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ROTEL®

Technical Manual

STEREO INTEGRATED AMPLIFIER

RA-214

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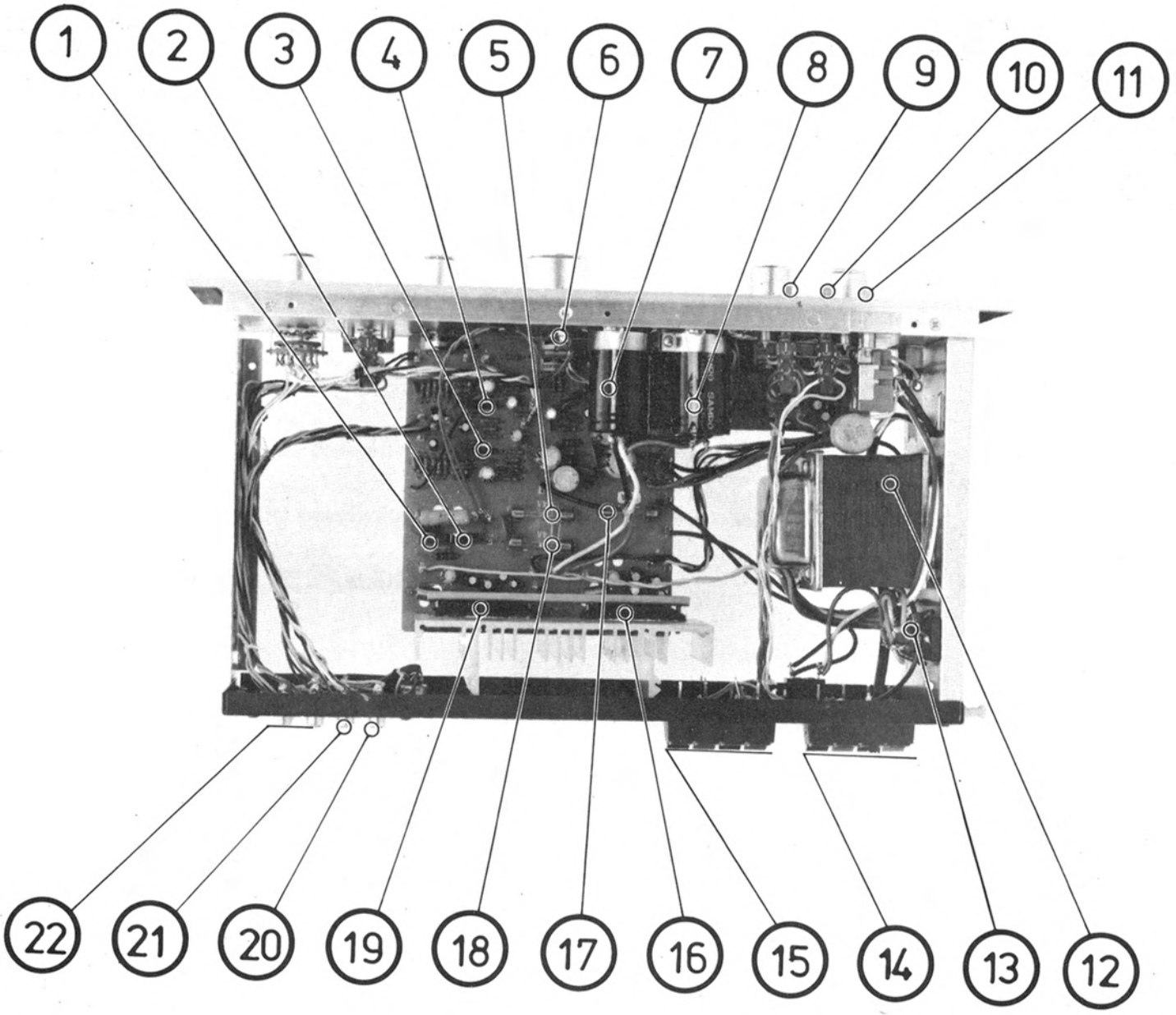
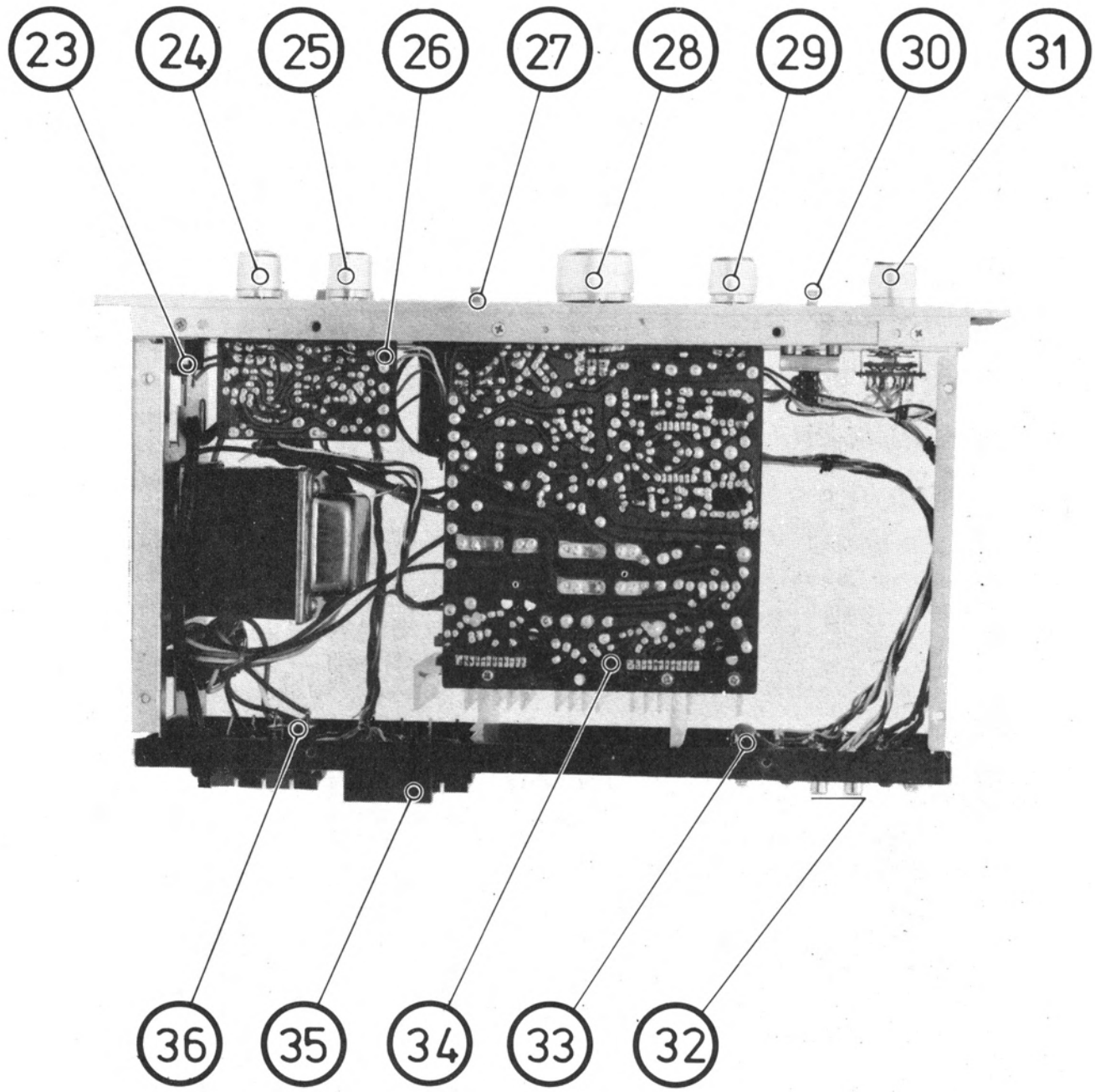
Chassis Layout (Top View)



