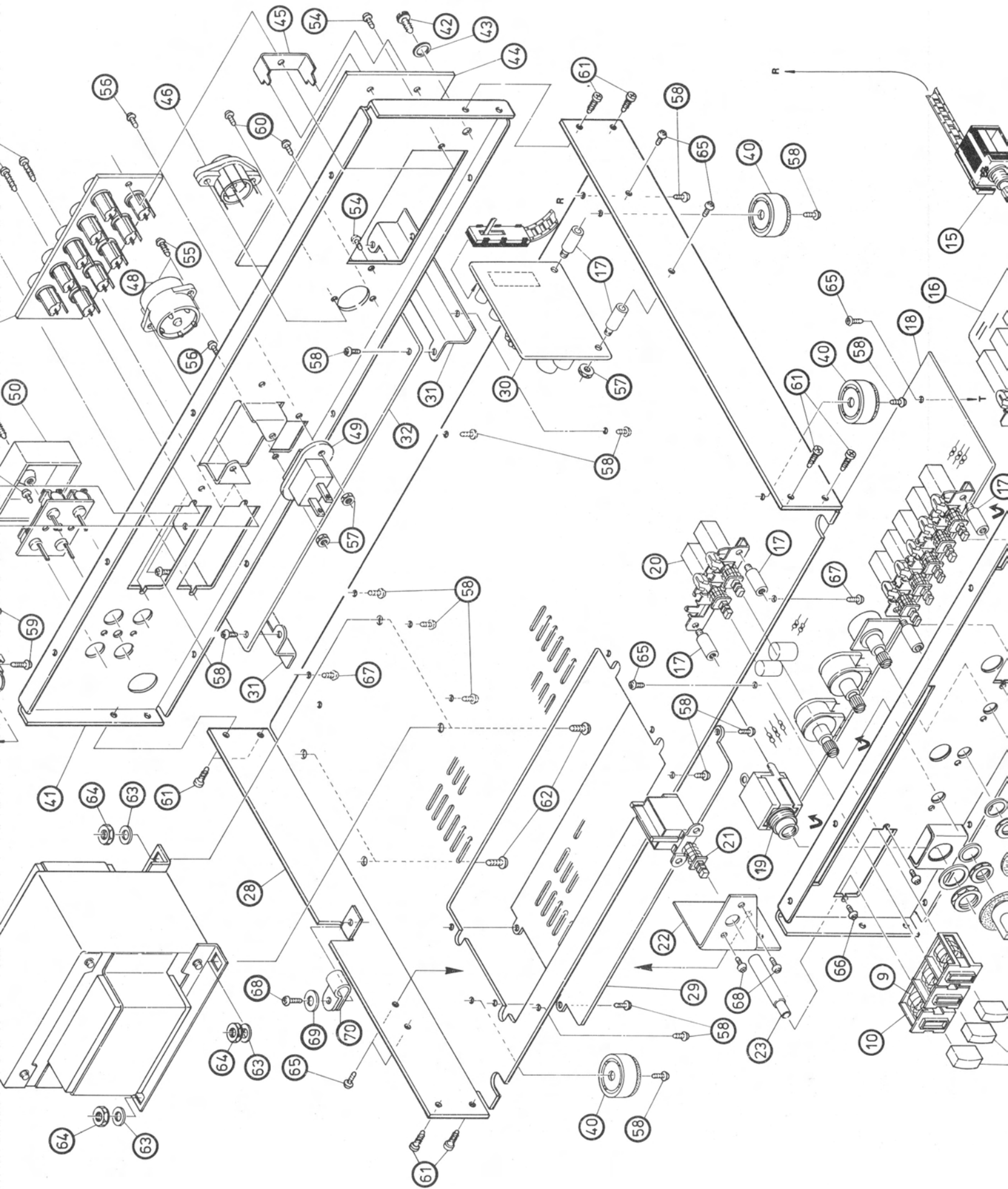
# Repair Parts List

Schematic Location	Parts No.	Description
<b>TRANSISTORS, DIODES AND IC's</b>		
Q401,402	302001123	2SK155 (S), MC Amp. (RA-550 only)
Q403,404	301001145	2SA921 (S), MC Amp. (RA-550 only)
Q405	301201155	2SC1318 (R,S), Regulator (RA-550 only)
Q501,502	301201222	2SC2634 (S,T), Driver
Q901	301201155	2SC1318 (R,S), Stabilizer
D101,102	300414042	LN224RP, Power Indicator
D201,202		
D103-106	300414040	LN324GP, Power Indicator (Green)
D203-206		
D301-303	300414040	LN324GP, Func. Indicator (Green)
D304,305		
D401,402	300313039	RD-3. 6EC, Zener Regulator 3.6V 1/2W
D901,902	300313017	WZ-162, Zener Regulator, 16V 1/2W
D903	300919026	1N4003, Regulator
D905	300313013	WZ-120, Zener Regulator, 12V 1/2W
IC401,402	303452192	HA-1547, Phono Amp.
IC601,602	303452232	LB-1416, Indicator Driver
IC603	303452249	S1-1725HDF, Power Amp. (RA-500)
	303452248	S1-173HDF, Power Amp. (RA-550)
<b>VARIABLE RESISTORS AND SWITCHES</b>		
VR401	510502139	1KB, Gain Adj. (RA-550 only)
VR501	515121131	250KW, Balance Control
VR601,602	525101173	100KCx2, Treble, Bass Control
VR603,604	510502152	5KB, Power Indicator Cal.
VR701	525121145	100KBx2, Volume Control
S1-5	614051021	Switch, Push 5-Key, Phono, Tuner, Aux, Tape 1 and 2
S6-9	614055023	Switch, Push 4-Key, Loud, Ind. Mode and Sub-Fil (RA-500)
S6-9,13	614051022	Switch, Push 5-Key, Muting, Loud, Indicator, Mode and Sub-Fil (RA-550)