1. D901, Rectifier Diode
2. D902, Rectifier Diode
3. IC401, Phono Amp. IC (L-ch)
4. IC402, Phono Amp. IC (R-ch)
5. F903, AC Circuit Protection
6. PL001, Indicator Lamp
7. C002, Smoothing Capacitor
8. C001, Smoothing Capacitor
9. S4, Speaker-B Switch
10. S5, Speaker-A Switch
11. S6, Power Supply
12. T001, Power Transformer
13. Voltage Selector
14. Speaker-A Terminal
15. Speaker-B Terminal
16. IC601, Power Amp. IC (L-ch)
17. F901, AC Fuse
18. F902, AC Circuit Protection
19. IC602, Power Amp. IC (R-ch)
20. Aux Jack
21. Tuner Jack
22. Phono Jack

Chassis Layout (Bottom View)



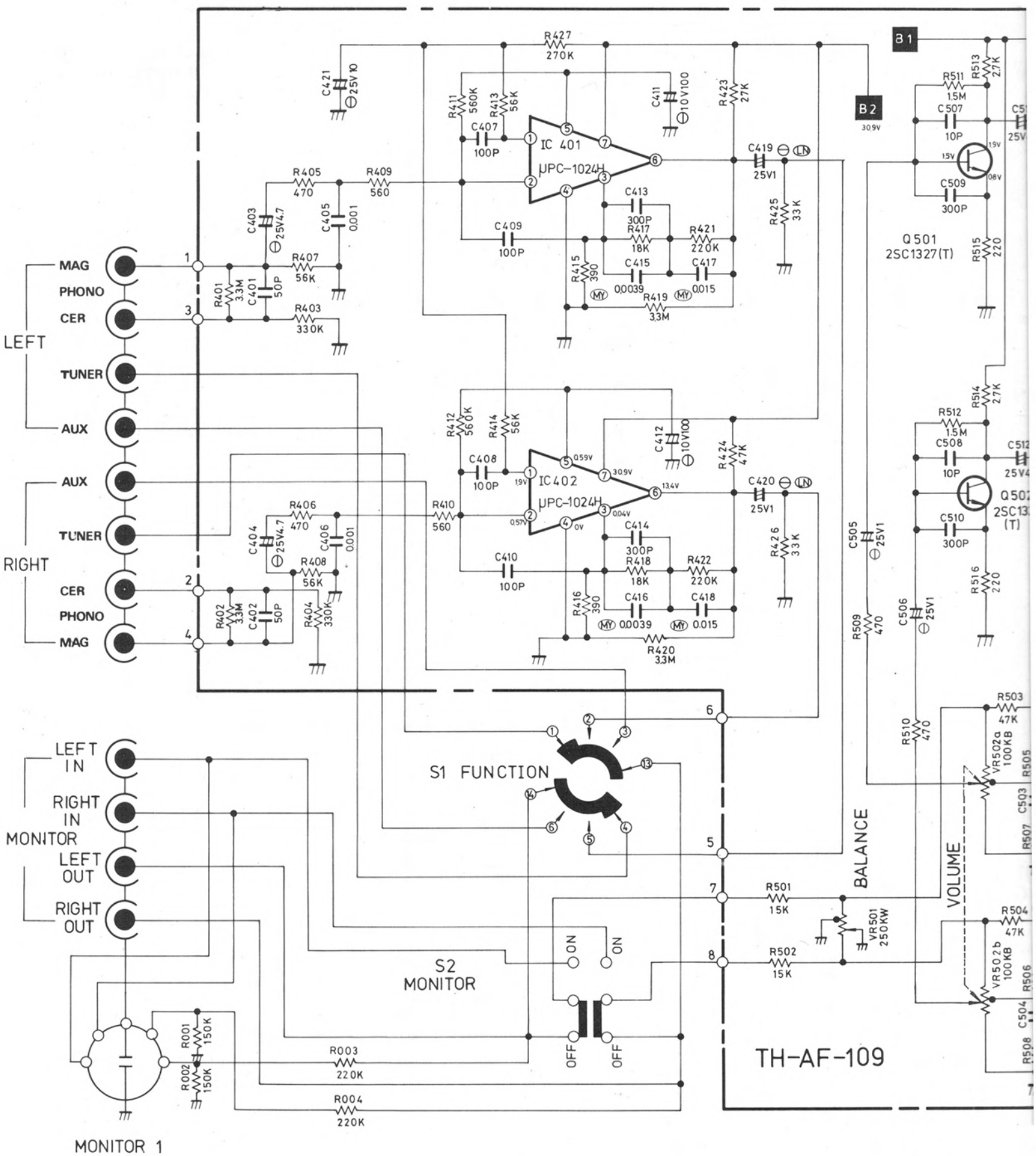
23. J001, Headphone Jack
24. Bass Control
25. Treble Control
26. Tone Control PCB
27. S3, Loudness Switch
28. Volume Control
29. Balance Control
30. S2, Tape Monitor Switch
31. S1, Function Selector
32. Tape Monitor Jack
33. Tape Monitor DIN Jack
34. Phono/Main Amp. PCB
35. Speaker Fuse
36. J002, AC Outlet

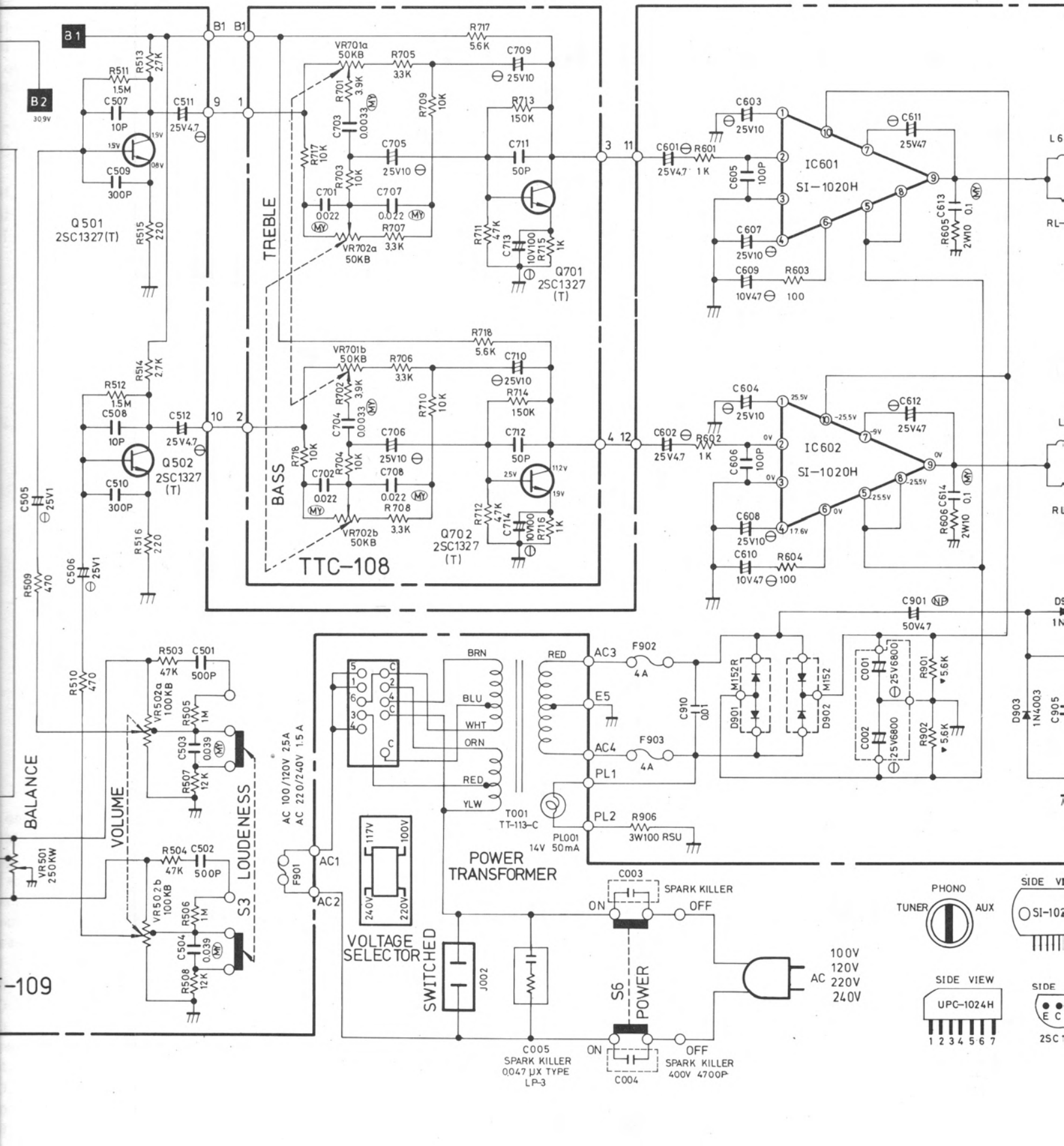
Repair Parts List

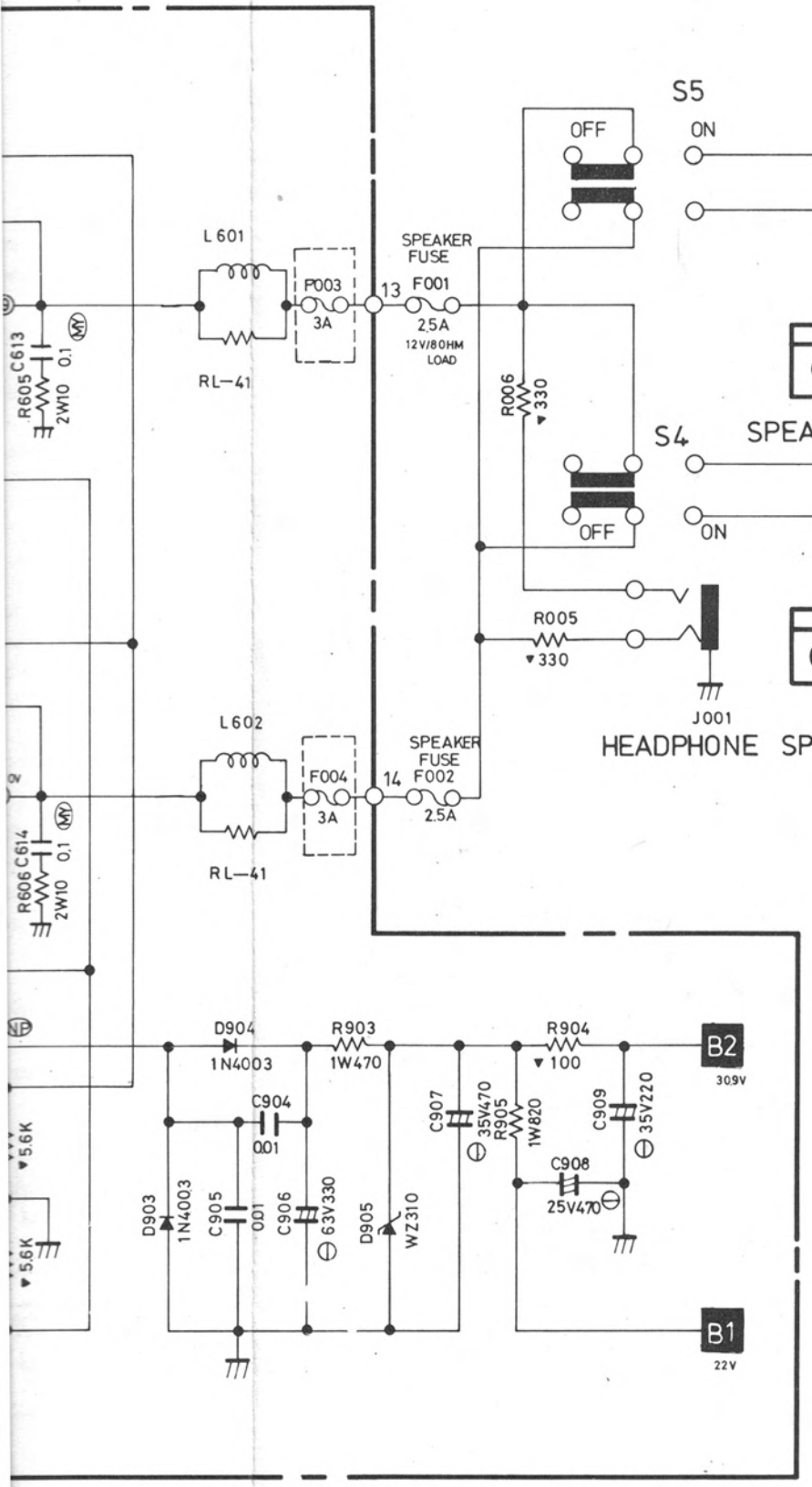
Schematic Location	Parts No.	Description
TRANSISTOR, DIODES AND IC'S		
Q501,502	0301201134	2SC1327 (T), Flat; Tone Amp.
Q701,702	0301201134	2SC1327 (T), Flat; Tone Amp.
D901	0300919022	M1-152, Rectifier
D902	0300919023	M1-152R, Rectifier
D903,904	0300919026	1N4003, Rectifier
D905	0300313021	WZ-310, Zener Requlator 31V, 0.5W
IC401,402	0303452164	μPC-1024H, Phono Equalizer Amp.
IC601,602	0303452176	SI-1020H, Power Amp.
VARIABLE RESISTORS AND COILS		
VR501	0515121124	250KW, Balance Control
VR502	0525121138	100KBx2, Volume Control
VR701	0525101142	50KBx2, Treble Control
VR702	0525101142	50KBx2, Bass Control
L601,602	0228641105	Anti-Parasitic
SWITCHES AND TRANSFORMER		
S1	1604100001	Switch, Function Selector
S2	0614010129	Switch, Push-1Key, Monitor
S3	0614010129	Switch, Push-1Key, Loudness
S4,5	0614020402	Switch, Push-2Key, Spearker-A and Speaker-B
S6	0614010127	Switch, Power Supply
	0614010118	Switch, Power Supply (for UL Apprication)
T001	0201001434	Transformer, Power Supply (120V only)
	0205001434	Transformer, Power Supply (Multi-Voltage)
	0206001434	Transformer, Power Supply (220V/240V)

Schematic Location	Parts No.	Description
OTHERS		
PL001	0351114005	Lamp, 14V 50mA, Pilot