S10,11	614030837	Switch, Push 2-Key, Speaker A and B
S12	610410139	Switch, Power Supply (for UL, CSA) 
	614010138	Switch, Power Supply (for BEAB)
S14	654101153	Switch, Phono Selector (RA-550 only)
S15	615212283	Switch, Slide, MM/MC

Schematic Location	Parts No.	Description
<b>OTHERS</b>		
C001,002	422680435	Smoothing Capacitor, 35V/6800μ (RA-500)
	422680450	Smoothing Capacitor, 50V/6800μ (RA-550)
F001,002	341221350	Fuse, 3.5A, Speaker Prot. (Long Size RA-500)
	345222350	Fuse, 3.5A, Speaker Prot. (Mini Size RA-500)
	345252350	Fuse, 3.5A, Speaker Prot. (Mini Size with S Mark RA-500) 
	341221400	Fuse, 4A, Speaker Prot. (Long Size RA-550)
	345222400	Fuse, 4A, Speaker Prot. (Mini Size RA-550)
	345252400	Fuse, 4A, Speaker Prot. (Mini Size with S Mark RA-550) 
F003,004	341221400	Fuse, 4A, Inside, Speaker Prot. (RA-500 CSA only)
	341221450	Fuse, 4.5A, Inside, Speaker Prot. (RA-550 CSA only)
F901,902	341221500	Fuse, 5A, AC Circuit Prot. (Long Size RA-500)
	345222500	Fuse, 5A, AC Circuit Prot. (Mini Size RA-500)
	345252500	Fuse, 5A, AC Circuit Prot. (Mini Size with S Mark RA-500) 
	341221600	Fuse, 6A, AC Circuit Prot. (Long Size RA-550)
	345222600	Fuse, 6A, AC Circuit Prot. (Mini Size RA-550)
	345252600	Fuse, 6A, AC Circuit Prot. (Mini Size with S Mark RA-550) 
F903	341221050	Fuse, 0.5A, Indicator Prot. (Long Size)
	345222050	Fuse, 500mA, Indicator Prot. (Mini Size)
	34252050	Fuse, 500mA, Indicator Prot. (Mini Size with S Mark) 