J001	0626110023	Jack, Headphone
C003,004	0440471095	Spark Killer, 400V 4700P
	0470101127	Spark Killer, 0.047μ X Type
F001,002	0341221250	Fuse, 2.5A, Speaker Protector
	0345222250	Fuse, 2.5A, Speaker Protector (mini Size)
	0345252250	Fuse, 2.5A, Speaker Protector (Mini Size with "S" "D" Mark)
F003,004	0341221300	Fuse, 3A, Speaker Inside Protector
F901	0341221250	Fuse, 2.5A, AC Protector (Line 100V, 120V)
	0341221100	Fuse, 1.5A, AC Protector (Line 220V, 240V)
	0345222150	Fuse, 1.5A, AC Protector (Mini Size)
F902,903	0341221400	Fuse, 4A, AC Circuit Protector
	0345222400	Fuse, 4A, AC Circuit Protector (Mini Size)
	0345252400	Fuse, 4A, AC Circuit Protector (Mini Size with "S" "D" Mark)
C001,002	0410680425	Smoothing Capacitor
C005	0470101123	Spark Killer, LP-3 (for CSA)
	0440471095	Spark Killer, 400V, 4700P
	1440471095	Spark Killer, 4700P (for UL)
	0470101127	Spark Killer, 0.047μ X Type
	0141010139	Phono/Main Amp. PCB Ass'y (for UL Apprication)
	0141010140	Phono/Main Amp. PCB Ass'y
	0141010141	Phono/Main Amp. PCB Ass'y (for BEAB, SEV, CEE)
	0141010142	Phono/Main Amp. PCB Ass'y (with Mini Size Fuse)
	0141710293	Tone Control PCB Ass'y
	0648211121	Voltage Selector
	0111911399	Front Panel Ass'y
	0642400111	Terminal, Push-4Key, Speaker
	0624110208	Jack, 8P
	0624110204	Jack, 4P
	0625001112	Din Jack, 5P

Schematic Diagram




TTC-108
TREBLE
BASS
VOLUME
BALANCE
LOUDENESS
S3
Q501 2SC1327(T)
Q502 2SC1327 (T)
Q701 2SC1327 (T)
Q702 2SC1327 (T)
IC601 SI-1020H
IC602 SI-1020H
VR501 250KW
VR502a 100KB
VR502b 100KB
VR701a 50KB
VR701b 50KB
VR702a 50KB
VR702b 50KB
T001 TT-113-C
PL001 14V 50mA
POWER TRANSFORMER
AC 100/120V 25A
AC 220/240V 1.5A
F901
F902 4A
F903 4A
VOLTAGE SELECTOR
SWITCHED
J002
S6 POWER
SPARK KILLER
C003
C004 SPARK KILLER 400V 4700P
C005 SPARK KILLER 0.047 μX TYPE LP-3
100V 120V 220V 240V
AC
PHONO
TUNER
AUX
SIDE VIEW
UPC-1024H
1 2 3 4 5 6 7
SI-102
2SC
B1
B2
30.9V



FOR BEAB CEE SEV

1. CHANGED TRANSFORMER T001 TO TT-113-E-1 TYPE
2. CANCELED AC FUSE F901
3. CANCELED SPARK KILLER C003 C004 ADDED C005 0.047UX TYPE
4. USED MINIATURE FUSE IN ALL FUSE

FOR UL CSA

1. CHANGED TRANSFORMER T001 TO TT-113-A TYPE
2. ADDED SPEAKER INSIDE FUSE F003 F004 3A (FOR CSA)
3. CANCELED SPARK KILLER C003 C004 ADD C005 LR3 (FOR CSA)
4. CHANGED SPARK KILLER C003 C004 TO RMCTAUM · 4700PX2 (FOR UL)

ITEM	SCHMATIC LOCATION (LAST)	
EQUALIZER	R427	C421
TONE CONTROL	R516	C512
MAIN AMP	R604	C612
VOLUME (TONE CONTROL)	R716	C714
POWER SUPPLY	R906	C909
CHASSIS	R006	C005

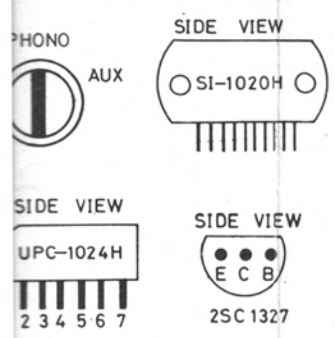
RESISTORS

5% TOLERANCE UNLESS OTHERWISE SPECIFIED
K---KILO OHM
M---MEGA OHM
RSU--METAL OXIDE FILM RESISTORS.
▼---COMPOSITION RESISTORS 1/2 WATT
NON MARK--LOW NOISE TYPE CARBON RESISTORS 1/4 WATT

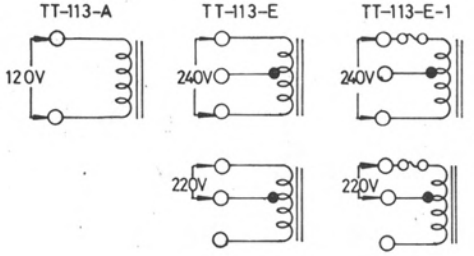
CAPACITORS

(MY)--MYLAR FILM CAPACITORS
⊣⊢---ELECTROLYTIC CAPACITORS
(LN)--LOW NOISE TYPE CAPACITORS
(NP)---NON POLARITY ELECTROYTIC CAPACITOR
NON MARK----CERAMIC CAPACITORS