# Disassembly Diagram







Key No.	Parts No.	Description	Key No.	Parts No.	Description
1.	138011310	Upper Cover		201001502	Transformer, Power Supply (RA-500 120V only CSA)
2.	770500002	Washer, 4.2φx10φx1φ BK		207001501	Transformer, Power Supply (RA-550 Multi-Type) ⚠
3.	705220408	Screw, +M4x8 SMB		201001503	Transformer, Power Supply (RA-550 120V only CSA)
4.	111911501	Front Panel Ass'y (RA-500)			
	111911502	Front Panel Ass'y (RA-550)			
5.	116310306	Knob, 33φ, Volume			
6.	116310304	Knob, 13φ, Bass, Treble. . . etc.	34.	127012254	Heat Sinking (RA-500)
7.	116210074	Push Button (Sub-Fil Mode. . . etc)		127012253	Heat Sinking (RA-550)
8.	116210073	Push Button (Function, Power . . . etc)	35.	120012935	Support (L), Heat Sinking (RA-550)
9.	114902319	Frame, Push Button (Sub-Fil, Mode . . . etc.)	36.	120012934	Support (R), Heat Sinking (RA-550)
	648601130	Spring, Frame		120012933	Support, Heat Sinking (RA-500)
	114902320	Shaft, Frame	37.	120012879	Support, IC
10.	114902318	Frame, Push Button (Function, Power . . . etc.)	38.	303452249	Power IC (RA-500)
				303452248	Power IC (RA-550)
11.	990201330	Felt, Knob (33φ)	39.	703213038	Scrw, +M3x18
12.	990201328	Felt, Knob (13φ)	40.	673402025	Plastic Foot
13.	122011408	Front Chassis Ass'y	41.	123011524	Rear Panel Ass'y (RA-500)
14.	141811009	Volume Control PCB Ass'y		123011525	Rear Panel Ass'y (RA-500 for UL)
15.	654101153	Switch, Phono Selector with Flex Wire		123011526	Rear Panel Ass'y (RA-500 for CSA)
16.	141811012	Function Switch PCB Ass'y		123011529	Rear Panel Ass'y (RA-550)
17.	770911263	Cylinder Bush, Inner Screw		123011527	Rear Panel Ass'y (RA-550 for UL)
18.	141610338	Tone Control and Main Amp. PCB Ass'y (RA-500)		123011528	Rear Panel Ass'y (RA-550 for CSA)
	141610340	Tone Control and Main Amp. PCB Ass'y (RA-550)	42.	770911126	Screw, GND, -M4x8
19.	626110035	Jack, Headphone	43.	770500004	Washer, 4.2φx10φx1φ <sup>†</sup>
20.	614030837	Switch, Push 2-Key, Speaker A and B	44.	141811051	IN/OUT PUT Terminal PCB Ass'y
21.	614010138	Switch, Power Supply (for BEAB) ⚠	45.	120012596	Support, IN/OUT PUT Terminal PCB
	614010139	Switch, Power Supply (for CSA, UL)	46.	625001119	Jack, DIN, 5p (PCB Type)
22.	120012932	Support, Power Switch	47.	624300210	Jack, RCA, 10P (PCB Type)
23.	654101154	Lever, Power Switch	48.	648211247	Voltage Selector (Multi-Type)
24.	114902321	Holder, Func, Ind.	49.	648211116	Socket, AC Outlet
25.	141811010	Func. Ind. PCB Ass'y	50.	648211157	Holder, 2P, Fuse (for UL, CSA)
26.	114902322	Holder, Power Ind.		648211162	Holder, 2P, Fuse (for BEAB) ⚠
27.	141811011	Power Ind. PCB Ass'y	51.	141811051	Speaker Terminal PCB Ass'y
28.	121011347	Chassis Body	52.	642400114	Terminal, push 4P, Speaker A and B
29.	120012937	Bottom Mask	53.	726203008	Screw, +M3x10, JT2V BK
30.	141510176	Equalizer Amp. PCB Ass'y (RA-500)	54.	766223006	Screw, +M3x6 STV BK
	141510177	Equalizer Amp. PCB Ass'y (RA-550)	55.	766223008	Screw, +M3x8 STV BK
31.	120012936	Support, PCB	56.	770911113	Screw, Flet, M3x10 BK
32.	141811013	Power Supply PCB Ass'y (RA-500 with Long Long Size Fuse)	57.	770402201	Nut, M3
	141811014	Power Supply PCB Ass'y (RA-500 with Mini Size Fuse)	58.	726203006	Screw, +M3x6 BTV MC
	141811015	Power Supply PCB Ass'y (RA-500 with Mini S Mark)	59.	766203008	Screw, +M3x8 STV MC
	141811016	Power Supply PCB Ass'y (RA-550 with Long Size Fuse)	60.	726223008	Screw, +M3x8 BTV BK
	141811017	Power Supply PCB Ass'y (RA-550 with Mini Size Fuse)	61.	722203008	Screw, +M3x8 JT20MC
	141811018	Power Supply PCB Ass'y (RA-550 with Mini S Mark)	62.	765204010	Screw, +M4x10 CTB MC
33.	207001500	Transformer, Power Supply (RA-500 Multi-Type) ⚠	63.	770500004	Washer
			64.	770402202	Nut, M4
			65.	766203006	Screw, +M3x6 STV MC
			66.	703213006	Screw, +M3x6 Pan Head
			67.	701203006	Screw, +M3x6 SMF
			68.	726223008	Scrw, +M3x8 BTV MC
			69.	770500003	Washer, 3.2φx8φx0.5 <sup>†</sup>
			70.	672200832	Connector, Line Cord
			71.	796301115	Line Cord
				796301149	Line Cord (for Europe)
				796301125	Line Cord (for Austria)
				796301138	Line Cord (for BEAB) ⚠

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