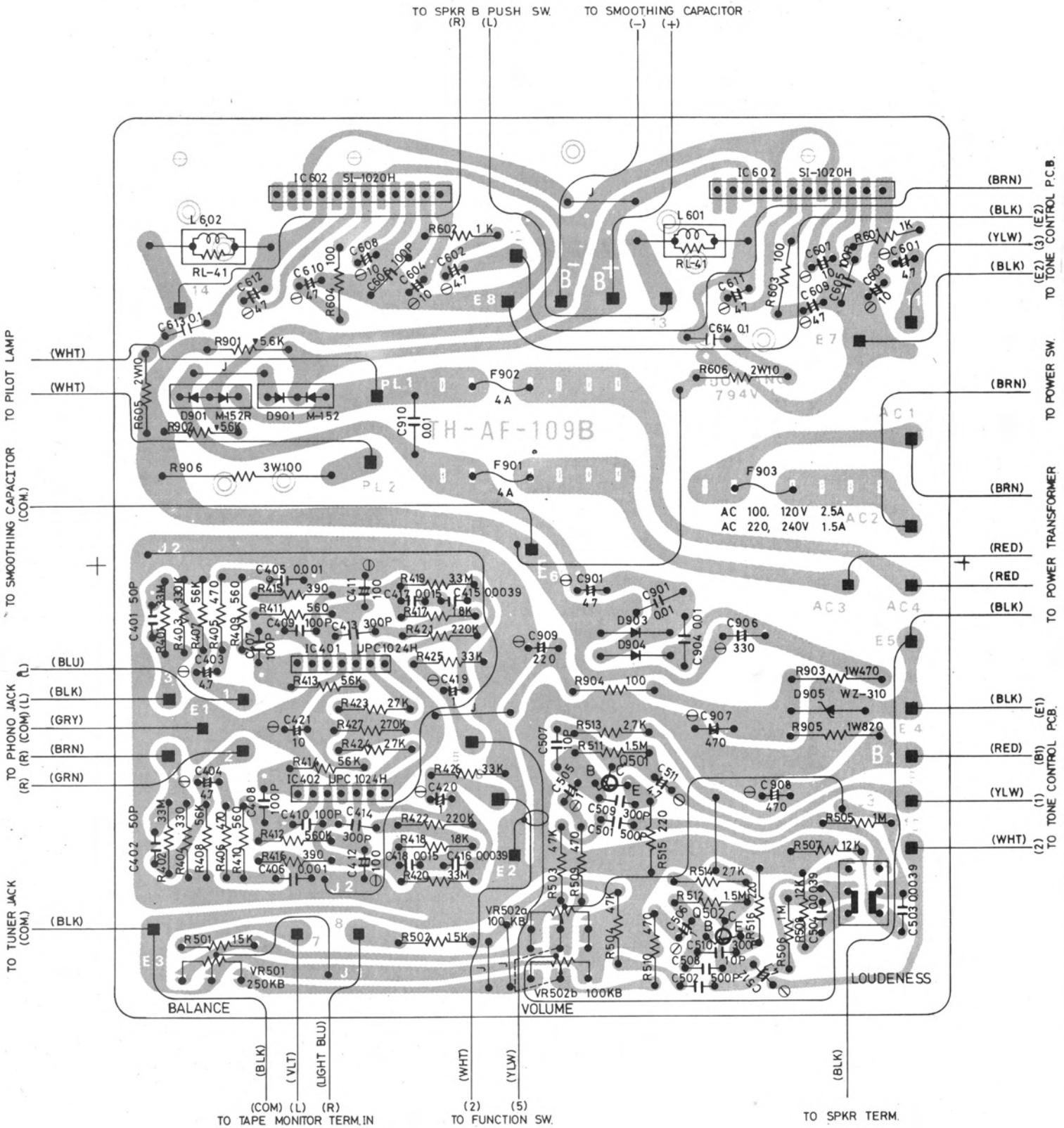
- UNLESS OTHERWISE NOTED IN SCHEMATIC ALL CAPACITANCE VALUES ARE EXPRESSED IN MFD
- VOLTAGE READING MAY VARY ± 20%



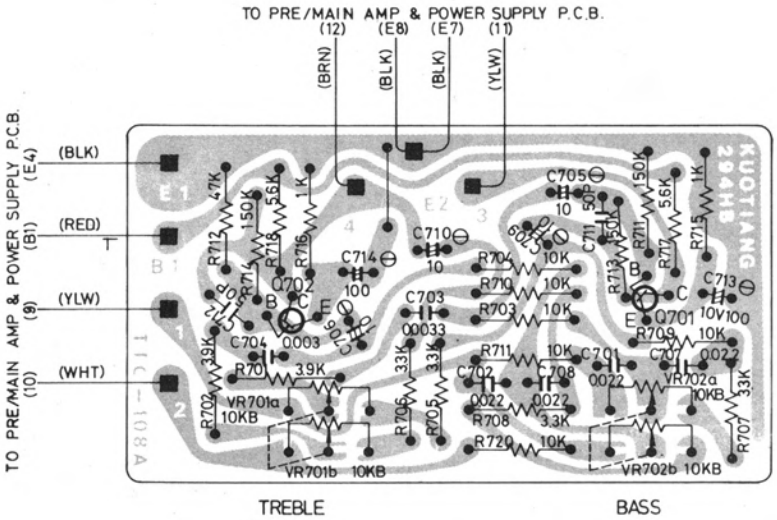
POWER TRANSFORMER STRAPPING



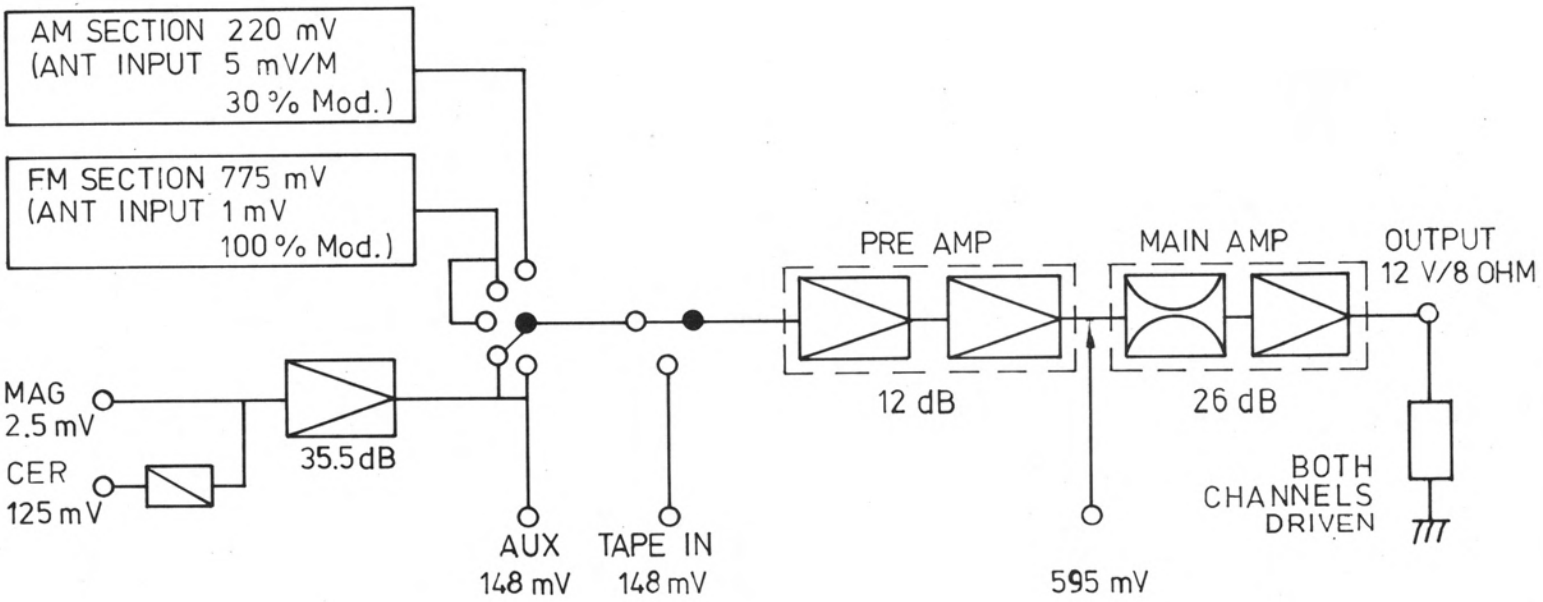
Phono/Main Amplifier and Power Supply Circuit Board Diagram



Tone Concol Circuit Board Diagram



Gain Diagram



Troubleshooting Guide

Unit inoperative

I. If the pilot lamp does not light:
   A. Fuse F901 or F903 may be opened, or
   B. Power switch S1 may be opened, or
   C. AC cord may be faulty, or
   D. Primary or secondary winding of the power transformer T001 may be shorted.

II. If the pilot lamp does light, check the pin No.13 (No. 14 for R-ch) at TTC-109 PCB
   A. If there is signal across:
      1. Switch S4 or S5 may be faulty, or
      2. Terminal or coupling cord may be shorted, or
      3. Speaker fuse F001 (F002 for R-ch) may be opened.
   B. If there is no signal across, check the point No. 3 (No. 4 for R-ch) at TTC-108 PCB
      1. If there is signal across, check pin No. 10 or No. 5 of IC601:
         a. If there is voltage (±25V) across, check the pin No. 9 of IC601:
            i. If there is DC voltage across, IC601 may be faulty.
         b. If there is no voltage across:
            i. Diode D901 or D902 may be faulty, or
            ii. Fuse F902 may be opened.
      2. If there is no signal across, check the pin No. 9 (No. 10 for R-ch) at TTC-109 PCB:
         a. If there is signal across:
            i. Transistor Q701 (Q702 for R-ch) may be blown, or
            ii. Capacitor C711 (C712 for R-ch) or C908 may be shorted.
         b. If there is no signal across, check the pin No. 7 (No. 8 for R-ch) at TTC-109 PCB: If there is signal across:
            i. Transistor Q501 (Q502 for R-ch) may be blown, or
            ii. Capacitor C505, C507, C509 (C506, C508, C510 for R-ch) may be shorted.
         c. If there is no signal across, check the pin No. 7 (No. 8 for R-ch) at TTC-109 PCB: If there is no signal across:
            i. Switch S1 or S2 may be faulty, or
            ii. Coupling cord may be shorted.

Phono section inoperative

A. IC401 (IC402 for R-ch) may be faulty, or
B. Capacitor C403, C411 or C419 (C404, C412 or C420 for R-ch) may be faulty.

Hum and/or Noise

A. Hum and/or Noise produced witch Volume control set at minimum.
   1. Transistor Q501 or Q701 (Q502 or Q702 for R-ch) may be faulty, or
   2. Capacitor C505, C511 or C709 (C506, C512 or C710 for R-ch) may be faulty.
B. Hum and/or noise produced only in Phono
   1. IC401 (IC402 for R-ch) may be faulty, or
   2. Capacitor C403, C411, C419 C906, C907, C908 or C909 (C404, C412 or C420 for R-ch) may be faulty.